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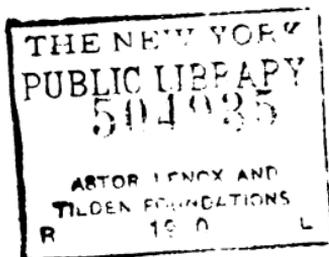
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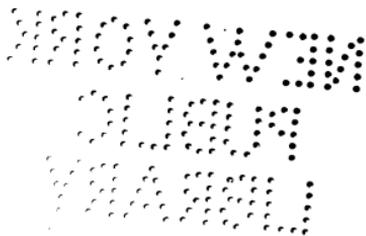
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THE
NEW
WAY

HANKY PANKY.

I.—SIMPLE TRICKS.



Fig. 1.—Mr. Hanky Panky.

FLY AWAY, JACK!

Take two pieces of white paper, about the size of a sixpence, and moisten them well on both sides. Put one on the first joint of each forefinger, just at the root of the nail, and place these fingers on the edge of the table, straight out, while the rest are closed up under the hands.

Then say :

“Two little dickey birds sat on the sill,
One named Jack—t’other named Jill!

Fly away, Jack!”

Close the right forefinger, and with the middle finger remove the paper and retain it there, while the forefinger is quickly replaced in the first position to show the veritable flight of Jack. Then say,

“Fly away, Jill!”

And repeat with the left forefinger. Then say :

“Come back, Jack!”

And take the piece of paper from the right middle finger upon the forefinger as at first, and replace it on the table.

“Come back, Jill.”

The same with the other hand. Then conclude :

“The two little birds are sitting there still!”



Fig. 2.—The Perplexed Spectator.

DANCE, BOATMAN, DANCE!

(From the German.)

Herr Professor Bobine von Rhumkorff amuses little children by holding up his hand, with the thumb and finger thus posed:—

The thumb is made to spring up and down to a lively air and to the words “Dance, de Boatman, dance!”

Then the thumb stops while the fingers are set leaping, to the words :

“Boatman’s piccaninnies dance, ’cause fader dance all alone by heself !”

Then leave the forefinger capering and sing :

“Eldest son of de Boatman, dance !”

Then all the fingers but the first leap about to the words :

“De whole family dance, ’cause him eldest son he dance all alone !”

So on with the other fingers, the little one being the baby, and the middle one Mrs. Boatman.

Some put on a black glove and make four chalk spots on the fingertop to represent eyes, nose, and mouth.

BUY A BIRD.

Fold each finger over the next, the forefinger undermost upon the thumb, and say :

“Who will buy my birds ?”

On one saying he or she will make the purchase, you quickly open your hand and cry :

“They all have flown away !”

LITTLE WATCHMAN.

(For Children) :

Hold up the left hand, open.

“This is the thumb !”

Touch the three principal fingers.

“This, this, this a plum !”

Put down forefinger.

“He eats this one !”

Put down middle finger.

“He takes his brother !”

Put down third finger.

“And grabs the other!”

Hold up little finger and wag it sadly.

“And little Watchman’s left alone!”



TO ADD FIVE TO SIX AND YET MAKE BUT NINE.

Having drawn six straight lines, by adding five more, as in figure 3, only *Nine* is seen.

NINE

Fig. 3.

TO CARRY HOT COALS IN THE HAND.

Cover the palm with sand, ashes, or any non-conductor, and calmly put the live coals on it. Which ancient “sell” will be found in the first German mediæval play, entitled “The Burning Iron,” by Hans Sachs, “per-

formed for the first time in Nuremberg in the year 1531." A peasant woman suspects her husband of some crime, and she arranges with her mother that he must pass under the ordeal of the "burning iron"—that is, a piece of iron made red-hot must be picked up with his bare hand, and carried round the room. If his hand remain unscathed, he is innocent; if he be burnt, then he is guilty. The husband promises to undergo the ordeal; but before doing so, manages to place, unseen by his wife, a flat piece of wood upon the hollow of his hand, and with this deception he passes through the ordeal successfully. Mr. Hanky Panky believes this gentleman to have been his "long-lost brother."



II.—TRICKS WITH COINS.



Fig. 4.

**COIN TRICK, FROM AN HIBERNIAN POINT
OF VIEW.**

Our brother magician, Signor Blitz, tells us the following tale, which is useful as a warning:—

While conversing in a grocery store with the proprietor, an Irishman came in to make some purchases. The trader was extremely anxious for me to astonish him by performing some feat, which I complied with. Before concluding I requested the loan of a quarter of a dollar from the Hibernian, which he at first refused, and even when the storekeeper pledged himself responsible for it, he reluctantly gave it to me. I desired him to close his hand, and hold the money secure, and I would change it into a five-dollar gold piece.

“Faith!” he muttered, as he grasped the quarter, “it is just as I would like to have ye after doing, but I don’t believe you can coin money so aisy. Let me see if you can do it!” he exclaimed.

"It is already done," I said. "Open your hand and see."

The man cautiously relaxed his fingers, and, at the first glimpse of the gold, jumped and hurraed wildly, as an Irishman only can; but when his curiosity was entirely satisfied as to its reality, he carefully deposited it in his pocket, with many thanks, declaring me to be the most wonderful man in the world.

I here desired him to replace the money in my hand, and I would again convert it to the original quarter.

"Sure, afther Mike being rich, would ye make him poor again?"

"But you know it is only a trick," I answered.

"A thrick? Divil a one! Sure, man, it is a rale piece of goold,"—thrusting his hand into his pocket to protect it from any sudden or unperceived effort on my part to extract it.

"You know it is but a joke," I repeated. "Return me the gold, and I will astonish you by transforming it into silver once more."

"By St. Patrick, you had better not do that."

"Yes, you must give me back the gold."

"I would not part with it if Priest McDermott bid me."

Finding my efforts to procure the money a failure, I resorted to artifice by exciting his fears of my power to do good or evil. I assured him that unless he returned the piece of gold, he would be a miserable man all his life; for it was Satan's coin, who was always in search of his own, and would take him away with the gold.

"Och, shure, yer honour, the Holy Father will save Mike, and if ye want any more silver quarters to change into goold, come to Michael MacCarty. He is the man for you." And with these consoling words he walked rapidly away, leaving me minus my half-eagle, while

the store-keeper laughed immoderately at the magician being outwitted by a son of the Emerald Isle.

All Louisville became cognizant of "the joke," as they called it, and hugely enjoyed it at my expense; but I could not see it.

THE NEW TRICK OF MELTING MONEY.

In our former works have been given revelations by means of which the disappearance of coins can be accomplished. The present act of prestidigitation is quite new, and never before discovered by magicians to their audiences.

Performance.—A drinking-glass having been passed around amongst the audience, that the absence of mechanism may be generally manifest, Mr. Hanky Panky borrows a half-crown and a handkerchief, and pours some pure water (which may be tasted) into the glass, held by one of the company. Though this essence of the New River has no corrosive properties perceptible to the tongue, Mr. Panky confidently asseverates that it is bewitched into the power of annihilating silver.

He then places the coin in the centre of the handkerchief, and puts it over the mouth of the glass, where the



Fig. 5.

volunteer holds it by its edge through the silk, so that the pendent corners hide the coin and glass.

The person is notified that Mr. Panky will count three, at the last of which numbers he is to let the piece fall into the glass, as the sound will betoken.

One, two, three, chink.

The coin is distinctly heard to fall, so that there can linger no doubt whatever of its presence in the glass.

Nevertheless, Mr. Panky, with his usual assurance, announces that—without his approaching—he has the power to attract the coin to him, and, in truth, he suddenly holds it up in plain sight. The person takes away the handkerchief, and is even more astounded than the most impressionable amongst the spectators, to see nothing but the water in the glass—of which the magician relieves him by swallowing it.



Fig. 6.

Explanation.—The bottom of the glass is of the same dimension as a half-crown. A disc of sheet-glass is cut of the same size exactly. This is substituted for the coin, and is felt within the handkerchief. When it falls, the sound is so like that of metal that all are filled with error. When the cover is removed, the water prevents the glass piece being seen at the bottom even by the operator himself.

The coin wand can be used in connection with this trick, for which see a description following.

TO REDUCE A SHILLING TO A SIXPENCE.

Take two pieces of fancy paper with one side in colours, patterns, or marbling, about seven inches square, put the coloured sides together, and cut them at the same time in the shape of Fig. 7.

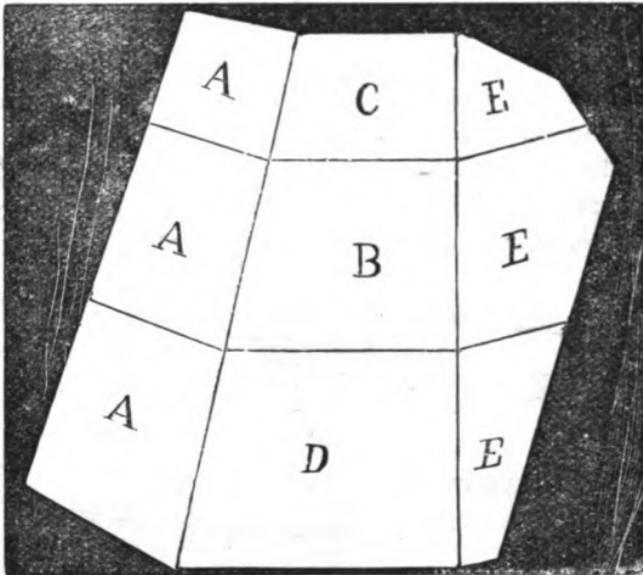


Fig. 7.

The success of the trick depends on their being exactly alike in size. Place a sixpence in the centre of one of the pieces at the place marked A, then fold it carefully over at the crease on the side marked B, and also again at the side marked C. When you have done this, turn down the end marked D upon the centre A and again fold over on E. You have thus formed a small parcel the shape of Fig. 8, with a sixpence in the middle. You must then put a shilling in the centre of the other piece of paper, and fold it up exactly the same

size and shape as the first piece. When you have done this, paste the two parcels together at the back of the ends marked *r* in Fig. 8, and the sides will be so even that both will appear as one. You can then open the



Fig. 8.

side of the paper containing the smaller coin, and show it to your audience, at the same time informing them that you are going to open a mint on a small plan, and coin a shilling from a sixpence. Dexterously turn over the side containing the shilling, and upon opening the paper, to the general astonishment, instead of a sixpence they will behold a shilling.

THE UNCRUSHABLE FLOWER.

At the time of the amusing warfare between the perennial Charles Mathews ("the Younger!" what happy augury in the title!) and the Great Wizard of the North, the former, who was assisted by Mr. Cremer in many of his diversions, created much surprise by the exhibition of a flower, as fragile as a rose, which could not be lastingly injured.

He would pluck this flower from his button-hole, and, in sight of the audience, who wondered "What he Would Do with It?" would dash it to the stage, stand on it, shut it up in a book, and martyrize it in various other modes.

In spite of this, he had but to take it up and tenderly wave it in the air, and gently breathe a tender sigh on it, and kiss it for its mother, when it would resume its pristine fulness of bloom—not a pistil broken, not a petal injured.

Explanation.—The flower is artificial, and carefully made of choice Berlin wool, which material will bear much ill-usage without injury to its elastic filaments.



Fig. 9.—The Victim of this Mystification.



THE FLYING COTTON REEL.

Wind off a ball of cotton cord (piping) upon a tin tube six inches long, and of the diameter of a half-crown or florin, or rather a trifle wider.

Borrow a coin which you have had marked, and change it by means of the magic salver.

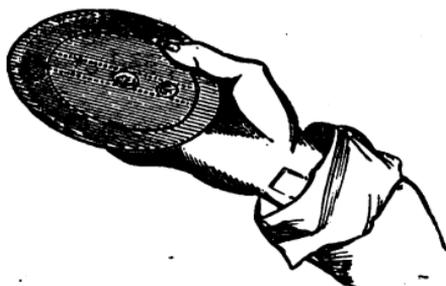


Fig. 10.

Pass the marked coin off the stage to your confederate, who puts it down the tube into the ball of cotton, and leaves it there in the centre; on withdrawing the tube the hole can be completely covered up by pressing the cord around it.

Thus prepared, the ball is brought to you in a glass cup, having a hole in the rim through which you pass one end of the cotton. Fasten this to a winding-off wheel (broad-tired), and as your assistant winds off the cord, you pretend to throw the coin into the ball.

Immediately, the marked piece falls into the bottom of the vessel, in which it is taken to the owner.



Fig. 11.—The Owner of the Coin.

THE OBEDIENT SIXPENCE.

Lay a sixpence between two shillings on a table-cloth, and cover them with a tumbler, and offer to remove the



Fig. 12.

middle one without touching the others or the glass. To do so scratch the cloth with the finger-nail, and the lesser coin will move out towards you, the others being held by the tumbler.

THE INVISIBLE TRANSIT.

(*Le Vase aux Grains.*)

Mr. Panky borrows a half-crown, which he politely requests some one in the party to mark, and having had a fruit examined, such as a shaddock, melon, marrow, &c., he puts it in a box.

Then holding a large cup or vase full of seed or corn, as he proves by taking a pinch out of it, and casting the grain amongst the audience, he sets it on a table.

At a word, the coin vanishes to enter the fruit. Next, the fruit is commanded to cross and bury itself in the vase filled with seed, without displacing its contents, which is assuredly remarkable. Indeed, on plunging the hand into the vessel, the fruit is produced, and in its centre is found the marked coin. The seed has disappeared.

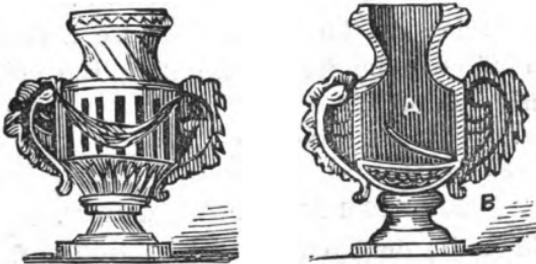


Fig. 13.

Explanation.—The vase is of metal with a secret bottom or with a trap in the stand, by which the contents, in this case seed, will run down out of it and

down through the hollow leg of the table on which it is placed. The box in which the fruit is put is that called the Box of Disappearances.

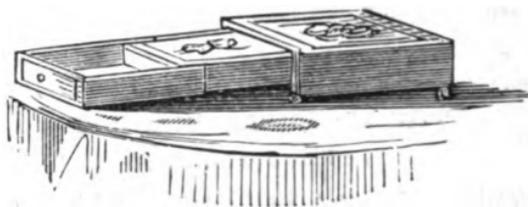


Fig. 14.—The Box of Disappearances.

It is a case with a double drawer, into the inner of which an object is placed and both shut up; only the outer or false drawer is pulled out, and the disappearance is performed.

As for the fruit, the coin is placed in it beforehand, or introduced by means of the coin knife.

Performance.—The marked coin is passed to your agent, who pushes it into a fruit by a cut made in it while you are letting a duplicate fruit be examined. The prepared one is buried in seed in the vase which is brought in upon the stage. The second fruit is put into the disappearing box and made away with. A touch to the spring releasing the trap of the vase makes all the seed run off, and the fruit containing the coin is triumphantly opened.

THE DIE AND DOVE TRICK.

You have the double die described in *The Secret Out*, composed of a hollow tin case, painted like a die, and a die in solid wood.

You hold up a borrowed hat and say that you will visibly pass that die (both being as one) into the hat. Upon the crown you leave the cover and the solid cube

you put inside the hat—or you say—“Now you see this die, and now you do not see it!” and pass it down on the secret shelf behind your table. Or, again, you

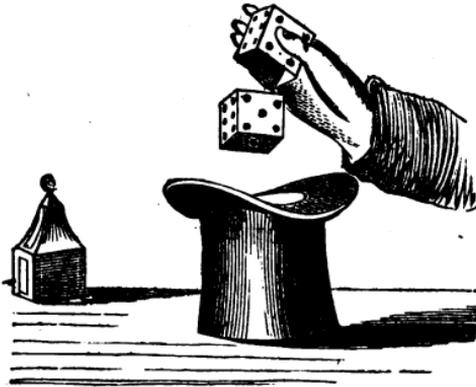


Fig. 15.

exchange it for a hollow die holding a live bird, and opening with a sliding side.

You place this die on a plate, and, in covering it, and turning it over, open the slide, so as to have the now open face down on the plate.

You have a small cage containing another bird, on which you set a handkerchief, in the centre of which is sewn a square plate of metal of the size of a cage, at top. Your table trap takes in the cage, and you hold the handkerchief by the square plate at the proper distance from the table, so that the way the folds fall from its edge will resemble their draping the cage.

Now, say—“I shall make that die pass into the hat and this bird take its place!”

You shake the handkerchief and show that the cage has departed—a most effective illusion.

You pick up the mock die in the case, and, of course, the liberated bird flies away.

You lift the hat and push the solid die so as to make it fall.

Then you put into the hat a set of cups, Chinese lanterns, dolls, or other objects made for that purpose, to fit inside each other, and so take up little space—and express your astonishment that the owner should fill his hat with anything but brains.

THE COIN WAND.

Let your ebony wand be hollowed out at one end and bored clear through for a movable rod to work in it. In the space at the end have a half-crown cut into three pieces, thus—

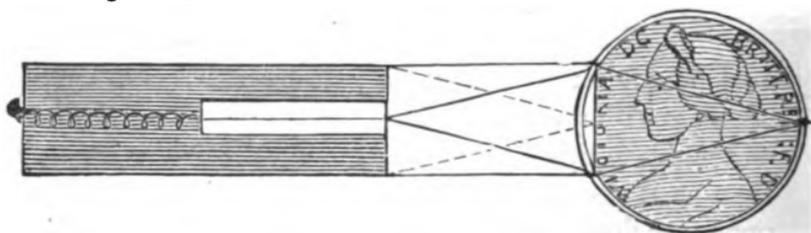
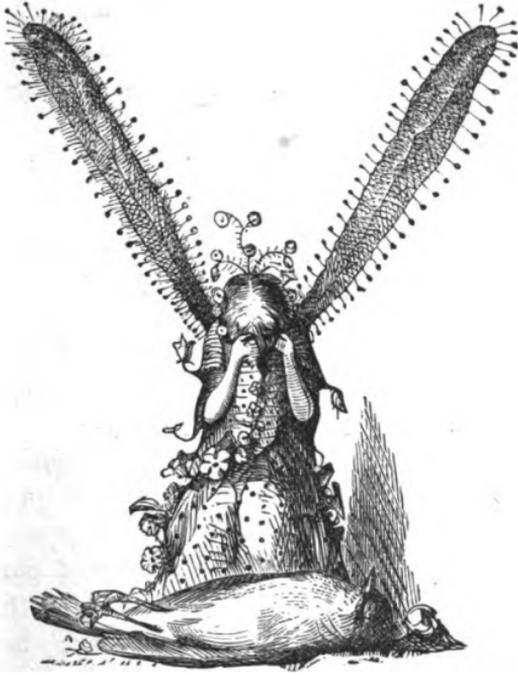


Fig 16.

with a simple mechanism worked by a spiral spring at the end of the rod, by which these three pieces, overlapping one another when drawn into the wand, unfold upon the same plane like a perfect coin when the spring is liberated.

You can by its means appear to draw a coin by the mere tap of your wand from any place whatever—the wall, a table, a person's ear, nose, or pocket—and as often as desirable, since you pretend to remove the half-crown each time that it is shown, and actually show a real one in your hands.

THE GARLAND OF ROSES.



YOU have borrowed three or four coins from the company, changed them for the ones used in your juggling, and passed them to your assistant.

Then you have as many cards drawn out of a prepared pack (see "How to force a Card," page 43, *The Secret Out.*)

Your attendant brings in a wreath of flowers, which is suspended from the ceiling by two silken cords.

You lay the coin on a little glass table, and only let one piece slide off at a time.

The coin wand can be used in connection with this stand, and rings and other objects can be substituted for the coin top, set on an iron frame.

On crying out, "I now take these sovereigns and throw them into the centre of that garland!" a chink of coin is heard, and on the instant the money is seen, held by invisible means, in the wreath.

Next you stuff the cards into a pistol, and, on firing at the garland, they appear within it.

Explanation.—This magnificent trick is simple, but requires electrical appliances.

The action of a battery makes the duplicate coin on the table fall into a recess in its edge, while the real ones and the chosen cards, by the same power, are thrust out from the wreath by secret wires with pincer heads.

THE BEWITCHED PICTURE-FRAME.

(*Le Cadre à l'Assiette.*)



WID you ever see such a lovely bit of Sèvres as this plate? Observe the delicacy of the tints and the dainty outlines of the floral decoration.

If I were in the musing mood, I might form quite a lecture on the scenes which this piece of porcelain conjures up: the rise of Dubarry; her downfall—Oh! the plate has slipped through my

fingers, and I take it up to find it broken.

Let me see: what is smashed china fit for? I forget—but I wonder, now, if it would not make excellent wadding for a pistol! Let us try. Here is the firearm, which I will load—on the powder I put the fragments of the plate—Time *severs* many a beauty from her mate—Plenty of room yet. I must add these rings, with which my obliging auditors have furnished me, and this ribbon. A very formidable charge!

Boy! a target!

Call that a target?

Why, it is a black board in a frame. Never mind; it will do, unless I make a butt of you! [*Exit the Attendant.*]

Click! bang!

When the smoke clears away, there is seen in the middle of the framed black space the ribbon, rings, watches, or whatever was used for cartridges, and the plate restored except for one small fragment. It seems that I left a piece out of the barrel. Oh! Is it not here under this obliging young lady's fan? I thought so; thank you.

I will throw it into its place.

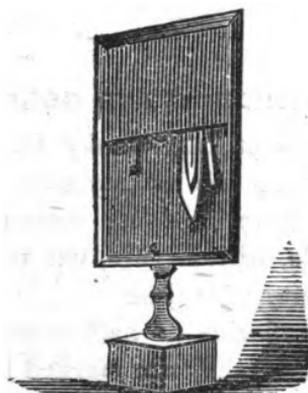


Fig. 17.

One, two, three, and an *off!* I mean *on!*

You will observe that Richard is himself again—as rich and hard as ever.

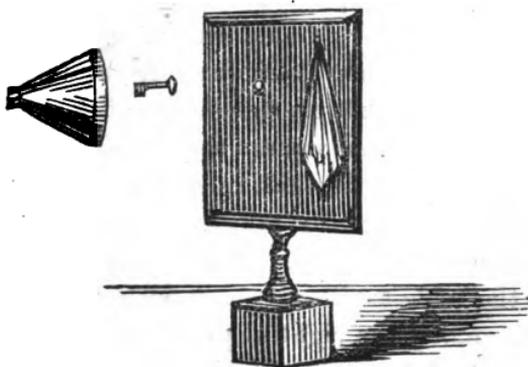


Fig. 18.

Explanation.—For the appearance of the entire objects, the enchanted target described on page 194, *The Secret Out*, is used, with the following additional contrivance for the china plate restoration, namely:—The duplicate plate is covered, as are the other articles, with a black blind, made to disappear into the frame by an electric shock, or the action of a piston-rod, while a scrap of black cloth to be pulled away by a wire leading secretly to your assistant, gives it the semblance of a broken one.

THE GUERIDON AND GOLDEN RAIN.

By the orders of Mr. Hanky Panky, his attendant brings out before the audience a small round table (*guéridon*), a more guileless means of mystification being impossible, with its thin, flat top, slender leg, and general simplicity of outline.

Half a dozen florins or half-crowns being borrowed from the audience, they are marked by one of them and placed in a pile upon the table, whence they disappear one by one.

This is, perhaps, not so very astounding, for no fellah ever yet clearly understood how money goes. But, to really make the deception a startling one, Mr. Panky puts a hat, a scarf, or a handkerchief on the table, and commands the money to return from its refuge of nothingness. The half-crowns—a great deal more eager to be restored to their owners than whole crowns now-a-days are—are heard to fall upon the table, without a trace of their passage through the hat or handkerchief.

On removing the cover, indeed, the attendant has but to go to the table to fill a salver with the money, and distribute among the rightful proprietors.

Explanation.—The table-leg is hollow and a rod works

in it, on the head of which the bottom coin is placed ; when the rod is lowered, which is done by simple mechanism (for which see "Grand Magic," in *The Secret Out*), the coins gradually vanish. The reappearance is managed by the reverse action, and the rod may be fitted with a joint a few inches from the top, so that the pieces will fall off on one side, the more noisily the better.

When the coins are to drop audibly into a metal or glass vase set on the table, the rod may terminate in a tube to contain the money.



Fig. 19.

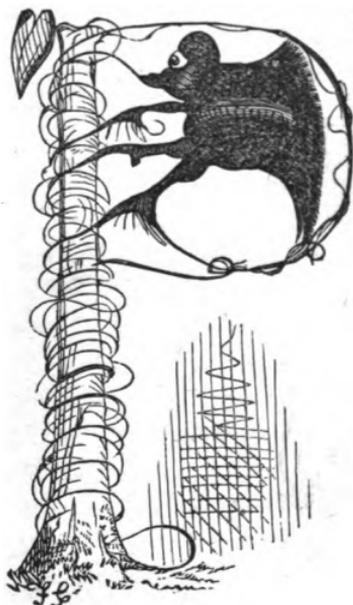


Fig. 20.

III.—WITH ROPE AND STRING.

THE SKIPPING-ROPE TRICK.

(*Hamilton's l'Entente Cordiale.*)



ROVIDE a skipping-rope, and, having had your wrists firmly bound together, let the person who thus tied your hands pass one end of the rope between your arms and join its ends, by which act the cord and your united arms will form two endless links or rings, to separate which, and instantaneously, will seem materially impossible.

However, it can be done.

Pull at the cord as if to make sure it is held fast, and, while so doing, catch

between the wrists the part of the rope that happens to be there, and work the rope up so as to get the

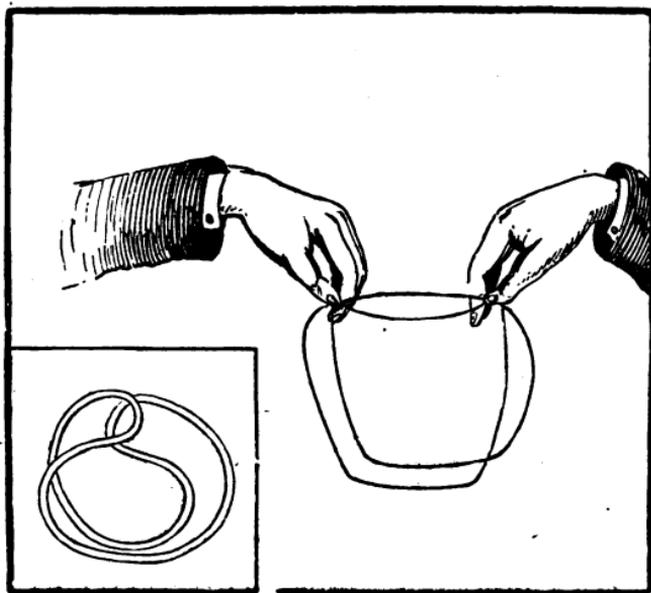
looped end through the handkerchief in your hands. Through this loop pass your left hand. Turn slightly to the right and jerk the rope a little, when it will fall to the floor, while your hands remain attached.

In the couple of seconds which this feat requires, move your hands up and down mysteriously, to baffle the attention of the bystanders on what you are doing.

TO RESTORE A CUT STRING.

(Decremp's Garter Trick.)

Having a piece of string, with the ends tied, run one hand through each end, twist it once round (Fig. 21), and put both ends into the left hand. Draw the right hand quickly along the double strings to where the strings cross, and conceal the join with the right thumb and forefinger (Fig 22).



Figs. 21 and 22.

Hold the strings in the same way with the left hand,

and let some one cut the string between them. You show that the string has been divided into two pieces, and assert that you can join them by mastication. Put all four ends into your mouth, and remove with your tongue the little cut-off loop.

When you take the string out of your mouth no one will notice the absence of so small a portion of its length, and will fancy that you really have joined them. Take an opportunity of getting rid of the fragment you retained in your mouth.

—————

TO CUT THE BRAID OF A BUTTONHOLE WITHOUT LEAVING A MARK.

Tie the ends of two feet of string together. Put it through a button-hole of your coat (or the ring of a key

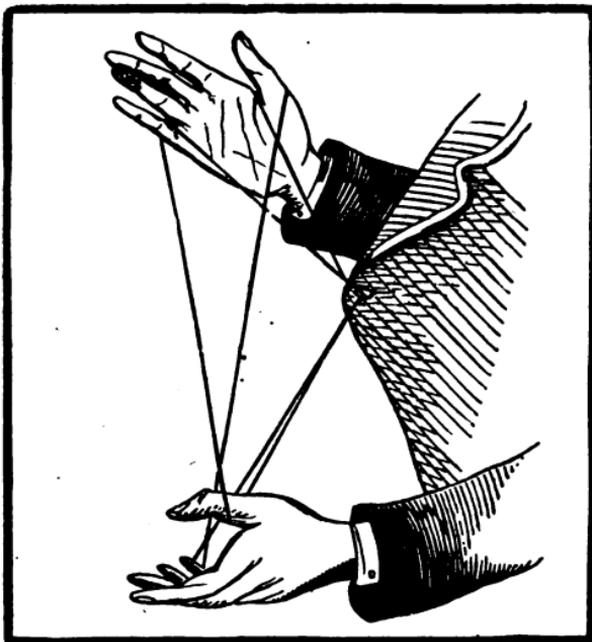


Fig. 23.

in the door); stick one thumb in each end, and each

little finger in the upper string of the other hand. Draw out the hands, and present the figure traced in the illustration.

Let go with the right thumb and left little finger, and thrust your hands quickly apart, when you will seem to have pulled the string through the braid of the button-hole, and yet there will be no trace of the passage. It is best, when you let go with the right thumb, to change the string from the right little finger to it.

THE DEMON CORD.

Saw a tube in half lengthwise, and at one end mount

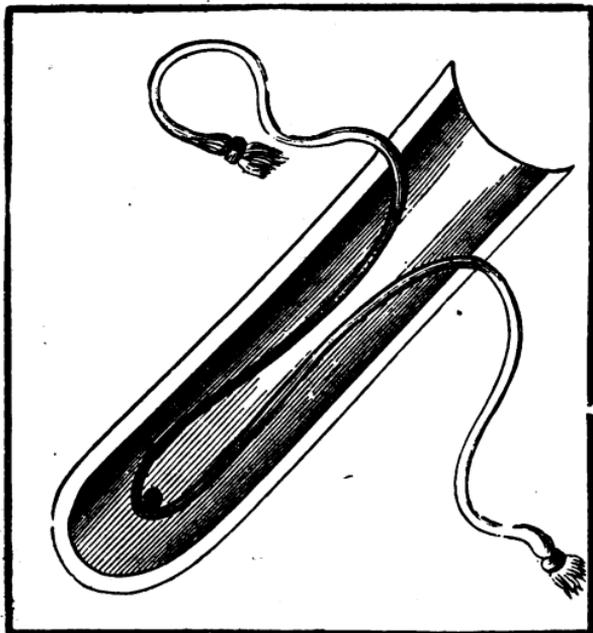


Fig. 24.

a grooved wheel, over which passes the bight of a cord,

with its two ends passing out of the hollow cylinder at the sides of the other end. Tint one-half of the cord a different colour from the other, close it in; varnish well to hide the crack, and your trick is complete.

The cord seems to have the chameleon property of changing its hue.

TO TIE A KNOT ON ONE WRIST WITHOUT THE TOUCH OF THE OTHER HAND.

Take a yard of whipcord, or stout fishing-line, one

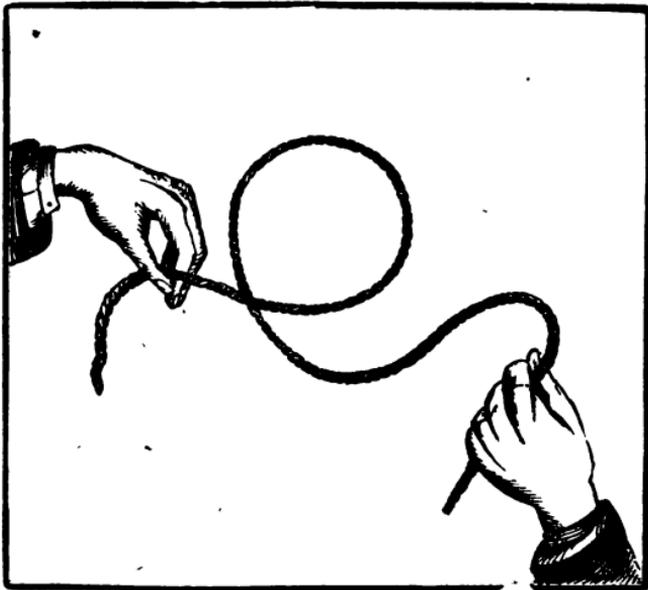


Fig. 25.

end in each hand, and with the right throw a loop over upon the left hand. Instantly draw back the right

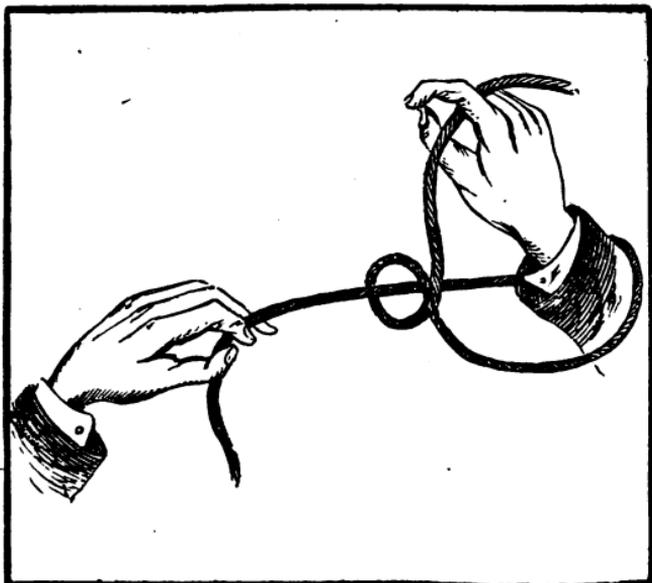


Fig. 26.

hand to tighten the loop, and let go both ends the moment the knot has been made.

TO CUT YOUR NOSE OFF WITH A STRING.

Tie the ends of twelve or fifteen inches of string together, and make a loop, as shown in the illustration.

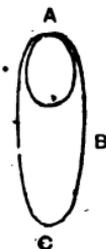


Fig. 27.

Place the loop in the teeth at A. Put the right forefinger in loop B, holding the other bight (or bend), C, on the left forefinger, as in the second illustration.

With the right forefinger remove the loop B, by raising it over the string D, and carrying it under that string.

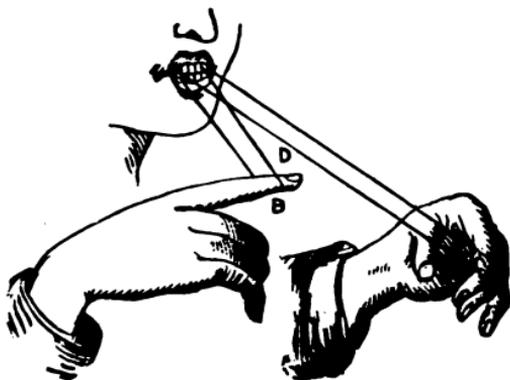


Fig. 28.

Put the top of the forefinger (the loop B being on it) on the tip of the nose.

THE MARVELLOUS RELEASE.

(*Le Captif Emancipé de M. Cleverman.*)

A ponderous ladder, composed of three uprights and crossbeams, is drawn in upon the stage, and inspected, as well as a new rope, by one of the company, and pronounced solid. The Magician's assistant is then bound to the centre post, and all the knots are sealed by one of the spectators. A light basket-work shade, covered with canvas, is put on over all, and in a few seconds the man is found tied as before, but without his coat. On being concealed and discovered again he is found completely freed, and the rope on the stand without a seal being broken.

Explanation.—The centre post is apparently quite firmly bolted into the cross pieces, but in reality the screw heads have no pin attached except one, which is

withdrawn by the tied man, who has his hands bound behind him just where he wishes to use them. On being unpinned, the beam drops down into a socket in the stand, and the rope can be pulled through the open space. The sealing of the knots keeps the ropes in their place.

A chair can be constructed in the same manner, and, if the deception be practised in a dark cabinet, one of the Davenport Brothers' feats can be imitated.

THE MAGIC UNTYING.

Give one end of a yard of strong, stiff, smooth twine to a person to hold, while you retain the other in your right hand. Put your left hand under the twine, half way between the ends, and make a single tie (or, in

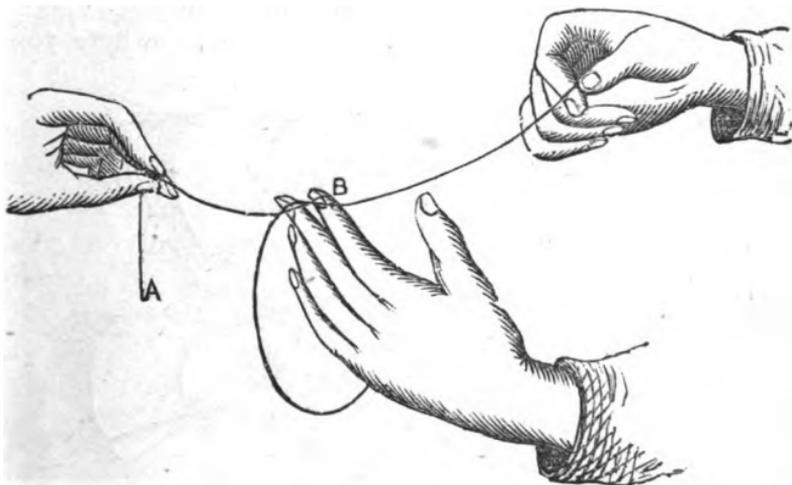


Fig. 29.

sailor phrase, a half hitch) over the string between your left hand and the end A in the illustration.

Draw the tie close but not tight over the left hand, B being the tie. Open out the left hand so that, when closed, the loop will be loose on the hand. Pass the

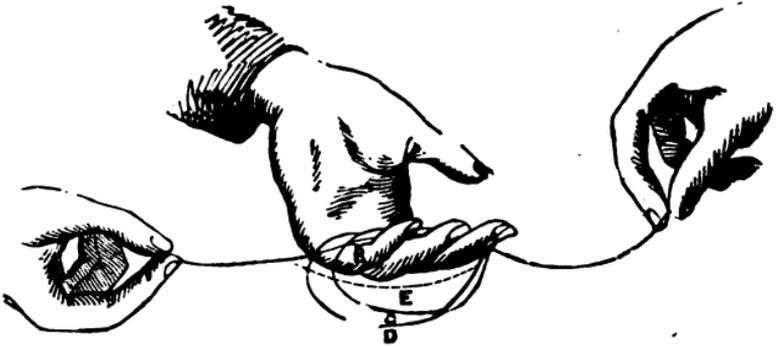


Fig. 80.

end in the right hand over the left palm on the inside of the string already there, and make another single tie over the string at the same place as where you



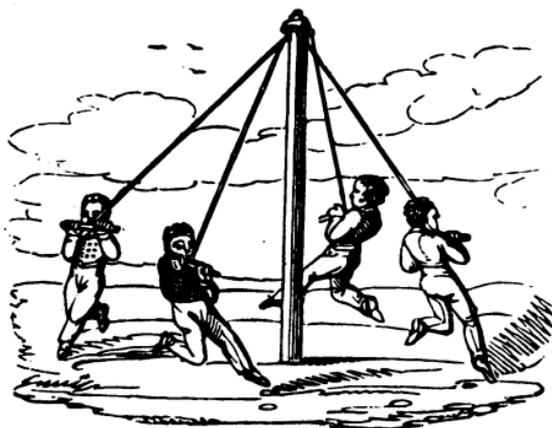
Fig. 81.

formed the first one, closing your left hand, which loosens the strings around its fingers. After the tie,

pass the twine under the back of the left hand, between the strings C and D (in the second illustration) Fig. 30.

The dotted line E is the string A. Take that string up on the left hand fingers as in the third illustration.

By practice this can be done unseen by the lookers on. Draw the end tight till it reaches B. Pass the end A under C and D strings, which cross the palm, drop the whole string off the left hand and pull gently and steadily the end A with the right hand, and the string pulls out straight.



ROBERT HOUDIN'S FAMOUS RABBIT TRICK.

Preparation.—Have a small white, long-eared rabbit hidden in a secret pocket inside the right breast of your coat.

Performance.—On requiring a rabbit for a trick, you select a simple-looking member of the company. On his rising, you stand behind him so as to cover your body with his. Take his right wrist in your right hand as if to keep him steady, by which act you open your coat out naturally to the right. Now flourish your left hand with the arm extended, and bring it round to the level of the back of the party's neck. Then, at the same time that you forcibly thrust your three last fingers well down within the simple gentleman's coat-collar, you seize the rabbit's ear or ears between your fore-finger and thumb. Now lift up the rabbit, and the simple gentleman will be too much confused by the shock to perceive how the deception was managed. The audience will be equally astonished.



THE MAGIC PICTURE FRAME AND VANISHING
PLAYING CARDS.

The magician Bosco, of Milan, numbered among his acquaintances the negro *prima donna* whose advent as "the Black Malibran" caused quite an operatic warfare in our fathers' time, from a certain opposition being waged against a Desdemona of Othello's colour presuming to darken the stage.

One afternoon previous to Signor Bosco's performance at the Rooms at the back of the Princess's Theatre, which veteran playgoers will remember, he took tea with the lady.

It was his habit, a pleasant one, of experimenting with his really remarkable inventions upon his friends before unveiling them to the public.

On this occasion he produced at the tea-table a pretty little picture frame. It was simply a border of wood around a square of quite clear glass, with coloured paper pasted over the back to keep out the dust.

Taking up a pack of cards, he had one drawn by the lady—let us suppose the ten of diamonds. This he made to vanish in the air.

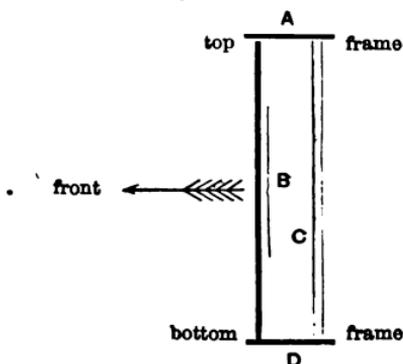
Then he again had the picture frame observed, that it might be beyond doubt that nothing but the clear glass in the front, and the coloured opaque back, were visible. And over the frame, held in the lady's hand, he lightly threw a handkerchief.

He uttered a magic phrase or two, took the frame, still in the handkerchief, waved it in the air, and made a pass or two over it. Then removing the handkerchief he held up the frame to the lady, who, to her astonishment, perceived a card in its centre—the card she had drawn.

Again covering the frame with the handkerchief, Bosco once more bewitched it. On taking away the

handkerchief this time, the picture frame was found to have resumed its original condition ; in other words, the card had vanished, and there was nothing visible but the border, the clear glass, and the opaque back.

Explanation.—The frame is hollow at top and bottom, so that these two places are receptacles to contain a quantity of sand. This sand is dyed of the same colour as the paper used to cover the back of the frame. Two pieces of glass are placed in the frame, a little apart.



SIDE-VIEW OF PICTURE FRAME.

A, the plain glass. B, card corresponding to that which the spectator has been forced to draw. C, the front side of the second glass. D, the other side, over which is pasted coloured paper.

To prepare for performance, fill the receptacle at the top part of the frame with the sand dyed the same colour as the paper at the back, and let it run down till it fills the space between the two panes of glass, and consequently, conceals the card, and is itself unnoticeable, from looking exactly like the paper.

After the handkerchief has covered the frame, and you take it into your own hands, reverse it unseen, so that all the sand shall run down into the receptacle.

On showing it now, the card will appear.

By turning the frame again so that the sand shall run out, and once more hide the card, it becomes invisible, as at first. The trick can be repeated at pleasure.

THE MAGIC FLOWER, APPEARING AND
BLOOMING AT COMMAND.

(The Invention of M. Robert Houdin, and as Improved by
Mr. Cremer.)

Mr. Hanky Panky, attired in a faultless evening dress, has presented himself to the audience with the air of being quite perfect in his appearance, when he suddenly becomes confused. By his nervous glances, and their direction, it is perceived that he has omitted an indispensable article of costume, and that is, the flower in his button-hole.

However, quickly recovering from his surprise and trouble, he smilingly observes that this misfortune, irreparable without a certain delay to ordinary members of society, is easily rectified by a conjuror.

To make good this assertion, he takes up his wand, and waving it gracefully three times, the company is startled to see a beautiful rose appear instantaneously in his button-hole.

Explanation.—This charming little deception is as simple as effective. A child can perform it, and at the cost only of a few pence.

You must have twelve or fifteen inches of common elastic cord, fine but strong, covered with thread of the same colour as your coat. To one end firmly fasten an artificial flower, or it may be a real one if you strengthen its stalk by the insertion of florists' wire. The place of fastening is close to, and just under, the flower.

Punch out a small hole in your coat, on the point corresponding to that button-hole in which a flower is usually worn, and just under the button-hole itself.

In this hole insert a metal "eye," such as is put in boots for the laces to run through, and fasten it there. It is for the cord to run smoothly through. This eye is not visible, even to yourself.

On the other end of the elastic make a small loop.

When ready for the performance, take your elastic cord, to which is attached the flower, and pass the loop end through the button-hole from the outside. Then pass it through the eye in the same direction, and bring it down along inside the coat to the button on your trousers, at the left side, or you may have a button sewn on your vest about the same place. There fasten the end of the cord by the loop.

The elasticity of the cord now draws the flower up to the button-hole.

Pull the flower back, just a little behind the left armpit, and let the left arm hang loosely by the side. As long as the upper left arm is kept close to the side, the flower must remain secure, and concealed at the back of the shoulder.

But, on opening out the arm, the flower must be drawn by the elastic cord up to the button-hole, through which it cannot pass, from its size.

Therefore, in entering the room where the audience await you, you have nothing to observe but to keep your face to the company. No one can perceive the cord, even at a little distance.

You take up your wand with your left hand, still keeping the left upper arm by your side; move your left hand and wand across the body to the right, then take the wand with your right hand, while your left hand remains across the body, with the hand on a level with the button-hole. Wave the wand to the left, and take it with the left hand again. Now wave the wand to the left, and on extending the left arm fully, you of course open it out, and the flower—under cover of the arm—is made to appear suddenly in the button-hole.

These three movements should be gracefully done, and with the happy medium between hurry and slowness.

IV.—WITH HANDKERCHIEFS.



**THE MELTING EGG AND THE BEWITCHED
HANDKERCHIEF.**

A glass is shown, and can be examined by the company. Into it is put an egg, and the whole is covered with a handkerchief. To prove that the egg is really within the vessel, it may be heard striking its sides.

Mr. Hanky Panky stands at a distance and rubs a small coloured handkerchief up into a ball in his hands, when it is suddenly seen to become an egg.

Returning to the holder of the glass vase, the handkerchief is taken away, and, instead of the egg, a coloured handkerchief shown. The handkerchief can be examined.

Explanation.—Run a fine black thread through a

perforated egg, and fasten the other end of the thread to the middle of an ordinary handkerchief. (If you are skilful of hand, you can have a bent pin at the end of the thread and perform with a borrowed white handkerchief.)

You only pretend to put the egg within the glass vessel, and really place a small coloured handkerchief therein, while the egg remains attached to the large handkerchief.

You have an egg made of enamelled tin in your hand, which you conceal with a duplicate coloured handkerchief, as you state your intention of executing the double change of egg into handkerchief, and *vice versa*.

As you speak, you dexterously stuff the little handkerchief into the egg, and in holding up the latter hide the aperture with your thumb. When you quickly lift the white handkerchief you carry away the egg, and discover the coloured one.

With practice, this is a most effective hanky-pankian feat.



TO UNDO A KNOTTED HANDKERCHIEF BY A
SHAKE.

Mr. Panky takes up a soft silk handkerchief, and holding the ends in his hands throws the right hand end over the left, and pulls it through as if tying a knot. Again throwing the same end over the left, he passes the latter to one of the company to pull it.

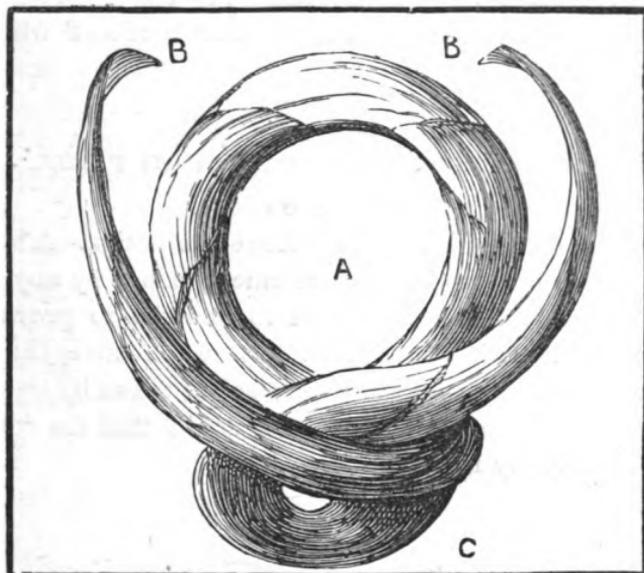


Fig. 32.

His left thumb holds the handkerchief just behind the knot, while he is pulling the right hand end against the person. He facetiously begs the pull to be hard, as the handkerchief is a borrowed one.

In the same way he seems to tie knots, really tying the right hand end round the silk, but this is not remarked, because he makes a great deal of drawing the knots hard, and—since the right hand decreases in length by thus enwrapping the rest—works up the slack to shorten the left end proportionably to the other.

The company is allowed to test the security of the knots.

On regaining the handkerchief, Mr. Hanky Panky covers the knots with the loose flap in the centre, and has one end held again.

The knot can be felt through the silk, but still, on seizing the loose end and the assistant letting go, Mr. Panky shakes the handkerchief out as one snaps a whip, and proceeds to find a rabbit or bottle of wine in the folds.

THE HANDKERCHIEF AND EGG TRICK.

This is a modification of the above.

An egg is passed round for free examination. A handkerchief is held up in the performer's hands by any two of its corners, and flourished to and fro to prove its innocency. It is then spread out on the table, the egg laid in its centre, and the handkerchief taken by its four ends, so that the audience cannot doubt that the "hen-fruit" is really in the middle.

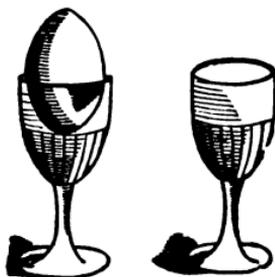


Fig. 33.

The Magician undertakes to fling the egg by this impromptu sling farther than David did the stone that slew the giant, and, what is more, make it alight in any place previously searched and found empty.

Then, taking the handkerchief by one corner, it is shaken about, and the egg, mysteriously vanished, is found in the designated spot.

Explanation.—The egg is a small one, hard-boiled. There are two handkerchiefs alike sewn together at the edge all round. The one considered as the outside has a slit in the middle, through which the egg glides as into a bag, when the handkerchief is lifted with it in the middle. The egg is let slip into one corner, which is that held by the performer, while the handkerchief is shaken in the air, and thus proven to be empty. A second egg is presently deposited in the place where one was to be found.



V.—WITH RINGS.

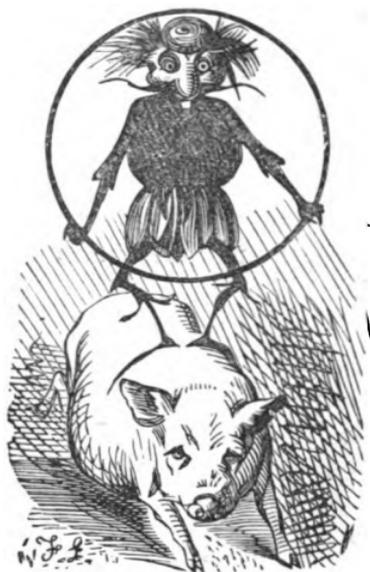


Fig. 34.

THE PENETRATIVE RING.

Fasten one end of a needleful of silk, of the colour of a handkerchief, to the middle of the handkerchief, and to its hanging end tie a brass ring. Always keep the ring on your own side, so that no one can see it while you shake and rumple the handkerchief. Offer to send a ring through a cup and saucer and the table they are on

Take the borrowed ring in your left hand, and keep it there; pretend to pass it to the right hand, and ask one of the party to step forward and hold the (mock) ring in the handkerchief. Now that the cup and saucer are empty, place the cup in the saucer at the centre of

the table, and ask the person to hold the ring in the handkerchief over the cup. The party will hear the ring fall into the cup, yet at your command it passes into a hat, which you hold under the table. In so doing, you put the real ring into the hat. Cry out some cabalistic words, and negligently take the handkerchief. The party may inspect the cup and saucer, but there the

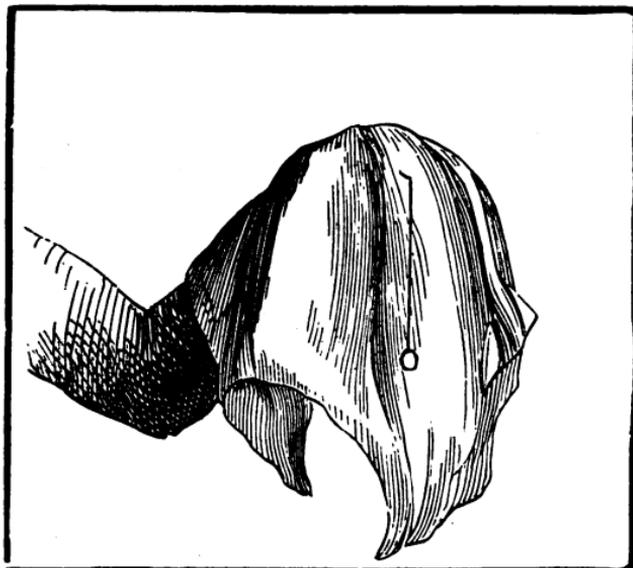


Fig. 35.

sorcery does not lie. The hat has but to be held upside down for the ring to fall out on the table.

Variation.—By using a stocking instead of the handkerchief, and letting the mock ring in the toe be tied up by a string a little further up around the foot, the feat may be likewise executed.

Variation.—Borrow a silk handkerchief from a gentleman, and a plain gold ring from a lady. Request some one to hold two of the corners of the handkerchief, and another to hold the other two, keeping them at full

stretch. You next exhibit the ring to the company, and announce to them that you will make it pass through the handkerchief. You have substituted for the ring one made by bending a piece of wire into a circle of the same size, with one or both of the ends finely pointed. Placing your hand under the handkerchief with this duplicate, you press it against the centre of the handkerchief, and desire a third person to take hold of the ring through the handkerchief, and to close his finger and thumb through the middle of the ring, which proves that the ring has not been placed within a fold, as may have been hinted when you performed a similar trick. The holders of the corners of the handkerchief let go, while the holder of the ring retains his hold. Another person now grasps the handkerchief as tight as he pleases, three or four inches down, so tightly that the ring cannot possibly pass, and you request him to permit you to take the ring in your fingers. Cover your hands with a hat to prevent the company from seeing your operations, and pull the mock ring open, draw it through the handkerchief, and, putting the handkerchief through the real ring, which you have ready in your hand, you remove the hat and the piece of brass together. Rub out the hole marks with the false ring in a purse or stocking. The trick becomes still more easy, since it readily can be passed through the meshes without a trace of its passage.

THE RING AND GLOVE PILLAR.

(La Colonne au Gant.)

Mr. Panky introduces to the company his Magic Sportsman, of which there is an extended description in *The Secret Out*, "The Marvellous Musket Shot." The automaton salutes the audience, and makes ready to fire his gun.

Several rings are borrowed and placed in the gun, with a lady's glove.

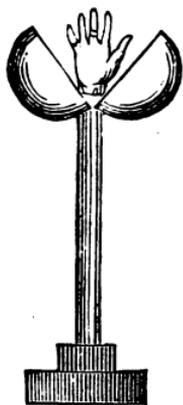


Fig. 36.

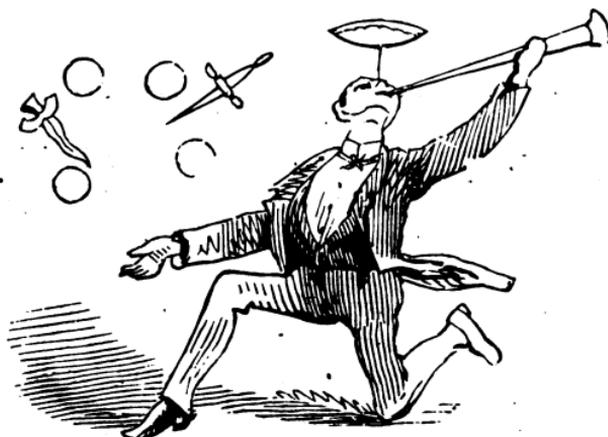
For a target there is brought in a stand with an ornamental pillar, on the summit of which is a golden ball. At the signal, the miniature marksman fires, the globular casket splits open, and the glove appears on the top of the pillar, as if containing a hidden hand, and with the rings on the fingers.

Explanation.—When the rings and glove are borrowed, others are instantly substituted for them, which are put into the gun. The real ones are taken out of the room and arranged, the rings on the glove inside the ball on the pillar. This pillar is hollow, and is in con-

nection with a gutta percha tube leading down within the table into the confederate's room. At the proper signal, the piston-rods work, and the sportsman discharges the gun, and a strong current of air forces the ball to open and inflates the glove. For the table, see *The Secret Out*.



VI.—SIMPLE TRICKS WITH KNIVES.



THE OBEDIENT KNIFE.

In a former work (*The Secret Out*) the secret spring literally to make a knife leap out of a cup at the conjuror's call, was revealed. We give here several other modes of compassing the same end, that the performer may have several strings to his bow.

1. "You have objected," says Panki-pan-ki, the Fakir of Hanki, "that I have executed this trick by hidden mechanism. Very well. At present I lay these three knives on the edge of the mouth of the cup, and yet at the instant named, that one which is chosen shall leap off in obedience," and it does so.

It is answered, truly, that a magnet under the table is made to attract the knife, which is delicately poised on the rim, thanks to an unseen confederate.

2. "As you please," proceeds the magician, taking the table up and setting it down in the centre of the

E

room, to make it manifest that there was no wire of complicity attached. I now repeat the experiment with the same result. This being done, only the readers of our works—being the most intelligent body of *perusers* existent—could have seen that in lifting the table a thread of communication was snapped asunder, and that this second obedience of the knife was owing to the magnet again, set in motion by a wire acted on by a treadle.

3. Mr. Panky hastens then to show how ludicrous is the supposition that a magnet has anything to do with the feat, by doing the same on a chair. Few or none remark that the chair being shaky, a wedge of wood had to be put under the cup to steady it. A large watch movement, with a bit of magnetized iron at the end of the second-hand, which coming round under the knife in a minute, produced the desired effect.

4. Mr. Panky shrugs his shoulders in deprecation of such absurd solutions of the problem, and employs a glass table, mounted on glass legs. But the apparently unprepared transparent board is made of two sheets of glass, set a little apart so that the air, blown in between by one of the legs being hollow, shall go out by a minute hole in the upper plate, just under the cup, which is also perforated at the bottom. The magician in walking about, treads on one plank of the flooring, where a bellows is concealed. The wind goes up into the cup, and as the selected knife is delicately poised on the edge while the others rest on little interior cleats, it falls off at the first puff.

Observation.—The knife must be marked so that it can be placed exactly on its balance without delay. Also, the rim of the cup should be flattened a little so as to be the twenty-fourth of an inch broad.

5. *With borrowed knives.*—As these cannot be prepared, there must be a drop or two of mouth glue or other

sticky substance, at a couple of places on the cup rim, on which the knives not to be moved are laid.

6. *With pretendedly borrowed knives.*—Let the audience furnish the knives, but to a great number, amongst which you mix three of your own, prepared for the performance. On taking up these, each owner of the knives will imagine that his remains on the table and his neighbours' are being used. Even if he suspected a substitution, that would not account for the trick.

Ingenious Variation.—One knife is laid on the cup with its handle outside to maintain the balance; a long knitting-needle, fastened to the knife-handle with a lump of sealing wax, while a leaden bullet at the other end and knife point serves as counterpoise. The glass table is used, and the Magician withdraws to a distance. All of a sudden though, the knife leaps off from the cup.

Explanation.—The column of air is again employed, for which the cup is set a little way from the hole in the glass plate, and the knife-handle bearing the sealing wax is adjusted over it. The air is heated this time, and on melting the wax the released needle is dragged into the cup by the bullet, and the knife falls.

7. Instead of the glass table, have a sheet iron case in the shape of a book, and painted and gilt to resemble one. This is put on top of two or more real books, on which the cup is placed, to be the better seen by the audience. One end of the mock book contains a lamp, which heats the iron above it, and the rays of caloric act on the wax as before.

8. *With a Silver Cup.*—The knife is poised, as before, on the rim of a silver cup, and leaps out at command. Mr. Panky had stuck the point in a lump of tallow, and a lamp in the base of the cup had no sooner melted it than the loss of its weight made the knife-handle bear itself down.

9. *Mechanically.*—The knife is again laid on the cup, to show that there is no machinery attached to it; a



Fig. 37.

candle is placed each side of the cup, fully illuminating it. Nevertheless the same result follows.

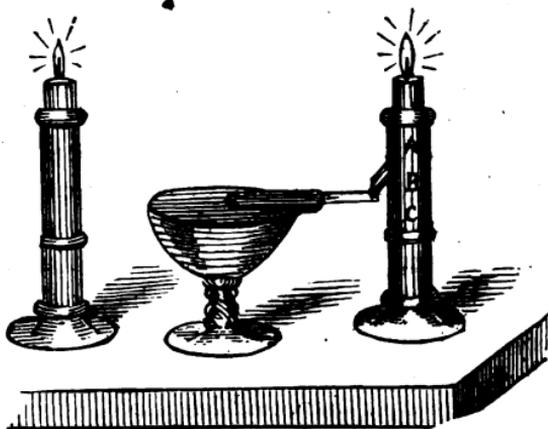


Fig. 38.

Explanation.—One of the candlesticks is hollow, and contains in the upper part, A, some fine sand, which

escapes by the hole, B, to run down into the receiver, C. When the latter is full up to D, it runs out by that hole, and falls on the blade of the knife to destroy its equilibrium. As the time of the sand reaching the level of the outlet is regulated by the dimensions of the receptacle, C, its bottom, E, is made movable, and consequently by fixing it at certain points the moment of action can be timed to one, two, or three minutes.

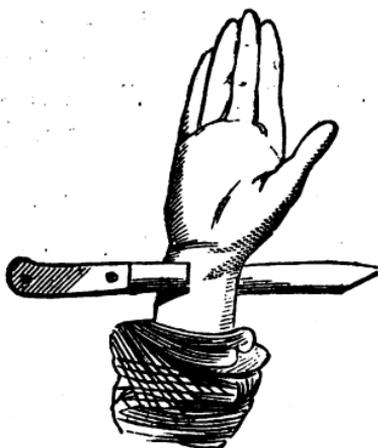
10. *The Loaded Knife.*—The handle is hollow, and divided into three compartments.

In the section A, is quicksilver, running by a hole, B,



Fig. 39.

into the division, C. So far the knife remains balanced, but when the mercury rises as far as D, it overflows into the part G, when the end being overweighted, the knife must fall.



VII.—FORTUNE TELLING TRICKS.

CATCHES AND QUIBBLES.



OR a wager, two men ate nuts: the one ate ninety-nine, the other a hundred and won [one], how many did the winner eat more than the loser?—One.

A specimen of that noble animal, the horse, having been paraded before a company enthusiastic upon its faultlessness, modestly but firmly insist upon it, that—without pretending to any great veterinary knowledge—you can see with a quarter of an eye that the gorgeous steed has “the lifts.” The name of this mysterious complaint being somewhat analogous to that of the “heaves,” a torrent of indignation will doubtlessly burst upon you. On being forced to give an explanation, you can, with the fearlessness of truth, explain that if the creature did not have “the lifts,” could it move its feet off the ground.

HOW TO PUSH A LADY’S HEAD THROUGH A WEDDING RING.—Run your finger through the ring and touch the lady’s head with the tip.

How many Bank of England notes will weigh down a sovereign? Only seven will more than equal the coin in weight.

HOW TO MAKE A LADY STICK OUT HER LITTLE FINGER.—The best way of securing this effect is to put on the finger a diamond ring. The mere desire to display the diamond to the best advantage is sure to make the lady stick out her little finger in the most charming manner possible. When the effect begins to fail, substitute another ring of greater brilliancy.

Addendum.—A ring at the door-bell has been known to make a lady stick her head out of the window.—*Hanky Panky.*

One of the company having related a story which lauds his moral excellence, observe that, spite of his pretensions, you know what will *hang* him! At the end of his indignation—answer, a rope!

SQUARING ACCOUNTS.—A day or two since an inveterate joker met his friend, Hanky Panky, Esq., in the street, whom he knows to be a great dog fancier. With a twinkle in his eye and an inquiring look in his countenance he anxiously asked him if he had seen the new breed of imported dogs, the “Sooner.” Professor Panky replied that he had not, and wished to know the peculiarity of the breed.

“They’d sooner stay in the house than go out of doors,” was the reply, as the joker cautiously moved away, shaking his sides and winking.

The prestidigitateur determined to be even, and the next time he met the joker he seriously remarked:

“You’ve been to Smith de Brown’s, haven’t you?”

“No, why?”

"I thought you knew he had got back his tray of diamonds."

"No, is that so? How did he get it?"

"He took it with the four 'spot.'"

The playful youth suddenly remembered a very pressing engagement and hurried away, remarking, "I—I—I'll see you again, Doctor Hanky, I—I—I don't quite understand."

A lady occupying a room, letter B, at an hotel, wrote on the slate as follows: "Wake letter B at seven; and if letter B says 'let her be,' don't let her be, nor let letter B be, because if you let letter B be letter B will be unable to let her house to Mr. B., who is to call at half-past ten." The porter—a much better bootblack than orthographist—after studying the above all night, did not know whether to wake letter B or let her be.



A young man asked a young lady how old she was, and she replied "6 times 7 and 7 times 3 added to my age will exceed 6 times 9 and 4, as double my age exceeds 20." The young man thought she looked much older.

What is the difference between twice twenty-eight and twice eight and twenty?—Twenty; because twice twenty-eight are fifty-six, and twice eight *and* twenty are thirty-six.



NE of 10 loves what
1028.

ADDRESS ON A
LETTER.

W O O D
J O H N
H A N T S.

Answer.—John Underwood, Andover, Hants.

ALGEBRAIC SQUARING OF THE CIRCLE.

C	I	R	C	L	E
I	C	A	R	U	S
R	A	R	E	S	T
C	R	E	A	T	E
L	U	S	T	R	E
E	S	T	E	E	M

A BUNCH OF ANAGRAMS.

A good anagram was once made from the translation in the Vulgate of Pontius Pilate's last question to our Saviour, "What is truth"—"*Quid est veritas?*" The anagram answers, "*Est vir qui adest*"—"It is the man who is before you." This example complies with the conditions of a perfect anagram. It employs all the letters—does not depend on pronunciation—and makes the anagramatised sentence an answer to the direct form.

Wilkie Collins.—We coil in skill.

Guiseppe Garibaldi.—Gape Pig! as I re-build.

Eugénie Imperatrice.—Mere Peace! I intrigue.

THE GRAMMATICAL WORD.

There is a word of 14 letters of which the 3rd and 14th form an article; 6, 10, 5, and 1 a noun; 12, a pronoun; 6, 10, and 2, a verb; 4, 13, and 11, an adverb; 8, 9, 7, and 6, an adjective; 14, 13, 9, a conjunction; 3, 11, a preposition; and the 13th an interjection: thus the word contains in itself the whole 8 parts of speech, and its meaning is in accordance with its anagrammatic changes. The word is

T R A N S M I G R A T I O N
 1 2 3 4 5 6 7 8 9 10 11 12 13 14
 3, 14=an; 6, 10, 5, 1=mast; 12=I; 6, 10, 2=mar;
 4, 13, 11=not; 8, 9, 7, 6=grim; 14, 13, 9=nor; 3,
 11=at; 13=O.

HANKY PANKY TO HIS NIECES, WITH A SET OF CHESSMEN.

The box now presented to you, my dear Nieces,
 Start not! contains *Men*, though in thirty-two *pieces*.
 But may each of you meet with *one* perfect and whole,
 For a partner through life, with a heart and a soul;
 May you each in life's *Game* e'er successfully move,
 And all conquests achieved prove the conquests of love;
 May you ever be able—on banks—to *give check*,
 And may *Bishops* and *Knights* bow down at your beck.
 May *Castles* surrender whene'er you attack 'em,
 And staunch prove your *Men*, with your good *Queen* to
 back 'em;
 May your fortunes permit you to dwell in the *Squares*,
 And enjoy life's delights without tasting its cares;
 May you each find a *Mate*, life's journey to sweeten,
 And if *mated* oft,—may you never be *beaten*!

COMIC FORTUNE TELLING.



ZADKIEL : I foresee that you have had a misfortune with one of your legs. It will never happen again.

THE ALPHABETICAL FORTUNE TELLER.

The Moslems have recourse, to determine them when they are in doubt as to any action, to a table called *Zairgeh*, divided into a hundred squares, in each of which is written some Arabic letter. The person who consults it, repeats three times the opening chapter of the Koran, and 58th verse of the sixth chapter. "With Him are the keys of the secret things: none knoweth them but him. He knoweth whatever is on the dry ground or in the sea; there falleth no leaf but He knoweth it; neither is there a single grain in the dark

parts of the earth, nor a green thing, nor a dry thing, but it is written in a perspicuous book." He places his finger at random upon the table; he then looks to see upon what letter his finger is placed, writes that letter, the fifth following it, and the fifth following this, until he comes to the first which he wrote, and these letters together compose the answer. The construction of the table is thus:—

d	w	w	a	w	o	h	a	b	h
i	o	i	s	o	t	d	t	t	w
w	o	a	a	a	i	e	n	i	i
t	s	d	n	t	h	i	a	a	e
o	t	t	n	t	u	w	t	d	h
t	i	a	e	s	f	l	i	n	u
e	l	n	j	c	a	d	t	o	c
r	o	h	y	e	o	w	y	p	e
f	r	w	e	d	i	o	i	a	e
l	n	s	c	t	l	g	h	e	h

Fig. 40.

For example, suppose the finger to be placed on the letter *s*, second in the fourth line, we take from the table the letters:—

s-i-t-w-i-l-l-d-o-w-r-o-n-g-w-a-i
-t-a-n, which forms the answer:—"Wait an(d) sit will do wrong," an incentive to action quite clear.

The sentence always commences with the first of the letters taken from the uppermost line. It will be seen

that the table gives only five answers, one of these with whatever letter of the alphabet we commence. The framer of the table, knowing that men very frequently wish to do wrong, and seldom to do what is right, and that it is generally safer for them to abstain when in doubt, has given but one affirmative answer, and four negative.

It was by this means that the dishonest Arab found out that Livingstone was dead and did not want the goods he was taking to him, which shows how reliable a forecast can be thus made. (See *The Finding of Livingstone.*)

A CHINESE PUZZLE.—A Chinaman died, leaving his property by will to his three sons, as follows: "To Fum-Hum, the eldest, one-half thereof; to Nu-Pin, his second son, one-third thereof; and to Ding-Bat, his youngest, one-ninth thereof." When the property was



inventoried, it was found to consist of nothing more nor less than seventeen elephants, and it puzzled these three heirs how to divide the property according to the terms of the will without chopping up the seventeen elephants, and thus perhaps injuring their lives. Finally, they applied to a wise neighbour, Y-sa-cur, for advice. Y-sa-cur had an elephant of his own. He drove it into the yard with the seventeen, and said, "Now, we will sup-

pose that your father left these eighteen elephants. Fum-Hum, take your half, and depart." So Fum-Hum took nine elephants and went his way. "Now, Nu-Pin," said the wise man, "take your third, and remove!" So Nu-Pin took six elephants and travelled. "Now Ding-Bat," said the wise man, "take your ninth, and begone." So Ding-Bat took two elephants and absquatulated. Then Y-sa-cur took his own elephant and drove home again.

Query: Was the property divided according to the terms of the will?

TO GUESS THE POINTS THROWN WITH DICE.

While I turn away my head, let some one throw a pair of dice and count the pips, and add to this sum the amount on the bottom face of either one of them. Now, throw again and add these new points.

I now turn and look, and tell the whole number thrown.

Explanation.—When you look, you count the faces seen, and add seven. This is a pretty little trick.

Arithmetically speaking, would not the world be happier if all were 2 B $\left\{ \begin{array}{l} 10015150. \\ C I V I L \end{array} \right\}$ 2 1 another



Fig. 41.—The Fair Arithmetician.

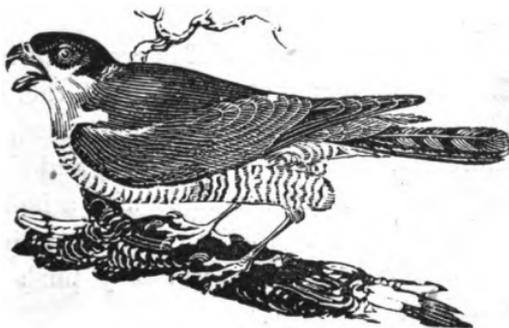
ARITHMETICAL FORTUNE TELLING.



DATES of important events in the lives of eminent men are supposed to have a mysterious meaning of a prophetic tendency.

The process of forecasting is to take the number of years between a man's birthday and that of his marriage or first notable occurrence, which number added to the second date should give the year of his next distinguished action. For in-

stance, by comparing the dates of special significance in the life of Pius IX. we discover that the figures of each sum up to 19. Thus Mastai Ferretti was born in 1792, ordained in 1819, chosen pope in 1846. The next year distinguished by the same peculiarity is 1873, when consequently some great event will again happen to him. What this is to be, time will show.



VIII.—SIMPLE TRICKS WITH BOXES.

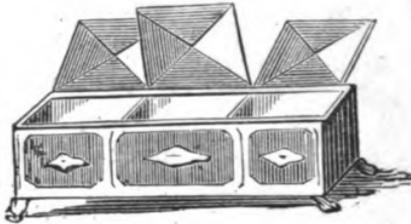


Fig. 42.

THE MAGIC TABLE AND SEALED CASKET.

The magician's bottle is shown to the company, and a little wine poured from it to prove it is not empty. A handkerchief and ring are borrowed, and put into the bottle.

A borrowed casket is then held up in view, fastened with sealed thread, and Senor Don Hanquey y Panquey announces his intention to break it open to see the contents, but previously will return the borrowed articles. Out of the bottle, then, he pulls the handkerchief and ring, dripping with wine, and places them upon the sealed box, in plain view. The bottle is taken away.

The wine-soaked handkerchief is crammed into a pistol and fired at the box. On opening it there is found a second box within, which being also opened, discovers the handkerchief, ironed and perfumed, and the ring.

Explanation.—The table is made with a hollow leg as usual, but with a larger aperture, closed with a double trap, through which a piston rod may push up a box deposited at its base.

The borrowed ring and handkerchief are put into the

secret compartment of the bottle (see *The Secret Out*, and *The Magician's Own Book*), where they remain until the bottle is taken out of the room. The wine-saturated handkerchief and ring put upon the sealed box are duplicated. When the assistant receives the bottle, he takes out the real ring and handkerchief, which latter he places in a box going into the casket, which has no bottom, the better for the two to be pushed up within the gueridon. The table has the double in its base when it is brought on the stage, and the duplicate handkerchief is fired at it. Consequently, you are sure to find the borrowed articles in the casket when it is opened.

THE 100 RINGS OF SMOKE.

Take six playing cards and turn up half an inch of the ends of each, the same side. With them form a hollow cube or box by the arrangement here depicted :

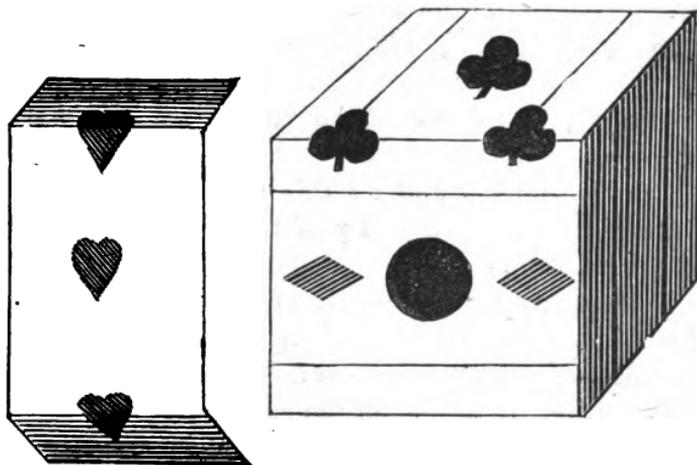


Fig. 43.

In the centre of one side cut out a small circle.

After filling this box with tobacco smoke, you can

F

make a ring of it issue from the aperture by giving a tap to the opposite side, just as the pressure of the flexible bottom of an oil-can makes the fluid spurt out.

**TO INTRODUCE CIGAR SMOKE INTO AN
AIR-TIGHT VASE.**



CERTAIN old dames of Mr. Panky's acquaintance are prejudiced upon the subject of tobacco smoke. To believe them, you would become of the impression that cigar vapour penetrates the thickest curtain, wall, or any partition whatever.

I beg to show you that these estimable ladies are not so far wrong.

I have in my hand a glass cup with a cover of the same material, as transparent as possible.

I put on the lid, and let this volunteer hold it at a distance from me, whilst I puff towards it the smoke of this perfumed cigarette.

Keep your eyes on the covered cup, for you will see that the smoke enters it, though hermetically sealed. To convince you that there is no ocular illusion, let my obliging Ganymede lift off the cover.

There, away flies the smoke caught in it.

Again close it, while I again despatch more smoke to it. Shall I repeat the experiment, for I warn you I am prepared to continue till morning. Three or four times will suffice, eh? So much the better for your patience.

Explanation.—Into the cup put a few drops of alkali, and move the vessel about so that the inside is coated with the liquid; treat the cover with chloridric acid, in the same way. When these two are brought into contact by the junction of the cover and vase, a thick vapour is produced, which resembles tobacco smoke. Take care not to cover the cup until just when you wish the vapour to appear, as its formation is instantaneous.



Fig. 44.

IX.—SIMPLE TRICKS WITH HATS.



Fig. 45.—The Gentleman who Lends his Hat.

THE MAGICIAN'S BIRDCAGE.*(Les Oiseaux Ranimés.)*

HERE is an universal exclamation of sorrow from the ladies when the inmates of the pretty cage—suddenly produced from a gentleman's hat, as a conclusion to a trick—are found to be lifeless.

Participating in the distress, Monsieur Hanky Panky seeks to remove its cause, and for that purpose

borrowed from the audience a pocket handkerchief.

Hardly has he drawn it two or three times over and around the cage, than the pitying faces are seen beaming with wonderment and joy, for the inanimate birds



Fig. 46.

have been resuscitated, and are flying and chirping within the gilded bars.

Explanation.—Some wondrously scientific gentleman will probably descant upon the marvellous effects of training of canaries, or, perhaps, of the administering angels,



Fig. 47.

ether and chloroform. Let him do so, for you will learn on an inspection of the cage, that it has a double bottom, in the receptacle of which, at first, the live birds are

kept unseen, and, on the pressure of a spring in the knob at the top, the stuffed ones descend, thanks to the false bottom sinking in the middle, if its halves are on pivots at each side; or, one half sinking one side and the other opposite, if they turn lengthwise.

An egg can be made to transform itself into a live bird or mouse, and other changes can be wrought by this same apparatus.



Fig 48 — "And when the Pie was opened," &c.

THE GARDEN HAT; OR, FLOWERS GROWING VISIBLY IN A HAT.



HAT being about to be returned to the owner from having been shockingly maltreated in the concoction of an omelette, it occurs to Herr Harngy Barngy, that, while it is unfit for adorning the human head, it may be available for other purposes.

"Hang it!" says the Professor, with his genial smile,

which is never so sweet and placid as when he is working his will with borrowed property, "I see such a resemblance in it to a flowerpot, that flowerpot it shall be. So I will hang it here—on this little shelf—hanging from the ceiling by three cords."

For seed, a few rose leaves; for mould, some shreds of handkerchief, &c., which are put into the hat.

Then Mr. H. B. retires in amongst the audience. At the wave of his wand, a tender stalk is seen to peep over the edge of the hat, and by degrees a bush of flowers



Fig. 49.

rise out of this novel jardinière, whilst a perfume as of newly blooming flowers pervades the air.

Explanation.—In our former works will be found full directions to manage the miraculous birth of flowers by mechanical means. In the present case the result is brought about by a less complicated method.

You have a tin vessel of the size and shape of a hat, to fit inside it. In it is a bush, with natural flowers attached, mounted on a large cork, the whole to move upwards without impediment.

In going up to the hanging shelf you slip this prepared

vessel into the hat. When the whole is in its place, your signal to your confederate sets him to turn on perfumed water, which runs into the vessel through one of the suspending cords, which is a gutta-percha tube covered with silk. As the water enters, the cork is floated.



Fig. 50.

**TO RUN THE FINGER THROUGH A HAT AND YET
RETURN IT INTACT.**

Having concluded a performance in which a borrowed hat was employed, you pretend to hesitate about handing it to the owner, and, in fact, whilst you are mumbling excuses, reveal that, by some bungling, you have made so large a hole in the crown, that a finger—yours, for instance (suiting the action to the word), can go through it, to do which you thrust a hand within the hat.

The forefinger is seen issuing through the top of the hat, where it wags in an amusing manner. Neverthe-

less, on instantly giving the hat to the owner, not the slightest trace of the fracture can be perceived.

Explanation.—The finger shown is one made of gutta percha, with a little cup valve at the base, from which

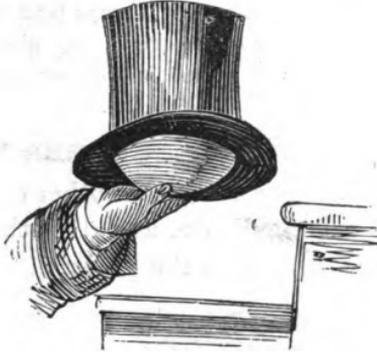


Fig. 51.

the air is exhausted by a simple pressure, when the adhesion is perfect. To remove it, pick up the edge of the valve with the thumb-nail. This little diversion causes that hilarity always befitting a magical entertainment.



X.—AMUSING TRICKS WITH VARIOUS ARTICLES.

“The mind of man, like a bow, if always bent would in the end lose its elasticity, and become useless; by giving it occasional freedom you preserve its tone, and it will serve your purpose.”—ÆSOP.

TO TAKE A PORTRAIT IN THREE MINUTES.

Draw on coloured paper with another coloured crayon the likeness of a confederate, and dust the lines with a powder of the same hue as the paper.



Fig. 52.

In your pencil-case have a hard brush, and when you appear to draw, remove the coloured powder.

This trick is used in connection with disappearing

feats, where you undertake to make the drawing of a card, a flower, or any vanished article, which you are not supposed to have seen.

A REMBRANDT ETCHING IN FIVE MINUTES.

Smoke a glazed card over a tallow candle till the surface is completely blackened. With a needle scratch out a landscape with a moonlight effect, or a figure in shadow, except on one side, where a strong light falls, after the fashion of the photographs by Solomon, Kliemeck, &c. The weird aspect will be quite like a Doré or Van Schendel.

THE ONE-EARED HARES.

Draw three hares, so that each shall appear to have

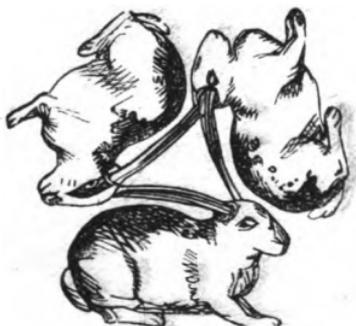


Fig. 53.

two ears, while they really have only three ears between them.

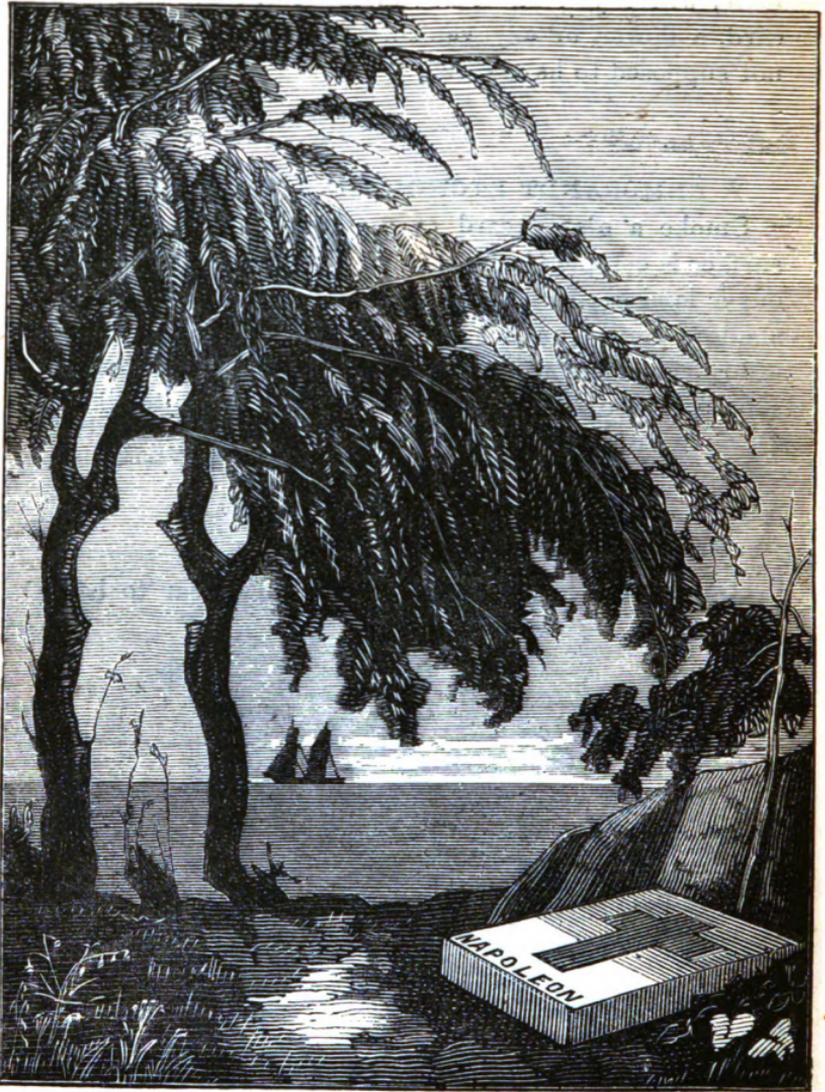


Fig. 54.

THE SHADE OF NAPOLEON VISITING HIS TOMB.

A full-length Portrait of Napoleon I. may be traced in the above Engraving.

DOING A GOOSE IN THE TURN OF A HAND.

(*Story and Drawing Lesson.*)

There was once upon a time a farmer who built a house with one window and two doors. A path led to

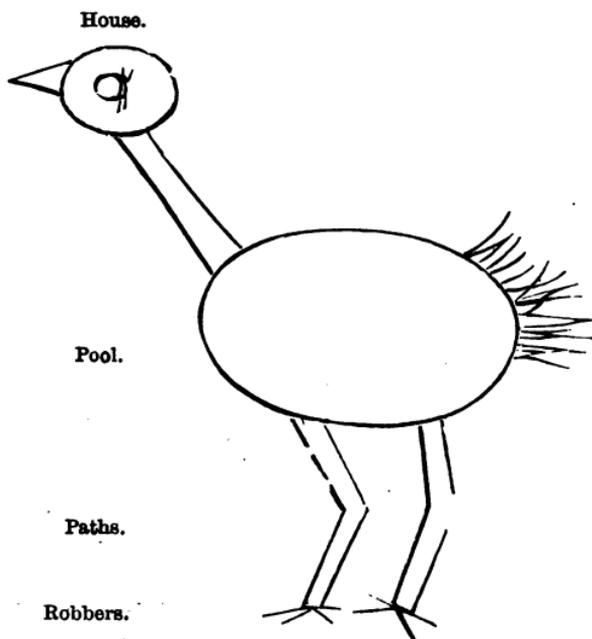


Fig. 55.

a pool adorned with sedge. But up to the pool, by two crooked paths, came a gang of robbers, who caught a goose.

VAPOURGRAPHIC PICTURES.

Write on glass with a quill full of hydrofluoric acid. After two minutes' action of the mordant, wash in clean water, and polish with silk or soft dry cloth. The bitten away lines are invisible, but will appear on the plate being exposed to the breath or steam from a kettle.

CHANGEABLE PICTURES.

Paint any subject on thin paper slightly with light colours, so arranged that by painting the paper stronger on the other side, it may be disguised. Then cover the last side with a piece of white paper to conceal the second subject, and frame the whole. It may even be put between two pieces of clear glass.

On holding up this picture to the light, a different scene is presented to what is usually beheld

MAGIC DRAWING.

Take a box about 18 inches long by six deep, and remove the lid and one side. In the centre set a square of glass at right angles to the bottom, and parallel with the plane of the ends.

Place a picture which you wish to copy on the left of this upright glass, and a sheet of paper on the right.

On holding the head on the left of the glass, and looking into it downwards, the reflection or spectre of the picture will be seen on the paper, where the lines may be traced.

TRANSPARENCIES.

Put a chafing-dish or gas-stove under a wooden frame on which you strain, that is, stretch, a piece of strong linen or silk, while you do it over with a solution of wax in oil of turpentine. It will then be equally diffused.

Paint with oil colours mixed with spirits of turpentine.

MOVABLE TRANSPARENCIES.

Mount the transparency on a light circular frame, on an axis easily turned. Close the upper end of the hollow cylinder with a disc of tin, cut into inclined planes like the ventilator let into window panes (fan-light).

A lamp placed inside the cylinder will illuminate the transparency at the same time that it makes it turn round by the current of heated air striking the tin plate.

Vary the subject of the pictures as you please. Mr. Panky's represent hideous serpents twisting round a column, and other delicious spectacles.

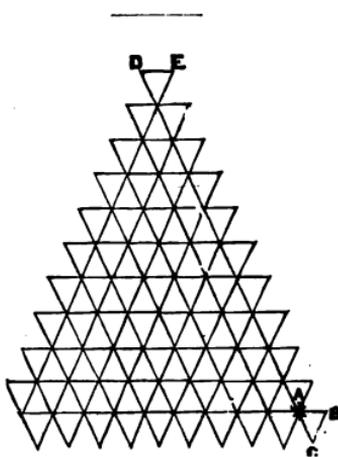


Fig. 56.

To make the above magical figure without taking the hand off, begin at A, thence to B, to C, to D, to G, and so on.

TO WRITE ON WOOD.

Rub the wood with powdered resin, and ink will not spread or run when you write upon it.

THE PIG'S-EYE GAME.

Shut the eyes and draw the figure of an animal without taking the hand off. Still not seeing it, remove the hand and try to put the eye in its proper place.

The ludicrous outline made, and the absurd position of the eye in most attempts, are remarkable.

EVERLASTING WRITING ON GLASS.

After covering a sheet of glass with visible colour or colours, write or scratch the inscription so as to remove the pigment in those places where the pen touches. Put the glass in the furnace for the colours to set with running so as to obliterate the marks, and after the proper cooling, the writing will be unalterably fixed. Designs of transparency for a tinted ground can be thus made.

MOSS PICTURES.

Take a board with a smooth face, and stripe it lengthwise with three bands of colour sky-blue and grass green, with a pale blue or pale yellow between, which will be the sky, the middle distance and horizon, and foreground of a picture. With coloured moss, varying in tint from yellow to deep brown, form trees, bushes, hedges, foliage, &c., by glueing the sprigs. The effect is often charming.

THE PUNCTUATION PUZZLE.

Whoever writes this on the wall has ten fingers, on each hand; five and twenty on hands and feet; guess who this may be.

OIL PICTURES.

If you drop oil or fat on water it spreads and breaks into variegated patterns as beautiful as snow-flake figures.

Have a vessel of pure cold water, still as possible. Let one drop of oil fall on the surface from about four inches height.

Lay a piece of glazed surface paper on the oil pattern, take it instantly off, place it on the surface of a plate of ink for a moment, remove and wash off the excess of ink, and you will have a black picture closely resembling a photograph. For red use cochineal or the aniline reds.

Pure sperm oil takes a minute to form a pattern; green rape oil is slower; Lucca oil three minutes; green olive one minute, &c. Oils can be mixed and tried.

The formation can be shown by the magic lantern, from which is removed its nozzle pipe for a shorter one, so as to form the oleographs properly, and yet leave room enough for a small pipe to be thrust between the nozzle and the trough containing the water on which swims the oil.

The lantern is turned back so that the chimney is horizontal; the hole is then perpendicular; on it is set a trough made of two plates of glass joined together, the upper, which has a hole in it, to be filled with water. On the nozzle is placed a prism, which reflects the picture on the screen.

XI.—AMUSING TRICKS WITH VARIOUS ARTICLES.



TO DIVIDE A HORSESHOE INTO SEVEN PIECES BY TWO CUTS.

Make a horseshoe of a slice of pear or apple, potato,

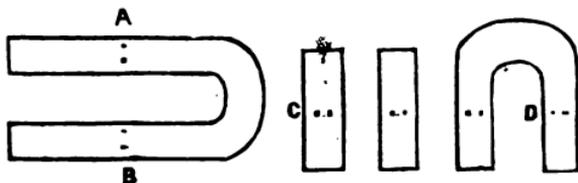


Fig. 57.

&c., and cut off the long arms at A B. Range all in a row, and cut them across into seven pieces.

TO MAKE AN ANTI-MACASSAR OF A SHEET OF PAPER.

Take a newspaper and fold one end transversely, so that the edge is parallel with one side, by which a square is obtained.

Fold this square to make a right-angled triangle; fold this to make another triangle, and so on until the last shape is an acute triangle.

The end *A* is just half as thick as the rest of the paper. Tear this off at the dotted line, by which the square of paper becomes a sixteen-sided figure, nearly circular.

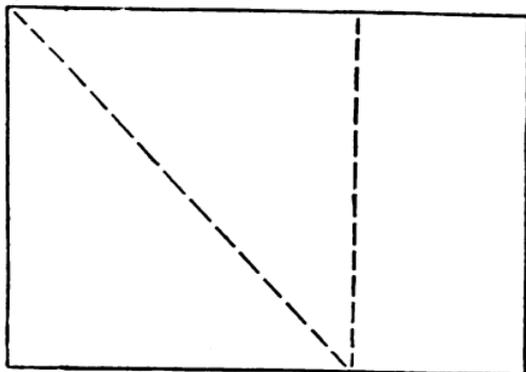


Fig. 58.

To make the pattern, tear off the point of the folded mass, by which a central hole will be made in the whole piece. Then tear from the sides and the broad edge small pieces, varying in size, by which a certain pattern will be made. Once having found the proper points whence to remove the ground, such counterparts

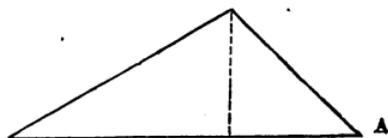


Fig. 59.

of lacework can be so rapidly and bewilderingly done that the spectators will be amazed upon your unfolding the paper completed. It is needless to say tearing of a common newspaper makes the trick apparently more difficult than the most elaborate cutting out of coloured tissues with scissors.

SYMPATHETIC CURRENTS OF DIVINATION.

A brother philosopher of mine (says Hanky Panky) has written about sympathetic atoms of communication. Descartes, as he is named, maintained that any one could put himself in correspondence with another so as to read in his mind as in a book, by aid of connecting atoms. Ahem!

I will now (continues Mr. H. Panky) apply to a lady and a gentleman, to whom I give each a sealed letter, with the request for them to take the best of care of them, and not to open them until permission is given.

I have here a pack of ordinary playing cards, which may be freely examined, from which are excluded all below the value of seven, being what is known as a piquet or euchre pack.

I make eight piles here on the table of four cards each, and number them. The gentleman holding the letter will kindly point out which one he selects. Observe that the gentleman has taken the third pile. I beg to offer it to him while I pick up the other cards.

I now spread out a set of dominoes on the table, of which I form four rows of seven each, face down on the table. I part the four rows into two ranks, separated by the empty domino-box between them.

The gentleman will please choose one of the rows, and then one of the piles in it. I give him that pile and turn up the dominoes to show that no two are alike.

I present to the lady a pencil, and ask her to mark one of the three flowers painted on the board held out to her.

The lady has marked the lily.

The gentleman can now open the letter, when he may read as follows :—

“ Sir—The four cards chosen by you are the king of spades, the eight of diamonds, the ace of hearts, and the knave of hearts.

“ The pile of seven dominoes contains the blank-two, three-two, double-four, four-five, deuce-ace, cinq-three, double-one, in all thirty-seven points.

“ Signed HANKY PANKY.”

On opening the lady's letter, she may read :—

“ Madam—You were destined to choose the lily.

“ Signed H. PANKY.”

And I shake the envelope out to produce a lovely lily, which was the flower the lady preferred.

Explanation.—The cards were eight sets of four, which were respectively the spade king, the eight of diamonds, ace of hearts, and knave of hearts. Consequently, wherever the choice fell it was sure to light on the cards which were named in the letter previously prepared.

The dominoes were placed in the box face up, as usual, but the bottom row was composed of the series which you wish to come out. On putting them on the table place the prepared lot on your left hand. If the right-hand lot should be chosen, quietly remove it, saying that you put it out of the way, and we will use the other (for it seems perfectly fair that the choice should as well exclude as include the lot). In the same way deal with the other rows so as to have the prepared set in any case.

The three names of flowers, or the flowers themselves, painted on a board, have the one to be selected somewhat prominent, and, with a little art, you can always induce a lady to mark the desired one. (*See directions to “force a card,” in The Secret Out.*)

THE TURNING SHEARS.



TAKE a large pair of scissors or shears in your hands, which you hold out, palms upwards. Hang them by their rings on the little fingers. Close the hands with a slight inclination towards the scissors, so that the finger tips only are in the rings, and the blade is supported on the inner fleshy part of the palms.

As you turn your closed hands, the scissors will turn, and on bringing the knuckles upward the point will be forward, and you can open and shut them freely.

THE SIMULACRUM.

Ladies and Gentlemen: One of the superstitions of the Middle Ages made it credible that if a person hating another bought of a regular magician an enchanted doll, resembling that object of enmity, any treatment of the representative, say, the insertion of pins into its wax, the twisting of its limbs, and so on, would be felt by the living being.

This was acting upon a person through his likeness.

On this principle I—Signor Hanchio Panchio, at your service—have succeeded in opening locks without going near them with the key.

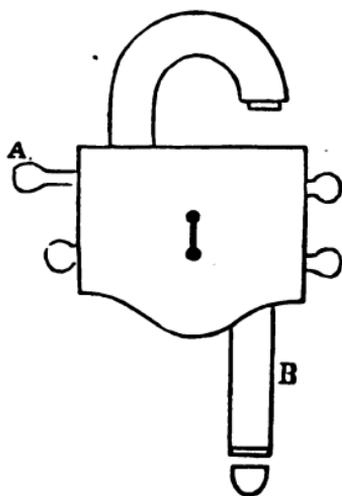
I have a facsimile of my front door lock in my own

study, and on hearing a knock I merely turn a key in the duplicate lock, when the door flies open so mysteriously that the visitor believes the agent an electric medium of mine.

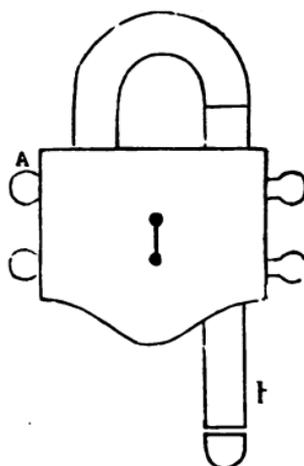
I am going to perform this most curious experiment before the present company, by aid of the massive padlock which I take out of its box.

There never was a more simple padlock. I shall lock it here under your eyes, and yet engage to open it without turning the key.

It is now locked, and any gentleman may test its security. I can even hang it on my wand by the ring at the top, and in that way my friend by my side can hold it for a moment whilst I make a drawing of it on a sheet of innocent white paper.



OPEN.
Fig. 60.



CLOSED.
Fig. 61.

Once more let me show that the fastening holds firm.
All are satisfied.

I will now apply the key to the hole in the drawing, and turn it once—twice—and cry :—

“ Open, Sesame ! ”

The padlock is open !

For your kindness in assisting me, sir, you may retain the drawing. You have watched me so closely that I see you have imbibed the art, and henceforth all the doors of society are open to you.

We borrow from *The Magician's Own Book* the illustration of a magic padlock. In the present case, the instrument contains a powerful spring which forces the key-bolt back out of the socket of the pin, and is set in action by pressure on one of the nail heads adorning the plate. This is done when the second testing of the lock is made. You keep up the chatter as long as the time required for the spring to work.

PRIMITIVE WOLF TRAP.

A double circular stockade, or palisade, is erected too high for a wolf to leap over, with one entrance, closed by a gate.

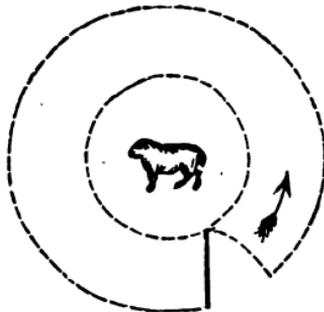


Fig. 62.

This is open, and the animal, hearing a tied-up sheep bleating in the centre, passes in and goes the round,

seeking the entrance to the prey, when he pushes the gate to, and is imprisoned till morning.

THE CELEBRATED HONEY-BEE TRICK.

Get possession of the queen bee, and confine her by a hair or fine silken thread by a running noose fast around her corslet.



Explanation.—Be Wise in Time.

The bees, attentive to her movements, will surround her, and go to and fro, as if in obedience to the will of the captor of the mother bee.

A swarm can be made to pass from one hive to another at pleasure.

TO PROTECT A HOUSE FROM RATS AND MICE.

The Japanese, from time immemorial, have manufactured china cats, with open eyes, so faithfully copied

from nature that one of these toys, with a rush-light inside, will protect a whole house during the night.

The image might contain a clockwork by which an intermittent sound would still further alarm the rats.

TO SHOW THE FUTURE IN A PAIL OF WATER.

Bid the person desirous of seeing his or her future partner's face look into a pail of water.

The reflection will certainly be of their own features, but as marriage makes each the other's, you can safely maintain your credit as a soothsayer. "That face will be your husband's when you marry."

THE INTELLIGENT PARROT.

Have a parrot, or other bird, carved and painted, with simple springs to make the head turn and the mouth to open, mounted on a hollow shelf against the wall.

Through its body, one leg, the hollow shelf, and thence through the wall, into an adjoining apartment, where your confederate can overhear, run a tube with a mouth-piece, to which the lips or a bellows can be applied.

On pretty Polly being addressed, she will whistle, sing, scream at command, and answer to sensible questions.

CLOVES.

Cloves are the unopened flowers of a small evergreen tree that resembles, in appearance, the laurel or the bay. Each clove consists of two parts, a round head, which is the four petals or leaves of the flowers rolled up, enclosing a number of small stalks or filaments. The other part of the clove is terminated with four points, and is, in fact, the flower-cup, and the unripe seed-vessel. All

these parts may be distinctly shown if a few leaves are soaked for a short time in hot water, when the leaves of the flowers soften, and readily unroll.

DANDELION RING CHAINS.

Pull some dandelions with long stems and cut off the flowers. As the stems are hollow, the upper or smaller end can be bent round to enter the other, so making a link, of a number of which a chain can be formed.

IMMORTElLES.

When fresh, scrape the flower leaves with a blunt knife to make each petal curl.

For a green hue, dip the flower, but not the stalk, or the former will fall off, in a brass or copper vessel full of vinegar and salt, for half a day, or not so long in oil



Fig. 63.

of tartar; wash in water, and dry them, keeping the stem up. For a straw-yellow tint, keep them two days in oil of tartar. For yellow or another shade of green.

in quick lime, slightly liquefied with water. For grey, in vinegar, milk with a little black dye. For jet, put the stems through holes in a plate of metal fitting a vessel by which the flowers can be exposed to the fumes of



Fig. 64.

sulphur. They will be blanched at first, but will then redden, and finally become black. To varnish: Melt down some Flanders glue, strain it, and brush it on thoroughly. Put them away to dry where no dust will fall on them. Perfume at pleasure.

THE POLITICAL TEETOTUM.

(No personal allusion intended to H. Panky, Esq., M.P.) Cut the edge of a teetotum into six faces, and put on them the letters D, R, C M, &c., standing for Despotism, Republic, Constitutional Monarchy, and any other form of government which may visit a country. The game is to pretend to tell the future rule by the first face which comes up three times.

ORTHOGRAPHICAL DICE.



PASTE or paint upon four cubes of wood, metal, stone, or bone, the vowels and consonants. Attach a value to them, and play with them in the same manner as if they were dice. The whimsical words which the upturned letters will often produce occasion laughter, and the

compulsion to name them will help slow juveniles on with their alphabet.

THE HEXAGON.

The six-sided figure is to be cut through the lines, and re-made.

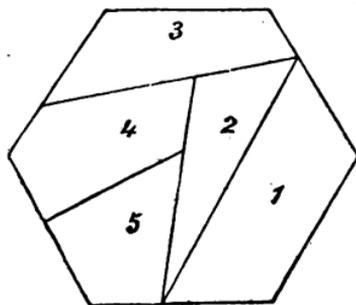


Fig. 65.

AMUSING TRICKS WITH

THE MAGIC OCTAGON.

Upon a piece of cardboard draw
 The three designs below ;
 I should have said of each shape four,
 Which when cut out will show,
 If joined correctly, that which you
 Are striving to unfold,—
 An octagon, familiar to
 My friends both young and old.

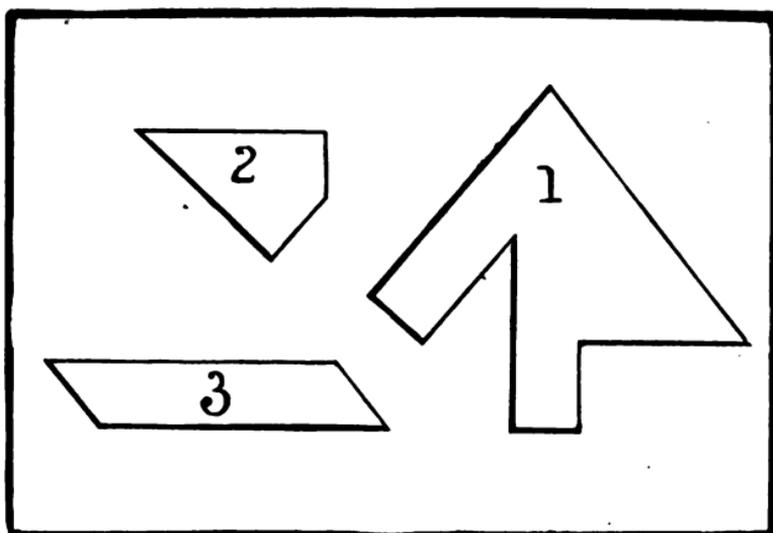


Fig. 66.

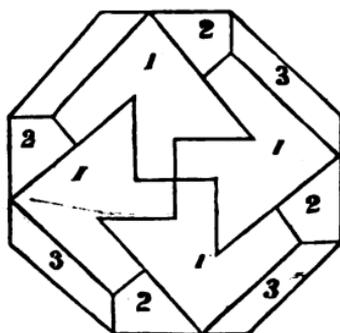


Fig. 67.

THE PARALLELOGRAM.

A parallelogram, Fig. 68, may be cut into two pieces, by which two other figures can be formed.

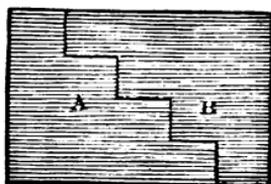


Fig. 68.

MOCK LACES.

Take a piece of linen or "long-cloth" and stamp, or paint gum on all the parts of a pattern which is to remain intact, and soak it in a potash-bath at 22° *Centigrade*. In a short time the process of felting, analogous with that of skeletonizing leaves, will act exclusively on the ungummed places, and eat away about a twentieth. Only the experienced eye can tell it from embroidery. Shirt-fronts are thus worked.

TO CUT OUT A CROSS.

To cut out of a single piece of paper, and with one cut of the scissors, a perfect cross, and all the other forms

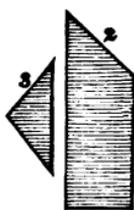


Fig. 69.



Fig. 70.



Fig. 71.

here shown, take a six-inch length of a piece of foolscap two inches wide, and fold the upper corner down, as shown in A, Fig. 72; then fold the upper corner over

the first, in B. Next fold the paper in half lengthwise, as in C. The last fold is made lengthwise also, in the

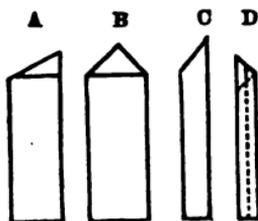


Fig. 72.

middle of the paper, to form D. Cut this through with the scissors lengthways, for the forms shown in Figs. 69, 70, 71.

THE MAGICIAN'S SPELL.

A B R A C A D A B R A
 B R A C A D A B R
 R A C A D A B
 A C A D A
 C A D
 A

CHERRY-STONE BASKETS.

Secure a cherry-stone in a vice, and having traced a line around it the longest way, and another at right angles, file out the space, both sides of the latter, down

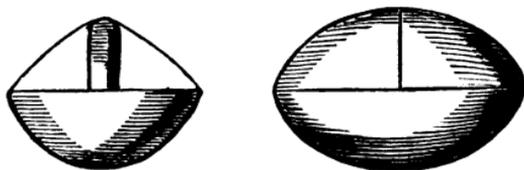


Fig. 73.

to the surrounding work. There will then be left a miniature basket with handle complete.

HANKY PANKY BURGLAR ALARM.

(*Diablotins.*)

Exploding crackers are used for awaking a sleeper by the detonation when any one attempts to enter the room without permission. They are fastened across the crack of the door, as if to seal it.

These explosive papers are made by taking strips of half an inch to an inch wide, and of a convenient length. By means of a little gum-water or paste a small quantity of coarsely pounded glass is attached to one end, on one side of each strip about one-fourth of an inch. A little fulminating powder is spread over the glass and the moistened end of the paper, and it is dried in the air: two of these strips are then laid with their covered surfaces nearly in contact, and so that their uncovered ends may project different ways. A narrow strip of paper or parchment is then wrapped round the coated ends and fastened to one of them, but not binding them so tightly as to prevent their being drawn, by taking hold of the projecting ends, one over the other. The friction occasions their detonation.

The quantity of fulminating powder must be proportioned to the effect intended.

MOCK TURTLE.

Take a piece of paper stained or painted like tortoise-shell, and cut out a piece of the shape of a turtle's upper shell; make claws and head, and paste them on. Bend up the middle and put on a bottom, which you also push up in the centre, where with a drop of shoemaker's wax you secure a large live fly. The efforts of the latter to escape will cause him to carry the paper shape about the table. Except for the fright—and the absence of

H

mental emotions in such low animals debars much fear of that—the creature need suffer no hurt.

MYSTIC CHANGES IN COSTUME.

We are all familiar with the excellent surprises in quick dressing shown by Woodin, Love, and the latest *polyphonist*, Mr. Maccabe. An American entertainer has carried this address in dress to its climax. He comes upon the stage attired in a black dress coat, black trousers, having in his hand a high opera crush hat, and sings a collection of songs, at the end of each one of which he, without leaving the stage, and while standing in full view of the audience, makes several changes in his costume, as follows:—Upon the coat, which is closely buttoned, in place of the black buttons there suddenly appear and disappear double rows of gilt buttons. Closing his crush hat and affixing it to a rear button on his coat, he produces from a pocket a small cap, with wig attached, which he places upon his head; quickly turning his trousers up above the knee, to give them the appearance of knee breeches, we find his lower limbs encased in neatly fitting white gaiters, and, producing a telescopic cane, we are presented with an excellent portraiture of an old man in the full costume of years gone by. By a sudden movement from the neck the entire costume is changed to full female attire. He then sings "Tassels on her Boots," and at the conclusion of the first verse, as he slightly raises the skirt of his dress in front, we see that the gaiters have disappeared, and that his feet are encased in neatly fitting ladies' boots with tassels thereon. Succeeding this he makes several entire changes of costume, all being, however, of female attire, differing materially in style and colour. He wears a jaunty little hat upon his head, which is

changed in colour and style to suit the various costumes, without removing it : also, different wigs are seen upon his head after the latest fashion of ladies' hair dressing.

THE ANIMATED CRYSTAL.

Alum put into a tumbler of water, as it dissolves will assume the shape of a pyramid. When the solution has nearly terminated, you will find the mass covered with geometrical figures, cut out, as it were, in relief upon the mass. This experiment having succeeded, take up a crystal quartz which has six sides, and cut accurately from each face to a perfectly convex surface, and place it on a piece of plate or common window glass, a china or glazed plate, or any smooth surface, perfectly clean, as grease or a particle of dust would impede its motion. Wet the surface, and give the plane a slight inclination, when, if properly managed, a rotatory motion will commence, which may be kept up for any length of time by giving alternate inclinations to the plane surface, according to the movements of the crystal ; to heighten the pleasing effect of which, a variety of paper figures, harlequins, waltzers, &c., may be attached. The first trial of the experiment had better be made by giving a slight rotatory motion to the crystal.

THE SPINELESS GIANTESS.

In *The Merry Circle* a full explanation was given of the mode of manufacturing a giant or giantess. A slight yet telling modification has occurred to us.

Let the skirts of a dress be fastened with its waistband around a boy's chest just under his armpits. He forms the body of the Colossus. Half open an umbrella and secure it in that position. Tie a shawl to the ferule

so that it will fall over the umbrella and conceal the boy. On the top fasten a muff or bale of cloth, which serves as a head on which a coal-scuttle bonnet may be fitted, with a thick veil to hide the absence of countenance. If the umbrella has a hinge in it, as parasols are often made, the animating principle of this "ten footer" may execute a bow with the upper part of the contrivance which a courtier could never surpass.



Fig. 74.

TO COLOUR AGATES.

Brown.—Soak the stone in a solution of silver in spirits of nitre, dry in the sun, then put in a damp place, and on again exposing it to solar light, the colour will appear. Repeat to deepen shade.

Light Brown.—A solution of gold.

Gray.—Add to the silver solution a quarter of its weight of lard and red tartar.

Deep Violet.—Add to the silver solution some plumose alum.

White.—The action of bismuth bleaches it so that it looks white; it will appear pale brown in the shades.

To draw Figures on the Stone.—Rough it, write with a quill, and the silver solution will dry it quickly.

CARD CASTLE.

With a pack of cards make houses in this manner. Place two on their narrow ends, fixing the tops level.

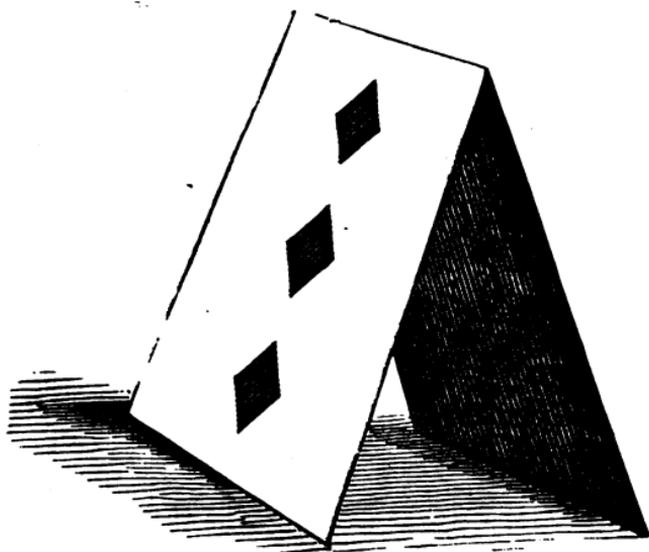


Fig. 75.

On each side of the opening stand a card longwise. And place two other cards at the end of the last pair, to form a square surrounding the triangle.

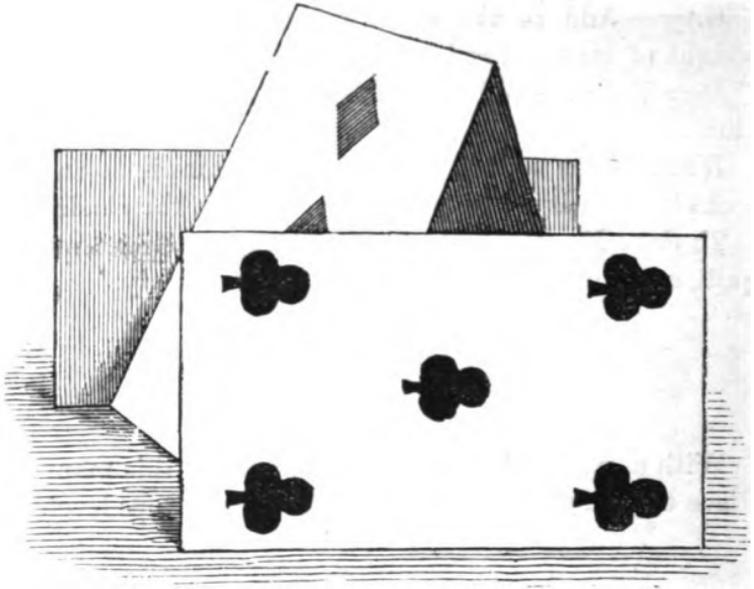


Fig. 76.

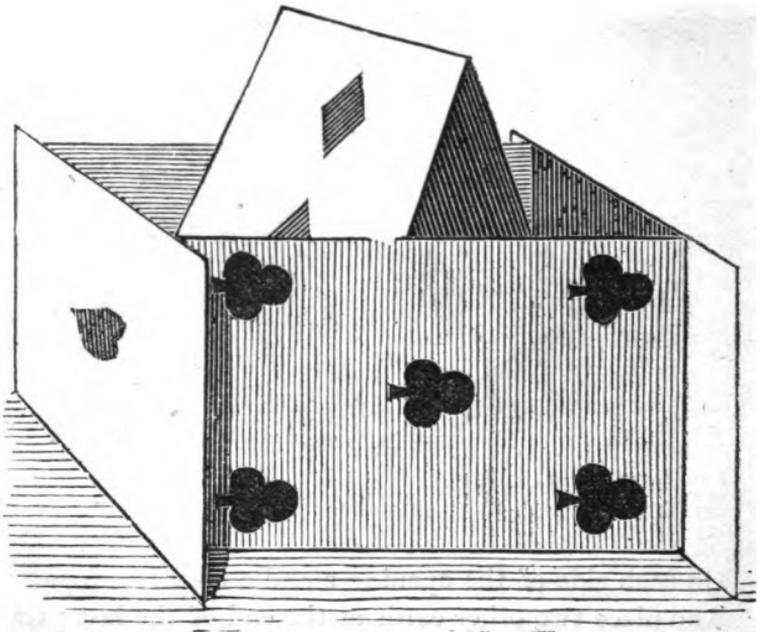


Fig. 77.

Each side of the central cards lay two more, flat upon the outward pair, like a roof.

On this platform rear cards like the first pair,

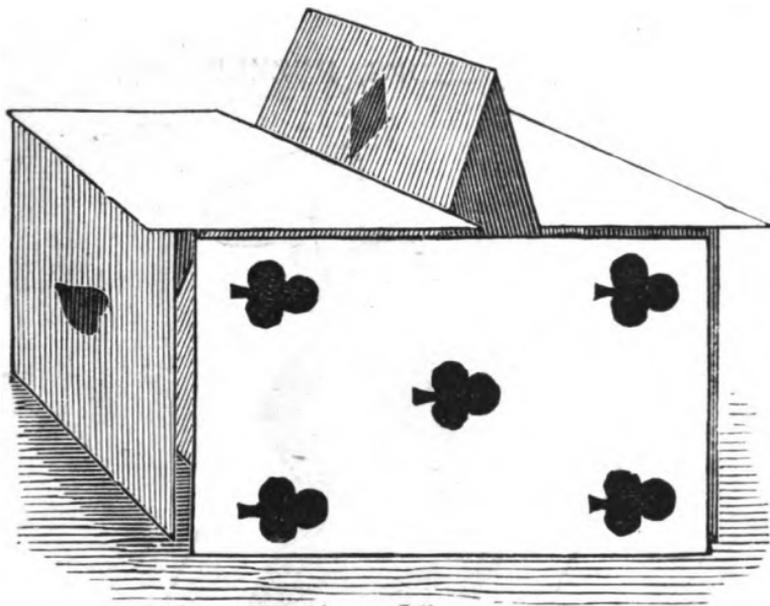


Fig. 78.

and continue till the whole pack is used; with care many of the under cards at the side can be removed to continue the structure.

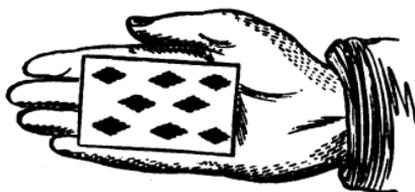


Fig. 79.

XII.—INTERLUDES, PUZZLES, &c.



PUZZLES.

The best material for these geometrical puzzles is hard wood about an eighth of an inch thick; but paste-board, cardboard, and stiff paper are efficient substitutes.

TO FORM A SQUARE.

To cut a card of the shape and in the proportions of Fig. 79, into three parts, to form a perfect square, you

must cut through the lines of the obtuse angle, and it will then be an easy task.

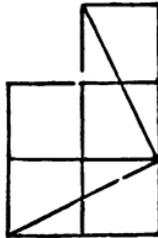


Fig. 80.

A SQUARE OF FOUR PIECES.

In a square card punch twelve holes, or make them with a pencil, and then cut it into four equal-sized pieces,

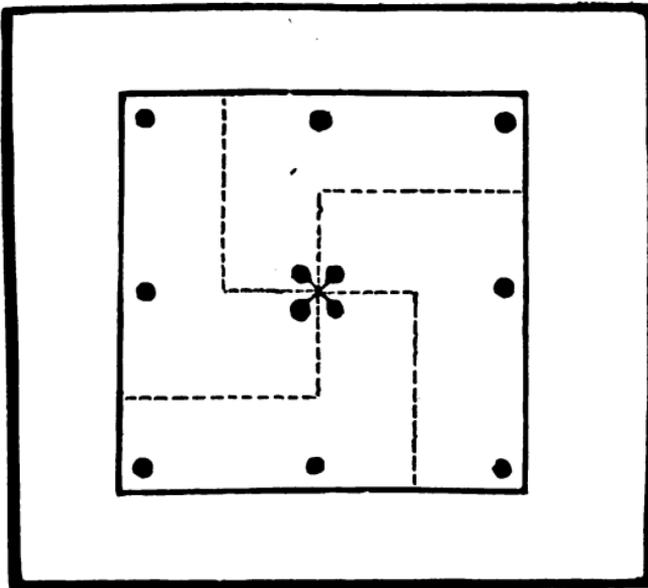


Fig. 81.

each of the same shape, and containing three holes or marks.

THE PUZZLE OF FIVE PIECES.

Find the centre of one side of four out of five squares, and cut them from that point to the opposite corner;



Fig. 82.

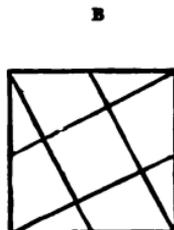


Fig. 83.

place them around the perfect square, and they will form the figure here presented.

ANOTHER OF TRIANGLES

With the five triangles make a square.

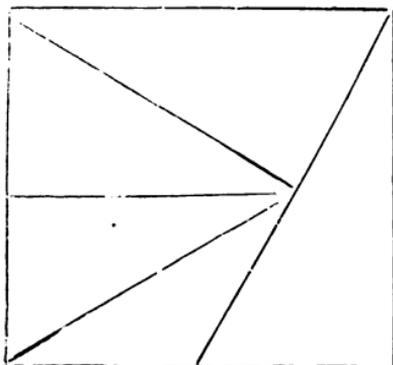


Fig. 84.

ANOTHER.

Dot a square card in eight places, which dots are to be divided by straight lines, so as to cut the cross into

sixteen squares. Unite the points of the diamond, within which is a square one-quarter the size of the first. A second diamond within this quarter-sized square, cut by a Saint Andrew's Cross—gives the points for the seventeenth square.

ANOTHER OF FOUR TRIANGLES AND A SQUARE.

Cut the card first into a ten-inch length, two inches

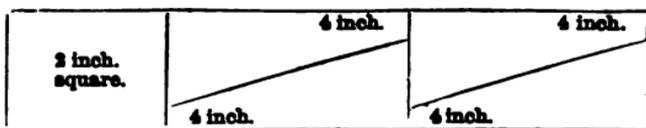


Fig. 87.

wide; and then of the pieces form a square.

OF FOUR SQUARES AND EIGHT TRIANGLES.

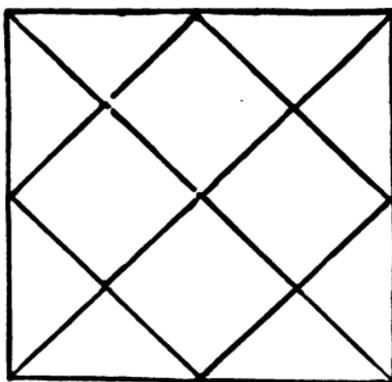


Fig. 88.

OF NINE PIECES.

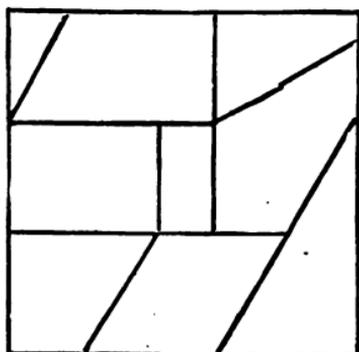


Fig. 89.

OF TEN PIECES.

First cut the square into pieces of the three shapes

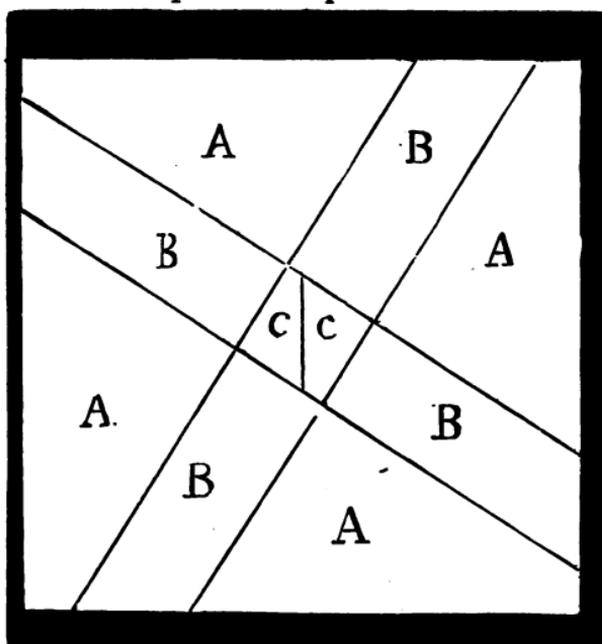


Fig. 90.

shown, four of A, four of B, and two of the small one c.

The formation of a perfect square with them will be a difficult task.

OF TWENTY TRIANGLES.

Begin by placing four triangles at the sides of a square of four triangles, when the rest of the shape can be filled in readily.

OF ELEVEN PIECES.

Cut up a square into four sets of two each, A a square,

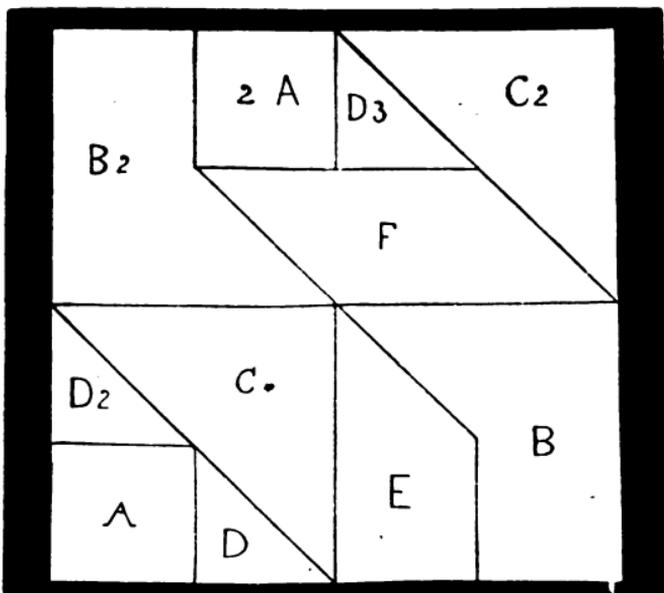


Fig. 91.

B and C a triangle; three of the triangle D, and one each of E and F. Begin at the left lower corner with A, to its top and right side place two of D, then a large triangle C; a square is now made, one quarter of the large one. The second square to the right requires but

the two pieces, E and B. The other half, from there only being five pieces to fit, will take but little time and trouble.

THE OVAL PUZZLE.

Hanky Panky has to make two oval boards : but it so happens that the area, exclusive of hand-holes in the centre, and the circular piece, are the same. To cut his stuff, on finding the centre of the circle, he strikes a

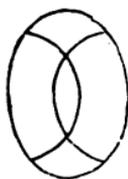


Fig. 93.

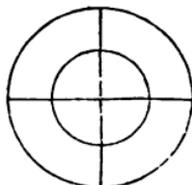


Fig. 92.

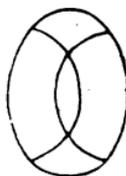


Fig. 94.

second circle, half the diameter of the first, with the same centre. Then he cuts the whole into quarters, by means of two lines drawn at right angles to each other, then cuts along the inner circle, (Fig. 92) and puts the pieces together, as in Figs. 93, 94.



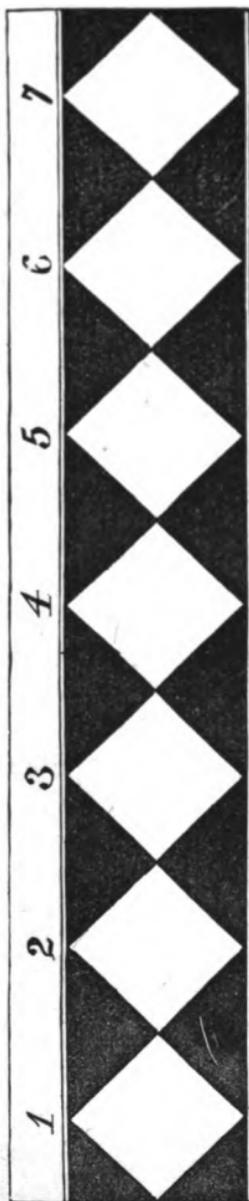


Fig. 95.

CHECKER PUZZLE.

The puzzle is as follows:—After placing three red wafers in the squares Nos. 1, 2 and 3, and three blue wafers in Nos. 5, 6 and 7, you are to move the three blues into the squares occupied by the reds and the three reds into the squares occupied by the blues (keeping within the squares), the reds moving towards the right, and the blues to the left, not being allowed to move back after once moving forward. You are to jump only one at a time, and have the privilege of moving either card into a vacant square adjoining. The first move, of course, is either from 3 or 5 into 4.

Explanation. Move blue wafer from 5 to 4; red wafer from 3 to 5, jumping 4; red from 2 to 3; blue 4 to 2, jumping 3; red from 6 to 4, jumping 5; blue from 7 to 6; red from 5 to 7, jumping 6; red from 3 to 5, jumping 4; red from 1 to 3, jumping 2; blue from 2 to 1; blue from 4 to 2, jumping 3; blue from 6 to 4, jumping 5; red from 5 to 6; red from 3 to 5, jumping 4;

and blue from 4 to 3, which performs the puzzle, having changed the three blue wafers from their former places into those of the red, and the red into those of the blue. This may be shown to a person a number of times, and if done quickly not one in ten will be able to perform it.

THE UNDETACHABLE CYLINDER.

Cut a slit close to one edge lengthwise of half a playing card, and of the other piece make a cutting in the following shape:—

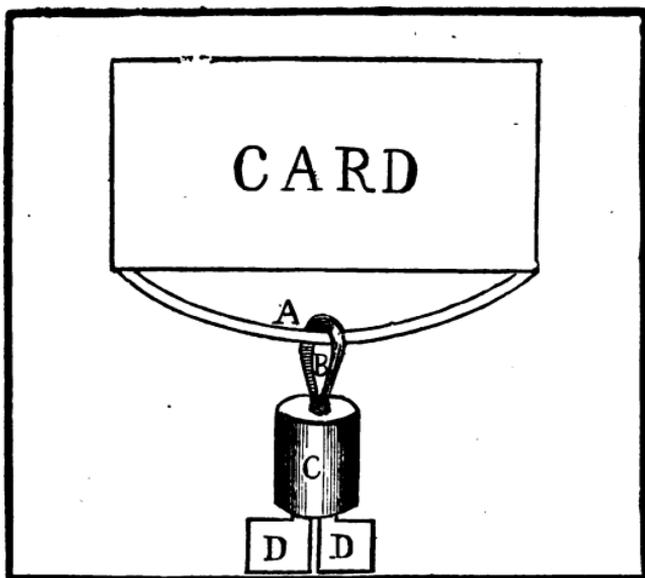


Fig. 97.

Pass the thin long ends through a button, a perforated disc of paper, or a piece of pipe-stem, after having taken the slip of card in its loop, and unfold the large square wings.

If the bands are not shown, the way to get the little cylinder off is truly undiscoverable.

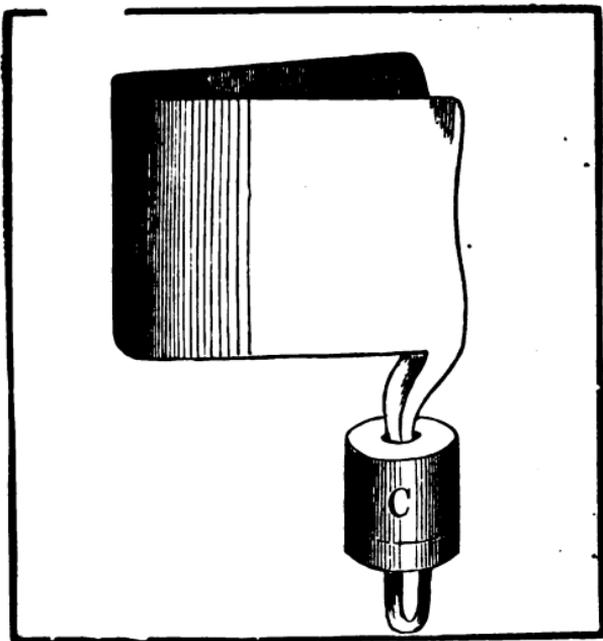


Fig. 98.

It is done, of course, by doubling the flat card till the slip can be pulled through the pipe-stem, when one of the square wings will go through it, and the release follows naturally.

TRIUMPHANT COLUMN.

Take a number of smooth true cylinders, of metal or hard wood, and, by carefully placing one upon another, rear a slender column. If the ground is firm and level, such a pillar may attain a somewhat astonishing height.

A PRETTY TRICK IN BALANCING.



Put an orange, apple, or other tempting object fifteen inches from the wall, and present it to any one who can pick it up while standing against the wall, or rather while keeping his legs against it. Or, again, challenge whoever has been distinguishing himself in agility to keep upright on the inner leg while sidewise against a wall.

Then—as probably you will be asked to perform some feat yourself after having thus set impossible tasks to others—put a cork in a bottle. Drive a large pin into it horizontally, and, having previously stuck two steel forks opposite each other in a second cork, with their handles inclining downwards, and run the head of a needle into the bottom of this cork, set the needle point on the pin's head, when the forkified cork will be delicately balanced, and may even be turned round without falling.

THE ANGULAR PUZZLE.

Cut a piece of cardboard into the form of, and of equal proportions to, the figure given here, after which, produce, with the same, three successive pyramidal or angular boxes, alternately bearing the respective numbers

of 7, 6, and 5 corners, still keeping the cardboard in one piece. After cutting the card half through at the dotted lines, so that it will bend more squarely, bring the ends

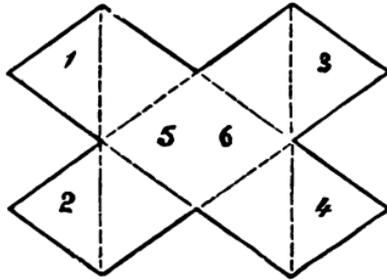
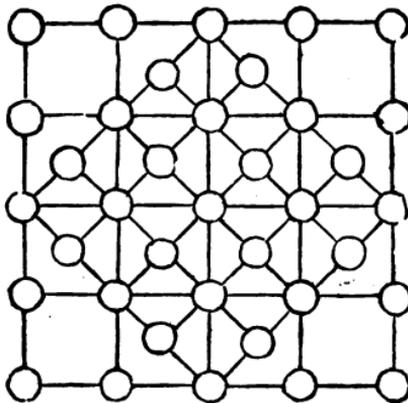


Fig. 99.

of 1—2 and 3—4 together; bend the whole in the middle at 5—6: fold 1—2 and 3—4 over one another, and the six-cornered box is formed. By again placing the angular sections inwards, the box will be finished. If larger, gum the parts as you fold them, and a curious box will be the result; if covered with Dutch metal so as to conceal all the seams, it may be a puzzle-box indeed.



the waiters was fixed upon to count the company out, who, owing his master a grudge, resolved to make him the person who should have to pay. How must he proceed to accomplish this ?

Explanation.—Commence with the sixth from the landlord. You illustrate with counters.

THE DIVIDED ORCHARDS.

To a house where dwell four persons, (see the windows to their rooms) is an orchard; each man wishes to enclose his two fruit-trees in a space equal to

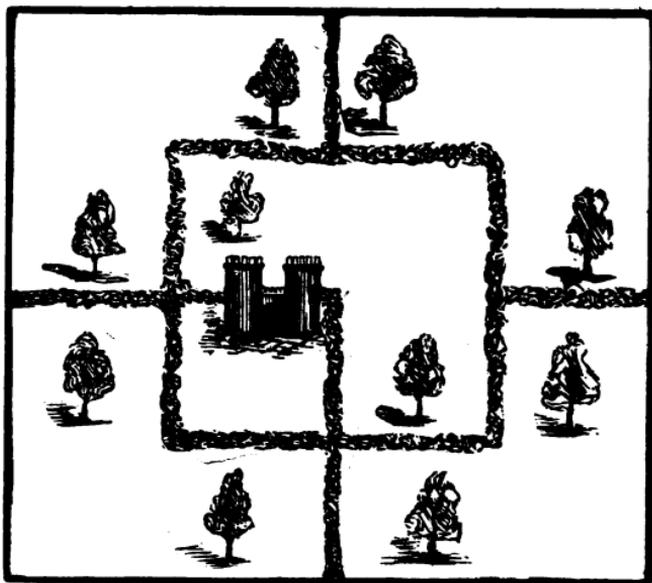


Fig. 101.

his neighbour's. The dotted lines show the position of the hedges.

THE OBLONG PUZZLE.

Having cut up a square of card by the lines shown, reform it. By remembering how to form one quarter of

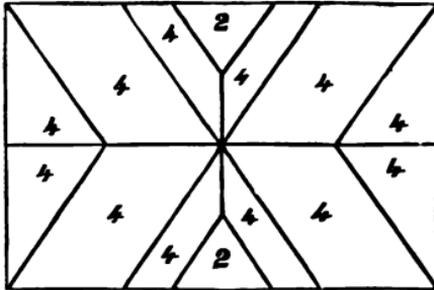


Fig. 102.

the figure, the whole will be so simplified that you can perform it under the spectator's eyes with a rapidity which will bewilder them.



THE ONE-QUARTERLESS SQUARE.

To divide a square less one-quarter, triangularly

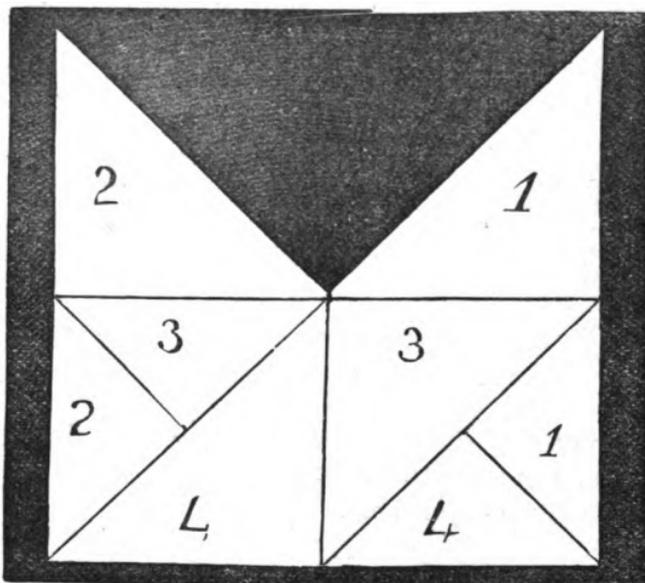


Fig. 103.

shaped, into four parts of the same shape and size, follow the lines here described.

COUNTER PUZZLE.

Place eight counters as here given :

0	0	0	0	0	0	0	0
1	2	3	4	5	6	7	8

The puzzle is to play them in twos, taking up only one at a time, and, each time, skipping two with the one in your hand. Answer : Put 4 on 7, 6 on 2, 1 on 3, 8 on 5 ; or, 5 on 2, 3 on 7, 8 on 6, 4 on 1, &c. For ten, put the 4th on the 1st, the 6th on the 9th, the 8th upon the 3rd, the 2nd on the 5th, and the 7th on the 10th.

XIII.—TRICKS IN THE WATER

THE FANE OF AQUARIUS.

Make a stand with a box upon it, having the roof and front of an ancient temple, the front of the stand being in steps leading up to the porch. This conceals a simple apparatus of glass tubes, receivers and siphons.

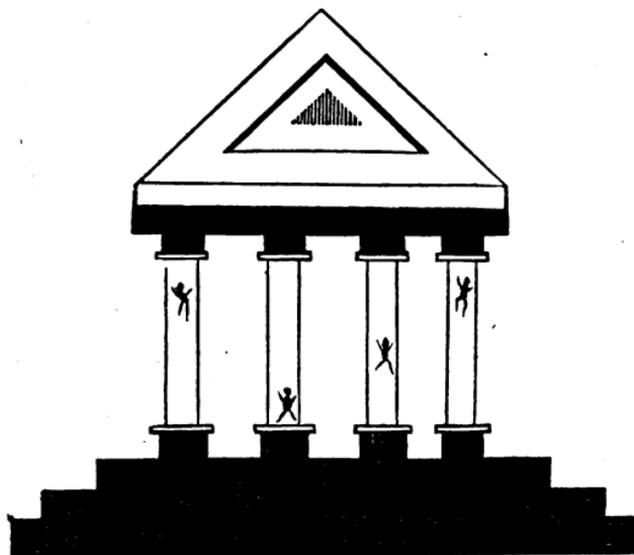


Fig. 104.

The four tubes are shown just above and below the bends, so as to appear to be solid glass pillars. The water from the upper reservoir fills them in running to find its level in the other container. Little figures are made of wax and pith, two having cork in their heads, two leaden feet, and they are placed in the tubes alter-

nately. A valve below prevents them sinking, and a fine hair prevents them rising into the bends. On the

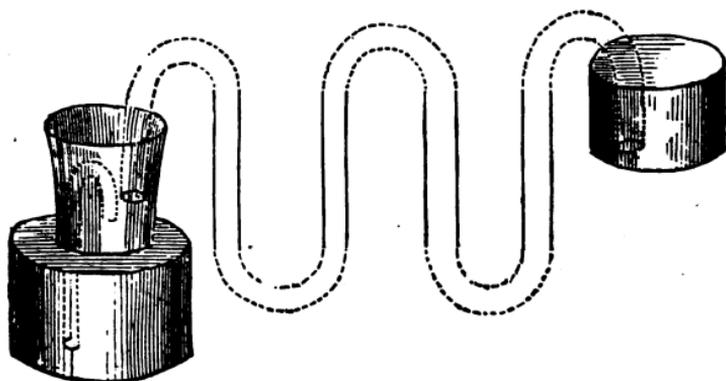


Fig. 105.

water being let flow, the figures are imbued with motion, and their rising and falling will greatly puzzle the spectators, for the fluid is not seen to run.

WATER RISING ABOVE ITS LEVEL.



Take two panes of common window-glass, about six inches square, set them together at one side, and at the other side prevent them exactly joining by a little wax, so that the two planes form a very small angle, as one or two degrees. Then place the bottom edge about an inch down into a dish of water, when the water will rise between the panes in the form of a hyperbola.

**WATER IN PERPETUAL MOTION.**

There is shown to the audience a singular instrument composed of glass, two bulbs connected by two tubes.

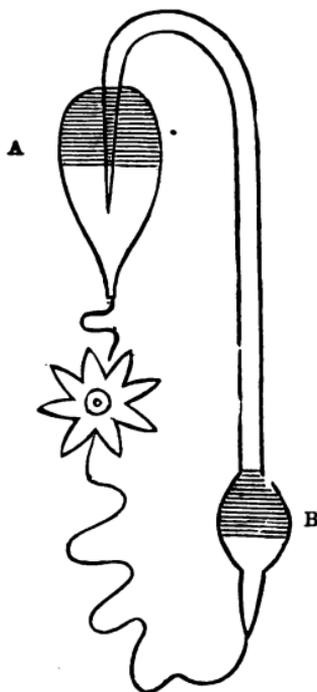


Fig. 106.

Water, which may be tintured with indigo for the better effect, flows from the bulb A very slowly into the

bulb B, whence it quickly and plainly runs up by the tortuous tubing, so thin as to scarcely let a hair pass through it back into the bulb A. The drops of ascending water are separated by air-bubbles, so that the current can be clearly studied.

Now, though the laws of nature forbid that water can by any power in itself lift itself up to the height of the reservoir originally holding it, here seems a contradiction. For a time, friction and the resistance of the air appears to be done away with. But this paradox is readily accounted for after close watching.

It will be found that the descending liquid does not ascend from ball B into the winding tube without part of it being left in that ball. It is this filling the space which gradually forces the air upwards (since it cannot go down through the column of water from A). The only cause of the liquid rising beyond B is its being filled, and once it is full the movement must stop.

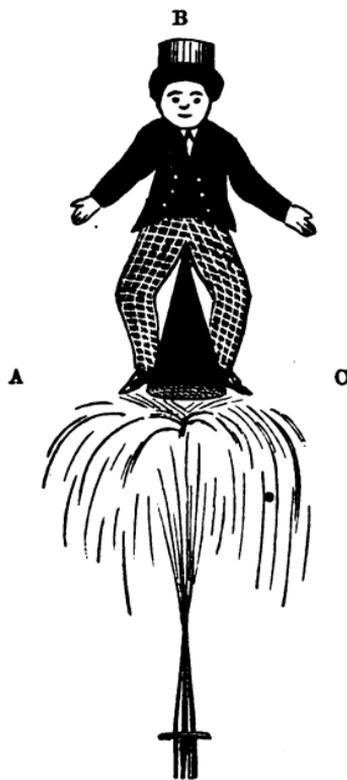
The same appearances of drops of water divided by air bubbles is shown in the windows of filter-dealers, who use great lengths of bent glass piping for the purpose of display; but a small force-pump is the active agent as regards their apparatus.

TO PLACE TWENTY SHILLINGS IN A WINE-GLASS,

Full to the brim, without spilling one drop.—Take care that the edge of the glass is quite dry: pour the water into the glass gently, until it is quite full; then drop the shillings in one by one very gently, and on their edges. If you act otherwise, the water will run over the edge of the glass.

**THE HYDRAULIC DANCER.**

Shape out a doll, A B, of light material, and paint or dress him prettily, as your fancy suggests, and between his legs set the cone, C, made of thin sheet-copper.

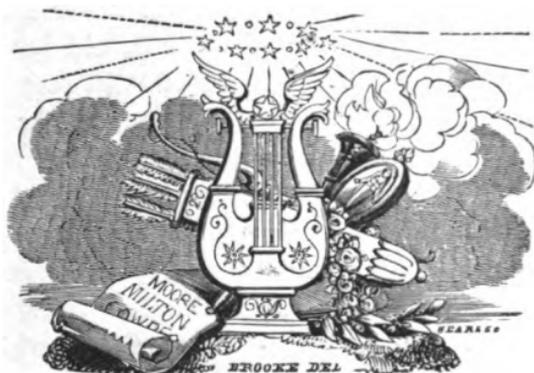
**Fig. 107.**

On placing this aquatic Blondin on a perpendicular jet of water, it will balance itself on the top, while rising and falling divertingly.

A hollow copper ball, an inch in diameter, will balance itself in the like manner, turning continually round its centre, and casting the water from its surface.



XIV.—TRICKS WITH MUSICAL AND OTHER SOUNDS.



HINTS FOR PUBLIC SPEAKERS.

In a large room, nearly square, speak from one corner to the other corner, diagonally. In ordinary rooms, the lowest pitch that will reach across the room is best. In the same, speak along the length. Low ceilings carry sound better than the high.

THE MERIDIAN ALARUM.

There are other ways of utilising the burning-glass to give a signal than to adjust it so that the rays, at noon, shall fire off a cannon, as at the Palais Royal, Paris. For instance, let the action of the focussed light and heat operate on a delicate spring retaining the hammer of a bell, the valve of a chamber of compressed air, with its outlet forming a whistle, &c., &c.

MUSICAL WATER.

A jet of water, passing through a hole in a brass plate fixed at the end of a glass tube will emit a musical sound, in consequence of the intermittent flow of the liquid through the orifice. Again, a slender vein of water, some twelve inches long, on being allowed to fall vertically from a vessel, will break at the lower end of the vein into drops. This vein of water should be brightly illuminated from above by a beam of light sent through it from an electric lamp, so that the thread of water will look like a line of light, from the end where it breaks into drops to the orifice from which it issued. A musical note of constantly-increasing pitch being then set up by means of the wind instrument known as a "syren," when the note reaches a sufficiently high pitch, the sound will act upon the luminous column of water, which will shorten itself by four or five inches, in response to the one particular sound to which it was sensitive. The same jet of water will respond to the beats produced by two organ-pipes, &c.

THE ÆOLIAN WHISTLE.

The Chinese fasten a whistle to their kites, so that the mouth always faces the wind, and the sound is almost continuous.

SIMPLE ÆOLIAN HARP.

Fasten the ends of a length of waxed saddler's silk to pegs or nails, which insert in the crack between the two sashes midway in a window, so as to stretch the cord well. The entering air will call out the musical vibrations.

TO PLAY ON TWO WHISTLES AT ONCE



DDOUBLE a length of gutta-percha tubing, say two yards long, and cut a slit in the centre, where you insert one end of another piece of tubing, of the same or a greater length.

In the two end openings put whistles, and make the whole air-tight. Place the free end of the long piece around the nozzle of a bellows, and on forcing the air from which into this novel instrument a double

succession of sounds can be produced. The whistles should be pitched differently, and more than two can be used.

ECHOES.

A good ear cannot distinguish one sound from another unless there is an interval of one-ninth of a second between the arrival of the two sounds. Sounds must, therefore, succeed each other at an interval of one-ninth of a second in order to be heard distinctly. Now, the velocity of sound being eleven hundred and twenty feet a second, in one ninth of a second the sound would

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travel one hundred and twenty-four feet. Repeated echoes happen when two obstacles are placed opposite to one another, as parallel walls, for example, which reflect the sound successively.

A certain river has a bend in it, avoided by every one, as it was supposed to be haunted. At a certain hour in



Fig. 108.—Miss ECHO.

the evening, for many years, terrible curses were distinctly heard. Suddenly they ceased. Hearing an account of the strange phenomena, Mr. H. Panky determined to ascertain the cause, and carefully examined the river on each side for about a mile above and below the bend. He ascertained that at about the time the sounds ceased an old fisherman, who had lived on the opposite side of the river, full a mile from the spot where the curses were heard, had died. He was told that the fisherman was in the habit of crossing the river to a village, where he found a market for his fish, and where he spent his money for liquor; and that after

drinking freely on his way home, while rowing across the river at night, he would swear terribly. This gentleman then persuaded a friend to go down the river to the place where the curses were formerly heard, while he remained in a boat on the river at the point at which the old man usually crossed. He then played on a bugle and sang several songs. His friend soon returned, and with eager delight exclaimed, "O, Hanky, such glorious music fills the air, just where the oaths used to be heard!" The neighbours came rushing down to hear it, and some fell on their knees, praying. They said, "The angels have driven the devil away." Mr. Panky then asked what were the songs they heard. His friend described them correctly, and said he understood even the words, one of them being the famous Marseillaise, another a German song. The foreign words made the ignorant more sure that the sounds were supernatural. The magician then played on the bugle, and sang again the same songs, while his friend stood by; but his friend said the music was not equal to that he had heard below, where the sounds had really seemed heavenly.

The peculiar configuration of the river-banks had concentrated the sounds, and the distance and the water had softened them.

WHISPERING GALLERIES.

As a rule a smooth-walled room of an elliptical shape will be found most probably gifted in this mysterious way.

THE INTELLIGENT ECHO.

Find a building, with a wall at an angle where an obstacle will send the voice from the one side around to

the other instead of reflecting it as an echo. Then have a friend able to imitate voices concealed round the corner, so that, when your victim calls out, "Who are you?" the answer will come, apparently from echo, in the questioner's own voice, "I, A or B, of course."

TO SHIVER GLASSES BY SINGING.

It is known that glasses may be broken by the note, powerfully sounded, which is that given when it is struck, or the octave of that note. Thin and convex glasses are best. But, to make sure, nick or scratch the object with a diamond to start the fracture. A trumpet will not succeed while a violin will.

THE WOODEN HARMONICON.

On a firm stand erect a three-inch soft wood board, a yard high and half a yard broad, in which stand twenty deal rods. The longest should be about five feet. The ones representing semi-tones should be painted a different colour from the others, which can be left plain.

Rub the fingers in rosin-dust and set the rods vibrating with friction, and you will have a manageable instrument, sweet and expressive.

THE STONE HARMONICON.

Stones must be found which, when freely suspended, are sonorous when struck, and those giving out the notes and half-notes of the diatonic and chromatic gamut are to be hung in a frame in proper order.

They are played upon with blows of a little hammer.

Hard wood can be also employed, mounted on a frame, and struck at one end, being the "bones" of the African under another phase.

THE LYRE WITH A GOOD MEMORY.

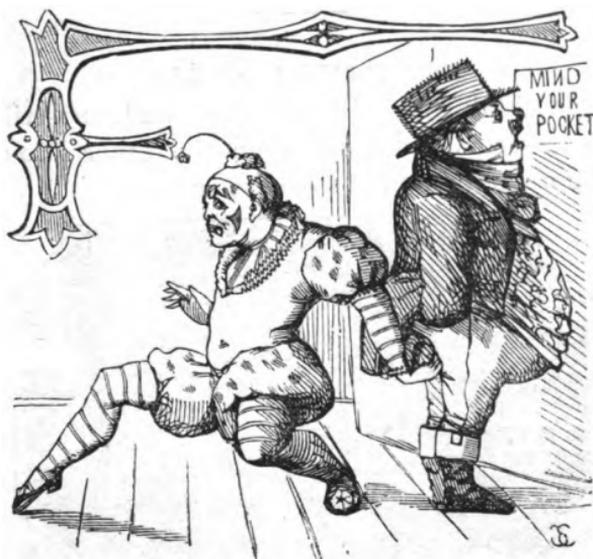
A proverb assures us that a teller of untruths should be skilled in mnemonics.

We exclaim, quite apropos of this remark, that we have a mystic harp which retains for our pleasure the airs which it has heard or played.

Amidst the murmur of incredulity, take the lyre and hang it to a wire luckily pendent from the ceiling.

On the unbeliever placing his ear close to it, the air is heard as of a whole band, at a distance, brilliant in its minuteness.

Explanation.—In the upper room is a piano, a square or grand being preferable : a wire runs directly from its sounding-board to the room below where the lyre is suspended. For convenience, the wire can be bent or formed of several portions overlapping where the join occurs.



THE TARTINI FIDDLE TRICK.

RANTING any two sounds are drawn from two instruments at the same time, there will be heard a third sound, the more perceptible as the listener is near the middle of the distance between them.

If the two sounds are succeeding ones in the order of consonance, as, for instance, the octave and the twelfth, the double octave and the seventeenth major, &c., the sound resulting will be the octave of its principal.

THE DEMON VIOLIN.

Hang a fiddle behind a partition, and, on striking a note on a second instrument on the other side of the wall, the unseen one will sound in unison.



PRACTICAL JOKES IN THE ORCHESTRA.



ANDY ANDY'S adventure with the trumpet will be remembered. Hardly less amusing experiments are practised in the orchestras of theatres, especially when a play has run its hundred nights and time hangs heavy.

A handful of bluebottle flies inserted within the bass-vial, or the greasing the fiddle-bows to make the instrument play a perpetual *mute*, may be numbered among them. A little lather put into a cornet will be blown out into soap-bubbles when it is played.

THEATRICAL THUNDER.

Suspend a sheet of iron, five feet wide by six or seven feet long, from the centre of one end by a cord. At the lower end, about five feet from the ground, fasten a handle. On seizing this, and shaking the sheet so that it shall wave in horizontal rolls from your hand upwards, the sound of thunder will be heard, and you will say, with Gainsborough, "Our thunder is decidedly the best."

Another Way.—Make a square drum-head of wood, a yard long by half as much wide, over which you spread and firmly glue a sheet of parchment, rather thick, wet on being put on, so as to dry very tight. Hang this up, and, on tapping it with your fingers, the reverberation will imitate a thunder-peal closely. Thus, in the theatre, a tap on the big drum often serves for this purpose.

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TO IMITATE THE CRASH OF A THUNDERBOLT STRIKING.

It may have happened to you to have been present when a servant's awkwardness has let a Venetian blind come down by the "run," when you surely cannot have

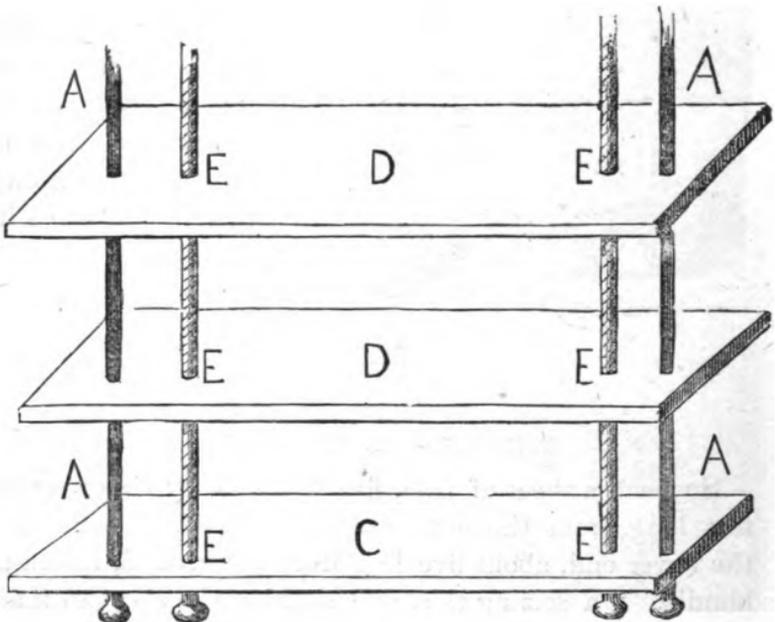


Fig. 109.

failed to notice the terrific noise resulting. By a similar fall of slats, of which the sudden contact gives a number

of sharp clatters, blended by the rapidity of their succession into one crash, the semblance of a thunderbolt's fall is given.

A A, stout iron rods, to which is fastened, at the lower ends, a board C; they rise perpendicularly, and are fastened above, being about 10 feet in length. B B are ropes, to which, at E E, are fastened firmly the slats D D (of which but two are represented, but there are as many as will cover the whole space enclosed in the rods, set 6 or 10 inches apart). These slats slide freely up and down the rods. The ropes, when drawn up taut, retain the slats apart, but, on being released, the slats fall, each striking the under one, and all coming down on C with a fearful crash.

THE CRASH BAG.



TO excite a laugh, you may pretend to be angered by the stupidity of your assistant, whom, at the end of your recrimination, you thrust out of doors. Suddenly a frightful sound is heard, a clatter of broken glass, and you exclaim in horror, "He has gone clear through the window!" (He shows his face at a door or window at the other side of the room, and laughs.)

This illusion of a broken window is made in two ways ; one by an enlarged watchman's rattle, the ratchet-wheel of which is turned rapidly by hand ; and by your letting a stout bag, partly filled with old metal and glass, suspended by a rope, fall a few feet, and be abruptly checked in its descent.

TO IMITATE RAIN AND HAIL.

Out of stout pasteboard cut twenty circles, five inches wide, and cut them all from the edge to the centre, as marked.

Bore a hole through them an inch wide. Join them together by glueing the cut side *c* of circle *A* to the cut

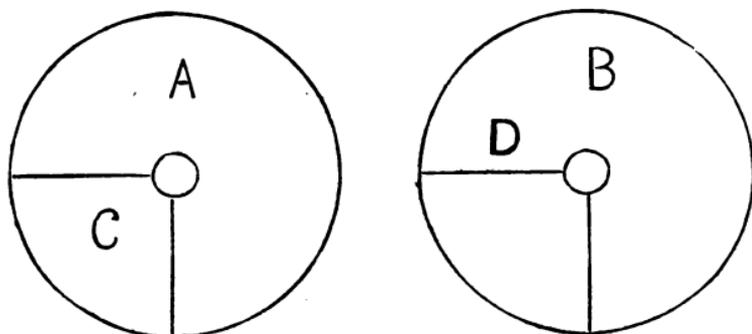


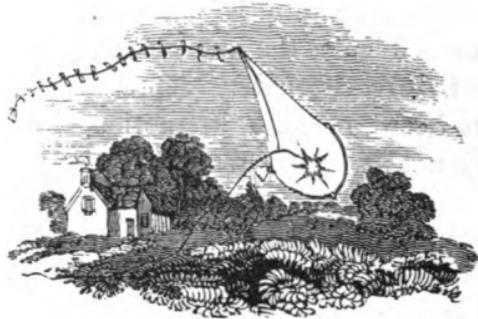
Fig. 110.

side *D* of circle *B*, and so on, till all the circles form but one piece, which, being thus lengthened, has the shape of a screw. Let them dry. Through the hole run a wooden rod to thread them, and set them three or four inches apart ; glue them in that position. Cover them along their outer edge, and at one end with parchment-paper, wet, so as to dry tight, like a drum-head. When dry, put in about a pound of fine shot, more or less, according to the size of the instrument, and close the open end with strong paper.

The lead being at one end of this case, horizontally, if you lift it up gently by the end with the shot, they will run slowly to the other end in the road formed between the circles, and their strokes against the paper cover will closely imitate the patter of rain. If the case is tilted up suddenly, the much louder sounds will resemble hail. By alternately depressing and elevating the case, to keep the shot in motion, the effect can be made continuous.



XV.—TRICKS WITH WIND AND AIR.

**INFLAMMABLE AIR.**

Put a sponge saturated with ether in a bladder. Let some one inflate this apparently empty vessel with common air with a bellows. On applying a lighted match to a nozzle tied in the mouth of the bladder the gas will take fire and burn, and the spectators will be compelled to believe you rendered common air inflammable.

CURIOUS VIVIFICATION.

Take any number of two-inch tubes, ten inches long, and close the bottom except one small hole. Place a piston in each, as in a syringe. In the bottom place a worm spring under a figure of a man or woman, each one different and in a different attitude, and of such a size as to fill up the hollow cylinders.

Set them all in a circular wooden frame, and create a vacuum under each piston by pushing them down, stopping the hole, and drawing them up to any height you please.

On placing the frame in the receiver, and exhausting the air, the force of the spring being greater than the friction of the piston and the weight of the figure, they will rise up gradually in their proper attitudes. On admitting the air into the receiver they will retire.

If the tubes be inflated with air, they will be extended when the pressure of that in the receiver is taken.



Fig. 111.

What is the difference between this subject and a young widow? The latter is a widdy girl, while the above is a giddy whirl.

FIERY SHOWER.

Bore out a small reservoir in a piece of hard wood, in the shape of a cup or inverted cone, and fill it with quicksilver in the upper aperture of the receiver of an air-pump. On exhausting the air, the atmospherical pressure will force the mercury through the wood so that it will fall in a luminous shower.

THE COIN AND WINE-GLASS PUZZLE.

Place a half-crown in a wine-glass over a sixpence. To remove the latter without touching the glass, blow

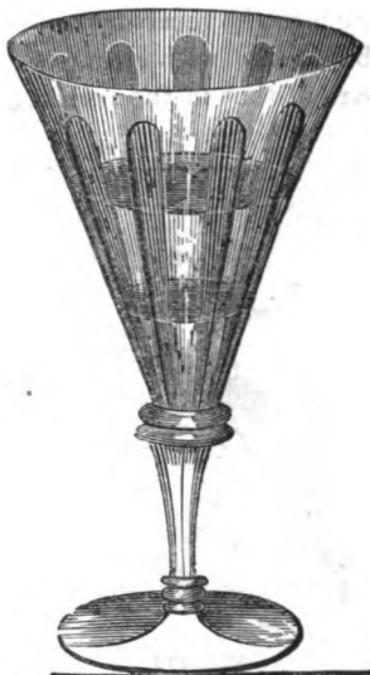


Fig. 112.

down into it, when the larger coin will turn and let the other pass up out over the other side.

THE WEATHER PROPHETS.

Suspend a small circular plate by its centre of gravity, by a fine string or piece of catgut, and attach the other end to a hook. As the air is more or less moist, the plate will turn. A bell-glass may cover it to prevent the wind deranging it, but the air must have access to the string.

Make a box, representing with one side a house-front with two doors, and mount on one side of the turning-plate a man with an umbrella, and on the other a lady with a fan. When the man comes out it indicates damp, whilst the appearance of the lady foretels dry weather. Unfortunately, as the atmospherical changes affect it but by degrees, these weather prophets are unreliable.

THE DANCER ON AN INVISIBLE MOUNTAIN.

Mr. Panky's friends, invited to his country seat, having admired a beautiful little dancer on the summit of a fountain-jet (page 137), he no sooner has led them into the house than he points to a figure, much of the same appearance, which waltzes a few inches above the surface of his glass table. There is no visible cause.

Explanation.—The figure is made of a cone of silver-foil, the dress of silver-paper, and the head of the seed-vessel of the *antirrhinum*, which is extremely light and properly shaped. The base can be weighted with lead pellets to keep the head uppermost, and the whole dances on a current of air. A funnel of pasteboard, with the small end encircling the hole in the table, will catch the figure so that it must roll down into the proper place for an ascension again.



XVI. ELECTRICAL TRICKS.

**THE CONTINUOUS CHIME.**

Make a "dry pile" as follows:—Cut out of silver-paper used by fancy boxmakers, leaf zinc and writing-paper discs, of the same size, with a die or punch.

Dry the paper in a gentle heat, and arrange the whole in two well-dried glass tubes, beginning with the zinc, next silver-paper, paper side down, the writing-paper, the silver-paper as before, and so on. Cement in brass caps at one end of the tube, with screws to compress the pile, and fasten a second cap after the column is inserted. This secures the perfect metallic current.

Connect the tops with a wire, from the centre of which hangs a brass ball to a raw-silk thread, to come in contact with a bell on the base of each column when reared upright upon a stand. One column has its positive end opposed to the other's negative one, which makes

the two, when connected above, one continuous column. Groove the stand, and cover all with a glass shade, oval or round.

The ball will swing to and fro between the bells, repelled and attracted alternately.

To recover lost power, insulate the columns for a few days.

SIMPLE ELECTROSCOPE.



RIVE the eye of a needle into a cork and stop a bottle with it, the point being up. At the balancing-spot of an eagle's feather glue a little hard socket or cup of glass or metal, and place it on the needle-point.

Sealing-wax, a vulcanite comb passed rapidly through the hair, or other "excited" electrifier, will cause the feather to whirl round and follow it as iron will the magnet.

THE OBEDIENT BROWNIE.

Hang a penny between the poles of an electro-magnet, and spin it round. On making the connection with the battery, the coin will be stopped short, and will place itself in the equatorial position.

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THE FEATHER PENDULUM.

A feather suspended between the positive and nega-

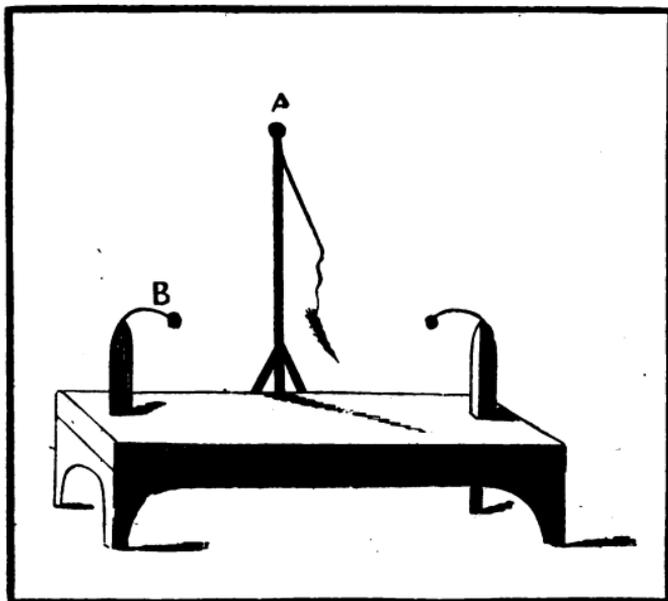


Fig. 113.

tive knobs of an electric battery will fly to and fro as it is attracted and repelled.

THE MAGNETIC FOX-HUNT.

On a table, at the back, rear a grove of trees cut out of pasteboard, and with moss gummed on for foliage. Near each side make two doors, and leave the table-top free on the segment of a circle. The rest of this circle is imaginarily described on the other part of the table. A fox, several huntsmen and dogs, made of iron, are placed in the grove, from which they issue and frantically course round back under cover, as if animated with the most frantic spirit.

The chase is suspended at any point in the course, at will of the magician.

Explanation.—Under the table is a wheel, moved by clockwork, the outer rim of which corresponds with the imaginary circle above in circumference. A strong magnet is attached to the edge, which attracts the iron toys.

Instead of a hunt, a ship sailing under two Colossi of Rhodes, or into two harbours defended by forts, a



Fig. 114.

duck or swan coming out at the call (the water being represented by looking-glass), a dog rushing out of one house and retiring rapidly, when you say, *à la clown*, "I'll tell your mother!" into another—these and many other subjects are easily contrived.

THE SPIRIT DRUM.

Have two electric magnets fastened to the side within a drum. Let the wires run up the cord or strap of suspension of the drum, so as to be in contact, when hung on a hook or silken cord in the ceiling, with the wires of a battery behind a partition or under the floor. One

magnet is to imitate the sound of the drumstick making the taps, whilst the other executes the roll or accompaniment.



Fig. 115.

When the drum is hung upon a figure, the arms of the latter are worked by strings, and the wires from the battery are led up through the figure from the table on which it is placed. (For the construction of such tables, see *The Secret Out* and *The Magician's Own Book*.)



XVII.—TRICKS WITH FIRE AND HEAT.



For the most strong, and therefore most suitable of the ancient *elements* for effect, we begin with tricks executed with real fire, with the caution that they were right who first declared fire and water to be good servants, but very bad masters.

THE FOUNTAIN OF FIRE.

To six ounces of water in an earthenware dish add by degrees one ounce of sulphuric acid (*dangerous*), and then three-quarters of an ounce of granulated zinc with three or four large grains of phosphorus. These form

a gas, amidst much effervescence, take fire and kindle the entire surface, coruscations and spirits of flame leaping out swiftly and most brilliantly; while a beautiful column of smoke will rise above the blue flames.

Note.—Always cut phosphorus under water, and, if burnt by it, apply hartshorn spirits.

LIGHT ON THE WATER.

Drop a little phosphoric ether on a lump of sugar, and throw it into a glass of water. The flame arising will look very pretty in a dark room. On blowing gently on it phosphoric emanations will form and light the air above the water.

SPONTANEOUS COMBUSTION.

1st. In a thick saucer make a paste of chlorate of potash with spirits of wine; on adding some sulphuric acid vapour will arise, and its orange-coloured clouds will burst with a snapping noise into flames.

2nd. *Variation.*

THE PILLAR OF FIRE.

Pound together a grain and a half of chlorate of potash and two grains of sulphur, a pinch of which mixture dropped into a phial holding a little sulphuric acid will give rise to a splendid column of flame.

3rd. Powdered antimony dropped into a phial of chlorine gas will take fire spontaneously and make a splendid light.

4th. With a glass rod put a couple of leaves of Dutch metal (copper imitating gold leaf) into a phial of chlorine gas, when they will flare up with a red light.

Gold leaf will make a red light. Two or three grains of phosphorus thus served will also take fire.

A strip of cloth or soft paper, soaked in oil of turpentine, will be similarly ignited.

THE MINIATURE MOUNT VESUVIUS.

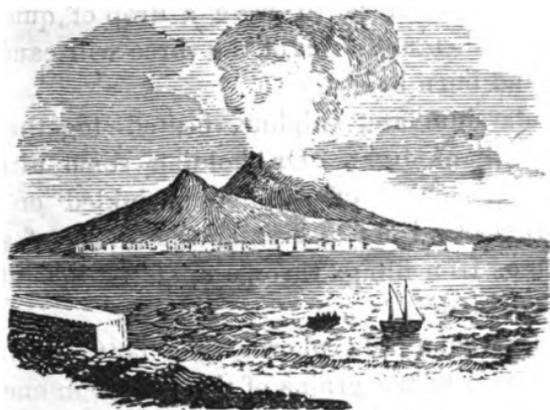


Fig. 116.

5th. Having some finely pulverised loaf-sugar and some chlorate of potash, also in powder, the same quantity in weight of each, they are well mixed together and placed in a crockery vessel, which will prevent injury to the table or stand. Having a glass rod for a wand, you have but to dip one end in sulphuric acid, and touch the compound with it, to produce a vivid flame.

6th. In a small retort put an ounce of a strong liquor of potash in water, and one drachm of phosphorus. Dip the mouth of the retort half an inch under water in a saucer. Gradually heat the liquid in the retort with a spirit-lamp until it boils. In a few minutes the retort will be filled with a white cloud, then the gas generated will begin to bubble at the end of the saucer; a minute more, each bubble, as it issues from the boiling fluid, will

spontaneously take fire as it comes into the air, forming at the mouth a ring.

7th. Into the jar of chlorine gas pour finely powdered charcoal, when a display of great beauty will be made.

8th. A grain of potassium mixed with the same quantity of sodium is to have a drop of quicksilver added to it, when agitation of the three will cause them to ignite and burn brightly.

9th. Potassium and sulphur, heated together, will show a brilliant light. Or, holding some nitre on a metal plate, flowers of sulphur sprinkled on it will ignite. Be careful not to breathe the fumes of sulphur at any time. Iron filings thrown upon red-hot nitre will burn and explode.

10th. Put some phosphorus in a bottle of water, in the proportion of ten grains of the former in one ounce of the latter, and, boiling it over a lamp, fire will burst forth, each particle of the phosphorus becoming a flaming ball, which will beautifully coruscate.

11th. Make a solution of tartaric acid, which, poured into sugar of lead dissolved in distilled water, will precipitate a white powder. Dry this sediment, and put it into a glass phial. Cover this with clay, and bake it in an oven. Now you can put this phial upon a charcoal fire, which you will increase in power until the glass is red-hot and no smoke leaves the mouth; stopper it up with a dab of clay or a lump of mastic, and take it away from the fire to cool. The contents are now fine powdered lead intermingled with the charcoal of the tartaric acid, which will take fire on contact with the open air. Iron and other metals, when reduced to an impalpable powder, will similarly ignite in the common air.

A FIRE OF TIN.

On tinfoil put some freshly powdered crystals of nitrate of copper; moisten with water; fold up the foil gently, wrap it up in paper, and the tin will soon begin to swell and send out flashes of light while burning away.

THE DIVING LIGHT.



On a good-sized cork or bung lace a small lighted taper, and then set it afloat in a pail of water. Invert a large drinking-glass over the light, and push it carefully down into the water. The glass being full of air, prevents the water entering it. The candle will burn under water, and come up again to the surface still alight. The largest drinking-glass holds but half a pint, so that your diving light soon goes out for the want of air. A burning candle consumes as much air as a man, and he requires nearly a gallon of air every minute, so that, according to the size of the glass over the flame, you can calculate how many seconds it will remain alight, a large flame requiring more air than a small one. A quart bell-glass is very useful. A substitute is easily made from a green glass pickle bottle, with the bottom cut off.

TO DECORATE METAL.



A brilliant and varied display of colours can be made on metal by dipping the piece in a solution, heated to 212 degrees Fahrenheit, of hyposulphite of lead in hyposulphite of soda.

FIRE FROM TWO COLD LIQUIDS.

Add three drops of any essential oil, such as that of carraway or turpentine, to a teaspoonful of aqua-fortis in a saucer, to have

a bright flame instantly start up.

A GREAT FLAME

Put half an ounce of sal ammoniac, one ounce of camphor, and two ounces of water in a narrow-mouthed pipkin. Set fire to the gas arising, and a vast column of flame will be produced.

FIRE BY PERCUSSION.

Take a hollow cylinder, in fact, a syringe or pop-gun, of some bad conductor of heat—wood or thick glass—with this difference, that one end must be perfectly closed; it must have a piston like the syringe, also a bad conductor of heat, and which must be made to move in the cylinder perfectly air-tight. Place a bit of tinder or

amadou, steeped in a solution of saltpetre in water and then dried, in the cylinder; then place the piston at the cylinder's mouth, and with a sudden and powerful thrust condense the air in the cylinder: the tinder will ignite. Phosphorus wrapped in paper, and struck with a hammer on an anvil, will likewise enflame.

THE DANCING FLAME.



TAKE a very small gas jet, to which fit a minute burner; Sugg's steatite pinhole burner answers best. Above the burner, at a distance of two inches, fix a seven-inch square piece of wire gauze; ordinary window-blind gauze of thirty-two meshes to the lineal inch acts perfectly. Turn the gas on, and light the flame above the gauze. Keep the room free from draught, and the flame will be steady; but at the least sound the flame is certain to move. It is a slender cone, about four inches high, the upper portion giving a bright yellow light,

the base being a non-luminous blue flame. At the least noise the flame roars, sinking down to the surface of the gauze, and becoming almost invisible. It is very active in its responses, and being rather a noisy flame, it is heard immediately. To the vowel sounds it does not appear to answer discriminately. It is extremely sensitive to A, very slightly to E, more so to I, entirely insensitive to O, but slightly sensitive to U. It dances admirably to a musical box, and is highly sensitive to most sonorous vibrations.

A jet of gas issuing through a circular orifice being lighted, and the pressure of the gas then slowly augmented by means of weights placed on the gasometer until such a pressure is reached that the jet of flame is nearly, but not quite, on the point of flaring. The flame will be about two feet long, and so sensitive to sound that a slight chirrup or a hiss from any part of the theatre will make the flame shorten itself to seven or eight inches.

FIRE FROM WOOD.

Dry rattan, or bamboo, struck together or on steel, will emit sparks, on account of the flint minutely intermingled with its outer coating.

HARMLESS EXPLOSION.

Powder four grains of chlorate of potash in a mortar, and add a little flower of sulphur, pulverized very finely. On rubbing the two powders together, a sharp but harmless detonation will result.

GUNPOWDER IGNITED WITHOUT EXPLOSION.

Expose a towel or cloth to a strong fire till it becomes very hot; carry it into a dark room, and, while it is cooling, throw upon it some grains of gunpowder, which will at first inflame. Leave it to cool a little, till the powder no longer detonates. If you then cover it with fresh powder, the latter, when it acquires the same heat as the cloth, will emit in the dark a faint light or weak flame, which will consume all the sulphur without causing the nitre to detonate.

SALAMANDER PAPER.



IGHTLY and smoothly wrap a clean piece of writing paper around a smooth metal cylinder, half a dozen inches in length, and an inch and a half thick, and, though held in the flame of a spirit-lamp, it will not catch fire; and yet, apart from the metal cylinder, it will readily ignite.

FIRE-PROOFING ONESELF.

An old book says, if you anoint your hands with two ounces of bol armenian, one ounce of quicksilver, half an ounce of camphor, and two ounces of brandy (well mixed together), it seems that you may steep them in a pot of boiling lead. If you prepare yourself with liquid storax (a juice produced from a tree called casper bauhine in Italy and elsewhere), you may enter fire—eat fire—have a coal put on your tongue—or, *finally*, swallow boiling oil (!). This storax also enables you to undergo baking in an oven: and as for taking poisons, the author says it is easy enough, if you take an antidote afterwards.

To handle boiling lead, no preparation is required, as the perspiration generated by the heat forms a coating of steam on the skin, impermeable to the metal, which feels like liquid velvet.

In the writer's youth, before he ever thought of parading his acquirements, he remembers being one of a

party of boys around a caldron of molten lead, used to solder gas-pipes in the street, all of us scrambling in the pot for coppers which a practical joker dropped in. The jest was most amusing when a penny had remained some time on the surface of the dross, and was thoughtlessly put into the cold hand to be transferred to the pocket.

Nevertheless it is a feat which had better be witnessed than performed by oneself.

As for dry heat, men have borne it up to 300 deg. Fahrenheit. The writer has been in the inner drying-rooms of an oil-silk factory where the workmen put their tea and coffee to boil, and experienced no ill effects, though a knife could not be touched without a disagreeable sensation.

To put a coal on the tongue, the skin is prepared, and must be thoroughly calloused, which no amateur would for a moment think of doing.

DIFFERENT TEMPERATURE OF WATER IN THE SAME VESSEL.



WITH a mixture of size and lamp-black paint half the outside of a tin pot. Fill with boiling water, when, by trial with a thermometer, or your finger if you are hardened, the water will be found to cool more quickly on the blackened than on the polished side.

THE MAGIC FLUID.

Mr. Hanky Panky displays to the audience a little fragment of a Tuscan temple, being a slab of marble, at the ends of which stand two black marble columns, two feet high, eight inches apart. Two glass tubes, almost as fine as capillary ones, cross the intervening space, in a direction inclined to the horizon.

A coloured liquid is distinctly seen running upwards through the lower tube from one column to the other, and thence back again by the upper tube. The colour

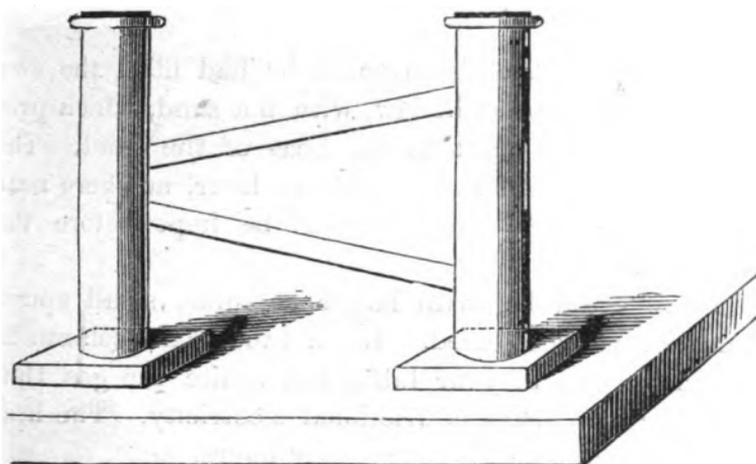


Fig. 117.

is pleasing to the eye, and the regularity of the flow well illustrates the theory of the circulation of the blood.

It is impossible to believe there are pumps concealed in the pillars and clockwork, while the low price at which such toys can be sold precludes the idea of costly mechanism.

Indeed, the two glass tubes are what is commonly known as a pulse-glass.

The glass tube ends in glass bulbs full of coloured

spirits of wine. When one bulb is held in the hand, and a slight inclination given to the tube, the animal heat will excite the fluid, and drive it continually from one ball to the other.



Fig. 118.

As for Mr. Panky's machine, he had filled the two columns, which were hollow, with hot sand, which produced the same effect as the heat of the hand. The sand will not cool for about half an hour, nowhere near which time need the apparatus be kept before the audience.

There could be, with larger columns, small spirit-lamps or gas introduced. Let a tube in the column fit into an orifice in your table, and ignite the gas thus admitted by a spark of frictional electricity. The heat would be continuous during many hours.

BLUE TO WHITE.

Dissolve a small lump of indigo in sulphuric acid by the aid of moderate heat, and you will obtain an intense blue colour; add a drop of this to half a pint of water, so as to dilute the blue; then pour some of it into strong chloride of lime, and the blue will be bleached with almost magical velocity. This trick is called "The Restoration"—of the Bourbons understood, since their colour, the Royalist white, replaces the Republican blue.

**EAT IN POWER.**

Cork a brass tube, holding water, and attached to a whirling table, and if it chafes against a wooden rubber in its motion the frictional heat will make the water boil, and the stopper will be blown out.

GREEN TO BLACK.

Make a cup of strong green tea; dissolve a little green copperas in water, which add to the tea, and its colour will be black.

COLOURS VANISHING AND REAPPEARING.

Dissolve brass filings in volatile alkali, which will be a liquid of a blue colour while exposed to the air, but, on corking a phial of it, the colour will disappear.

To nine parts of water in a glass put one part of nitric acid; a red ribbon dipped in this will have its hue "killed," but it will come again when washed in a solution of fuller's earth in water.

RED TO PURPLE, GREEN, AND CRIMSON.

Slice a little red cabbage; pour boiling water upon it, and when cold decant the clear infusion, which divide

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into three wine-glasses; to one, add a small quantity of solution of alum in water; to the second, a little solution of potash in water; and to the third, a few drops of muriatic acid. The liquor in the first glass will assume a purple colour, the second a bright green, and the third a rich crimson.

ENCHANTED TAPERS.

Mr. Panky has concluded a trick in which a borrowed hat was used, and out of it has produced a number of lanterns. These he ranks on the table, and, taking up a glass rod, has but to touch the little tapers to have them catch fire.



Fig. 119.

Explanation.—The lantern frames are telescopic, so that a dozen fold into the space of one. The tapers are prepared by being once lit, blown out, and when cold a grain of phosphorus is put on the wick. One end of the glass rod is red-hot; for a glass stick a foot long may be hot enough at one end to inflame phosphorus, and yet be harmless to finger at the other.

The wicks may be prepared with match composition, and have a glass drop containing sulphuric acid; on breaking this with a pinch the acid will fire the wick, but, unfortunately, the fizz betrays too much.

THE INEXTINGUISHABLE CANDLE.

Fill a wheat-straw with live sulphur; wrap it about with lint or cotton, so as to be a wick, and run wax round it in a mould, so as to form a candle.

When this is blown out, the warm snuff ignites from the sulphur.

THE FROZEN CANDLE.

(*Kunstliches Nordlicht.*)

Soak a candle in a mixture of sulphur and charcoal-dust, and you may dip it in water and freeze it, and dip again and again till it is thoroughly iced, and yet it will burn. The wick should be kept dry during the operation.

BLACK MORE LUMINOUS THAN WHITE.

If you heat a black and white encaustic tile, the black part will glow the brighter.

INVISIBLE COMBUSTION.

Pour a very little liquid ether into a half-gallon bottle, and the ether, in evaporating, will, of course, fill the bottle with its vapour. Then make a glass rod very hot, but not red-hot, and dip it for half a minute into the neck of the large bottle, and although no smoke, fire, flame, or mist is to be seen, an invisible combustion of the ether vapour does go on inside the bottle. This is proved by inserting a thermometer in the neck of the bottle, when a high temperature is very soon indicated by the instrument.

DAZZLING LIGHT.

Suspend a bullet of antimony in a jar of chlorine gas, in which, after the lapse of many minutes, it will acquire a red heat, and slowly burn away. Then pour finely-divided metallic antimony into a tall jar containing chlorine; the metal instantly ignites, and falls to the bottom as a fiery shower; yet the nature of the chemical action in both these experiments is the same. Make a piece of thick iron wire white hot, and insert it in a large tube containing vapour of sulphur, made by boiling some brimstone in the bottom of the tube; the white-hot iron will catch fire, and burn away like wax, and with intense brilliancy, in the sulphur vapour. The iron must first be raised to an intensely white heat, or it will not burn under these conditions.

WALKING ON BURNING COALS.

Sir David Brewster assumes that the power of walking upon coals and hot iron unharmed depends partly upon a certain horny hardness of the cuticle, and partly upon the action of some chemical substance with which the cuticle has been smeared. The conjuror Richardson made himself famous in England by chewing burning coals, pouring melted lead upon his tongue, and swallowing melted glass. Sir David Brewster considers these feats to have been in part real, and in part a deception.



THE DIVING LIGHTS.



Have a long glass bottle and a glass tube of the same length. Into the phial put two drachms of chlorate of potass, and upon it nine or ten pieces of phosphorus. Then insert the tube, and pour down it half an ounce, by measure, of strong sulphuric acid. The liquid will turn yellow, and a gas will arise and be inflamed by the phosphorus most effectively. A few

lumps of phosphoret of lime will turn the flame emerald-green.

2nd. Drop several pieces of phosphoret of lime into pure water in a tumbler, and flashes of fire will suddenly dart about and end in wreaths of smoke, which will rise to the surface very prettily.

3rd. Three (3) ounces of sulphur of iron, one (1) ounce of saltpetre, and three (3) ounces of gunpowder being beaten up thoroughly together, put the composition in a paper or cardboard mould or cup, and, touching a light to it, and putting it in a vessel of water, it will burn to the last grain, though after sinking to the bottom.

4th. Into a glass vessel of hot water, put a small

piece of phosphorus, and instantly direct a stream of oxygen upon it from a bladder with pipe-end cut-off. The phosphorus will blaze up brightly under the water.

THE SYMPATHETIC LAMP.

This lamp is put upon a table; the conjurer gives a signal to the assistant to blow in a pipe, without directing the wind to the place where it is laid, and nevertheless it extinguishes it immediately, as if some person had blown it out.

Explanation. The stand which holds the lamp contains a pair of bellows in its base, by which the wind is conveyed straight to the flame through a little pipe. An assistant under the floor (or behind the curtain), by moving machinery concealed under the table, works the bellows below to extinguish the lamp at the moment desired.

PROOF THAT FLAME IS HOLLOW.

Pour some spirit of wine into a watch-glass, and inflame it; place a straw across this flame, and it will only be ignited and charred at the outer edge; the middle of the straw will be uninjured, for there is no ignited matter in the centre of the flame. Or if you hold a card over a candle-flame where it will be singed you will find a browning ring and not a solid scorch.

MAGIC LAMP.

Put some granulated zinc in an ordinary wine-bottle, and pour in a mixture of water and sulphuric acid, four parts of the former to one of the acid; through a

hole in the cork run a glass tube, and cork the bottle. The decomposition of the water will send up some hydrogen gas, which will drive out the common air, and then the touch of a light to the tip of the tube will inflame the gas as it rises, and produce a faint light, scarcely visible by day. The heat, however, is so intense that it will melt metal and make platinum white hot. You may collect the steam inside a tumbler held over the flames, being caused by the hydrogen forming water by its union with the oxygen of the air.

2nd. In the cork of a jar of oxygen, is a long wire, at the lower end of which is a copper cup, to contain a piece of lighted phosphorus. In an instant a light more extreme than the sight can sustain, is produced and the bottle will seem to be full of light. Pure oxygen would probably cause the jar to be burst by its heat, so its weakening by one-quarter of its bulk by air will be advisable.

3rd. Fasten a point of charcoal on the end of a coil of soft iron wire, which is hung from the cork of the jar of oxygen, and on lighting the charcoal the flame will catch the wire and throw out a brilliant light. The sparks will be formed by the union of the metal and gas forming oxide of iron. They will be very hot, and may even pierce the side of the bottle.

4th. Light some sulphuret of carbon in a dish, and on presenting a brush of steel wire to the flames an illumination will be had.

5th. A small coil of platinum wire put in, or a little oxide of zinc poured on, the flame of a lighted jet of hydrogen gas will furnish a bright light.

6th. Magnesium ignited gives a brilliant flame. The wire is to be fed by clockwork to a light, or simply held by the hands.

7th. A red-hot iron wire dropped into a jar of oxygen gas, tightly covered over, will scintillate and be strongly luminous. The sparks that fall will break the glass, except for the precaution of a layer of fine sand at the bottom. Into the same gas place a firefly, "lightning bug," or glow-worm, and the light will be uncommonly vivid. So with a lighted candle.

TO BURN THE POKER IN THE CANDLE.

File off an ounce from the fire-end of a poker. The iron filings produced are perfectly combustible, as may be proved by sprinkling them over the flame of a candle. As they descend into the flame they take fire, each particle burning like a star—producing, in fact, miniature fireworks. Any iron filings will burn in the same way; but a poker is the handiest means to prove that while iron, in a solid mass, will not burn, in small atoms it takes fire readily. It is just for the same reason that a fire is better lighted with chips than with a log of wood.

FIRE FOR AMATEUR THEATRICALS.

Put a lump of fresh quicklime in a cup, pour water it, and the heat will be very great. A pailful of quicklime, if dipped in water, and shut closely into a box constructed for the purpose, will give sufficient heat to warm a room, and is the source of steam vapour in theatrical representations.

A LAMP WITHOUT FLAME.

Wind a platinum wire spirally round the wick of a spirit lamp; light the wick, and let it burn till the wire is red-hot; then remove the wick, but the wire will

remain red as long as there is spirit in the lamp; and though there be no flame, it will give out enough light for one to read by, if not too far off.

RAY'S OF THE SUN.

The invisible, and not the visible, rays of the sun have the greatest heating power, and do the principal work in the melting of the mountain snows, and in vaporising the waters of the seas and rivers. Water absorbs or filters away the dark rays from the light ones; so that, if you pass the rays from an electric lamp through a narrow glass trough filled with water, and then bring them to an intensely sharp and brilliant focus, although the rays thus filtered contain sufficient heat to set fire to brown paper, hoar-frost is not touched by them, because, being transparent to these rays, it lets them pass through without absorption. Proof:—You can and do set fire to paper in the focus, and then place a flask, covered outside with hoar-frost, in the same focus, yet the snow remains unmelted. Then you can stop all the visible rays by the interposition of a glass trough filled with solution of iodine in bisulphide of carbon—which is, however, transparent to the invisible rays—and on removing the trough of water, this allows invisible rays to pass on to the focus, whilst the visible rays are cut off by the solution of iodine. When the flask coated with hoar-frost is placed in the dark focus, the heat at once melts it from the surface, wherever the glass is brought into the centre of action.

COMMON GAS.

Bituminous coal contains chemical compounds, nearly all of which can, by distillation, be converted into an

illuminating gas, and with this gas cities are lighted. Fill with coal dust (or walnut or butternut meats) the bowl of a tobacco-pipe; then cement the top over with some clay, place the bowl in the fire, and soon smoke will issue from the end of the stem. When that has ceased coming, apply a light, and it will burn brilliantly for several minutes; after it has ceased, take the pipe from the fire, and, when cool, remove the clay, and a piece of coke will be found inside. Toy balloons can be filled by this means. They are made of gold-beater's skin, sheet gutta percha, &c., and are miniatures of the aëronautic machines seen on gala occasions.

THE FAIRY IRIS.

Well mix in two ounces of spirits of wine half a drachm each of nitrate of baryta, nitrate of copper,



Fig. 120.

chloride of copper, and nitrate of strontian. Put this liquid in a strong metal globe, holding a quarter of a pint, by an aperture into which screws tightly a small

fountain-jet with a tap. Boil over a spirit-lamp. When the spirit boils, shut off steam for five minutes. On turning the tap the whole of the spirit will blow out and spread like a cloud, to which a light being applied, the whole will become a fiery spray, tinted blue, green, red, yellow, &c.

Perform only in an empty room, where no harm can be done by an explosion.

THE COLD LIQUID BECOMING SOLID UNDER HEAT.

Put equal parts of fixed alkali and of powdered quicklime, and boil them in sufficient water rapidly; filter, and put in a well-stoppered bottle. Again boil this liquor, either in the bottle or another container, until it becomes pasty, or like thick glue. Let it cool, and it will become a transparent liquid again. Repeat at pleasure.

INVISIBLE GASES MAKE A SOLID.

Muriatic acid and ammonia will combine to make a visible solid. Also ammonia and carbonic acid.

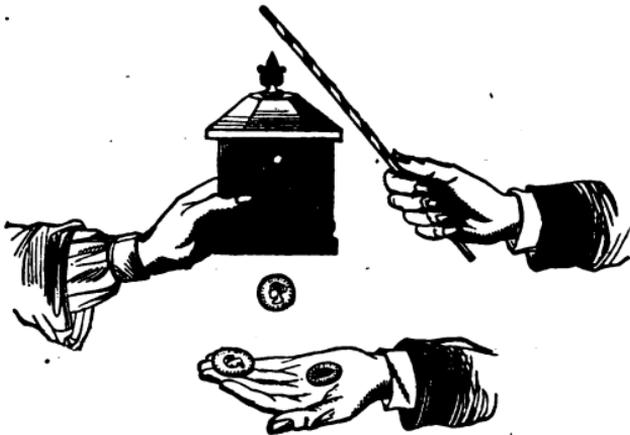
GASES MAKE A LIQUID.

Oxygen and hydrogen form water.

CHEMICAL CURIOSITY.

The double salt potassio-chromic oxalate presents the curious anomaly of being pure deep blue when in crystal, claret-red in strong solution, and dusky green if further

diluted. The crystals appear black by reflected, but blue by transmitted light. A solution made by dissolving ten grains of potassium bichromate, twenty grains of oxalic acid, and twenty grains of potassium binoxalate in four ounces of hot water, if put into a white glass bottle, appears to be a red solution when seen in the direction of the longer diameter, but a green liquid viewed through the shorter.



XVIII.—OPTICAL TRICKS.



THE ILLUSION OF SUBTRACTION.

Against the wall of a room fix three small pieces of paper, about the size of a sixpence; let them be about half a foot asunder, and the height of the eye; stand about a yard distant, and, keeping both eyes steadfastly fixed on the centre piece, all three pieces are visible. Now shut the *right* eye (keeping the left still on the centre), and the piece which is opposite to the *left* eye disappears; or close the *left* eye, and the *right* piece cannot be seen: so that if either eye be shut, the paper opposite its fellow becomes invisible; plainly proving, that some objects opposite the left eye are viewed by the right, and *vice versa*, with the left eye closed, and the right piece consequently invisible; remove the right eye

from the centre, and carry it to the piece on the left; the right piece now becomes visible, but the centre disappears; and so on alternately, the three pieces not being visible at the same time, as when both eyes are open, showing one of the uses of having two eyes.

VARIATION.

Another method of trying this experiment is by holding both the thumbs together at a little distance from, and at the height of the eyes: shut the left eye, and keep the right steadfastly fixed on the left thumb-nail; move the right thumb gently away in a horizontal direction, and at the distance of two or three inches, the top of the thumb disappears; but by carrying it a little further, it becomes visible again.

COLOURED GLASSES IN FOGS.

When there is a fog between two places, so that the one station can with difficulty be seen from the other, if the observer passes a coloured glass between his eye and the eye-piece of his telescope, the effect of the fog is very sensibly diminished, so that frequently signals from the other station can be very plainly perceived, when, without the coloured glass, the station itself could not be seen. The different colours do not at all produce this effect in the same degree. The red seems the most proper for the experiment. Those who have good sight prefer the dark red: those who are short-sighted like light red better.

JAPANESE MYSTIC MIRRORS.

The bronze looking-glasses of Japan have the curious property of showing in their reflection of a strong light

on a screen, not only their own polished surface, but the figures on the back.

These figures are fashioned by striking them out; they are then ground down till the raised metal is levelled to the deepest indentation, when the pattern is stamped once more, the face again ground, and the operation repeated.

The alteration in the metal where this compression has visited it, is not perceptible even with a magnifying glass, but in reflection it is shown.

TRANSFIGURATION PICTURES.

Having a picture on thin cardboard or paper, representing an interior or exterior of a building, cut out three sides of a door, so that it will bend back as if on hinges;



Fig. 121.

behind the opening thus made fasten a second picture, depicting a landscape, or the inside of a room, as the case requires.

SUBJECTS.

“Pity the Sorrows of a Poor Old Man.” The upper picture is that of a room with a fire in the chimney-place on one side, a well-filled supper table on the other, the door in the middle. The under picture has a background of a winter landscape, with an old blind man, leaning on his staff, and taking off his hat, so placed as to seem to be on the threshold.

“How glad they will be to see me!” The upper picture is a street, with a man about to open the door; the under picture a room, in which several children are quarrelling, amidst a chaos of broken toys, furniture, and looking-glass, with mamma upsetting the tea-table in trying to beat a bad boy teasing the cat.

 THE EIDOTROPE.

Perforate two metal or board discs, and make one turnable around in front of the other, by means of a band and pulley, while both are mounted as a magic-lantern slide.

When their shadows are thrown on the screen, the effect of the revolving plate more or less eclipsing the other, is to create singular forms.

To imitate watered silk, use wire gauze. For effect, let the light pass through tinted glass.



WRITING ON THE WALL.

A hand appears on the wall, and writes, and then rubs out what it has written. Light the gas in a dark room. Next procure a mirror, stand at the door of the room, and hold the mirror so that it will throw the light of the gas on the wall or a white sheet outside of the room. Now observe that, by holding your hand over the face of the mirror, the same hand appears on the white wall or sheet. Next procure a small paint-brush, about the size of a pen, and dip it in black paint, and then make any figure or character the reverse way on the mirror, and of course the same will appear on the wall on which the mirror reflects. Now lay the brush aside, and rub out the figures or characters off the mirror, and of course they will disappear off the wall also.

THE THEATRE WITH THE CURTAIN DOWN AND UP.

The sides of the proscenium and stage before the curtain unfold, and the curtain is a slip of paper which is pulled up to discover the tableau as above. The two figures are cut out and mounted on small spiral springs, which make them stand out upon the stage when released from pressure.

THE MAGIC INVERSION.

Join two square parallel ends by a third piece, half an inch broad and an inch and a half long, using a piece of cardboard doubled up, with that interval between, as the simplest material. In the middle of one end make a round hole, a little more than one-twelfth of an inch wide, and in the centre of it fix the head of a pin or

point of a needle. Directly opposite, in the other side, make a large pin-hole. If the latter is held to a strong light, and the eye is applied to the other hole, the head of the pin will be seen, not only greatly magnified, but turned upside down.

THE PRETENDED ENDLESS ARCADE.

In public gardens an apparently endless walk, under arches of gas-jets, is often seen. But, on walking down it, it is seen to be of restricted length, the illusion being obtained by an artful lessening of the sweep and height of the arch, after, during a certain distance, the arches have been regularly spaced out. This being done according to the rules of perspective, the keenest are deceived.



THE WITCHES' DANCE.



Draw a figure of a witch riding on a broomstick, or a capering demon, on a sheet of cardboard, and cut it clean out.

Make a square aperture in a partition facing a transparent screen, large enough to comprise the figure, say twelve inches, and place the cut-out board in it, tight as a pane of glass in its frame.

Let the part of the room where the audience sit be darkened, and the only light pass through the hole in the partition, or rather

through the cut-out cardboard.

If but one light is held to the figure, the counterpart, enlarged according to the distance between the screen and the picture, will be single, but, on having three or more candles, the figures will be trebled or quadrupled, and the effect will be startling and whimsical.

The limbs of such figures can be fashioned of wire, and the result is highly amusing when a score of such figures are to be seen capering. The jaws can move as if masticating, the arms may brandish a club, a somersault may be executed, and so on. A ratchet and cogged-wheel action will make the movement backward and forward regular and fully controllable.

The screen should be of cambric muslin, strained

tightly, and soaked with a varnish composed of picked gum-arabic and white starch, which renders it diaphanous.

PENETRATIVE SIGHT.



Take a piece of pasteboard, about five inches square, roll it into a tube with one end just large enough to fit round the eye, and the other end rather smaller. Hold the tube between the thumb and finger of the right hand; put the large end close against the right eye, and with the left hand hold a book against the side of the tube. Be sure and keep both eyes open, and there will appear to be a hole through the book, and objects seem as if through the hole instead of through the tube. The right eye sees through the tube, and the left eye sees the book, and the two appearances are so confounded together that they cannot be separated. The left hand can be held against the tube instead of a book, and the hole will seem to be as if through the hand.

THE BLIND SPOT IN THE EYE.

L.

R.

Look with both eyes on these two letters; then shut the right eye while you look at the R, and gradually bring the book near your face. There is a point where the L will disappear. Repeat with a change of the eye employed.

THE BEWITCHED PLAYING-CARD.

The dioptrical paradox consists of a hard-wood base, A, B, C, D, about eight inches square, with a groove in which slides coloured prints or drawings. Connected with the base are a pillar (E), a horizontal bar (F), with a tube (G) directly over the centre of the base, and containing a peculiarly shaped glass.

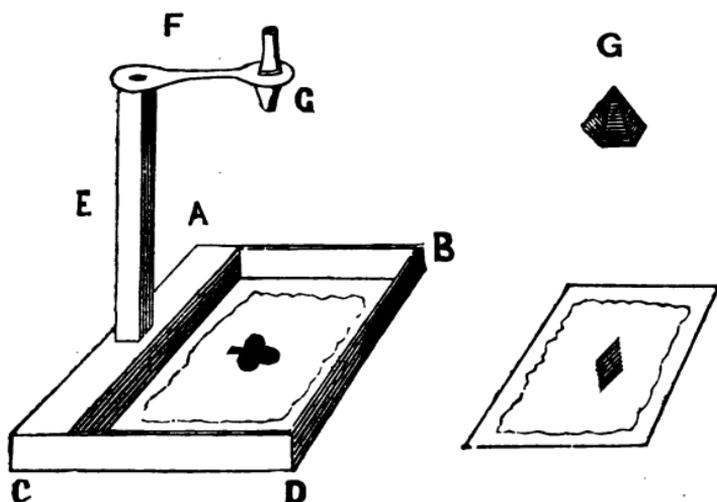


Fig. 122.

Performance.—An ace of diamonds, when placed on the base, will be actually shown as an ace of clubs to anybody looking down through the glass, or one animal is seen as another; in fact, any shape is presented as something different.

Explanation.—The glass (G) is like the common multiplying glass, except that its sides are flat and diverge from its hexagonal base upwards to a point in the axis of the glass, like a pyramid, each facet being an isosceles triangle.

Regulate its distance from the eye so that each side

will refract the various parts of the drawing on the border so as to form one figure, and the centre object be entirely unreflected.

The ace of clubs is, therefore, drawn mechanically on the circle of refraction at six different parts of the border, and blended in with it. So with the other drawings.

THE MAGIC CUBE-BOX.

An illusion is often practised at fancy fairs and bazaars, when a spectator, looking into what he supposes to be an ordinary looking-glass, sees his companion instead of himself. Of course the exhibitor endeavours to show the illusion to two persons at once; and if they are strangers to each other, and of opposite sex, a great deal of fun is made out of the trick. Showmen at the fairs have made immense harvests by showing two such mirrors, one to all the young girls who wished to see their future husbands, and the other to all the young men who wished to see their future wives.

Explanation.—Make a cube-box, fifteen inches, say, each way, and stand it on a pedestal to bring it to the height of the eye. In each side of this box let there be an opening of an oval form, ten inches high and seven wide. In this box place two mirrors with their backs against each other. Let them cross the box in a diagonal line, and in a vertical position. Decorate the openings in the side of this box with four oval frames and transparent glasses, and cover each with a curtain so contrived that all draw up together.

Place four persons (in the case first mentioned two are confederates) in front of the four sides, and at equal distances from the box, and then draw them up that they may see themselves in the mirrors, when each of them,

instead of his own figure, will see that of the person next to him, but who will appear to him to be placed on the opposite side. Their confusion will be the greater,

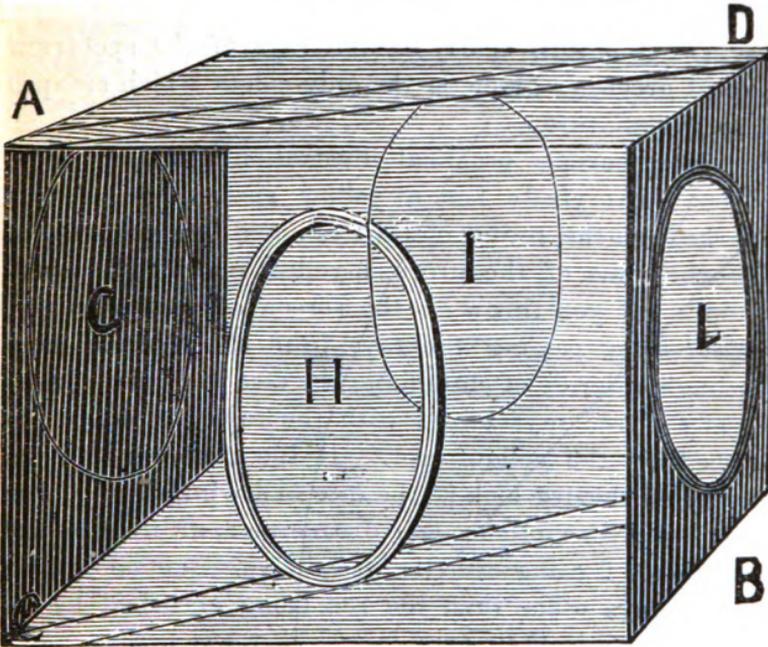


Fig. 123.

as it will be very difficult, if not impossible, for them to discover the mirrors concealed in the box. The reason is that though the rays of light may be turned aside by a mirror, yet they always *appear* to proceed in right lines.

YELLOW AND BLUE DO NOT MAKE GREEN.

With an electric or lime-light throw a disc of blue light and of yellow light upon a screen, and cause them to overlap each other. Where they overlap the space on the screen will be, not green, but a pure white. If you then place a rod or pencil near the two sources of light, so that two shadows of it shall fall on the white space where

the discs overlap, one shadow will be of brilliant blue colour, and the other deep yellow. Mixed blue and yellow lights, therefore, do not make green. Mixed blue and yellow paints make green, because between them they absorb nearly all the rays of the spectrum except green, so green is the only colour which escapes from the mixture.

A very curious practical illustration of this may be given. Everybody has a yellow spot, more or less marked, on the retina of the eye; and this yellow spot absorbs some of the greenish-yellow rays of the spectrum. If you throw on the screen a circle of light, coloured by passing the rays from the electric lamp through chloride of chromium, the disc will then consist chiefly of red rays mixed with the rays which are absorbed by the yellow spot. If the observers in the darkened theatre look at the disc and wink slowly, they will see, with more or less distinctness, an illusion like red clouds floating over the disc, in consequence of most of the rays other than the red being absorbed by the yellow spots in their eyes.



THE MAGIC TEMPLE.

Trace on the hexagonal ground-plan, A, B, C, D, E, F, which serves as base to the building, the six semi-diameters, G A, G B, G C, G D, G E, G F, and on each of them rear perpendicularly two plain mirrors, joining all exactly at the centre, G. These glasses should be very thin, set back to back in each pair, and cut with a double bevel where the point of junction falls.

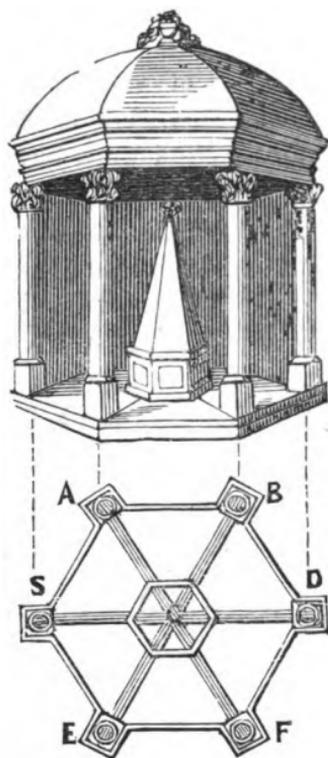


Fig. 124.

Ornament the six corners of the outer edge of the structure with as many columns and their bases, into which the outer edge of the mirrors fit by their grooves. Make the roof in any fashion you please.

In each of the six triangular spaces comprised be-

tween every two of the glass walls little pasteboard figures in relief, representing six different subjects, which will have a pleasing effect in a hexagonal form.

With some ornament harmonizing with the temple hide the junction of the mirrors.

Action.—When any one looks into one of the six openings between any two of the columns, the object there will be repeated six times, which will be an extraordinary illusion if the subjects are suitable to the arrangement of the mirrors.

Observation.—If a part of a fortification is mounted between two of the mirrors, such as a curtain and two demi-bastions, the entire citadel will be seen, surrounded by six bastions; a portion of a ball-room, with a quadrille party and one gaselier, will be multiplied, and so on.

The construction can be made on a triangular or square base, and is equally agreeable; but as only three or four subjects can be shown, and the parts of those subjects are parallel with the sides of the temple, and therefore take a form like that at its base, the result is not so wonderful.



Fig. 125.

THAUMATROPE, OR WONDER TURNER.

Cut out a disc of cardboard or pasteboard, and drill three holes near the edge on two opposite sides, in each of which tie a length of string. In the centre on one side paint a jockey seated, and on the other centre, upside down as compared with the man, a running horse.

Performances.—If you take the strings, one set in each hand, and whirl the disc round as on a horizontal axle, the strings will twist and keep up the movement, during which the two pictures will unite as one. Other objects may be a bird and cage, a juggler doing the knife or ball tossing trick, a rat and trap, &c.

THE ARCADE OF VERDURE.

(Unter den Linden.)

Make a box half as wide and high as long. At one end place a mirror, exactly the size of the board, and fixed firmly against it, and remove the quicksilver within a circle agreeing with an eyehole cut in the end. Back the opposite end in the same way with a plane mirror.

Prepare grooves at right angles across the box, in which will slide two sheets of cardboard, painted on both sides with trees and overarching foliage, with the lights cut clear out, taking care that a bough will prevent the eyehole being reflected in the opposite glass.

Paint two other boards similarly with foliage, and cut the lights out and set them against the mirrors.

Cover the box with gauze, and frame a sheet of ground-glass to form the lid, which should be firmly fastened on. The bottom is to be painted sandy colour or green, or may be varnished and strewn with moss whilst wet. When viewed with a strong light, the

effect will be as of an endless vista, gradually fading away in the distance.

(See "The Endless Vista," p. 300, *Magician's Own Book*.)

THE PERSPECTIVE GLASS.

At one end of a box, twenty inches long and twelve high and wide, place a concave mirror, of which the focus should be about fifteen inches from the reflecting surface. Blacken the other end inside, and cut an eye-hole in it.

Darken the mirror by covering the top in from it to a little less than half way along the box, where a blackened frame should be set, with a sufficient opening to let the mirror reflect any object just under the eye-

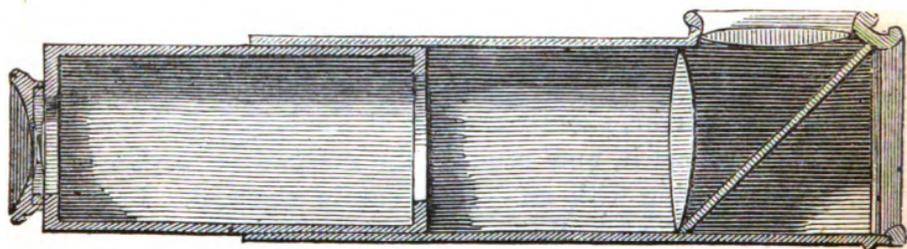


Fig. 126.

hole at the other end, where a grooved cleat permits picture-slides to be inserted. Cover the other part of the box with ground glass or other transparent media, to keep the inside from being seen.

If you must use artificial light, let an aperture be practised in the mirror end, so that the source of the illumination cannot be perceived.

Simple as is this contrivance, the figure drawn on a plane surface will be given a natural perspective as wonderful as entertaining.

THE ENCHANTED LOOKING-GLASS.

Take a life-size picture of a man in a full-bottomed wig, or a lady in a head-dress with head and shoulders only shown, and, having cut out the face and all the background, glue it to the back of a looking glass, from which you have scraped away all the quicksilver just where this cut-out picture goes.

Undertake to show any one his forefather, or her ancestress, as the case may be, in their habiliments as they lived, and, on standing before the mirror, their face will be reflected in the vacant place.

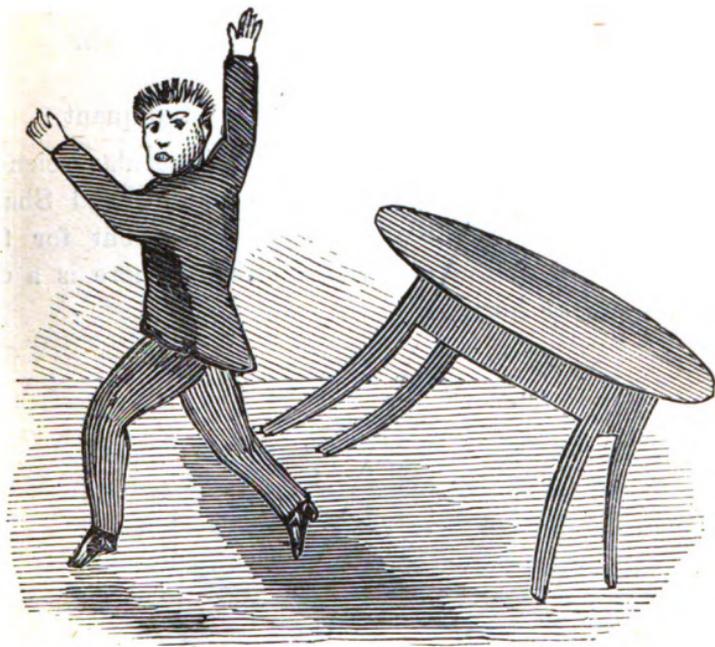


Fig. 127.

THE OCULAR AND OLFACTORY HARPSICORD.

Reverends Père Castel and the Abbé Ponceau have constructed, on the supposed connection of flavours, perfumes, and colours, the following amusing scales:—

Ut.....	blue.....	sharp.
Ut dièze	sea-green	
Re	bright green	sickly, insipid.
Re dièze	olive	
Mi	yellow.....	sweet.
Fa	deep yellow.....	bitter.
Fa dièze	orange.....	
Sol	red	bitter-sweet.
Sol dièze.....	crimson	
La	violet	harsh.
La dièze	violet-blue	
Si.....	iris blue.....	piquant.

It is true that a blind man, noted in ocular science, likened the blast of a trumpet to scarlet, and Shakespeare speaks of the sweet south wind, but for the greater part of the above comparisons there is a deficiency of authorities.



SHADOWS ON THE WALL.

Take a print of a human face, with a Rembrandt or Tintoretto effect of deep shadows and soft lights, and cut out the whole outline and all the lights, picking with a pin the thin lines and spots. Heads of Christ, and the Madonna as Our Lady of Sorrows, are excellent, for this purpose.

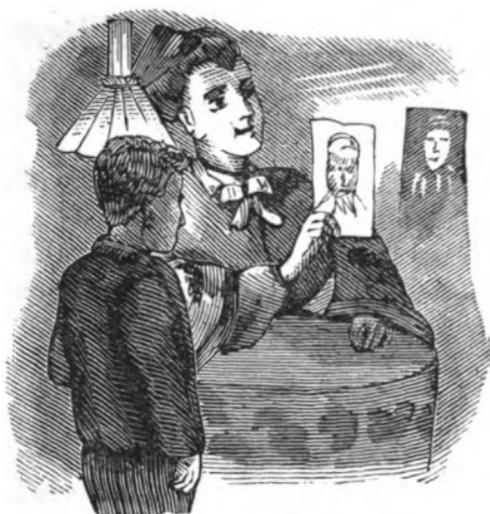


Fig. 128.

On holding these up between the white wall and a lighted candle, in a position found on trial, the figure formed seems to float vaguely instinct with mournful life, the indistinctness of the outline aiding the illusion.

IRREGULAR PROFILES FORMING SYMMETRICAL SHADOWS.

Nearly everybody has at some time been struck by the strangely accurate shapes made by the shadows

cast by the edges of a pile of irregular formation, such as a heap of books, &c.

The heads of pipes, sword-hilts, umbrellas, and canes



Fig. 129.



Fig. 130.

can be turned into shapes unrecognizable as at all human, yet giving a shadow, of which the outline reproduces the profile of some eminent man.

CHINESE SHADOWS.

Opaque bodies, cut in various shapes, are held against a transparent screen, with a powerful light behind them. The audience are in a dark room.



Fig. 131.

To increase the effect, make the figures of acrobats, rope-dancers, performers on the horizontal bar, &c., of sheet metal, and fit them with joints, so that the limbs can be moved by mounting them on thin rods at right angles with the rope on which they seem to walk. These rods can be turned by cranks, or end in a cogged wheel locking in a ratchet.

ANAMORPHOSES; OR, DISTORTED FIGURES.

Having drawn a subject, such as a human face, on a piece of paper, enclose it in a square, as A, B, C, D (Fig. 130), and divide it into smaller squares by marking off equal parts of the sides and drawing straight lines across, as when you wish to make a reduced copy of a picture.

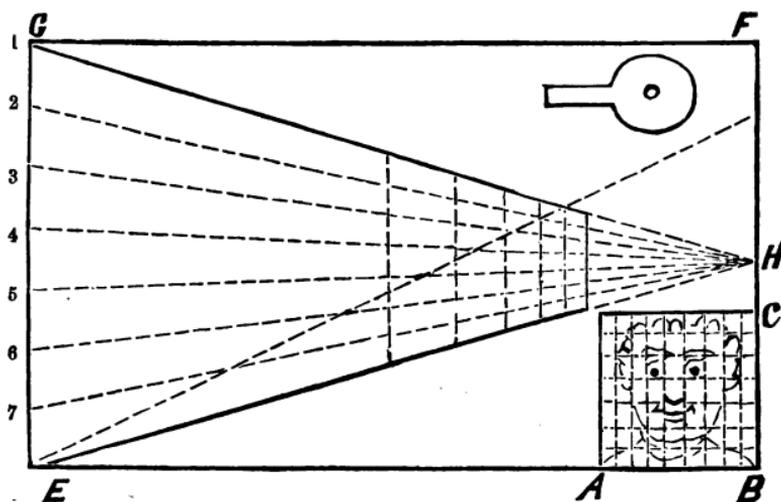


Fig. 132.

Describe a parallelogram, E, B, F, G, the short side, E, G, being divided into as many equal parts as A B, in our example 7. From the centre of the side B F, draw straight lines to the points of division on the side

o

E G. Assume the point I, on the side B F, as the height of the eye above the picture; draw from I to the point E the straight line, which cuts the lines diverging from H at the points 1, 2, 3, 4, 5, 6, 7. Through these intersecting points draw parallel straight lines to divide the triangle into as many trapeziums as there are small squares in the square A, B, C, D.

Now fill up all the cells of the triangle with corresponding parts of the drawing, taking the base of the triangle to be the head of the picture transferred, and the comical distortion will be made. To see it, however, like its original, bore a hole, K, in a board, L, placed upright in H, so that the height, L K, equals H I, which must not be great, in order that the distortion may be remarkable.

Several lines of letters forming a phrase or sentence, can be distorted in a similar manner, so as to be read only by holding the paper so inscribed at a certain position as regards the eye. Further anamorphoses may be made by painting on curved surfaces, cylindrical, conical, or spherical, which appear natural when seen from a certain point of view. Still another way is to look at the reflection on a cylindrical mirror of a drawing made only so to appear regular.

Another way to obtain the distorted picture is to prick out the outlines of the original drawing, and hold it at an angle to a sheet of paper, so that the light on the other side, streaming through the pinholes, shall form a figure, which you can trace with pencil, more or less out of the true position. To see this changed picture corrected, you must place your eye where the light was.

By varying such pictures, they can be adapted to being seen aright by reflections in cylindrical, conical, pyramidal, and prismatic mirrors.

OPTICAL FIREWORKS.

A Gerb of Fire.—On white paper draw the figure of a gerb of fire, lay it on quite opaque paper, black on both sides, and with a very sharp penknife cut several slashes at unequal intervals from the gerb centre; pierce these breaks with holes to represent the sparks. The lines and holes both paint the effect of burning powder issuing from a small aperture.

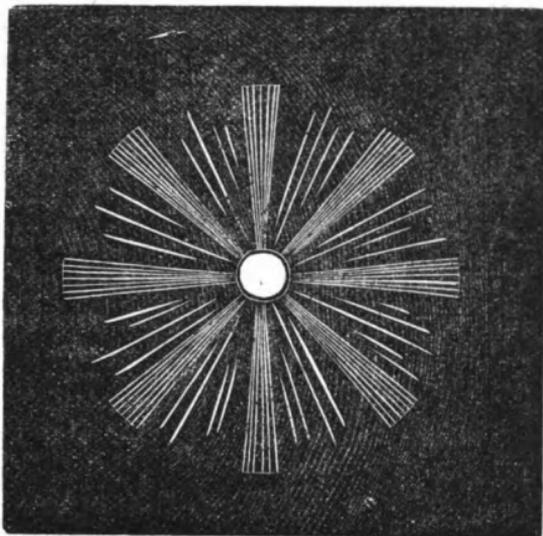


Fig. 133.

Globes, Pyramids, or Revolving Columns.—Draw the outlines on paper, and cut them out in a helical or spiral form. For the various tints, paste coloured transparent paper at the back.

TO GIVE MOTION.

Jet of Fire.—Prick various sized holes at unequal distances apart in a band of paper, but few in one part, others thinly scattered, others profusely sprinkled, to represent the sudden bursts of sparks.

This band is to ascend between a light and the jet made on paper as above.

Cascade.—The same perforated band is to move down-



Fig. 134.

wards instead of upwards, which is done by making the band wind off one roller as another winds it on.

Globes, Columns, Pyramids.—The band of paper cut out in apertures inclined at a somewhat different angle from that of their spirals, must move upwards vertically. Thus the fire will seem to be continually ascending along these spirals, and the machine will appear to revolve with them.

Suns.—These are more difficult, as you must picture

fire proceeding from the centre to the circumference. On strong paper describe a circle a little larger than the surface of your sun. On this trace two spirals, one-twelfth of an inch apart, and open the intervening space with a knife, cutting the paper from the circumference,



Fig. 135.

decreasing in breadth to a certain distance from the centre. Then cut the remainder of the circle into similar spirals, alternately open and close. Paste it on an iron hoop, supported by an iron cross, and set all on a stand which will let it freely turn round its centre.

On placing this between a light and your sun, and moving it towards that side to which the convexity of the spiral is turned, the opening will give, on the image



Fig. 136.

of the sun's rays or jets of fire, the appearance of fire continuously flowing from the centre to the circumference.

THE SULTAN'S SUMMER PALACE ILLUMINATED

Take a print of an Oriental palace, and colour it properly. On the back paste paper to make it but partially transparent. With differently sized points prick small holes in the places, and on the lines where lamps and lanterns are generally placed, as along the sides of windows, cornices, arches of doors, balustrades, and as if suspended from trees. The greater the supposed distance of these architectural and decorative features, the smaller and closer these punctures must be. With large punches cut out the stronger lights, as of Bengal fires in pots, and so forth.

Cut out the panes of some of the windows, and paste at the back gelatine paper of green or red colour, as if they were curtains within an illuminated room.

Place the print thus prepared in the front of a box representing a miniature theatre, strongly lighted from the back, and look at it through a convex glass of a rather long focus.

There may be added some pieces of Chinese or artificial fireworks, moved by clockwork.

THE PENETRATIVE EYEGLASS.

Perhaps some one in the company has made use of the saying that he "can see as far through a millstone as anybody."

Eagerly espouse his cause, and declare him, indeed, gifted with preternatural vision, as you will prove to him by your magic spyglass.

A box is made with two upright extensions, in which are placed the tubes of telescopes, with plain glass eye-pieces. A A A A are plane mirrors, set all at an angle of

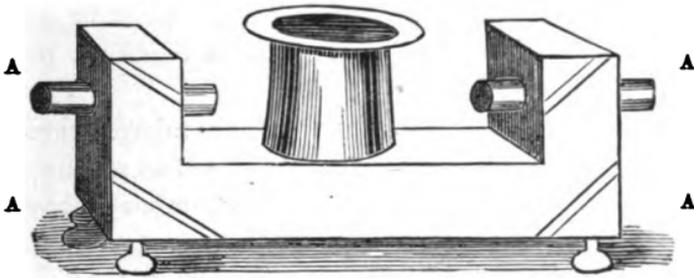


Fig. 137.

45 degrees, so that any one looking in at either end, sees whatever is visible at the other extremity.

THE POLEMOSCOPE.

This is an utilisation of the last-mentioned trick.

If the higher glass is placed behind the other, or even with its sides parallel with its own, the latter could be behind an impenetrable wall to shelter the observer, without the landscape being out of the scope of vision.

Another plan is to place the upper mirror without a window above the house-door, to reflect the part of the street beneath upon a mirror within on the sill.

A third is in miniature, by which an opera-glass has an opening at the side of the barrel, by which one's neighbours are scrutinized while, to all appearance, one is intently examining the performers. Happily the frequenters of the playhouse of the present day are less sensitive than our forefathers, and no such deceptions to avoid showing impoliteness are in request.

**THE HEAD DECAPITATED AND FLOATING IN
THE AIR THREE YARDS FROM THE BODY.**

This is a modification of "The Sphinx," or "The Head of the Decapitated Speaking," as it is called, of which *The Magician's Own Book* contains a full explanation.

A hole is made in a large plane mirror, through which the actor puts his head. It is set at an angle so as to reflect the ceiling of the little chamber where the decapitation has occurred; hence the spectators believe they see it suspended in the air. The front corners and edge of the mirror are artfully masked by architectural ornaments, and the upper edge enters at the joining point of the ceiling and supposed wall.



THE ILLUMINATED HEAD OF ISIS.

The description of the fiery-faced God of the Egyptians in Lord Lytton's "Last Days of Pompeii" is vivid enough for it almost to provide data for an illusion in itself. However, we can form one upon it.

Get a false face made of the Egyptian type (the Sphinx would be suitable), of fine muslin, and dressed with wax to make it transparent. Fasten it on a board with drapery in accordance with it; cut out at the back



Fig. 138.

a place where a white glass bottle can stand on a shelf, closed in on all sides by that in the opening, and containing a solution of a few grains of phosphorus in some essential oil of cloves. Have the stopper at the end of a rod working on a pivot, so that a touch will lift it out of the bottle. When out, the air entering makes the phosphorus glow with a mysterious light. The impression can be enhanced by a few chords on a celestine or harmonica.

A NIGHT WATCH LAMP.



CONTRIVE a six-sided box, six inches in diameter and ten deep, lined with tin or other polished surface, and with a double convex lens in the centre of one side. On the opposite side, exactly in its middle, cut out a hole to receive the face of a watch, with a little shelf outside to hold the case firmly.

Support the box in the centre on a hollow leg, which is watertight and is filled with water, to float a night-light, and let the leg fit into a stand to go on a

table by the bed-side or on a shelf at the foot of the bed.

Action.—The lens will magnify the reflection of the watchface so that the figures can be clearly distinguished.

DOUBLE-COLOURED REFLECTION.

Bore a hole through a disc of tinted glass with a bradawl, kept moist with oil of turpentine, frame it in your forefinger and thumb held around the edge, and let a strong light pass through it.

With a blue glass the centre spot will be orange ; with green, red ; with red, green, &c.

THE PHANTOM FLOWER.

(Palingenesia.)

A plain white glass decanter is taken up and placed on a table, when it is filled with water. It is pretended that this fluid is enchanted, since, after a flower has



Fig. 139.

been selected from a bouquet and burnt by the spectator himself, its exact image is presented in the bottle.

Explanation.—Behind a partition, A B (Fig. 140),

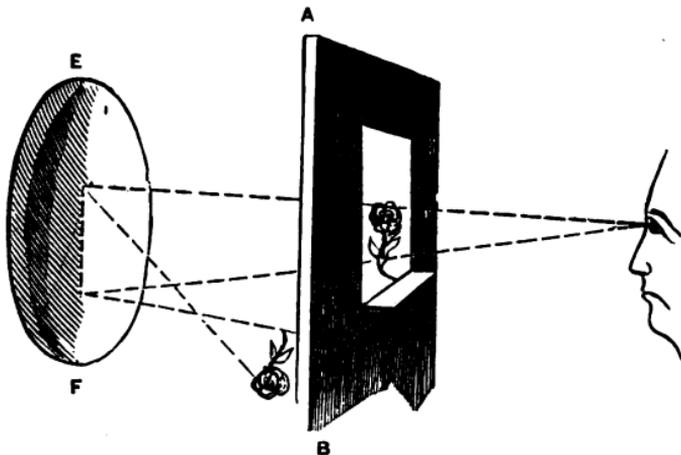


Fig. 140.

place a concave mirror E F, ten inches diameter, and at a distance three-fourths from its centre, somewhat

inclined. In the partition cut a square or circular opening, about eight inches wide, directly opposite the mirror. Behind have a light to illuminate any object at *c*, without shining on the mirror or being visible at the opening. Behind the aperture and beneath it place inverted the object of which a phantom is to appear.

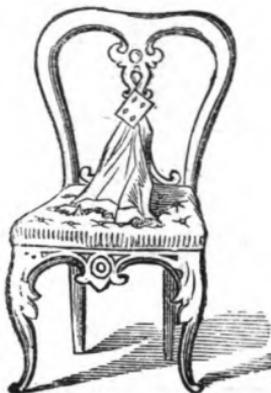
Before the partition, just under the hole, set a bouquet-holder or flower-pot (or, at the opening, as in this case, the bottle of water), that the image may seem to be standing in it.

All extraneous light must be kept from the mirror by blackening the surfaces around it.

The spectator will see the image so real that he will be apt to attempt to pluck it, if a flower and a flower-pot is substituted for the bottle.

The different flowers of a bouquet have counterparts set on the circumference of a disc, of which the edge comes to the proper point to present one of them to the mirror.

The magician, on seeing a certain flower taken to be destroyed, has ample time to set the disc in motion and place the duplicate in position.



THE MAGIC CAMERAS.

The Chadburn attachment to the oxyhydrogen microscope serves its purpose excellently, but a singular means of exhibiting *opaque* bodies, of any description whatever, has been contrived by the Optician Kruss, of Hamburg.

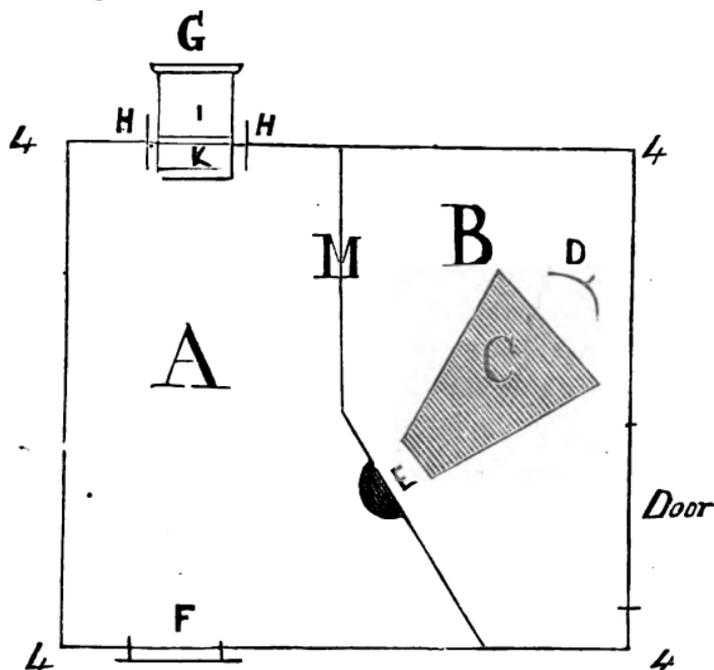


Fig. 141.

A tin box, 4 4 4 4, a foot cube, or a little less high than broad and long, is divided by a tin partition, M, into two compartments, A and B, dark chambers, in fact.

In the room, B, a lamp, C, has a concave reflector, D, which concentrates the light upon a condensing lens (commonly called a bull's eye), E. This light is directed upon the place F, where a door is made with a convenient slit for the insertion of prints, cartes de visite, or other photographs, lace, gems, jewels (the most in-

tricate patterns afford pictures of great beauty, and the scintillations of colour from diamonds and other stones are perfectly bewitching), &c. Or the door can be opened, and one's hand, eye, ear, or any other object held to the light, is likewise projected on the screen through the tube H H. This tube is solidly inserted in the end of the room A, diametrically opposite an imaginary circle drawn on the side or end of the door F. A second tube slides freely in and out, containing two lenses, as in ordinary magic lanterns.

A screen is constructed of an upright frame, on which is smoothly stretched common white tissue-paper, or the same oiled, or linen or silk made transparent.

An object being placed in the door F, the light being turned on and the focus being properly obtained, the picture projected on the screen will be seen by persons on its other side greatly magnified.

Where the oxyhydrogen light cannot be used the lamp should furnish the next best light. Pure sperm oil, in which crushed camphor, an ounce to half a pint, has been dissolved in gentle heat, in a suitable lamp, with an argand chimney to prevent flickering, will be sufficient.

We should add that a tin chimney, bent as in magic lanterns, will, of course, be required to complete the apparatus.



THE IMAGE LIKE LIFE.



TAKE a concave mirror of the diameter of 40 inches, and three in concavity, made by cementing pieces of looking-glass on a wooden mould. The focus will be three feet six inches or so from the mirror.

The image of a person standing before it will be so vivid and seemingly solid that it will terrify even a strong-minded experimentalist.

As a reflector of light or a burning-glass, the effects are wonderful, even with an English sun.

THE NOSTRADAMUS TRICK.

The story goes that Nostradamus, the great trickster of France in the days of Francis and the Henries, showed the Queen Dowager Marie de Medicis a throne occupied by Henry the Fourth.

Upon a throne he had a confederate, costumed and "made up" to resemble the *Béarnais*. In the wall of the room, at a point opposite him, an opening was made by which a plane mirror hidden in a canopy in another room should reflect the figure upon a second mirror naturally visible. As the two reflectors were set at the same angle, the picture presented by the second was an exact counterpart of the counterfeit prince.

PROTEUS.

THE INCREDIBLE TRANSFORMATION.



EMOIRS are but too often dull reading, but those of Robertson, the French perfecter of phantasmagorian exhibitions under the Revolution, contain some valuable revelations. That of the mode of executing transformations of a human being beyond the wildest dreams of the fabulist who created Proteus, is here given.

In the partition between two rooms make a horizontal slit, and apply on one side a sliding frame containing a flint-glass prism, and a piece of ordinary white glass, which can be moved up and down by wires set in motion in the room overhead, so as to present at will one or the other of the glasses, through which may be seen the interior, or scene of the experiment. But the rays from an object entering a prism are deflected, and as a consequence, the whole apartment is reversed, so that the ceiling and floor change places. If a chair is lowered through a hole in the ceiling, it will seem to be standing on the floor.

The audience are allowed to inspect the inner room, and see that the wall and floor are solid and the chair there is without secret machinery. Then, on their withdrawal into the adjoining apartment, and looking through the plain glass, they will see the performer seat himself in the chair.

He asks—in a prearranged order—what transformation is desired, such as that he shall be capped, in Bottom's fashion, with an ass's head, a bear's, lion's, wolf's, and so forth, and, on receiving an answer, declaims a magical formula, as :

“Aroonel intabbara, marandizala tafmaquirisolon—Zambelara !”

At the last word a pistol is fired unawares, and, as the lookers involuntarily start, the prism is substituted for the plain glass, and there is seen a duplicate chair let down from the ceiling, in which is seated a puppet dressed like the magician, but with an animal's head.

Observation.—The slit must not permit the ends of the legs of the chair to be seen, or the vision would see the floor at the same time as the prism was showing the ceiling, which would be ruinous.

All the room must be of the same colour, and without ornaments or hangings, for the prism turns them topsy turvy.

It is to be added that the change of the plain glass for the other replaces the performer before the eye, for, indeed, he has not stirred.



THE ENCHANTED TELESCOPE.

In this variation of the Nostradamus Trick, a telescope-tube is mounted, instead of the false mirror, on a stand on a table. It has a plane mirror set in it at an angle of forty-five degrees over the stand, which is hollow and communicating with a drawer of the table, opening into the next room, with a second plane mirror, to reflect any person therein, up to the tube reflector.

The inner room should be dark, so that, when the light is cut off, the figure will vanish.

THE HEAD OF JOHN THE BAPTIST.

Before a concave mirror, which the spectator sees, have a little railway with a head on a dish, in wax or plaster, strongly illuminated, and concealed from him. Let a wire in the hands of an assistant, or wound on a drum by the release of a detaining spring, draw this head on its carriage into the focus of the mirror, when it will seem to start out and fly towards the beholder.

THE DAGGER OF MACBETH.

A table is shown on which is a looking-glass. The room is darkened, when a white arm and a hand brandishing a dagger is seen suddenly to appear and menace the spectator.

Explanation.—The glass of the mirror slides out of the frame at a signal. Behind it is a concave mirror set on the floor at an angle in an opening in the wall. Within the other room an arm and hand of wax, holding a dagger, are mounted so as to descend, while brilliantly illumined, towards the concave mirror.

A person can show his or her face instead of his arm

or the false limb, and something rather laughable than terrifying is recommended for such experiments to a juvenile auditory.

THE GHOST ILLUSION.

In *The Secret Out* the explanation of "The Witch of Endor" trick showed how spectres may be made to appear by aid of the magic lantern.



Fig. 142.

In the Middle Ages phantoms were called up by that means or by reflectors, but the inability to procure apparatus in perfection seems to have delayed the complete achievement of a success.

In 1847 M. Robin, the Parisian prestidigitateur, startled Lutetia with his presentation of ghosts, almost solid forms, through which, nevertheless, swords were passed, to prove their intangibility

Robertson had attempted the same, but with a com-

plication of mirrors, plane and convex, which were hardly workable.

But, in seeking simplicity, the later inventor left a difficulty unavoids. In the front of a stage, below it, he places the personator of the ghost, illumined with a powerful light. A part of the stage is open, over which leans, at an angle of forty-five degree, a very smoothly polished plate of glass, as large as the stage from the "flies" to the boards, and its edges hidden from the audience by trees, &c.

The reflected figure appears on the stage as far behind the glass as its cause is before it.

The trouble is that, to counterbalance the inclination of the glass, the actor must stand vertically on an inclined platform.

Professor Pepper and Mr. Tobin place a plane mirror exactly opposite the plate-glass below it, which



Fig. 143.—An Oriental Magician.

reflects an actor who may stand in a natural position. This suffices for a single figure; but for more than one the Robin inconvenience has to be endured.

The phantascope, spectroscope, are other names for this deception.

The Eastern jugglers are spoken of as executing a trick which seems done by this means.

A chain is seen in the air up which animals ascend ; after all have disappeared, the chain is apparently pulled up by them, for it is lost to sight. This could be represented by this means, at all events.

THE SAINT'S HEAD IN A GLORY.



Mr. Panky, in showing his Gallery of Art to some friends, suddenly directs attention to a painting of a saint, upon whose head a mysterious and divinely golden light seems continuously to glow. To add to the bewilderment of the gazers, the light suddenly ceases to descend, and, in a twinkling, emanates from the saint's head in a magnificent nimbus. There is no resemblance to electric light or any other known, and the undulating motion is incomprehensible under natural laws.

Explanation.—The painting is set in a small frame in the centre of a larger one.

At the back of the picture is a cogged wheel, of which the teeth move a series of pinions. In each of these

latter is immovably inserted one end of a white glass rod, around which runs a spiral thread of gold (colours may be substituted), and its other end terminating in a point. These points work freely in sockets on the rim

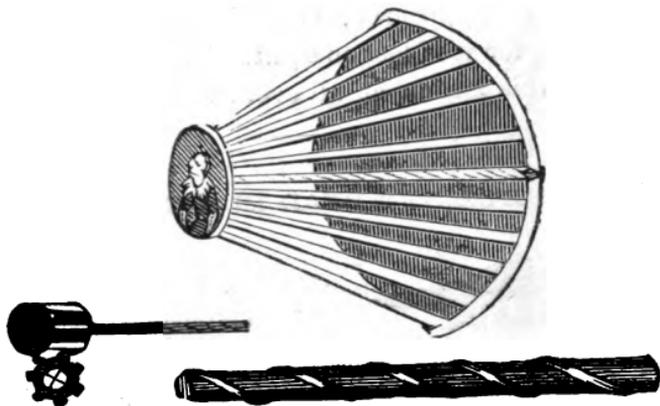
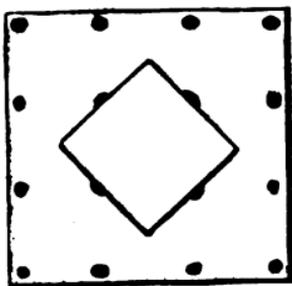


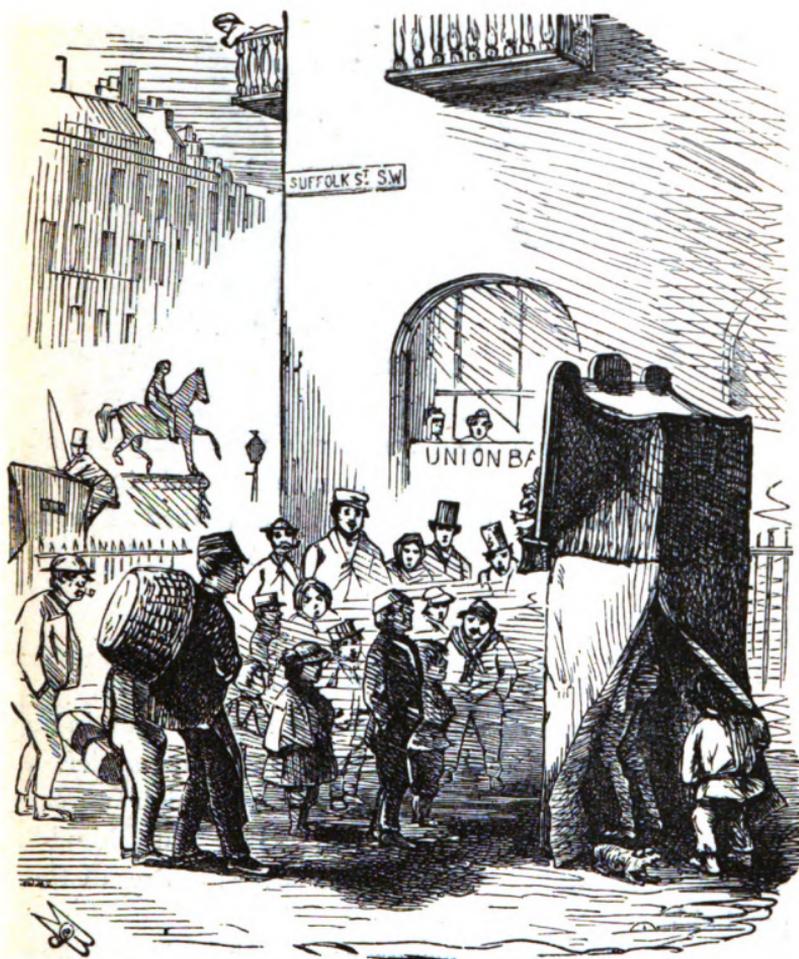
Fig. 144.

of the larger circle, equally distant, to which, consequently, they diverge.

When the cogwheel turns the pinions the glass cylinders revolve, and the spiral lines change their position continually to the vision, and, as the wheel turns to the left or right, the light seems to run up from or flow down to the picture.



XIX. COMPLICATED TRICKS IN MECHANICAL MAGIC.



PUPPETS, MARIONETTES, FANTOCCINI, &c., &c.

THE POTATO MANNIKIN.

For an impromptu puppet to answer questions about cards, concealed watches, and so forth, cut a hole in a

potato at one end for a forefinger to enter. Scoop out for eyes, nose, and mouth; put on a horsehair wig and beard. Drape the hand in a handkerchief to represent the cloaked body, while the thumb and middle finger

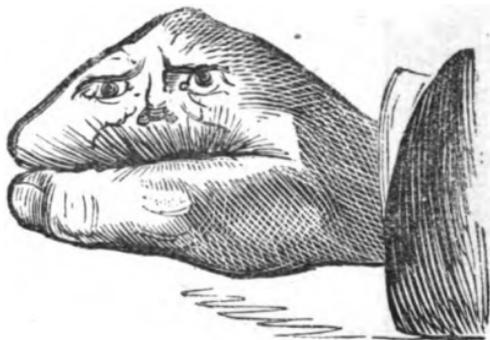


Fig. 145.

play the part of arms, and you have such an improvised Talking Hand as Edmund Kean employed to hold Byron spellbound for hours, and as is described of more elaborate manufacture in the "Art of Amusing."

A MASQUERADE TRICK.

At the height of the merriment of a grand ball in an opera house, there suddenly is heard in an upper tier, a sound as of a violent quarrel, amidst which uproar such shouts of terrible import as, "Over with him!" "Turn him out!" "Throw him over!" are distinguishable.

Suddenly a tumultuous group are seen from below to approach the railing, among the furious combatants of which one figure is seen battling fiercely. But all his frantic resistance is seen to be useless; his hold is detached from the seats, and slowly but surely he is bent over the rail, and—as a cry of horror breaks from

the onlookers' pale lips—is flung over upon the mass of spell-bound revellers beneath.

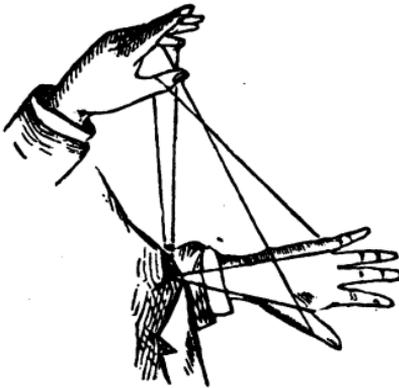
Dashed to the floor? Dear, no! for his descent is



Fig. 146.

abruptly suspended at about the height of a man, and he swings calmly above the plumes and head-dresses.

It was but a puppet with a rope round under the armpits regulated to prevent it from falling among the people in the pit.



THE COMIC ANATOMIST AND DANCING BOGIE.

The negro minstrels excite much laughter by a burlesque anatomical lecture upon a ludicrous skeleton drawn on a slate or blackboard.

Having traced the figure with chalk, after a short introductory speech, proceed with the lecture, and at



Fig. 147.

the end express amazement that the audience should not have been impressed with the solemnity of your discourse, you, of course, being unaware that the drawing has mysteriously become animated.

You suddenly perceive that the figure has taken to dancing, and, inexpressibly shocked, you endeavour to quell its Terpsichorean propensities. Finding that in vain, you cut the Gordian knot by seizing the board, and running out of the room with it, despite the vigorous kicking of the anatomy.

The next instant you return, and, making your bow, say gravely :

“Ladies an’ gemblemen : If de skillingtums ack dis yere way wid de perfessers, what will dey do when de medical men is all lady doctors ?” And exit.

Explanation.—The black board has both sides alike. On the one not seen at first by the audience a skeleton, drawn on black cardboard, is cut and pinned up by the

head. The thread connecting the limbs at the joints and the pulling string should be black.

After making a few chalk marks on the board, you turn it and chalk the edges of the skeleton, the limbs, the ribs, &c., without moving it. Then take the pulling string in your left hand, held behind the board, whilst your right gesticulates and points out the osteological peculiarities, and set the figure dancing as you please.

If made of metal, strings can be adjusted to shake the head, unfold the fingers, &c.

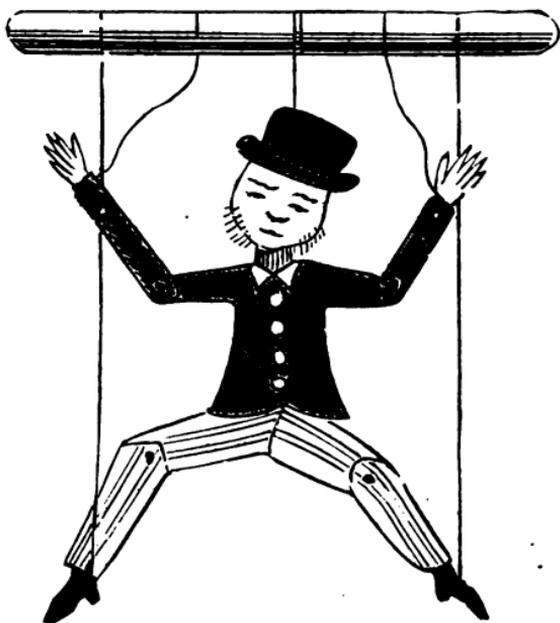


Fig. 148.

Dolls with ball-and-socket joints to the limbs make excellent marionettes. Suspend them as in figure 148.

The rod A is held in the left hand, and the different threads are worked with the right fingers. If the figure has many articulations and threads to control

their movements, hang the stick on a hook at its centre, and use both ends.

A proscenium is constructed, with "a scene flat" set far enough back to let your hands play freely in the intervening space.

THE GYROSCOPE.

This instrument illustrates the law, that the axis of rotation is preserved, in any fixed direction, immovable, while the particles surrounding it are in rapid rotary motion. Hence the humming and the peg-top stand erect, the axis of rotation—the spike or the peg—being kept in a vertical position while in motion; it falls as soon as this motion sinks below a certain rate. This power may be illustrated by placing a disc of wood, or of metal, upon one end of a weighing beam, from which one of the scales has been removed. The disc being equipoised by weights in the opposite scale, place the beam at an angle of 45—the disc being the lowest end—then, by striking the disc, get it into rapid rotation. It will be found that, while spinning, the beam is preserved rigidly in its position; but, as the disc comes to rest, the beam is restored to its horizontal position. Several small weights may be placed in the scale, while the disc is rotating, without disturbing the position of the beam.



EXPERIMENT WITH THE GYROSCOPE.

(From the *Mechanic*.)

The ordinary gyroscopic action takes place when the lever D is held, the weight F being carried horizontally round the vertical axis, passing through the pivots C C. When the wheel is not spinning, the weight F turns the ring A A into the vertical position, so that the weight

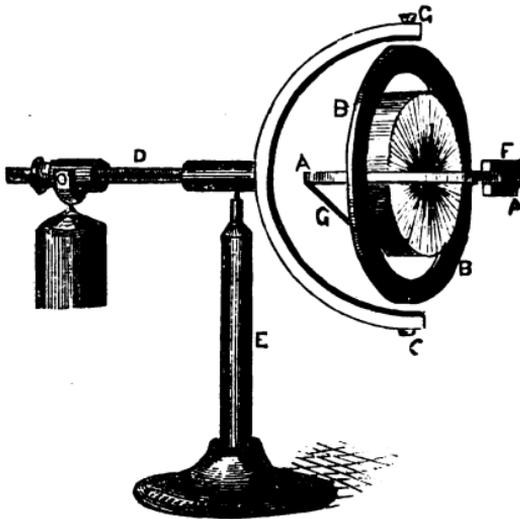


Fig. 149.

pulls downwards in the vertical line passing through the centre of the wheel. The parts carried by the lever D are then accurately balanced by means of the adjustable weight H. The ring A A is next held, in the position shown, by the thread G being hooked on the pivot screw opposite the weight F. If now the ring B is turned round on the pivots C C, the gyroscope or the weight H will preponderate accordingly as the weight F is further from or nearer to the supporting point of the pillar E than the centre of the wheel. Finally, spin the wheel,

and throw off the thread G. It will then be found that although the weight F, in being carried round by the gyration, is continually altering its distance from the point of support, the apparatus keeps in balance. The gravitation of the weight F is *not*, as some think, annihilated or converted into horizontal action, but still *tells* fully, doing so, however, as though acting at the centre of the wheel. If any of my readers should wish to try this experiment, they must have the apparatus very carefully made; and they must bear in mind that the conditions required for the experiment cannot be maintained for many seconds, as the friction of the pivots and other resistances cause the introduction of forces which, slowly at first, but with increasing rapidity, change the relative positions of the parts.—E. H



Fig. 150.

THE HIGHFLYER.

In two corks, A and B, insert four wing-feathers from any bird, so as to be slightly inclined, like the sails of a windmill, but in opposite directions to each set. A round shaft is fixed in the cork A, which ends in a sharp point. At the upper part of the cork B is fixed a whalebone bow, having a small pivot-hole in its centre, to receive the point of the shaft. The bow is then to be strung

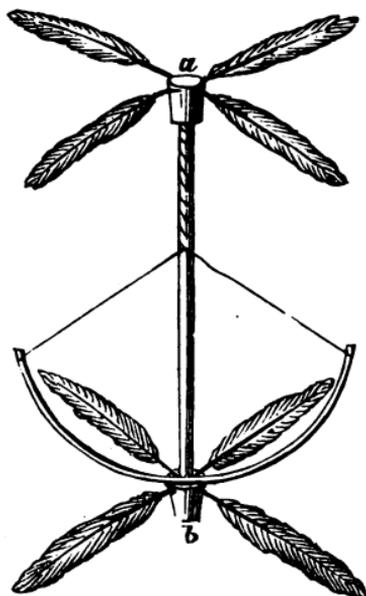


Fig. 151.

equally on each side to the upper portion of the shaft, and the little machine is completed. Wind up the string by turning the bow, so that the spring of the bow may unwind the corks, with their anterior edges ascending; then place the cork, with the bow attached to it, upon a table, and with a finger pressed on the upper cork, press strongly enough to prevent the string from unwinding, and taking it away suddenly, the instrument will rise to the ceiling.—Dr. Piesse.

THE MECHANICAL AEROSTAT.

Make a "flyer" by attaching three vanes to a common centre, mounted perpendicularly on a pin. These vanes are segments of a circle of which the obliquity increases as they recede from the centre of motion.

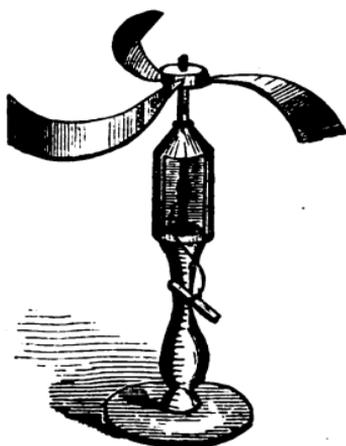


Fig. 152

A stand is made to hold it while a cord is wound round the spindle. On pulling the string, it will ascend.

The vanes must be adjusted angularly for the best effect.

ARTIFICIAL SNAKES.

String on three parallel threads a number of small wooden scales, somewhat thick in the middle, and rounded at the edges, to form a length tapering to a point, while the other end is furnished with a carved head as of a serpent. Fasten the threads so that they are moderately tight. When taken up by the middle horizontally the two ends have a tendency to sink, but being prevented by the connection, they move to one

side or the other. They can also be made of flat pieces, with one thread running straight through all to form a length, and a thread to run through them all alternately

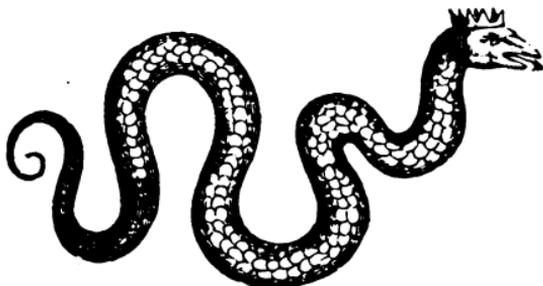


Fig. 153.

on one side and the other, opposite each other. If turned, boxwood is better than ivory, which easily breaks.



THE PIPING BULLFINCH.

If one of the mechanical singing-bird toy-boxes is opened so that the machinery is laid bare, the mystery will disappear.



Fig. 154.

The little bird who pops up on his feet when the lid of the box is opened, flutters his wings, and opens his mouth as the trill comes forth, has nothing to do with the sound.

That comes from a short tube, which has a supply of air from a little bellows, regulated by a piston. Its action is controlled by a lever, acted on by the same clockwork which works the bellows, and turns a barrel set with pins for the tune like any barrel-organ.

To make one, get a toy bird, and mount it on a box, concealed in which is such an instrument as is found in musical albums and valentines; the opening of its bill and wings needs a very simple connection with the wheel of the barrel.

THE WONDERFUL WELL.

A little model well, mounted on a stand, is shown to the company, and is held upside down to prove that it

is empty. Four different kinds of seed, as rape, hemp, canary, millet, and so on, are mixed together (or coloured sweetmeats, those called "hundreds-and-thousands" being suitable), and the mass is thrown down the well. The company then decide in what order they will have the sorts of seed separately drawn up, and this had better be written down to prevent difficulties, as

1st, Hempseed ; 2nd, canary ; 3rd, rape ; 4th, millet.

A little bucket attached to a revolving beam above the well is let down, and each time that it is drawn up, bring up the seeds in the order pre-arranged.

Explanation.—In the lower half of the well, level with each other, are four cells, at the height of the bucket from the bottom of the well. The floor of these cells is inclined towards the well, so that, on the doors of these cells being opened, their contents must slide out into the well. In each cell is one sort of seed. The doors are valves opened by pressure on secret springs on the outside of the well, like the keys of a flute. The well narrows at the bottom so as to only admit the bucket. At the bottom of the well is a secret trap, down which the mixed seed falls and is no more seen.

Operation.—When the mixed seed has been thrown down and falls into the secret receptacle, the performer takes the well in his hand, and places his fingers on the little slightly projecting pins which work the valves of of the cells. All that is now to be done is to make that valve open which will open the cell of the seed demanded.



THE TWIN SINGING-BIRDS.

Mr. Panky brings forward a cage in which are two birds, perched on different branches of a tree, which sing, one the first part, the other the second, of a piece of music, which would hardly let anyone to believe them live birds trained to so exquisite a degree.

But when their bodies are found to be covered with shells, and their eyes made of precious stones, that illusion cannot for a moment be entertained. And yet it is unreasonable that mechanism should impel their action, when they are seen to spring from one bough to another, while perfectly detached from the cage itself.

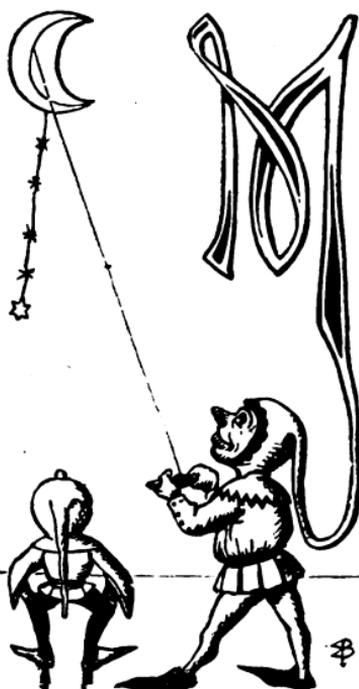
The smallness of their size, and the multiplicity and variety of their movements, preclude the supposition of their tiny bodies being the cases of clockwork.

Explanation.—The birds are really attached by wires of communication.

Their perches, on which they alternately alight, join at one end so as to form an angle of forty-five degrees. The birds are in no wise attached to either of them, but at the outer extremity of fine tubes—the other end being on a joint at the place of junction of the two perches—which tubes contain the fine wires which open the bill and wings. The outer point carries the bird, in each case, along the line of an arc of forty-five degrees. It passes so quickly through the air that a forewarned spectator would hardly perceive it; but as the exchange of position is made when attention is diverted by Mr. Panky, no clue is given.

This movement is a great improvement on the ordinary twin singing-birds of the conjurors, which simply stand on a cross-handled perch, or fixed tube, through which the wires pass.

THE AUTOMATON ARTIST AND WRITER.

(Robert Houdin's Improvement.)

R. PANKY introduces to the audience his young friend, a puppet, arrayed as the secretary to royalty, in an exquisite court dress of the time of Louis XV., and removes him from a side-board to his table set in front of the audience, that they may see no deception is possible.

The mannikin has a little table before him, on which his hands rest, but can be lifted up.

Mr. Panky furnishes him with paper and a pencil, and begs the audience to suggest a subject for the

exercise of his artistic skill.

The ladies' voice is for a rose or a bird. The secretary moves his eyes, bows, and at once sets to tracing before him an excellent picture of the objects voted for.

He also writes down answers to questions, tells the time to a second, the age of the inquirer, and all without the least vestige or sound of hidden mechanism.

At the end, Mr. Panky takes the figure up bodily from his little chair, and pops him into a hat, whence he mysteriously vanished.

Explanation.—A pantograph is required, and upon that a preliminary description is given.

Four rules are mounted as a square, so as to move

freely on the nails D, E, F, G; when the instrument is fastened on a table at the point C, and a pin at B traces the lines of a picture, the pencil placed at A duplicates the marks double that size. By shifting the slide

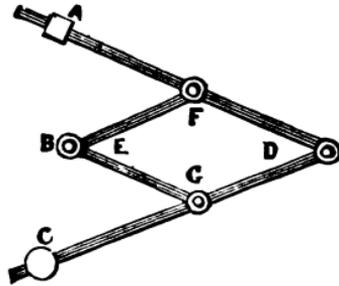


Fig. 155.

attached to the fixed point C and the slide carrying the pencil along their respective arms, the proportion will be varied.

A fixed arm from F to G would conduce to the steadiness and reliability of the apparatus.

However, it suffices for Mr. Hanky Panky's experiment.

The puppet seems to be completely isolated from any underhand management, because it can be detached from its seat and the table; but a real communication exists between its right arm and that of a confederate in the room beneath.

When the automaton is in his seat, the needle A B is thrust up through the floor, carpet, and table, E F, to enter the cylinder, C D, concealed in the chair at the part of the pantograph B.

Then the part A B, hidden in the room below, forms one with the part C D, within the figure, and the two united become the end of the pantograph.

Performance.—All the drawing done by the assistant unseen must be repeated at the point K. Now, the pan-

tograph being within the body of the automaton, and setting its arm in motion, it seems as if it was drawing of its own volition.

Observation.—The needle A B, and the cylinder C D,

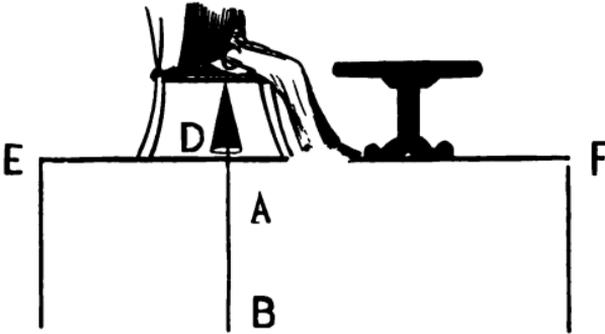


Fig. 156.

when in junction, form a kind of lever with its fulcrum in the room below, and, consequently, all the movements given to the point B are first repeated in miniature at B of the pantograph in reverse, and then large at A.



**THE AUTOMATON PERFORMER ON THE
HORIZONTAL BAR.**

Make a puppet with its arms inflexible at the elbow; put on a ball-and-socket joint at the shoulder; the arms are bent as shown in the illustration.

At the points G H and L M on the bar are tubes, covering it; with the joints hidden by mock garlands of flowers; the tube can, however, enter the two supports. To this tube the figure is fastened by the forearms.

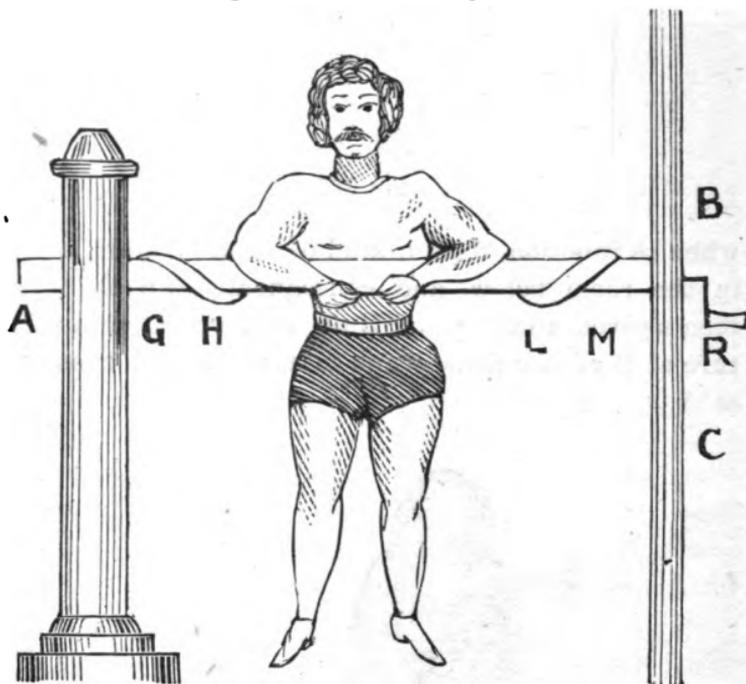


Fig. 157.

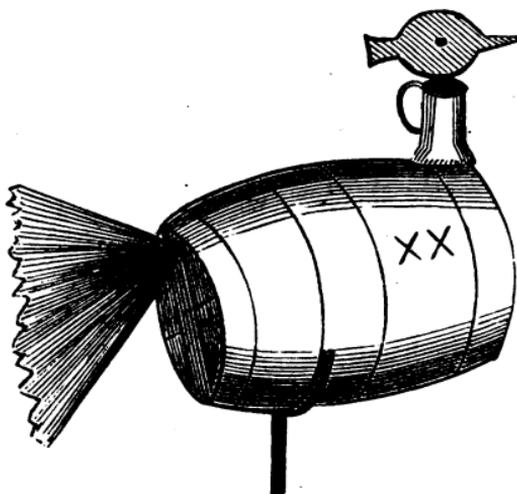
An assistant of Mr. Panky is concealed on the side C, where he turns the crank R, to make the figure execute a quarter turn to the left. The automaton now moves, from having his arms parallel with the horizon; rises gradually until his arms are placed vertically and parallel to the rest of his body.

If another quarter turn be made in the same direction, the upper arms then lean towards the spectator, and necessarily drag the body after them. The limbs offer no resistance, as they are jointed at the hip and knee.

The confederate, being on the watch, can take advantage of the moment when one leg passes before the other to let the mannikin drop astride the bar. Then he makes him swing, and finally execute a somersault; all to the movements of a piece of music.

As a finish, a jerk is given to a wire, and the figure is detached and falls to the floor. It will be believed thereby that mechanism made it grasp the bar, perform, and detach itself.

As the tube wraps the bar in all places except where the figure is attached, and hides all the turnings of the bar, no complicity is ever suspected.



THE AUTOMATON TUMBLER.

Figure 158 represents the only motor of a little figure which, placed in a cell on top of a flight of stairs, will, upon the bell of his residence being pulled, fly out heels over head, and, tumbling somersaults down the steps,

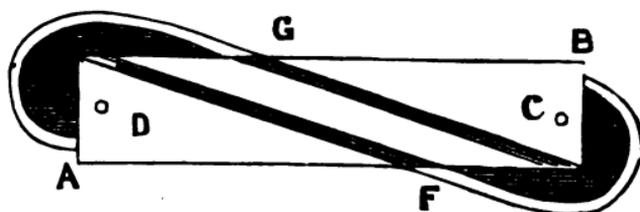


Fig. 158.

alight in a chair at the bottom, in order to be at his ease before his visitor.

It is a small piece of light wood, two inches long, one-sixth of an inch thick, half an inch broad.

At its two ends are two holes, C and D, which receive two pins, around which the legs and arms of the figure play. At each end also is a small receptacle, nearly concentric with the holes C and D, having an oblique prolongation towards the middle of the piece of wood. From their ends proceed two grooves, G and F, in the wood, a-twelfth of an inch wide.

Nearly fill one of these receptacles with quicksilver, and glue pasteboard on the sides to close it up.

To the axis passing through C fix two legs with long feet. The other has the arms with hands so placed as to become a base when the figure is turned backwards. On the G H part a head of elder-pith is glued, painted and dressed with a wig and cap. The body is made of the same substance, and a silk petticoat or skirted coat is added.

To prevent the figure or its legs turning any more

after reaching the resting-place of the feet, two small pegs are made to meet a prolongation of the thighs.

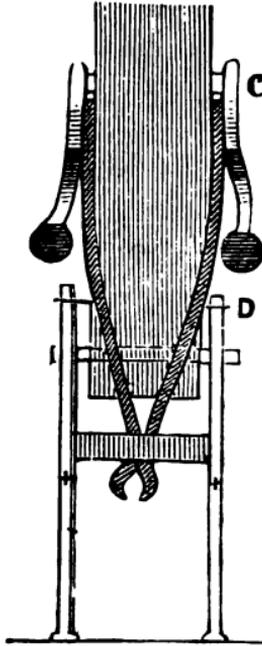


Fig. 159.

To make the arms present themselves firmly and horizontally when the figure turns backwards, furnish

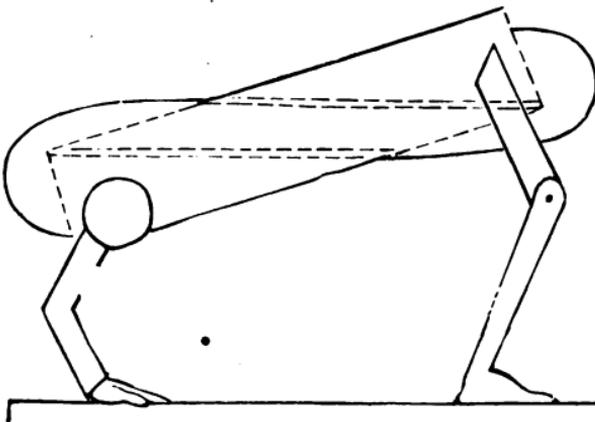


Fig. 160.

the arms with two small pulleys, concentric to the axis of the motion of these arms, over which run two silk threads, uniting under the front of the figure, and fixed to a small cross-bar joining the middle of the thighs. Adjust these threads till there is no unsteadiness in the figure when it is placed up or down on its four supporters.

Generally a box is made to contain this figure, and open out into being the flight of stairs to be performed upon.



THE AUTOMATON FLUTE-PLAYER.

(*The Masterpiece of Vaucanson.*)

A figure is made of about quarter life size. (Vaucanson's stood five feet and a half.) In it and its pedestal are contained these works:—A strong spring, which, when wound up, moves nine bellows, three rows of three each. One set is soft, one medium, and one forte. Three separate reservoirs receive the air from each series, each by a valve letting it then into a single pipe ending in the figure's mouth.

The same spring makes a barrel, on which is mounted an air, as usual in organs, revolve. Its pins set three levers in play, which connect, by chains, with the three valves, and so control the force required, whether natural, forte, or piano.

Another lever moves a chain which opens or shuts a tongue in the figure's mouth, in order to emit or stop all sounds.

Of four other levers, one opens the lips, one closes them; one draws them back, and one moves them forward.

Seven other levers communicate with the seven fingers, which do all the fingering, and make them move properly.

As there will be breaks in the direct line of action, use bell-levers where required.

Explanation of the Action.—To sound the *mi* base, the cylinder-pin for that note would move that lever of the right third finger, which opens the first flutehole; another pin moves the lever of the tongue; a third, the *piano* valve; a fourth is the lip-opener, and a fifth draws the lips back from the flute-hole. In all, five movements, executed at the same time.

THE AUTOMATON DRUMMER.

This figure is worked after the same plan. But it has been superseded for magicians by the "Spirit Drum."

Performance.—If the machine can play but one tune, the following trick is devised to make it seem that it plays at will any one of twelve airs. Twelve blocks are shown to the company, on which are written the titles of as many airs for the flute or drum. These are put into a bag, and any one in the company is allowed to insert his hand and draw out one at random, the music on which the automaton will play. The bag is double, and the part where the hand is thrust contains twelve blocks, like the others, except that all have the same named tune on them.



TRICKS WITH CARDS, DICE, DOMINOES, &c.



As the deceptions performed by sleight of hand at cards rely, notwithstanding their variety, on only a few easily acquired movements, and these have been fully explained, with illustrative diagrams, in "The Secret Out," we do not repeat the revelation, in all cases, of these processes.

The tricks immediately following are quite innocent, and may be performed in any private circles. We have thought it advisable to append an exposure of the devices by which gamblers or any persons who cheat their associates and strangers, deceive the inexperienced.

The conjuror always warns the company that his

exhibitions of dexterity, are meant to delude the inattentive and untaught, so that he can do no harm and occasion no loss.

THE GARCIA SLIP, OR TOUR D'HOMBOURG.

You must remember the bottom card of the pack, which you hold face down in your left hand. Cover the cards with your right hand, held over them palm down, and run the cards one by one in under the right hand by means of the finger ends. One of the company is to lay his finger on any card he pleases and stop it. Let us call this one A.

On his doing so you secretly slip back the bottom card, and, opening the pack at the card A, get the bottom card up next under it. Now bring the lower portion to the top of the other, and show B as the bottom card.

The audience having fully taken note of it, you let them shuffle the cards as much as they please, for it little matters while you know what the card is.

On receiving the cards again, you spread them out on the table, face up, and readily point to the card B as if it were the card A which was really selected, but for which B was substituted.

TO TELL A CARD THOUGHT OF.

Take a pack containing fifty-two cards, then lay out one card, any card you see proper. Then divide the cards into three rows, by laying them down face upwards. When you have laid down three begin at the left and lay one upon the first, so continue to the right until you have laid out the fifty-one; at the same time request some person to think of a card. When they are laid out, ask Which parcel the card is in; he tells you. place that parcel

in the middle of the other. This done, lay them out again in three parcels ; so continue to do for four times, and the card he thought of will be the twenty-sixth card.

TO GUESS THE SPOTS ON A CARD.

Take a whole pack, consisting of 52 cards, and desire some person in company to draw out any card, at pleasure, without showing it. Having assigned to the different cards their usual value, according to their spots, call the knave 11, the queen 12, and the king 13. Then add the spots of the first card to those of the second ; the last sum to the third ; and so on, always rejecting 13, and keeping the remainder to add to the following card. It may be readily seen that it is needless to reckon the kings, which are counted 13. If any spots remain at the last card, you must abstract them from 13, and the remainder will indicate the card that has been drawn : if 12 remains, it has been an ace ; but if nothing remains, it has been a king.

Demonstration.—Since a complete pack contains 13 cards of each suit, the values of which are 1, 2, 3, &c., as far as 13, the sum of all the spots of each of the different suits will be 7 times 13 (91), which is a multiple of 13 ; consequently the quadruple is also a multiple of 13 : if we add the spots of all the cards, always rejecting 13, the remainder at last must be 0. Hence it is evident, that if a card, the spots of which are less than 13, be drawn, the difference between its spots and 13 will be what is wanting to complete the number. If, at the end, then, instead of attaining to 13, we attain only to 10, for example, it is plain, that the card wanting is a 3 ; and if we attain exactly to 13, the card missing must be equivalent to 13 ; that is, it must be a king.

TO TELL TWO CARDS OUT OF TWENTY.

You must retain in your memory the four following words, with the arrangement of the letters which compose them :—

<i>m</i>	<i>i</i>	<i>s</i>	<i>a</i>	<i>i</i>
<i>t</i>	<i>a</i>	<i>t</i>	<i>l</i>	<i>o</i>
<i>n</i>	<i>e</i>	<i>m</i>	<i>o</i>	<i>n</i>
<i>v</i>	<i>e</i>	<i>s</i>	<i>u</i>	<i>l</i>

Collect all the cards into the left hand, two by two, as they lay on the table, and then place them, one by one, in the same order as the preceding letters, taking care to place the two first as the two *m*, the two next as the two *i*, the two following as the two *s*, and so on.

Ask each person in which horizontal row his two cards are. If he says they are both in the same row, for example the third, they will be pointed out by the letters *n* and *n*, contained in that row; if they are in two different rows, as the first and last, the letters *s* and *s* will indicate the place which they occupy.

TO BRING ALL THE CARDS OF THE SAME KIND TOGETHER.

Have in readiness a pack, all the cards of which are arranged in successive order; that is to say, if it consists of 52 cards, every 13 must be regularly arranged, without a duplicate of any one of them. After they have been cut as many times as a person may choose, form them into 13 heaps of 4 cards each, with the coloured faces downwards. When this is done, the 4 kings, the 4 queens, the 4 knaves, and so on, must necessarily be together.

THE FOUR INDIVISIBLE KINGS.

Take four kings, and place between the third and fourth any two common cards whatever, which must be neatly concealed; then show the four kings, and place the six cards at the bottom of the pack; take one of the kings, and lay it on the top, and put one of the common cards into the pack nearly about the middle; do the same with the other, and then show that there is still one king at the bottom: desire any one to cut the pack, and as three of the kings were left at the bottom, the four will therefore be found together in the middle of the pack.



TO GUESS CARDS SELECTED BY SEVERAL PERSONS.

Show as many cards to each person as there are persons to choose; that is to say, 3 to each, if there are three persons. When the first has thought of one, lay aside the three cards in which he has made his choice. Present the same number to the second person, to think of one, and lay aside the three cards in the like manner. Having done the same in regard to the third person, arrange all these cards in three rows, with their faces turned downwards, and then put them together in order. If you take the 3 first, and present them successively to the different persons, and do the same thing with the others, you may easily guess the cards, by observing, that the card thought of by each person will have the same place among the cards as the person has in regard to the other two; that is to say, the card thought of by the first person will be first of that packet in which he discovered it; that thought of by the second will be the second in the packet where he recognized it; and that of the third will be the last and in the last packet.

The operation is exactly the same when the number of persons is greater. If, instead of 3, there are 4 or 5 persons, four or five cards must be presented to each.

A NEW THREE-CARD TRICK.

As it is necessary that the cards presented should be distinguished, we shall call the first A, the second B, and the third C. Let the persons, whom we shall distinguish by first, second, and third, choose privately whichever of the cards they think proper, and when they have made their choice, which is susceptible of six variations, give the first person 12 counters, the second

24, and the third 36: then desire the first person to add together the half of the counters of the person who has chosen the card A; the third of those of the person who has chosen B; and the fourth part of those of the person who has chosen C; and ask the sum, which must be either 23 or 24, 25 or 27, 28 or 29, as in the following table:

First.	Second.	Third.	Sums.
12	24	36	
A	B	C	23
A	C	B	24
B	A	C	25
C	A	B	27
B	C	A	28
C	B	A	29

This table shows, that if the sum is 25, for example, the first person must have chosen the card B, the second the card A, and the third the card C; and that, if it be 28, the first person must have chosen the card B, the second the card C, and the third the card A; and so of the rest.

TO TELL THE SPOTS ON ALL THE BOTTOM CARDS OF SEVERAL HEAPS.

Arrange each heap of cards in such a manner that the spots on the bottom one, added to the cards above it, may always amount to twelve; continue to make as many heaps as possible, in the manner above prescribed, and place the remaining cards on one side. Then separate in your mind four heaps, and multiply the heaps which remain, after these are deducted, by 13; this product, added to the number of cards, will be that of the spots required. We give the solution of this problem by an analysis in "To Guess the Spots on a Card," p. 253.



TO NAME ALL THE CARDS OF A PACK.

✕ Have a complete pack of 52 cards, and arrange them according to the order of the following words, which you must retain in your memory.

<i>Unus</i>	<i>quinque</i>	<i>novem</i>	<i>famulus</i>	<i>sex</i>	<i>quatuor</i>	<i>duo</i>
Ace	five	nine	knave	six	four	two
<i>Rex</i>	<i>septem</i>	<i>octo</i>	<i>fœmina</i>	<i>trina</i>	<i>decem</i>	
King	seven	eight	queen	three	ten	

Besides this first order, you must arrange them also according to the order of the colours, spades, hearts,

clubs, and diamonds ; so that the 52 cards may be disposed as follows :

ORDER OF THE CARDS.

1 Ace of spades	27 Ace of clubs
2 Five of hearts	28 Five of diamonds
3 Nine of clubs	29 Nine of spades
4 Knave of diamonds	30 Knave of hearts
5 Six of spades	31 Six of clubs
6 Four of hearts	32 Four of diamonds
7 Two of clubs	33 Two of spades
8 King of diamonds	34 King of hearts
9 Seven of spades	35 Seven of clubs
10 Eight of hearts	36 Eight of diamonds
11 Queen of clubs	37 Queen of spades
12 Three of diamonds	38 Three of hearts
13 Ten of spades	39 Ten of clubs
14 Ace of hearts	40 Ace of diamonds
15 Five of clubs	41 Five of spades
16 Nine of diamonds	42 Nine of hearts
17 Knave of spades	43 Knave of clubs
18 Six of hearts	44 Six of diamonds
19 Four of clubs	45 Four of spades
20 Two of diamonds	46 Two of hearts
21 King of spades	47 King of clubs
22 Seven of hearts	48 Seven of diamonds
23 Eight of clubs	49 Eight of spades
24 Queen of diamonds	50 Queen of hearts
25 Three of spades	51 Three of clubs
26 Ten of hearts	52 Ten of diamonds

This order is of such a nature that, by knowing any one of the 52 cards, that which follows it may be also known.

Thus, for example, if it were required to know what card follows the king of spades, it will be sufficient to

recollect that *septem*, in the two Latin lines above given, which follows that of *rex*, denotes that it is a seven; and as the colour which follows the spades is hearts, it is the seven of hearts, and so for the rest.

Everything being thus arranged, having retained in your memory the above words, and the order of the colours, desire any person to cut the pack as many times as he chooses; for it will be easy to name all the cards in order provided you have found means, by some dextrous manœuvre, to observe that one which is at the top of the pack.

The same arrangement of the cards may be employed for the following two tricks especially, as well as others.

EVEN OR ODD.

First, find out whether the last card in the pack be black or red; then, on the pack being cut into two parts, if the card found at the bottom of the upper division is of the same colour as that at the bottom of the pack, the two parts which have been separated, contain each an even number; on the other hand, if it be of a different colour, they contain each an odd number.

TO TELL THE SPOTS ON SELECTED CARDS.

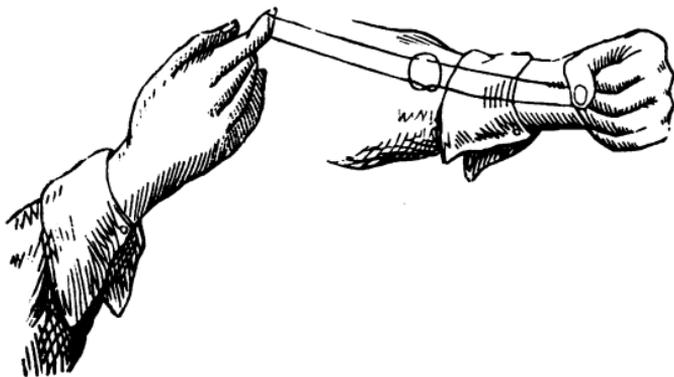
Having presented the pack, that the person may choose several succeeding cards at pleasure, privately observe the card which is above those he has chosen, and how many he has drawn from the pack; it will then be easy to count how many spots they ought to contain.

For example, if the observed card be a nine, and four cards have been drawn, it may readily be seen that those drawn must be a knave, equivalent to 10 spots: a six, a four, and a two. You may then announce, that the cards in the person's hand contain 22 spots.

TO TELL A CHOSEN CARD OF FOUR.

Let the person draw four cards from the pack at pleasure, and desire him to think of one of them ; then take these four cards back, and place two of them at the top and two at the bottom of the pack, in a dextrous manner, so as not to be perceived : under the two last, place any four cards whatever ; then display the lower part of the pack on the table, showing only 8 or 10 cards, and ask the person whether the one he thought of be among them. If he says No, you may be sure that it is one of the two which you put at the top of the pack ; in that case you must transfer them to the bottom, and then, showing the bottom of the pack, say, Is not this your card ? If he replies No, turn aside that card with your third finger, which you must have previously moistened, and desire him to draw out his card himself from the bottom of the pack.

If the person should say, that the card he thought of is among the first shown to him, dextrously remove the four cards put at the bottom of the pack, in order that the two, one of which is the card he thought of, may be the lowermost of the pack, and you may then either show him his card, or make him draw it out himself, as above explained.



TOPSY TURVY.

On receiving the selected card pretend to shuffle it amongst the others, but really bring it to the top. The rest of the pack you arrange with their edges even, whilst the top card projects a little.

On pushing that card a little out, at the same time as you drop the pack perpendicularly, the resistance of the air will turn the single card upside down, so that it will rest face upon the top of the fallen cards.

THE CONJUROR'S CARD CASTLE.

From a pack of cards two are forced upon two of the company. They are replaced, and the pack is shuffled. While this is being done, a little model house is brought into the room and placed on the table.

In its front are two windows, with closed blinds, and a door.

The pack is thrust down the chimney of the house, when, instantly, the door flies out and emits the pack of cards without the two selected cards, which appear one at each window.

Explanation.—The house is already prepared with a pack of cards, the duplicate of that used, less the two cards like the couple forced. These two are placed in the windows behind the closed shutters or drawn blinds, as the case may be.

When the second pack is thrust down the chimney, it touches a lever, which at the same time throws open the door and pushes out the other pack, and discloses the cards in the windows.

ODD OR EVEN.

Let one of the company take in each hand several cards, an even number in one hand, and an odd in the other.

You engage to tell in which hand he holds the even number.

To do so, bid him multiply the number held in his right hand by three, and that in his left hand by two, and add the product together. He is then to answer whether the sum is odd or even.

If even, the right hand contained an even number, and *vice versâ*.

**MYSTERIOUS TRICK OF THIRTY-SIX CARDS.
TELLING THE CARD YOU LOOK AT WITHOUT
SEEING THE PACK.**

To perform this trick you must take a pack of cards containing fifty-two in number. Then take out the two, three, four, and five spots of each suit (meaning the spades, hearts, diamonds and clubs). Then commence as follows with the remaining thirty-six: Commencing with six of diamonds, face downwards, seven of clubs, eight of hearts, nine of spades, ten of diamonds, jack of clubs, queen of hearts, king of spades, ace of diamonds, six of clubs, seven of hearts, eight of spades, nine of diamonds, ten of clubs, jack of hearts, queen of spades, king of diamonds, ace of clubs, six of hearts, seven of spades, eight of diamonds, nine of clubs, ten of hearts, jack of spades, queen of diamonds, king of clubs, ace of hearts, six of spades, seven of diamonds, eight of clubs, nine of hearts, ten of spades, jack of diamonds, queen of clubs, king of hearts, ace of spades.

After having arranged the cards in the order above mentioned, they may be cut by all in the house, or as

many as please, and by placing the cut under the pack each time the relative position will not be changed. Then ask the person who has the cards in his hand what card he has at the bottom of the pack (the faces being down); he answers, giving the name of the bottom card; then you can answer positively, by calling the card one less in value. For example, the nine of clubs is at the bottom, the eight of diamonds will be upon the top, the second will be the seven of spades, the third the six of hearts, the fourth the ace of clubs, the fifth the king of diamonds, and thus you will find them completely arranged throughout the pack. At the conclusion of this feat you may shuffle them over and under by holding the main pack in the left hand, and slipping the cards off one at a time in the right hand, one over and the other under, until you change them entirely through the pack, then return the pack to the right hand and repeat the over and under shuffle. Then you can deal them out into four parcels, nine at a time, and you will find the nine hearts in one pile, the nine diamonds in the second, the nine spades in the third, and clubs in the fourth.

THE FOUR ASSOCIATES.

Let a person draw four cards from the pack, and tell him to think of one of them. When he returns you the four cards, dextrously place two of them under the pack, and two on the top. Under those at the bottom you place four cards of any sort, and then, taking eight or ten from the bottom cards, you spread them on the table, and ask the person if the card he fixed on be among them. If he say no, you are sure it is one of the two cards on the top. You then pass these two cards to the bottom, and drawing off the lowest of them, you

ask if that be not his card. If he again say no, you take that card up, and bid him draw his card from the bottom of the pack. If the person say his card is among those you first drew from the bottom, you must dextrously take up the four cards that you put under them, and placing those on the top, let the other two be the bottom cards of the pack, which draw in the manner before described.



HOW TO CHANGE CARDS TO PICTURES.

Take a pack of cards, and paint the backs of one half of the pack with what figures you think fit, as men, birds, women, flowers, &c. Also, paint the faces of the other half of the cards in the same manner; thus, you will have a complete pack of odd pictures, and may—by showing the faces of that part of the pack whose backs only have been painted, and then by a momentary shuffle, apparently transforming them into a set of grotesque figures—produce much amusement.

There is another manner of making the pack; it is as follows:—Take a dozen cards or more, and draw a line from the right-hand upper corner, to the left-hand lower corner of the face of each of them; they will thus be all equally divided. Then paint part of some odd figure on the right division of each card, leaving the left untouched. By a little dexterity, you may now seem to transform a set of common cards into a painted pack.

MAGIC DISAPPEARANCE.

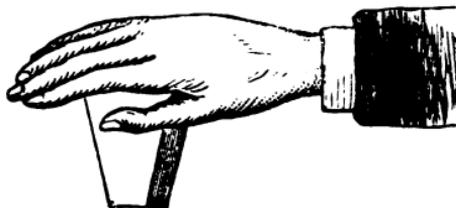
Divide the pack, placing one half in the palm of the left hand, with the face of the cards downwards; then take the balance of the pack in the right hand, holding them between the thumb and three first fingers, and place the cards upright, so that the edges of the cards in your right hand will rest upon the back of those lying in the palm of the left hand perpendicularly, and forming a right angle with them, by which means you will perceive that the four fingers of the left hand touch the last card of the upright cards in your right hand. Be sure you get this position correctly, for the rest of the trick is very simple. You now request any one of your audience to examine the top card of the half pack that rests in the

palm of your left hand, and to replace it again. Having done this, you request him to look at it again, and to his amazement it will have disappeared, and another card will appear in its place.

To perform this trick after you have assumed the position already described, you must dampen the tips of the four fingers that rest against the last card of the upright cards in your right hand. You must now raise the upright cards in your right hand very quickly, and the last card, No. 1, will adhere to the dampened fingers of your left hand.

As you raise the upright cards you must close your left hand skilfully, and you will thereby place the last card of the upright cards—which adheres to the fingers of your left hand—upon the top of the cards in the palm of your left hand, and when you request the person who examined the top card in your hand to look at it once more, he will see the card you have just placed there, instead of the card he first examined.

Observe, be very rapid and dextrous in slipping the card at the back of the upright card from its position there to the top of the cards in the palm of your left hand.



SIXTEEN CARDS BEING IN TWO ROWS, TO FIND THAT WHICH A PERSON HAS THOUGHT OF.

The cards being arranged as follow, desire the person to think of one, and to observe well in which row it is :

A	B	C	D	E	F	H	I
0	0	0	0	0	0	0	*
0	0	0	0	*	0	0	0
0	0	*	0	0	0	0	0
0	0	0	0	0	0	0	0
*	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Let us suppose that the card thought of is in the row A : take up the whole row in the order in which it now stands, and dispose it in two rows C and D, in such a manner, that the first card of the row A may be the first of the row C ; the second of the row A, the first of the row D ; and so on, transferring the 16 cards from A and B, to C and D. This being done, again ask in which of the vertical rows the card thought of stands. We shall suppose it to be in C ; remove that row as well as D, observing the same method as before ; and continue in this manner until the card thought of becomes the first of the row I. If you then ask in which row it is, it may be immediately known, because after the last operation it will be the first in the row said to contain it ; and as each row has a distinguishing character or sign, you may cause them all to be mixed with each other, and still be able to discover it by the sign you have remarked.

If a greater number of cards be employed, disposed in two vertical rows, the card thought of will not be at the top of the row after the last transposition : if there are 33 cards, 4 transpositions will be necessary ; if 64 there must be 5 ; and so on.

**A CERTAIN NUMBER OF CARDS BEING SHOWN
TO A PERSON, TO GUESS THAT WHICH HE
HAS THOUGHT OF.**

To perform this trick, the number of the cards must be divisible by 3; and to do it with more convenience, the number must be odd.

The first condition, at least, being supposed, the cards must be disposed in three heaps, with their faces turned upwards. Having then asked the person in which heap is the card thought of, place the heaps one above the other, in such a manner that the one containing the card thought of may be in the middle. Arrange the cards again in three heaps, and having asked in which of them is the card thought of, repeat the operation as before. Arrange them a third time in three heaps, and having once more asked the same question, form them all into one heap, that containing the card thought of being in the middle. The card thought of must then necessarily be the middle one; that is to say, if 15 cards have been employed, it will be the eighth from the top; if 21, the eleventh; if 27, the fourteenth; and so on. When the number of the cards is 24, it will be the twelfth, &c.

THE RESTORATIVE CARD.

Secretly coil up a needle-full of thread by winding it round a ruler and slipping it off; and hide this in a card as you roll it up. Wind around this card a needleful of the same thread, which you then clip to pieces with scissors, shaking the bits into the fire or into your magic box by which they disappear. On unrolling the card, you seem to reproduce the destroyed thread.

THE FOUR CONFEDERATE CARDS.

A person draws four cards from the pack, and you tell him to remember one of them. He then returns them to the pack, and you dexterously place two of them under, and two on the top of the pack. Under the bottom ones you place four of any sort, and then taking eight or ten from the bottom cards, you spread them on the table, and ask the person if the card he fixed on is amongst them. If he says No, you are sure it is one of the two cards on the top. You then pass those two cards to the bottom, and drawing off the lowest of them, you ask if that is not his card. Should he again say No, you take up that card, and bid him draw his card from the bottom of the pack. But if, on the contrary, he says his cards are amongst those you first drew from the bottom, you must dexterously take up the four cards you put under them, and place them on the top. The other two are the bottom cards of the pack, and are to be drawn in the manner before described.

THE MAGIC POCKET-BOOK.

(Die zwei magischen Brieftaschen.)

Cut out two rectangular pieces of pasteboard three inches by three and a half inches, A B. Run a band of tape on the board A, from C to E, and from D to F: then turn-over and glue the tape at C D at the back of A; and at E F at the back of B.

Fasten two other tapes in the same way on card B at G L on the back of it, and at G H on the back of A.

The two boards will now form a book of two leaves, opening as on hinges.

Bring four other tapes under those already fastened, marked M H Q R, and glue their ends down at the back

of the card; and two more tapes on O and B sides of B; all of which form borders and are for no other purpose.

Make two envelopes like those for letters, and fasten down the front, where the address is written—which must be the same size as the card, so as to cover all the tapes G J and H L as well as the space between them;



one envelope being thus face down upon the ribbons to which it is glued, the second envelope is pasted to the first one, face to face, one hiding the other and both, of course, hiding the tapes from view.

As the book can be opened *twice over*, by bringing the leaf on the left upon that next to it, and that again over on the other, when the envelope now open and alone shown is the duplicate, and not that first seen, a deception is easily performed.

Performance. A coin is borrowed and marked, or a question is written, and the coin or the paper is put into one of the envelopes, and folded up. In closing up the book you secretly reverse it, and bring the second envelope up so as to be shown open and empty, or with an answer to the question.

Performance with cards. Having had a drawn card carefully noted, you undertake to change it into another one altogether. Placing it in your magic book and proceeding as with the coin above, the transformation is readily accomplished.

TO GUESS SEVERAL DRAWN CARDS.

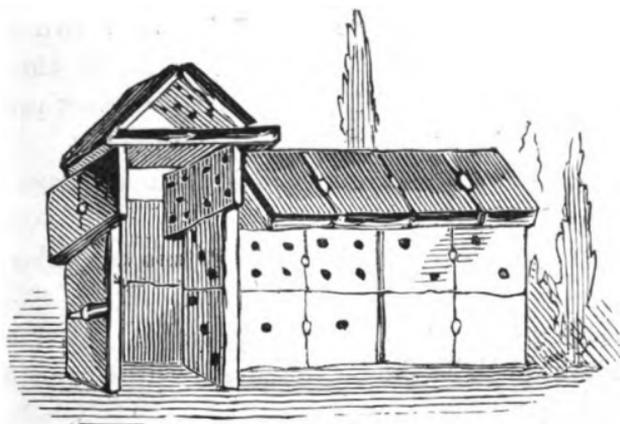
A pack of similar cards is offered, from which two or three persons draw cards. They should not sit too closely together, however, lest one should see the cards drawn by the others. They note their cards and replace them in the pack. You turn, and while pretending to look through the pack, you take two other cards which you must have at hand, place with them a card out of the pack, and approach those persons who have drawn cards, asking each if his card is not among the three. On receiving an answer in the affirmative, you point out the drawn card.

THE BUTCHER'S GRIP, OR "HOLD IT FAST."

Asking the most athletic person in company whether he is nervous, he will most probably answer in the negative; then ask whether he thinks he can hold a card tightly. If he answers, "No," ask the question of some one else, till you obtain an answer in the affirmative. Desire the party to stand in the middle of the room, and holding up the pack of cards, you show him the bottom card, and request him to proclaim what card it is; he will say it is the knave of spades; you then tell him to hold the card tightly at the bottom, and look to the ceiling. While he is looking up, ask him if he recollects his card; if he says, "Yes," desire him to draw it away,

and ask him what it is ; he will, of course, answer, " The knave of spades." Tell him he has made a mistake, for if he looks at his card, he will find it to be the knave of hearts, which will be the case. Then give him the remainder of the pack, telling him that if he looks over it he will find the ace of spades in quite a different situation.

Explanation.—An extra knave of spades is cut in half, the upper part alone retained. When commencing your feat, get the knave of hearts to the bottom of the pack, and lay over the upper part of it, unperceived, your half knave of spades ; and, under pretence of holding the pack very tight, throw your thumb across the middle of the knave, so that the joining may not be perceived, for the legs of those two knaves are so much alike that there is no danger of detection. You, of course, give him the legs of the knave of hearts to hold, and, when he has drawn the card away, hold your hand so that the faces of the cards will be turned towards the floor, and take an opportunity of removing the half knave : you may vary the feat by having a half knave of hearts.



**TO PREVENT ANY ONE DRAWING A CARD WHICH
YOU HOLD UP PLAINLY BEFORE HIM.**

Place the four kings face up upon the top of the pack, their feet towards the company. As you place the topmost king upon the pack, you bend it secretly in the middle, folding the lower part back upon the upper half of the card, the head of which is now only visible, the feet of the king below seeming to belong to it. You conceal the deception by placing your two thumbs across the middle of the pack.

In this manner you can let three persons draw, and neither will draw the king that is on the top of the pack.

THE RECOVERABLE CARD.

Procure fifty-three cards exactly the same. Let a person draw from them, as from a regular pack, one card which he may burn or otherwise destroy.

Nevertheless, on his or another's picking a second card at will out of the pack, it will appear to be the same as that destroyed.

It will possibly be observed: "You had two similar cards!" and a wiseacre will defy you to let the cards be counted, since he will suppose you were not prepared for this objection.

You can count them out, face down, and prove there are, indeed, fifty-two.

If other remarks are made substitute a regular pack of the same appearance.

Variation.—With two duplicate cards. After having shuffled the pack let the bottommost be drawn, examined, and destroyed.

Go to the chimney place and whistle: "Father, come

home!" and, on returning to your former place, pull the duplicate card from the selector's ear.

Modification.—Let a corner of the destroyed card be given to you. For this substitute a corner of the duplicate card. On returning and producing the card it is found to want that very piece by which it is to be identified.

A PACK OF CARDS KEPT TOGETHER IN THE AIR.

Have a pack of cards bound together with a hair, on the shelf at the back of your table. After having shuffled another pack of cards, bunch them rapidly, and, in lowering your hand as if to throw them away—substitute the prepared pack. These will fly through the air like a solid body until it comes in contact with ceiling, wall, or floor, when it will fall asunder.



TO CHANGE A CARD BY WORD OF COMMAND.

Have two cards of the same sort in the pack (say the ace of hearts). Place one next the bottom card (say ten of clubs), and the other at top. Shuffle the cards without displacing those three, and show a person that the bottom card is the ten of clubs. This card you slip aside with your moistened finger, and, taking the ace of hearts from the bottom, which all suppose to be the ten of clubs, lay it on the table, telling him to cover it with his hand. Shuffle the cards again, without displacing the first and last card, and, shifting the other ace of hearts from the top to the bottom, show it to another person.

You then draw that ^{secretly} away, and, taking the bottom card, which will then be the ten of clubs, you lay that on the table, and tell the second person (who believes it to be the ace of hearts) to cover it with his hand.

You then command the cards to change places; and when the two parties take off their hands and turn up the cards, they will see, to their great astonishment, that your commands are obeyed.

**TO PLACE THE FOUR KNAVES UPON ONE ANOTHER
SO THAT ONLY THE UPPER HALF OF EACH CARD
IS VISIBLE.**

Upon the lower half of one of four knaves place the upper half of the second at right angles; upon the lower half of the second knave place the upper half of the third, also rectangularly; then the upper half of the fourth knave upon the under half of the third; and lastly push the under half of the fourth knave under the upper half of the first, and the trick is done.

TO CHANGE FIVE KINGS INTO FIVE QUEENS.

Draw a sharp knife gently across the middle of four kings of an ordinary pack. Peel the picture carefully from one half of the cards, and paste upon the blank part the four half pictures of four queens, which have been peeled off in the same manner. In this way you have four cards, each representing both a king and a queen.

To these prepared cards add an ordinary king and queen. These six cards you fan out, from the left to the right, in such a manner that only the kings are visible.

This is easily done if you keep the ordinary king at the end of the fan to the right, and the queen concealed behind it. You show the five kings, say that you will change them into five queens, blow upon the cards, reverse them, placing the king behind the queen, and display them as five queens.



THE SHUFFLED TEN.

Let a person remember the numerical position of a chosen card replaced in the pack. On taking the pack into your hand, bring a certain number of cards, say ten, from the top to the bottom.

Mentally take that number from the whole number of cards, fifty-two with a full pack, and boldly tell the company that the selected card will be the forty-second, reckoning from the card itself. If his card was the tenth, you count it eleven, twelve, thirteen, and so on, and his card will come out as announced.

THE MYSTIC CHANGE.

Take the four kings into your hand in such a manner that one slightly overlaps the other, yet so that each can easily be distinguished when held closely in the hand.

After showing them to the company, you slide them together, and place them, thus joined, upon the top of the pack, held in your right hand. You then draw off the four top cards, and lay each in a person's lap, face downwards, directing them to place the flat of the hand upon them. You now draw four other cards from the pack, and place them each upon the lap of a neighbour of each of the four above persons, and direct them also to cover them with the flat of the hand. You now step with the rest of the cards, in front of each of these eight persons, flirt the cards towards the lap of each, and when each lifts his card from his lap, and looks at it, it appears that the four persons, upon whose lap you have placed the four kings, have altogether different cards, and their neighbours have now the four kings.

This is done in the following manner. While you are drawing the four kings from the pack, and placing them

as described, one upon the other in your hand, you, at the same time, unperceived, carry off four other cards, and place them behind the four kings, so that they lie in the hollow of your hand, and cannot be seen. When, after having showed the four kings, you push them together in a heap, the four kings, of course, come in front of the four other cards, which latter now lie on the top of the pack; these you distribute to the first four persons, and then deal out the four kings to their neighbours.

TO SEPARATE A CHOSEN CARD FROM THE PACK AT A BLOW.

If the pack is placed between the finger and thumb of one of the company, holding it by one corner, and you strike them abruptly upwards with your wand while the grasp is tight, the cards will fly away, except the uppermost one. This will be caught between the fingers, on their coming naturally together on closing the pack between them.

Variation.—If the blow is given downwards the bottom card will be similarly retained.

It follows that if you have placed a selected card in either of the above positions described, it must be the one which is thus left in the person's hold.

KNOCKING A CARD OUT OF THE PACK.

When a chosen card is replaced in the pack, bring it to the middle as you pretend to shuffle them.

The backs of the cards will be uppermost, so that no one can see where you have placed it.

Upon any one striking the cards you have merely to tighten your grip on the others and entirely release the centre one, for it to fall on the floor, where it will be discovered to be the selected card itself.

**TO NAME EVERY CARD IN A PACK SUCCESSIVELY
TURNED UP BY A SECOND PARTY.**

Begin by laying out the cards in four rows according to the suits, all of a suit in a row side by side. The cards must now be arranged. Take up the *six* in the top or bottom row, then the *two* in the next row, the *ten* in the *third*, and the *nine* in the *fourth*, placing them one upon the other in the left hand. Then begin again with the row from which you took the *six*, and take up the *three*. From the next row take the king. These numbers will be easily remembered with a little practice, amounting altogether to 30, made up thus—6 and 2 are 8, 8 and 10 are 18, 18 and 9 are 27, 27 and 3 are 30—**KING**. By repeating this addition a few times, it will be fixed in the memory. Proceed by next beginning with the row next to the one from which you took the last card or the king, and take the *eight*; from the next row take the *four*; from the next the *ace*; from the next the *knave*. These cards make up 13. Therefore say, 8 and 4 are 12 and one are 13—*knave*. From the next row to that whence you took the knave, take the seven; from the next row take the five; from the next the queen. These cards make up 12. Thus—7 and 5 are 12—*queen*. It thus appears that you have taken up *thirteen* cards consisting of the four suits, successively taken and being arranged as follows—6, 2, 10, 9, 3, king; 8, 4, 1, knave; 7, 5, queen. Proceed in like manner with the remainder of the cards, beginning with the row next to that from which you took the queen, and take the *six*, then from the next row the *two*, and so on as before, making up another batch of 13 cards. Repeat the process for a third batch, and finish with the remainder for the fourth—always remembering to take the card from the next row in succession continually; in other words, only one card must be taken from each row at a time. When the

cards are thus arranged, request a party to cut them. This is only pretence; for you must take care dexterously to replace the cut just as it was before. Let them be cut again, and replace them as before. Your *ruse* will not be detected, simply because nobody suspects the possibility of the thing. Now take up the pack, and from the *bottom* take the first *four* cards handing the remainder to a party sitting before you, saying, "I shall now call every card in succession from the top of the pack in your hand." To do his, two things must be remembered; and there is no difficulty in it. First, the numbers 6, 2, 10, 9, 3, king, &c., before given; and next the *suit* of those cards. Now you know the *numbers* by heart, and the *suit* is shown by the four cards which you hold in your hand, fan-like, in the usual way. If the first of the four cards be a *club*, the first card you call will be the *six of clubs*; if the next be the *heart*, the next card called will be the *two of hearts*, and so on throughout the *thirteen* made up from every row, as before given, and the suits of each card will be indicated successively by the suit of each of your four indicator cards; thus, as the case may be, *clubs, hearts, diamonds, spades*; *clubs, hearts, diamonds, spades*, and so on. After a little private practice, you will readily and rapidly call, as the case may be, from the four cards in your hand:—the *six of clubs, two of hearts, ten of diamonds, nine of spades, three of clubs, king of hearts, eight of diamonds, four of spades, ace of clubs, knave of hearts, seven of diamonds, five of spades, queen of clubs*—and so on to the last card in the pack.

TO WIN EVERY TRICK AT WHIST.

In the midst of the astonishment produced by this seemingly prodigious display of memory, say—"Now,

if you like, we will have a hand at whist, and I undertake to win *every trick* if I be allowed to deal." Let the whist party be formed, and get the cards cut as usual—on taking care to *replace* them, as before enjoined, precisely as they were. Deal the cards, and the result will be that your thirteen cards will be *all trumps*. Let the game proceed until your opponents "give it up" in utter bewilderment.

TO TELL WHAT CARD A PERSON THINKS UPON.

To do this trick you must lay a wager that you will tell the card the person has touched, though you do not see it. Let several cards be laid out on a table, 1, 2, 3, 4, 5, 6, or any number, then turn your back, or leave the room while the person makes choice; on your return you must inquire what he will lay, having your eye upon the cards laid out: if he says he will lay six to one, or ten to one, you must take the highest number, as that will, in all probability, be the card he had fixed on. You must seem to pause about counting the cards as they lay and choosing the farthest off.

HOW TO DELIVER OUT FOUR ACES, AND CONVERT THEM TO FOUR KNAVES.

Take a pack of eight cards, viz., four aces and four knaves, and let them be laid in this order: an ace and a knave, and so alternately through all the eight cards; then shuffle them, so that always at the second shuffling or at least when you have done shuffling them, one of the aces may be the lowermost card; then putting your hand with the cards to the edge of the table, let out privately a piece of the second card, which is one of the knaves: then showing to the audience the lower card,

which is one of the aces, be sure to cover the piece of the knave with your fingers; then draw out the same knave, laying it down on the table; then shuffle the cards as before, and you will have two aces at bottom; therefore take off the uppermost card, and thrust it in to the middle of the pack; do the same with the lowermost card, which is one of the aces, then you may show another ace as before; and instead of that lay down another knave; proceed in the same method, till, instead of the four aces, you have laid down the four knaves.

The beholders, all the time thinking that they lay four aces on the table, are greatly deceived when the cards are turned up, and will wonder at the transformation.

**TO TELL A SELECTED CARD, WITHOUT SEEING
IT TILL YOU FIND IT IN THE PACK.**

As you hold the cards in your hand, let any one take a card out of the pack, and look at it; then take the card from them with your eyes shut, and put it at the bottom of the pack; then shuffle the cards till you know it is come to the bottom again: then putting the cards behind you, pretend you shuffled them behind you, but let your shuffling be only this; take off the uppermost card, and put it at the bottom, reckon that two; then take off another card, and reckon that three; then take off as many as you please from the top, and put them at the bottom, counting to yourself how many you take off: then bring the cards forth, and hold them with their faces towards you; then take off one by one, privately counting the number, and smell them, as though you found it out by your nose, till you come to the right card; then produce it, saying this is it: and they will wonder how you found it out.

TO NAME THE NUMBER OF CARDS THAT A PERSON SHALL TAKE OUT OF THE PACK.

To perform this recreation you must so arrange a piquet pack of cards that you can easily remember the order in which they are placed. Suppose, for example, that they are placed according to the words in the following line.

Seven aces, eight kings, nine queens, and ten knaves, and that every card be of a different suit, following each other in this order; spades, clubs, hearts, and diamonds. Then the eight first cards will be the seven of spades, ace of clubs, eight of hearts, king of diamonds, nine of spades, queen of clubs, ten of hearts, and knave of diamonds; and so on.

You show that the cards are placed promiscuously, and then offer them with the backs upward, to any one, that he may draw what quantity he pleases; which, when he has done, you secretly look at the card that precedes, and that which follows those he has taken. After he has well regarded the cards, you take them from him, and putting them into different parts of the pack, shuffle them, or give them to him to shuffle. During which you recollect by the foregoing line all the cards he took out; and as you lay them down, one by one, you name each card.

THE CARD IN THE MIRROR.

Provide a mirror, either round or oval, the frame of which must be at least as wide as a card. The glass in the middle must be made to move in the two grooves, and so much of the quicksilver must be scraped off as is equal to the size of a common card. You will observe that the glass must likewise be wider than the distance between the frame by at least the width of a card.

Then paste over the part where the quicksilver is rubbed off, a piece of pasteboard, on which is a card, exactly fitting the space, which must at first be placed behind the frame.

This mirror must be placed against a partition, through which is to go two strings, by which an assistant in the adjoining room can easily move the glass in the grooves, and consequently make the card appear or disappear at pleasure.

Without an Assistant.—Place a table against the partition, and let the string from the glass pass through a hollow leg of it, and communicate with a small trigger, which you may easily push down with your foot, and at the same time be wiping the glass with your handkerchief, that the card may appear the more conspicuous. It may also be diversified by having the figure of a head, say of some absent friend, in the place of the card.

Matters being thus prepared, you contrive to make a person draw the same sort of card with that fixed to the mirror, and place it in the middle of the pack: you then make the pass, and bring it to the bottom; you then direct the person to look for his card in the mirror, when the confederate behind the partition is to draw it slowly forward, and it will appear as if placed between the glass and the quicksilver. While the glass is coming forward you slide off the card from the bottom of the pack, and juggle it away.

The card fixed to the mirror may easily be changed each time the experiment is performed. This trick may be also made with a print that has a glass before it, and a frame of sufficient width, by making a slit in the frame through which the card is to pass; but the effect will not be so striking as in the mirror.

THE DIVINING SPY-GLASS.

Let a small perspective glass be made, that is wide enough at the end where the object-glass is placed, to hold a table similar to the following :—

1.131	10..132	19.133
2.231	11..232	20.233
3.331	12..332	21.333
4.121	13..122	22.123
5.221	14..222	23.223
6.321	15..322	24.323
7.111	16..112	25.113
8.211	17..212	26.213
9.311	18..312	27.313

Take a pack of cards that consists of 27 only, and giving them to a person, desire him to fix on any one, then shuffle them and give the pack to you. Place the twenty-seven cards in three heaps, by laying down one alternately on each heap, but before you lay each card down, show it to the person without seeing it yourself; and when the three heaps are finished, ask him at what number, from 1 to 27, he will have his card appear, and in which heap it then is. Then look at the heap through the glass, and if the first of the three numbers which stands against that number it is to appear at, say 1, put that heap at top; if the number be 2, put it in the middle; and if it be 3, put it at bottom. Then divide the cards into three heaps, in the same manner, a second and a third time, and his card will then be at the number he chose.

Example.—Suppose he desire that his card shall be the 20th from the top, and the first time of making the heaps he says it is in the third heap; you then look

at the table in the perspective, holding it at the same time over that heap, and seeing that the first figure is 2, you therefore put that heap in the middle of the pack. The second and third times you in like manner put the heap in which he says it is, at the bottom, the number each time being 3. Then looking at the pack with your glass, as if to discover which the card was, you lay the cards down one by one, and the twentieth card will be that he fixed on.

THE CARDS IN THE OPERA-GLASS.

Provide an opera-glass about two inches and a half long, the tube of which is to be of ivory, and so thin that the light may pass through it. In this tube place a lens of two inches and a quarter focus, so that a card of about three quarters of an inch long may appear of the size of a common card. At the bottom of the tube there is to be a circle of black pasteboard, to which must be fastened a small card with figures on both sides, by two threads of silk, in such manner that by turning the tube either side of the card may be visible.

You then offer two cards in a pack to two persons, which they are to draw, and which are the same as those in the glass. After which you show each of them the card he has drawn, in the glass, by turning it to the proper position.

The better to induce the parties to draw the two cards, place them first on the top of the pack, and then, by making the pass, bring them to the middle. When you can make the pass in a dextrous manner, it is preferable, on many occasions, to the long card, which obliges you to change the pack frequently; for otherwise it would be observed that the same card is always drawn, and doubtless suspicion arise.

TO TELL THE CARDS BY THEIR WEIGHT.

Ask a person to cut the pack as often as he likes, undertaking by weighing each card for a moment on your finger, not only to tell the colour, but the suit and number of spots, and, if a court card, whether it is king, queen, or knave.

Have two packs of cards exactly alike: one pack to be constantly in use during the evening in performing your other tricks; the second, or prepared pack, in your pocket, which take an opportunity of exchanging, so that it may be believed that the pack of cards of which you tell the names is the same as that you have been doing your other tricks with, and which they must know have been well shuffled.

The manner of preparing your pack (which must be done previously) is by the following line, which you commit to memory, the words in italics forming the key:

Eight Kings threa-tened to save nine fair Ladies for one sick Knave.
Eight King three ten two seven nine five Queen four ace six Knave.

The initial letter of the words in the line and the names of the cards are identical. The word "threatened" is divided into two words, in order that it may answer for the three and ten; pay attention to this, or you may forget the ten altogether, which would set you entirely wrong. You should likewise commit to memory the order in which the suits come, viz. *hearts—spades—diamonds—clubs.*

You should now separate the different suits, and lay them on the table, face upwards, hearts first, then spades, diamonds next, and clubs last. Having done so, begin to sort (to yourself), according to your key: take up the eight of hearts, placing it in the left hand face up; then the king of spades, which you lay upon it, next the three of diamonds, next the ten of clubs, then the two of

hearts, and so on, until you finish your line, which will terminate with the knave of hearts. You then take up the eight of spades, and go on in the same way till you come to the knave of spades, when you begin again with the eight of diamonds, and go on until you come to the knave of diamonds and beginning again with the eight of clubs, you go on until you come to the knave of clubs, which finishes the pack, and which is now ready for use; when you have made your exchange, and brought forward your prepared pack, hand it round to be cut.

You now want to know the first card, as a clue to the rest; and therefore take off the top card, and, holding it up between you and the light, you see what the card is, saying, at the same time, that the old way of performing the trick was by doing so, but that was very easily detected.

Having thus obtained a knowledge of the first card, which we will suppose to be the ten of diamonds, you then take the next card on your finger, and, while pretending to weigh it, you have time to recollect what is the next word in your key, to *ten'd*, which is *to*; you consequently know that this card is a *two*; you must then recollect what suit comes after diamonds, which is *clubs*; you, therefore, declare the card you are now weighing on your finger to be the *two of clubs*; the next will of course be the seven of hearts, the next to that the nine of spades, and so on as long as you please.

Variation.—Take a parcel of cards, suppose 40, among which insert two long cards; let the first be, for example, the 15th, and the other the 26th from the top. Seem to shuffle the cards, and then cutting them at the first long card, poise those you have cut off in your left hand, and say, “there should be here fifteen cards.”

Cut them again at the second long card, and say, "There are here only eleven cards." Then poisoning the remainder, you say, "Here are fourteen cards."

**TO DISCOVER A SELECTED CARD BY A THROW
OF A DIE.**

Prepare a pack of cards in which there are only six sorts of cards. Dispose these cards in such manner that each of the six different cards shall follow each other, and let the last of each suit be a long card. The cards being thus disposed, it follows that if you divide them into six parcels, by cutting at each of the long cards, those parcels will all consist of similar cards.

Let a person draw a card from the pack, and let him replace it in the parcel from whence it was drawn, by your only offering that part. Cut the cards several times, so that a long card may be always at bottom. Divide the cards in this manner into six heaps, and giving a die to the person who drew the card, tell him that the point he throws shall indicate the parcel and show him the card.

You should put the cards in your pocket immediately after performing this recreation, and have another pack, ready to show, if any one should ask to see the cards.



**TO PLACE NINE CARDS IN TEN ROWS OF
THREE EACH.**

Arrange as in this figure.

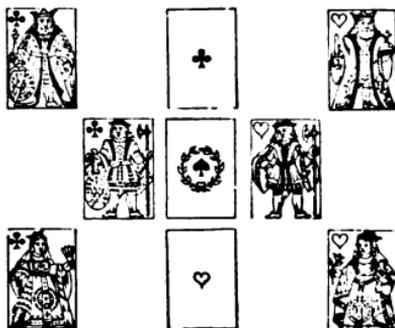


Fig. 161.

**TO NAME SEVERAL CHOSEN CARDS OUT OF A
PACK DIVIDED INTO TWO HEAPS.**

A complete pack is divided into two such lots that all the aces, nines, sevens, fives, and threes, are in one, and all the kings, queens, knaves, tens, eights, sixes, fours, and twos, are in the other.

Let several of the company draw cards out of either of the heaps, change the heaps unperceived, and let the persons place the odd cards, as ace, nine, &c., into the heap of even cards, and *vice versa*. On running over the cards, you easily discover the drawn cards, the even cards being in the heap of odd cards, and the odd cards in the heap of even cards.

**TO MAKE TWO PERSONS DRAW THE SAME CARD
OUT OF TWO PACKS.**

You arrange with your confederate that he shall select a certain card, say the tenth from the top, in a prepared

pack. From a second pack you force a similar card on an innocent member of the company. On the two comparing notes, the truth of your assertion will be made manifest.

TO PRODUCE A CARD WITHOUT SEEING THE PACK.

Take a pack of cards with the corners at one end slightly cut off. Place them all one way, and ask a person to draw a card; when he has done so, while he is looking at it, reverse the pack, so that when he returns the card to the pack the corner of it will project from the rest; let him shuffle them; he will never observe the projecting card. Hold them behind your back. You can feel the projecting card; draw it out, and show it.

HOW TO KEEP A ROADSIDE INN.

Pick out all the aces and picture cards, and then place an ordinary card upon the table. The card," you say, "we will call an inn." You commence your story as follows:

"On a dark night there come four ru"cs to this inn, and ask for a night's lodging. As none of the landlord's four rooms are occupied, he shows each of the yokels to one of the rooms, and goes quietly to bed. (Lay the four knaves around the card which represents the hostelry, and proceed.)

"Not long afterwards four policemen knock at the door, and request also a night's lodging. As Boniface has now no chamber unoccupied he puts an officer in with each of the clowns. (Lay the four aces upon the four knaves.)

"Presently four fine gentlemen come along, and these

want a night's lodging. Mine host is now in great embarrassment, but there is nothing left for him to do but to put a gentleman in each of the four tenanted chambers. (Here you lay a king upon each ace.)

"Thus far times went tolerably well, although not meeting with general approbation. But now come four fine ladies, who also must have a night's lodging. The landlord is now beside himself with perplexity; indeed he fairly loses his senses, for the stupid fellow, not knowing where to *halve* them, actually *quarters* a lady in each of the already occupied rooms! (Lay the queens upon the four other cards.)

"The ladies are highly indignant. 'Could he not have put like and like together?' they ask. So he ought to have done, for policemen and louts, lords and ladies are badly assorted. The fellow is out of his wits!

"'Well,' cried the landlord, at last, 'if you are agreed, I will lodge you like with like.' All readily consent, and soon all the rustics are lodged in one chamber, all the constables in another, all the gentlemen in a third, and all the ladies in a fourth."

While you are saying this, you lay the four heaps one upon another, and let the company cut them as often as they choose. But, notwithstanding all their cutting, if you now tell them off in order from the bottom of the pack, and place them about the tavern, all the knaves will be in one heap, all the aces in another, and so on.

TO TELL FOUR CARDS IN A LOOKING-GLASS.

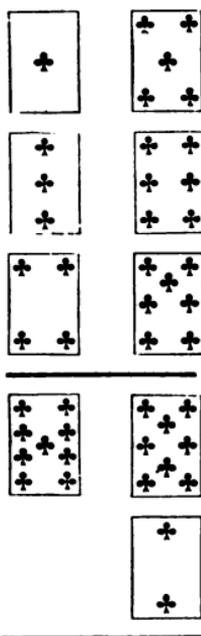
Prepare a pack of cards thus: eight aces of diamonds, eight eights of clubs, as many tens of hearts, and a last octave of queens of spades. These sets are arranged in the order as described, the last bottommost.

The four persons who draw are forced to select each

from a set of eight, in order from the top downwards. Do not allow the drawers to look at the cards, but keep them in their hands or pockets. You now hand around a mirror, and ask the spectators whether they see in it anything else except their own faces. On their replying in the negative, you say, with an air of mystery, that you can see something else in it, and then call off, as if out of the mirror, the card which each person has drawn.

THE CENTURY OF CARDS.

Arrange the nine cards below ten, ace included, so



1 0 0

Fig. 162.

that by adding the spots on them together the amount will be 100.

THE NINE DIGITS.

Place the cards of one suit from one to nine, in-

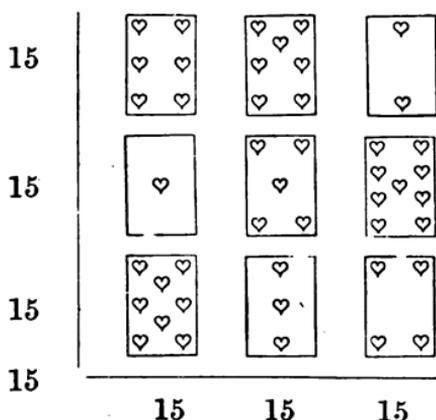


Fig. 163.

clusive, in three rows, so that, in whatever direction you add the rows, the amount will be fifteen.

—————

**TO DIVIDE THE RED CARDS FROM THE BLACK BY
A SINGLE CUT OF THE PACK.**

Screw a pack of cards up tightly in a vice, and shave the edges so as to make the cards narrower at one end than at the other. You then arrange these cards in such a manner that the broad ends of the black cards lie all in one direction, and the broad ends of the red cards in the contrary direction. Now let any of the company shuffle it and return it to you. You then ask in which hand they wish the red, and in which the black cards to appear. On receiving a reply, you grasp the pack firmly at both ends, with both hands, and draw them apart, when you will have in each hand those cards whose broad ends lay in its direction.

Sometimes you will have to draw the card several times before you can get them entirely separated.

Observe.—This recreation should not be repeated, unless you have another pack of cards to adroitly substitute for the former, in which you may separate the pictured cards from the others, they being prepared for that purpose; which will afford a fresh surprise. You may also write on a number of blank cards certain letters or words that form a question, and on others the answer.

THE CARD OF ONE COLOUR FOUND IN A PACK OF THE OTHER.

Put all the red cards in one heap, and all the black cards in the other. One of these packs you conceal in your pocket. You let any person draw a card from the other pack, and while he is examining the card, substitute the pack in your pocket for the one you hold in your hand. Let him place his card in the pack you have taken from your pocket, and shuffle as much as he pleases. On receiving back the pack, you will at once recognize the card he has drawn by the difference of colour.

TO IMPALE A CARD.

Take any card with a pip in the middle—as an ace, five, nine, &c., and thrust through the centre a short tack, of which the head is flat and broad, and the point made very sharp.

At the conclusion of a trick with a borrowed card like the one prepared as above, juggle the former away, and bring the other to the bottom of the pack, the tack point outwards. On hurling the pack horizontally

against a door or other wood-work, the pack will act like a solid body and drive the nail in fast, when the chosen card will be displayed, while the others fall to the floor.

CARDS TOLD BY POETICAL INSPIRATION.

Lay sixteen cards on the table in four rows of four each, face up.

You state that you will leave the room, and, on your return, name any one card touched in your absence.

All the clue you ask is such a one as may be found in a passage read out of any poet on your return by any one. This any one, however, must be your confederate. The cards should be placed in the order in which they are

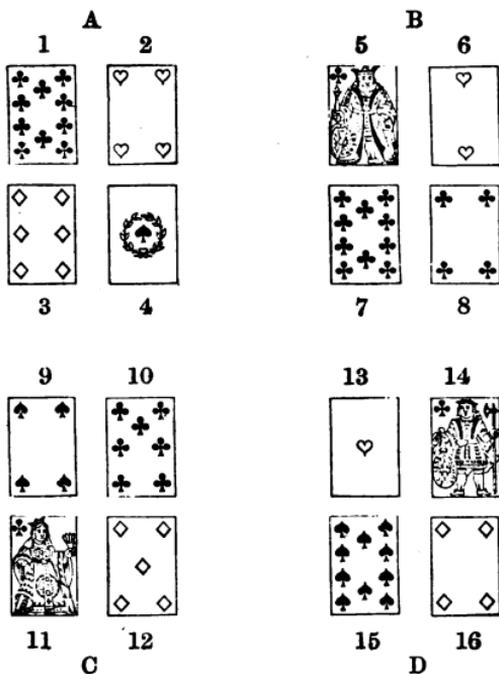


Fig. 164.

here shown, you previously making your confederate acquainted with your mode of proceeding, which is thus : The cards are supposed to be divided into four classes, as A, B, C, D; you class everything in the world as biped (A), quadruped (B), vegetable (C), and mineral (D). Each class is subdivided similarly Class A, No. 1 is the biped; 2, the quadruped; 3, the vegetable; and 4, the mineral; and so with the other classes. When performing the trick your confederate must take care to select an appropriate passage. For example, we will suppose the card No. 12 to have been touched, and that, a volume of Wordsworth having been presented to your confederate to select from, he gives the following lines to be read :

"A violet by a mossy stone," &c.

The first word which can be classed as above is "violet;" you may thus be certain that the card touched is in class C, a violet being a vegetable. The next word you can fix upon is "stone," which you rank in the mineral class, and know that card No. 12 was the one touched, it being the mineral of the vegetable class.

Suppose the trick to be repeated, as is very likely, and that Shakspeare is given to your partner; he selects the passage in "Othello" commencing :

"My mother had a maid called Barbara, &c."

You know, "mother" being the first word that can be classed, the card touched must be in class A (biped), and the next word "maid" being also a biped, the card touched must have been No. 1, which is the biped of the biped class. Many appropriate passages may be easily selected, and your confederate should select a long passage to be read, as it gives greater scope, and helps to mislead the rest of the company; for should they imagine that the card is discovered by the number of lines read,

and they touch the same card again, he can select another passage, desiring them to read only as many lines as they choose.

THE CARD NAILED TO THE WALL WITH A PISTOL-SHOT.

The conjuror obtains a card drawn, and requests the person who has chosen it to tear off one of its corners, and to observe it well to know it again; he takes the card thus torn and tears it all to pieces, burns it, and reduces it to ashes; he then gets a pistol loaded with powder, mixed and confounded with the said ashes, and, instead of a leaden ball, a nail, marked by one of the company, is put into the barrel; then the pack of cards is thrown up into the air, the pistol is fired, and the burnt card is found nailed against the wall; the piece torn from it is then produced, and found to fit exactly the place from whence it was torn, and the nail is acknowledged to be the same by the person who marked it.

Explanation.—A corner of the chosen card being torn, the conjuror steps from the stage, takes a similar card and tears a corner of it exactly in the same manner; returning, he asks for the chosen card, places it secretly under the pack, and expertly substitutes that which he has prepared, in order to burn it in its stead; he then lays hold of the pistol for the first time, under pretence of showing how it should be cocked, fired, and handled; one of the company is then desired to load the pistol with some powder and paper; he seizes this interval to convey the card to his invisible agent, who speedily nails it upon a square piece of board, which serves to shut up hermetically a hole made in the partition and the hangings, but which is invisible, being covered with a piece of the same; by this means the card nailed to

the wall or partition does not yet appear; the piece of tapestry with which it is covered is slightly fastened on one side with two pins, and on the other to a thread, the loose end of which the accomplice holds in his hand. As soon as the latter hears the pistol fired, he draws the thread, and rapidly pulls the piece of tapestry behind the glass; the card consequently appears, and as it is the same that had been marked with the nail just put into the pistol, it is no wonder that this trick, so difficult to account for, obtains applause. It depends entirely on first loading the pistol with powder, after which a tin tube is covered on the charge of powder, the card and nail being rammed down in the tin tube; the pistol being inverted, the tube and its contents fall into the conjurer's hand to convey to his invisible agent.

THE CARDS IN TEA-CADDIES.

Two cards being drawn by different persons, are put into separate tea-caddies and locked up. The performer changes the cards without touching them, or any confederacy.

The caddies are made with a copper flap, which has a hinge at the bottom, open against the front, where it catches under the bolt of the lock, so as when the lid is shut and locked, the flap will fall down upon the bottom; the performer places two cards that he intends to be chosen between the flap and the front, which being lined with green cloth, may be handled without any suspicion; he then desires the first person to put his card into one of the caddies, taking care it be that which contains the contrary card from the one that he chose, and the second into the other; he then desires they will lock them up, which unlocks the flaps, covers their cards, and when opened, presents the contrary ones.

THE CARDS NAMED, DISCOVERED WITH THE EYES BLINDED.

A pack of cards are caused to be drawn by some person. A person arriving in the room names all the cards just drawn, without making the least mistake with regard to their colour, number, &c.

Explanation.—The cards are disposed as we observed before. The conjurer having, unnoticed, observed the card drawn, he informs his agent, even at the very instant he promises he will take particular care he or his agent shall know nothing about it: he says he will not speak a word while his agent names the cards, and that the person who holds them shall be confined to show them to the company, by saying this is such and such a card, &c. It is in this last phrase he names the card, which is underneath; his accomplice, who hears him, and who knows by heart the disposition of the pack, names the cards which follow it; that is to say, for instance, if he is given to understand that the 19th is underneath, he names the 10th, the 17th, &c. Having mentioned the whole pack, his friend, who, during this time, never speaks a word, resumes the use of his speech, and begs of the person who had chosen them, to ask what are the others that remain unnamed; the confederate is informed by this question that there is not one remaining, and answers accordingly.

THE CARD SPRINGING UP INTO THE AIR, FROM THE PACK, WITHOUT BEING TOUCHED.

One of the cards is drawn, which is afterwards put in, and shuffled with the rest of the pack; then the pack is put into a kind of a square spoon, placed upright upon a bottle, which serves it as a pedestal, and at the

company's pleasure the card instantly flies up into the air.

Explanation.—In the first place, a forced card must be chosen, in the manner described; then the pack must be placed in the spoon so that the chosen card may lean on a pin, bent in the form of a hook; this pin is fastened to a thread, and ascending through a pack, leans upon the upper end of the spoon; then it descends under the room, through the table. Thus arranged, the confederate cannot pull the thread without dragging along with it the hook and card, which causes it to be perceived as flying in the air. The thread slides upon the blunt edge of the spoon as easily as if it run in a pulley.

In order to place the cards in the spoon quick enough, that the spectators may perceive no preparation, care must be taken that another pack is presented dextrously on the table. The chosen card in the other, with the hook and thread, must be previously prepared as above described.

TO SHOW A CARD CHOSEN BY THE AUDIENCE IN A DARK ROOM.

Arrange the cards of a pack so as to name them all according to their positions after several changes. This is done in various ways, as explained in *The Secret Out* and the last few pages.

After the pack has been cut by different persons spread it out on the table and ask one of the company to select a card quite at random. Take up the pack, and in doing so divide it into two parcels, and place the one which preceded the drawn card below the other.

While pretending that you wish to convince the audience that the cards are of different suits, hold the pack in such a position that your accomplice in the

next room can see which is the last card. Knowing, then, that the following one is the drawn card, he writes the name or draws the figure of it in black on a transparent screen in the adjoining room.

This screen is to be placed within an aperture in the wall, on withdrawing a curtain to which, the person who selected the card has but to look in to see the writing or picture of it "staring him in the face."

The inner room should be quite dark, so that nothing but the writing is perceived.

THE DOUBLE CONFEDERATES.

Two accomplices are required. Each, however, supposes that he alone is in the secret. To the first accomplice, for instance, you say that the card to be noted is the king of hearts. You take this card from the pack, and give it to the second accomplice to hide somewhere. You then shuffle the cards, let Accomplice A shuffle them also, and then begin a conversation like the following :

You say to Accomplice A, "Kindly note a card in this pack. Shuffle the cards again, and then tell me the name of the card you noted. The king of hearts, is it? Thank you for the king of hearts."

"But I cannot find that card."

"Was it really the king of hearts that you noted?"

"Certainly."

"Ah, I see how it is. His Majesty has gone out for a stroll. Perhaps, sir," addressing Accomplice No. 2. "you saw which road the runaway went."

"I rather fancy I saw him hide behind the clock."

"Will one of you be so good as to look behind the clock?"

And to the general astonishment the missing card is actually found behind the clock, or where else it was placed.

FINALE TO A CARD TRICK.

You ask a person to draw a card, which he does, and putting the pack of cards in a boy's mouth, you tell him that card only shall remain there. You then give the card a blow, and all fall down except the card that was drawn.

Explanation.—Having forced a particular card upon a lady or gentleman, you take care to put this card only between the boy's teeth, and the rest you can easily jerk away.

Variation.—You may put the cards into the boy's pocket, and ask the lady or gentleman whether you shall draw that card out, or leave it by itself. Which-ever is desired, you can easily do, having already separated the card from the pack while putting them into the pocket.

Improvement.—Your confederate is prepared by filling his pockets with cards. On his being called in, you send him among the audience to let several cards be selected. You pretend then to shuffle the selected cards into the pack but you (knowing them from the first, though even this is not necessary) really place them in order at the top or bottom of the pack. The whole pack is then placed in the confederate's breast coat-pocket. He is then asked to draw the cards out one at a time, and show them to the audience, who recognize their selection. This being done, you ask your man to hand you the pack. He does so.

You tap the outside of the pocket, and say, "You have not given me all." He denies that he omitted to

empty his pocket, but on trial, discovers another entire pack. This can go on as long as his supply lasts, and you conclude by inserting your left hand in the man's pocket (up the sleeve of your left arm are several packs) as if merely to keep it open, while with your right hand you shower out several hundreds of the cards.

**JACK TAR'S PRAYER-BOOK, OR THE
COMPREHENSIVE CARDS.**

A nobleman, who kept a great number of servants, had employed as a *confidential servant* an old superannuated Jack Tar. Jack soon became the decided favourite, and upon him did he place all of his most important services. This excited great jealousy among the others, who, in order to prejudice their master, put into his pocket a pack of cards, and then accused Jack in broad terms of being a gambler. Jack was called up, and closely interrogated, but he denied the fact, at the same time declaring he never played a card in his life. To be more fully convinced, the gentleman ordered him to be searched, when behold a pack of cards was found in his pocket. Highly incensed at Jack's want of veracity, the nobleman demanded, in a rage, how he dared persist in an untruth?

"My lord," replied he, "I certainly do not know the meaning of a card: the bundle in my pocket is my almanac."

"Your almanac, indeed? then I desire you to prove it."

"Well, sir, I will begin. There are four suits in the pack, that intimate the four quarters in the year. There are thirteen cards in a suit: so there are thirteen weeks in a quarter. There are also the same number of lunations; twelve signs of the zodiac, through which the

sun steers his diurnal course in one year. There are fifty-two cards in a pack; that directly answers to the number of weeks in a year. Examine them more minutely, and you will find three hundred and sixty-five spots, as many as there are days in a year; these multiplied by twenty-four and sixty, and you have the exact number of hours and minutes in a year. Thus, sir, I hope I have convinced you it is my almanac; and by your lordship's permission, I will prove it my prayer-book also. I look upon the four suits as representing the four prevailing religions, Christianity, Judaism, Mahometism and Paganism; the twelve court cards remind me of the twelve patriarchs, from whom sprang the twelve tribes of Israel; the twelve Apostles; the twelve Articles of the Christian faith.

“The queen reminds me of the allegiance due to her Majesty. The ten brings to my recollection the ten cities in the plains of Sodom and Gomorrah, destroyed by fire and brimstone from heaven; the ten plagues of Egypt; the ten commandments; the ten tribes cut off for their vice. The nine remind me of the nine Muses; the nine noble orders among men. The eight reminds me of the eight beatitudes; the eight persons saved in Noah's ark; also the eight persons mentioned in the Scripture to be released from death to life. The seven reminds me of the seven ministering spirits that stand before the holy throne; the seven seals wherewith the book of life is sealed; the seven liberal arts and sciences given for the instruction of man; the seven wonders of the world. The six reminds me of the six petitions contained in the Lord's Prayer. The five reminds me of the senses—hearing, seeing, feeling, tasting, and smelling. The four puts me in mind of the four evangelists; the four seasons of the year. The three reminds me of the Trinity: the three hours of agony on the cross; the

three days in the Holy Sepulchre. The two reminds me of the two Testaments; the two contrary principles struggling in man, virtue and vice. The ace reminds me of the only true God to adore, to worship, to serve; one faith to believe; one truth to practise, and one good master to serve and to obey."

"So far is all very well," said the nobleman; "but I believe you have omitted one card, the knave."

"True, my lord; the knave reminds me of your lordship's informer."

The nobleman became more pleased with Jack than before, freely forgave him, raised his wages, and discharged the informer.



APPENDIX.

GAMBLERS' TRICKS WITH CARDS, EXPOSED AND EXPLAINED.

GAMBLERS' PREPARATION OR DOCTORING OF CARDS.

Of cards which are "marked" as they come from the manufacturers there is elsewhere mention. But it sometimes happens that the player cannot understand the peculiar patterns of the back, and hence has to mark them himself as he plays.

This is generally done, while he is holding them, by denting them with the nail, scratching the edges or face, or bending the corners.

When the cards have backs perfectly white, the swindling manufacturer can, at a moment's glance, tell you what is on the face of the card; and this secret he communicates to others, whom he employs to go out, and by means of these cards to swindle people out of their money. This may seem quite incredible to some; it is, nevertheless, done, and very successfully too, and it is accomplished by embossing the paper on the back, so as to form a small, fine grain, which the eye would take to be the grain of the paper, this grain running different ways to represent different cards. And there is only one position in which this card must be held that it can be told; and that is, hold the end of the card that is from you the highest, and then the shade will cast the grain in a way that you can plainly see the marks.

REFLECTORS.

The cards so named are, by a mechanical process equally distinguishable to the initiated by their backs as by their faces ; but, from the expense of manufacturing them, they are not often had recourse to. They nearly resemble those ingenious landscapes which, at first sight, present to our view some beautiful scene in nature, but, upon a more minute inspection, give us portraits of human faces with great exactness and fidelity. Some years back this trick was played off on the Continent, to the enriching of a German Jew and two or three of his confederates. He attended the fairs of Frankfort and Leipzig with a large quantity of these cards, which he sold at a price which bade defiance to competition. Visiting the country again, by the time he thought they would be in circulation at the various spas and watering-places where high play was going on, himself and his friends, by being alone able to decipher the apparently invisible hieroglyphics, made a fortune out of this scheme.

THE LONGS AND SHORTS

Consist of having all cards above the number eight a trifle longer than those below it. This is accomplished with great nicety, by a machine invented for that purpose. By this means, nothing under an eight can be cut ; and the chances against an honour being turned up at whist are reduced two to one.

SAUTER LA COUPE, OR SLIPPING THE CARDS.

An adept at this trick can cheat and swindle at pleasure. Wherever it is practised the fair player has no

earthly chance of rising from the table other than a loser. The trick, too, is much practised. By its means the wealth of the unwary and inexperienced player is transferred to the pocket of the cheat.

The following simple *exposition* of the manner in which this trick is performed, will be of essential service to the player. It will enable him to detect the sharper and black-leg; and thus protect himself from their nefarious scheme.

Sauter la Coupe is the French term for "*Slipping the Cards.*" It is practised at whist, when the cards are cut, and placed in the hands of the dealer. By a dexterity, easily acquired by practice, he changes the *cut card*, by *slipping* from its position in the pack, either from the top or the middle, *the ace*, and thus secures its "turning up." The practiser of *Sauter la Coupe*, to cover the trick he is resorting to, invariably *ruffles* the cards, making with them a loudish noise. While the apparently simple action he thus performs, with the consequent noise, distracts attention, he *slips the card*, the ace, which he has hitherto concealed for the purpose, and dextrously placed on the head of the pack when passing it from one hand to another to deal, or ascertains its position in the pack by one of the many means resorted to for that purpose. Whenever the player begins to *ruffle* the cards, instead of dealing *quietly*, suspect foul play. It is a symptom of cheating.

The fair player has no chance with the cheater by means of *Sauter la Coupe*. Suppose that during an evening *twenty* games have been played. The cheat and his partner would thus have to deal the cards at least ten times. During these ten deals the cards might be slipped *six* times, giving the cheat an advantage over the fair player of at least *twenty to one*.

CONVEX AND CONCAVE CARDS

Are both of the same genus with the foregoing ones. All from the eight to the king are cut convex, and all from the deuce to the seven, concave. Thus, by cutting the pack in the centre, a convex card is cut; and by taking hold of the cards, in cutting them, at either end of the pack, a concave card is secured.

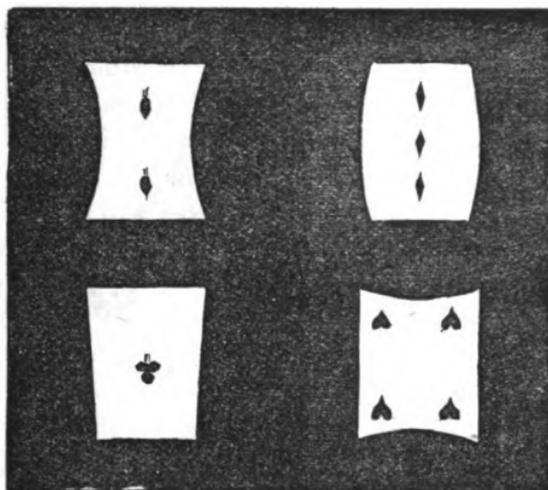


Fig. 165.

Sometimes these cards are cut the reverse way to the foregoing one, so that if suspicion arises, a pack of this description is substituted for the others. But here the sharper has not so great a pull in his favour, because the intended victim may cut in the usual way, and so cut a low card to the dealer. But the possibility, or rather certainty, of his being able, by any means to cut or deal a high or low card at pleasure, is an advantage against which no skill in the game can avail.

HANDLING THE CARDS.

So called from the cards being secured in the palm of the hand. The person who practises this art at cribbage generally takes care to get two fives, with any other two cards, placing one of the two ordinary cards at the top, next to it one five, then the other ordinary card, and under it the other five. These four cards, so placed, he secures in the palm of his hand, while he desires his adversary to shuffle the cards, and being very generous, also tells his opponent to cut them; when this is done, he puts his hand which contains the four cards upon that part of the pack which is to be uppermost, and then leaves the cards on the same; consequently, when he deals, the two fives will fall to his own hand of cards. By these means when a person who can handle, deals, he is pretty sure of two or more fives.

"GARRETTING."

Is so called from the practice of securing the cards either under your hat or behind your head.

The method of doing this is to select out three or four extraordinary good cards, while your adversary is marking his hand of crib. This being done, and the cards properly dealt, you take up your own cards, which you take care to examine pretty quickly, and after laying out any two you think proper for crib, you immediately, with one hand, put your other remaining card on the pack, and with your other hand take down the cards which have been secured; then in lieu of very bad cards, which you might possibly have had, you have the best which can be got.

WALKING THE PEGS

Means either putting your own pegs forward, or those of your adversary back, as they may best suit your purpose; and it is always executed while you are laying out your cards for crib.

The method generally adopted for this business is to take the two eards which you intend to put out for the crib, and fix them with your third finger on the back of the cards, and your others on the front; then holding them fast in your hand, you cover the pegs in the board from the sight of your adversary, while with your first finger and thumb on the same hand, you take out unperceived any peg you like, and place the same wherever you think proper.

THE BRIDGE; or, "THE OLD GENTLEMAN"

Is a card slightly curved. By introducing it carelessly into the pack, and shuffling them, it can be cut at pleasure. The trick of the "Old Gentleman" consists in merely introducing into the pack a card of thicker substance than the rest, which can likewise be cut at pleasure, by being properly placed by the shuffler.

SKINNING.

It is by this operation that unfair cards are introduced, and too often without creating suspicion, by the ingenuity with which it is performed. Certain fair cards are taken out of the original stamped cover, without injury to it, and in their stead either concave, convex, or pricked ones, or reflectors, are placed. The stamp being stuck on the cover by means of gum, which the application of warm water dissolves, or deprives of

its tenacity: a kettle of hot water and a sponge are the only things requisite. The exchange being completed, the unfair pack finds its way into societies of a certain description, where it is contrived to be placed on the card-tables unobserved. Plunder is the inevitable result.

SHUFFLING OR WEAVING.

Much fraud is practised by the help of dextrously shuffling, by which the power to place cards in certain parts of the pack is under the control of the sharper, when become an adept in the art. The preparatory step is a strict observance of the tricks taken up on both sides, and their contents, when those rich in trumps or court cards are selected to be operated upon by the shuffler, when it is his turn to deal.

THE GRADUS, OR STEP

Consists in one particular card being so placed by the shuffler, on handing them to his adversary to be cut, as to project a little beyond the rest, and thus to insure its being the turn-up card, either at whist or *ecarté*.

SLIPPING THE FIVES.

Slipping the fives at cribbage is an amazing strong advantage. The mode of doing this is first to mark them in any manner so as to know them; and whenever it happens that you observe one coming to your adversary, you give him the next card under in lieu thereof, which many who are in the habit of playing much perform with extraordinary dexterity.

SADDLING THE CARDS

Is frequently practised at cribbage. This is bending the sixes, sevens, eights, and nines, in the middle, long ways, with the sides downwards; by which it is extremely easy for you to have one of those cards for a start, by cutting where you perceive a card bent in that manner, taking due care to have the card so bent uppermost.

DEALING FROM THE BOTTOM.

Is a very common practice; it is, therefore, very necessary for you to be very watchful over your adversary while he deals.

This is a device of old date, but it is easier to be performed with the small cards used at *ecarté* than those generally played with at whist. It consists in secreting a certain card until an opportunity presents itself of its being available when it is produced, as implied, from the palm of the hand that secretes it. The story of the hand that was nailed to the table with a fork, and the proffered apology for the act if no card was found under it, is too well known to be repeated: but it is not a solitary instance in the play world. Some sixty years since a member of Brookes's Club was playing at quinze with Mr. Fox. At this game a five is a principal card, and on the person alluded to displaying a five in his hand, after Mr. Fox supposed them all to have been played, he complained, with evident chagrin, of the increasing inaccuracy of his memory. Others, however, were less charitably disposed. The unfair gamester was watched, and detected in introducing a *fifth five!*

STEALING OUT CARDS, AND PALMING.

The cheat of stealing cards is practised as often, perhaps, as any other fraud in card playing. It is of great advantage to the gambler, and gives him an opportunity of forming very good winning hands. In whist, the most desirable cards to steal out are the "honours," and sometimes all four will be stolen out by one man, that is, the honours of one suit; and then he will make that suit trump by keeping one of them at the bottom. This can be done by the backs as well as by the faces, for the cards in general use now by the gamblers can all be known by the backs, and a player will know by the backs where any particular card is dealt; and if he should not steal the honours, he can deal them to himself or his partner, by dealing off the second card instead of the top card, whenever the top card is one that he may want for himself; and if he should steal two of the honours out, he will hide the theft by dealing each player two cards twice; then all will have their proper number, and his theft remains hid; or he will miss giving himself a card twice during the deal, and hide the theft by that means; or he will give himself two twice during the deal, and have sixteen, while the others have but twelve each; he will then hide his theft by concealing four cards that are poor in the palm of his hand, and in gathering a trick will place all upon his bunch of tricks. And as his tricks are all bunched, the players will depend on counting the tricks of the other party to determine who has won the odd trick; and hence he succeeds in hiding his theft.

CUTTING, SHUFFLING, DEALING, STEALING, &c.

No man is secure from the artifice of the gambler; so long as he will play at all, he may rest assured that he will, in the end, come out loser, for the methods of cheating are almost innumerable. A majority of gamblers have arrived at such perfection in the art of dealing that they will deal the second card from the top instead of the top card, and will go all through the pack in that manner: and you may look directly at them, and will not be able to detect the cheat. They will, at other times, have a hand which they have stolen out, and will smuggle it under the bottom; then, in the course of dealing, they will deal this hand just where they please, and defy you to discover their dealing from the bottom. A gambler will often deal himself six or seven cards, when he should have but five, and if he can make a good hand, by laying out the two poorest in his lap, he will do so; or if he cannot make a good hand, he will take the two best to help him in his next hand. This cheat is very often practised.

DIAMOND CUT DIAMOND.

I will here relate a case which occurred not long since, as going to show how well-experienced men will play more than their number. A gambler got to playing, coming up from Goodwood, with a man whom he mistook for a "greeney" that knew nothing of playing *scientifically*. But he was sadly deceived. The gambler from the beginning played somewhat carelessly, supposing that it needed no science to beat the stranger; but the gambler lost, and commenced playing as scientifically as he could. He still lost, and finally lost nearly all he had before he left off; and after quitting, they went to

the buffet to drink. The gambler said to his antagonist, "You beat any man for luck I ever played with. I've lost my money with you, but it makes no difference: I will be honest with you; you did not know it, but I played six cards all the time, and your luck beat it." "Well," said the innocent chap, "since you have been so frank, I will also be frank; I have played *seven* cards all the way through, besides stocking and palming and occasionally stealing, for the sake of variety." The gambler was greatly surprised, and swore that he would not have supposed that he knew much more than one card from another; but he was deceived in the man, and it would not have done for him to have shown any anger, as he first confessed having cheated the other, who was in reality a most expert gambler, and had purposely assumed that disguise.

GAMBLERS' MEANS OF SECRET COMMUNICATION.

Again, gamblers, for mutual advantage, generally travel in small companies, and in secret partnership. I have again adverted to this, in order to mention one of the ways in which they often turn their partnership to good account. They almost invariably feign to be total strangers to each other, the better to carry out their base designs; and when one or two of them are seated at a table at play with some whom they wish to fleece, one of the company will seem to be a total stranger to everybody, seats himself in sight of a man's hand, who is at play, and is not one of the confederates; and if he shows, by word or act, that he would rather he would not, he will readily protest that his only motive is the gratification of an idle curiosity; that he scarcely knows one card from another. And very probably, after such protestations from one who appears a stranger, and withal an

honest gentleman, he is suffered to continue to look into the player's hand. If he should be asked to play, he will say, "I cannot, as I have never learned; indeed, I scarcely know the cards." He will take this course in order that his looking into the hands of the players may not be objected to. And his motive in looking into the hands is to give his secret partners signs. This he will do in various ways. I have known men who would give signs, that were perfectly intelligible, by the different manner in which they would blow their cigar smoke. In even such simple and imperative acts as holding the cards a gambler can give intelligence to his partner. As for his fingers, their slightest movement, however natural, conveys information. And in order to evade suspicion, I have also known signs to be conveyed through two and three different persons, who were secret partners of the players, and were sitting in different parts of the same room; and the signs would always reach the player in time to benefit him. This is often done when there is danger of being detected, if he should look at the man who is looking in the other's hands for his signs. Nor is it a matter of importance whether there is a room full or not; for they will practise these artifices before a room full as well as if there was a very small number of persons present.

At other times, when a man loses heavily, one of the company will go to him and form an acquaintance, if it does not already exist, and will say to him, "You are much the loser with A or B, and I am acquainted with him, and if you will in confidence accept the offer, I will do you a favour, by which you will stand a chance of getting your money back again. Do you engage with him in play, and I will sit back of him, and give you correct signs from his hand, so that you can know how to govern your bets." Nothing appears more generous than

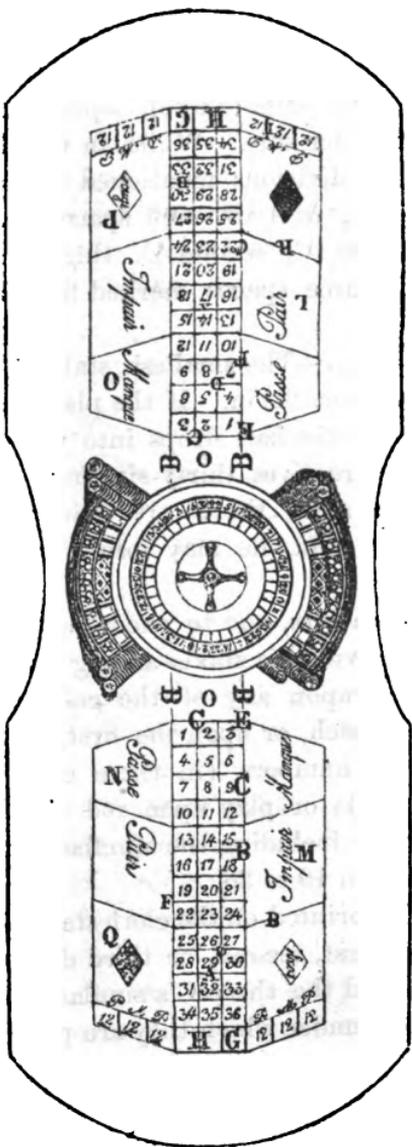
this; and a weak man is apt to be eager to avail himself of any means that promises to restore him his lost money, and will feel highly elated that he has met with an unexpected friend, and will flatter himself with the idea of winning all the man has; feeling that if his pretended friend should succeed in giving him correct signs one hand out of four, it will be sufficient to enable him to win much from him. This is all the basest deception. The man proposing this mode of playing is a secret partner of the winner, and their design is to swindle the man still further. Both are fully apprised of the plan, and when they succeed in getting the loser to play again (they generally have cards which they know as well by the backs as by the faces), if the winner should have a large hand, and the loser a larger one, he (the winner) will bunch his cards so closely that the one behind cannot see to give signs, and he then suffers himself to be run off. And if you should have one or two pairs (which he will know by the backs), and he should get the same, though a little larger, he will then permit the man to give signs that he has only one or two pairs, as the case may be, and all that he can entice the loser to bet, he will win from him.

The gambler will only bet on small worthless cards when his hand is better than his opponent's; and, frequently, by such contrivances as we explain, will deal the latter three aces and a pair of kings to his own four tens or knaves.

Anybody would bet largely on such a hand, and thus, a gambler will ruin a man in a few games.

TRICKS AND ROULETTE.

Roulette is played upon a long table, of which we give a representation. This table is covered with green cloth. In its centre is a movable cylinder, on the circumference of which are thirty-seven divisions, separated from each other by wires, and numbered from 6 to 36.



This cylinder is made to revolve, by the hand, at the same time that a small ball is thrown in the opposite direction upon the fixed parts of the machine, where, after several circuits, it falls into one of the numbered compartments, which are alternately black and red.

At each end of the table, numbers corresponding with the thirty-seven upon the cylinder, are stamped on the cloth in three columns, with the words *manque* ("dead" or missed), *pair* (even), and *rouge* (red), on one side of the columns; and *passee* (stake), *impair* (odd), and *noir* (black), on the other side. While, in the line below the columns and the divisions mentioned (namely, *manque*, *pair*, *impair*, &c., &c.) are nine spaces, marked below the columns, first C, second C, third C; and to the right and left three spaces marked first D, second D, third D.

Mode of Playing.—The smallest stake allowed by the foreign tables is one florin. If the player bet upon any odd number, and the ball drops into the compartment so numbered, he receives thirty-six times the amount of his stake; but since there are always thirty-eight chances against him, he may lose a very large sum before winning at all.

To simplify matters, and to encourage the player, he is at liberty to divide his stakes among several numbers, lay his wagers upon any of the columns containing twelve numbers each, or upon the first, second, or third series of twelve numbers (in these cases he is paid double if he win); or play upon red or black, odd or even—the former including the numbers from 1 to 18, and the latter from 19 to 36.

The three D's printed on the cloth stand for *Douzaine*, and signify the first, second, or third dozen on the red or black side; and the three C's similarly stand for the *column* of figures under which they are placed.

The game, however complicated it may appear at first glance, is really quite simple, as a little attention to the explanation will attest, and affords great variety in the betting.

As the bank must win in the long-run, and its per-

centage is but small, the "regular" places can afford to dispense with deceptions. In private gaming-houses, however, as many tricks as ingenuity can invent are employed to fleece the unwary.

ENGLISH ROULETTE.

(From *Rogues and Vagabonds of the Race Course.*)

The thirty-six divisions of the English roulette-table into which the ball falls, are thus designated:—

Two Crowns.	Four Blues.
Two Feathers.	Ten Reds.
Three Yellows.	Fifteen Blacks.

The odds laid are—

The proper odds being—

Against Crown . . .	12 to 1	17 to 1
„ Feather . . .	12 to 1	17 to 1
„ Yellow . . .	8 to 1	11 to 1
„ Blue . . .	5 to 1	8 to 1
„ Red . . .	2 to 1	13 to 5
„ Black . . .	1 to 1	7 to 5

Any one not acquainted with the roulette man would almost marvel that with such immense odds in his favour, he should think it necessary to cheat; but to cheat is his delight and recreation.

The man who enters the roulette-text on the race-course, should he be the only *bonâ fide* player, may well leave all hope behind. Supposing that he commenced playing with the determination of losing a certain sum only, he would save himself trouble by paying down that sum then and there.

True, if several are playing at the same time, he does stand a chance; a poor one, perhaps, but yet he

may win considerably—for however sharp the man at the wheel may be, he cannot fleece everybody at once. If anything delights the roulette man, it is to slay his victims one by one; for where there are many playing, some shrewd man is sure to place his sovereign or two exactly opposite the large stakes; and should he vary this amusement by an occasional half-sovereign on zero, when heavy stakes are on the black and red, he becomes an intolerable nuisance. In this game the ball can be made to fall into zero at will, and very often into any other number. Should a heavy stake be placed on red, it is any odds on black turning up, and *vice versâ*; and should, as is often the case, a large stake be on both red and black, provided there is no stake on zero, then zero will inevitably turn up.

On examining a roulette wheel, it will be found, probably, that the brass partition on one, and often on each side of zero, can be drawn out slightly, thus causing a projection. We say probably, for in case of any untoward event, a perfectly fair duplicate movable bottom, with which most tables are provided, will be substituted for the unfair one with marvellous rapidity.

Supposing that the man at the wheel wishes zero to turn up, by the same movement with which he starts the wheel to the right, he dexterously pulls out the brass partition on the left of zero, causing a projection which, in the rapid rotary motion, escapes notice; he then carefully sends the ball in the opposite direction, which, as it encounters the projection, jumps forcibly, making a peculiar clicking noise. As it lessens its speed the jumping becomes less violent, till, at last, the ball has not impetus sufficient to clear the projection; it therefore calmly “refuses,” or, in other words falls into zero “dead beat.” Of course, the same principle holds good conversely, for by drawing out the other

partition, or by turning the wheel to the left, it is a moral impossibility for the ball to rest in zero.

To stand a chance, then, the player should *never on any account stake until the ball is fairly in play.*

The clever way in which the partitions are restored to their proper places is worthy of notice. After the ball has fallen into the desired place, but before the wheel has ceased to revolve, the roulette man places his hand, apparently with the intention of stopping the wheel, but in reality so as to make each partition, as it passes his finger, strike up against it. Those that have been pulled out are thus driven back again.

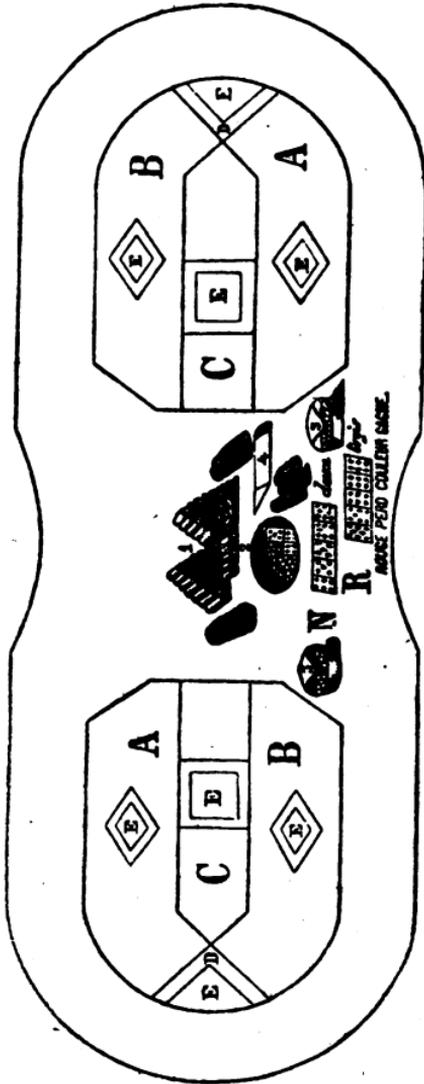
There is another way of preparing the table, bungling and apparent; but it is only attempted upon the intoxicated and very inexperienced young men.

In this case, though only one or two of the brass partitions can be pulled out, on *the left* of the crowns, feathers, yellow, and blue, the partitions were all fixed projecting more or less, so that no sleight of hand was at all necessary in the manipulation of the wheel; for when it is turned to the right, and the ball of course thrown in the opposite direction, the ball must necessarily fall into one of the above-mentioned divisions; but, on the other hand, were the wheel turned to the left, red or black would necessarily turn up.

If the roulette man cannot by this system, as he can by the other, turn up what he likes, he can, at all events, prevent anything turning up that he would lose upon.

Roulette is considered vulgar compared with 30-and-40 (Trente et Quarante), otherwise Red and Black (Rouge-et-Noir).

ROUGE-ET-NOIR, OR, TRENTE ET QUARANTE
 This game is played, like roulette, on a table covered with green cloth.



The *tailleur* ("cutter of the cards," banker or dealer) seats himself at the centre of the table, while opposite him, and at each end, are croupiers (rakers-in), to see that no mistakes are made, to aid bettors in placing stakes, and to draw or push money lost or won with long wooden rakes.

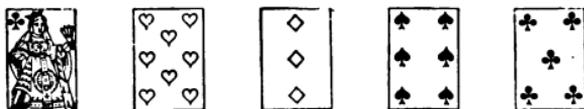
On one side of the table is a piece of red cloth, diamond shaped, and, opposite it, a piece of black cloth of the same shape.

The bettors who believe that red will win, put their money on the red side, and those who believe in black, lay their wagers on the black side.

The dealer continually calls out, "*Faites votre jeu*" (Make your play), and when he sees that all the stakes are down on the table, he adds, "*Le jeu est fait*" (The game is made), closing, as he begins to deal out the cards, "*Rien ne va plus*" (no more stakes can be received).

All bets are then rejected, and all stakes pushed back.

Mode of playing.—The game is played with six packs of cards, the court cards counting ten each, and all the others according to the number of spots upon their faces. They are shuffled and held face down, and laid on the cloth face up in two rows or series. The dealer continues dealing out, and counting in a loud voice, until the added numbers reach thirty-one, but they must not be beyond forty. The first row counts for black, and the second for red. Supposing that the first row or series of black came thus :



This makes in all 32, completing that series.

Now, supposing that the second row or series of red came thus :



This makes in all, 37. In this case, black wins, because 32 is nearer 31 than 37.

The dealer, therefore, declares, "*Noir gagne*" (Black wins), or "*Rouge perd*" (Red loses), whereupon all bets upon black are paid, and all the stakes upon red taken in by the croupiers.

Wagers on colour are made during the play, and decided by the colour of the last card in the winning series.

Thus: if black wins, and the last card of that series be clubs or spades, colour wins; but if hearts or diamonds has been turned up last, colour loses.

The bank has, in the long run, advantages enough to defeat all players. The advantage at Rouge-et-Noir is called the *refait* (drawn game), which happens when there is a tie between the two series, and both count the same number between 32 and 40. For instance, 34 or 39 for both the series, red and black.

In this case, neither bank nor players win or lose. The players may change their stakes, or let them remain, at pleasure.

Should each of the series count 31 (which occurs once in thirty-eight or forty times), bets are *en prison* (dead); that is, there they must remain until the next deal decides their fate. This seems fair, but it is equivalent to giving the bank half the stakes. The Homburg Bank, which is the most liberal, puts the stakes *en prison* only when the last card of the second series is black.

The *refait* at Rouge-et-Noir is estimated to make the percentage of the bank about two and two-thirds, which is diminished at Homburg to one and a third.

The advantage at Rouge-et-Noir is less than at roulette; while the minimum stake is two florins, and the maximum is 5,600 florins. The bank capital at the present game must be something like five times that at roulette. The extent of stake, on a simple chance, is 4,000 francs.

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