









**INANIMATE REASON;**

**O R A**

**CIRCUMSTANTIAL ACCOUNT**

**OF THAT ASTONISHING**

**PIECE OF MECHANISM,**

**M. de Kempelen's Chés-Player;**

**NOW EXHIBITING AT**

**N<sup>o</sup>. 8, SAVILE-ROW, BURLINGTON-GARDENS;**

**ILLUSTRATED WITH**

**THREE COPPER-PLATES,**

**Exhibiting this celebrated AUTOMATON, in different  
Points of View.**

**Translated from the original Letters of M. CHARLES  
GOTTLIEB DE WINDISCH.**

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**L O N D O N:**

**Printed for S. BLADON, No. 13, Pater-Noster-Row.**

**1784.**



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## P R E F A C E.

**T**HE boldest idea, that ever entered the brain of a mechanic was, doubtless, that of constructing a machine to imitate man, the masterpiece of the creation, in something more than figure and motion. M. de Kempelen, not only conceived this idea, but also carried it into execution; his chess-player being, beyond contradiction, the most astonishing Automaton that ever existed; never before did any

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mere

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mere mechanical figure unite the vis motrix, to the vis-directrix, or, to speak clearer, the power of moving itself in different directions, as circumstances unforeseen, and depending on the will of any person present, might require. Was a wooden figure ever before seen playing at the most difficult and complicated of all games, frequently beating the most consummate adept, and setting him right, if ever he deviated from the rules of the game? This phænomenon was too extraordinary not to make a great noise on its first appearance; and, accordingly, the literary journals were eager to announce it, not without some exaggeration tending to the marvellous. There had hitherto appeared but one description tolerably



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tolerably exact, and free from exaggeration, which was published in 1773, in some public provincial papers, by M. de Windisch, the respectable author of the history and geography of the kingdom of Hungary, and the intimate friend and countryman of M. de Kempelen: But that description, too concise in itself, and circulated in too narrow a sphere, was insufficient to make known, as it deserved to be, to all Europe, an invention as surprizing as incredible. The above-named author is therefore intitled to the thanks of the public, in having furnished it, in the letters we are now publishing, with a more ample detail of the particulars of this celebrated Automaton. He here gives an account of all its component parts,

B 2

and

and describes them in such a manner as to leave nothing to be wished for, except the inventor's secret; and has added some interesting circumstances, proper to make known the merit of this so justly celebrated man. The editor who has the publication of these letters, having, during a long residence at Vienna, contracted an intimacy with M. de Kempelen, and had frequent occasion of seeing his Automaton play, is happy in performing his task, to have not only an opportunity of testifying to the public, his earnest desire to please them, but likewise of giving his illustrious friend, an authentic testimony of his particular esteem. The better to do this, he has added three copper-plates, representing the  
chefs-

P R E F A C E. ix

chefs-player in so many different situations, which cannot but be exact, as they were carefully engraved from M. de Kempelen's own drawings.

The first is a front view, before he begins playing.

The second a back view, likewise before playing.

The third represents him at play, with his hand and arm lifted up.

These plates are doubly useful. Those who have not had an opportunity of seeing the Automaton, may, by means of them, form an exact idea of it; and they will remind those, who

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who have had the pleasure of seeing it, of the most interesting piece of workmanship ever produced by art. May they also transmit to posterity, the memory of the most astonishing genius this age has produced, in the person of M. de Kempelen.

## L E T T E R

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## L E T T E R I.

Presburg, Sep. 7, 1783.

**D**O not expect, my dear friend, that I should answer every question you put to me, relative to M. de Kempelen's famous chess-player. The Ozanams, the Guyots, and other writers of that class, would be as unsuccessful as myself, in their attempts to satisfy your curiosity. You must therefore set bounds to it, and be contented with such information on this subject, as my observations, made with the utmost care, will enable me to give you.

Far

Far from believing all that you have heard related, or read of this machine, you say, your reflections on it have only encreased your wish to be further informed, inas-much as they encrease your doubts of the possibility of a thing so incredible. Be not surprized at this, since I myself, who have so often seen it, who have examined it, and have played with it, am obliged to make the humiliating avowal, that it is as incomprehensible to me, as it can be to you. This, however, serves to keep me in countenance, that others, endowed with much superior knowledge, and quicker penetration, have not been more successful than myself. Among the many thousands, of all ranks, who have seen it, not one has been able to develope the mystery.

Notwithstanding, say you, it can only be a *deception*, in this the inventor, and every other  
other

Other reasonable being will readily agree with you. But in what this deception consists, is a gordian knot more difficult to untie, than that in days of yore, which Alexander cut afunder.

'Tis a *deception!* granted; but such an one as does honor to human nature; a deception more beautiful, more surprizing, more astonishing, than any to be met with, in the different accounts of mathematical recreations.

The first idea that strikes you, on a superficial examination of this chess-player is, a suspicion, that its movements are effected by the immediate impulse of some human being. I, myself, fell into this mistake. When I first saw the inventor shove his Automaton, fixt to a kind of  
 C large

large cupboard, out of an alcove, I could not, any more than the rest of the company, avoid suspecting, that this cupboard certainly contained a child, which, from the size of it, I supposed might be from ten to twelve years old. Many of the company were so fully persuaded of it, that they made no scruple to declare it; I assented only in silence to their opinion, but was not less confused, when I saw M. de Kempelen tuck up the dress of the Automaton, take out the drawers, and open all the doors of the cupboard, and in this situation, roll it round the room, on the castors which it goes upon, turning it in every direction, so as to enable each person present to examine it on all sides. You are sure, I was not the least eager to gratify my curiosity; I examined even the minutest corner of it,



it, without being able to find any thing, throughout the whole, capable of concealing even the size of my hat. My Vanity was grievously mortified, to see my hypothesis, which, at first sight, appeared so plausible, instantaneously done away.

I know not whether the whole company were affected in the same manner; but I thought I could perceive in many of their countenances, marks of the greatest surprize. One old lady, in particular, who had not forgot the tales she had been told in her youth, crossed herself, and sighing out a pious ejaculation, went and hid herself in a window seat, as distant as she could from the *evil spirit*, which she firmly believed possessed the machine. It is now midnight, a time when churchyards yawn, and graves yield up their  
 dead,

( 16 )

dead, at which hour you know those spirits  
are most intractable, I will therefore leave  
joking, and wish you a good night.

**LETTER**

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## L E T T E R II.

September 16.

I Cannot find an expression to convey the idea I have formed of you, on reading, in your last all the whimsical imaginations, which your suspicions have given rise to. You will place no trust either in my eyes, or those of so many others, not even with the assistance of spectacles! You doubt we did not see clearly, and heap ifs upon buts in such a manner, that I shall be led to reckon you among those

those who suspect M. de Kempelen of dealing with the devil. Be patient, and you shall know the whole, except that one little secret, which probably the inventor will never trust any one with. In order to render my description as clear and easy to be conceived as possible, I enclose you copies of three drawings of the machine, done by M. de Kempelen himself, for M. de Mechell, and which consequently cannot fail of being faithful and exact.

The first represents the machine, such as M. de Kempelen exhibits it for the examination of the curious, before setting it to play; that is seen in front, with the doors open, and the drawer taken out of its place. The second shews the back part in like manner, the dress of the Automaton

tomaton being tucked up, to shew the interior mechanism of the body. The third represents the Automaton at play. By the help of these drawings, and the particulars which I shall give you, you will be able to form as clear an idea of the whole, as if you had seen it play yourself. The order in which I shall communicate these to you, (for I know of none more natural,) is that which I observed the inventor himself constantly adopted in his explanations, and which is become so familiar to me, from the number of times which he permitted me to attend him, that I think myself capable of shewing the machine myself, were it not for the *little* difficulty I should find, to know how to set in motion.

M. de

M. de Kempelen resides here, at Presburg, and occupies, with his family, the first floor of his house; his little work-shop and study, in which the Automaton is, are on the second. When the Automaton is exhibited, the company assemble in the lower apartment, from whence they are conducted up stairs. In passing through the work-shop, which serves as an anti-chamber to the study, you see nought but joiners, smiths, and clock-makers tools, laying in heaps, in that confusion, so characteristic of the abode of a mechanical genius. The walls of the study are, in part, hid by large presses, some containing books, other antiques, and the remainder, a small collection of natural history; the intermediate spaces are decorated with paintings or prints, the performances of the master of the house.

house. The upper part of the presses is glazed, the lower shuts with folding doors, the whole of oak, the floor is of deal. I thought it necessary to be thus particular, in order to save your asking one question, which you certainly would have done, if your imagination, after being worn out by a number of fruitless conjectures had, like mine, found itself under the necessity of having recourse to the idea of a communication with some neighbouring apartment. The first object on entering the study, that catches your eye, is the Automaton, which faces the door. The cupboard, to which it is fixed, is  $3\frac{1}{2}$  feet long, 2 feet deep, and  $2\frac{1}{2}$  feet high. It stands upon four castors, by which means it may be easily moved from one place to another. Behind this is a full-length human figure, dressed in the Turkish

D it,

fashion, seated in a wooden chair, fixed to the cupboard, and which moves with it, when it is wheeled about the room. This figure leans with its right arm upon the table, and in its left hand holds a Turkish pipe, in the attitude of a person who has just been smoking. It plays with its left hand when the pipe is removed. Before the Automaton, is a chess-board screwed down to the table, on which it keeps its eyes fixed. M. de Kempelen opens the front door of the cupboard, and takes out the drawer at bottom. The cupboard is divided by a partition into two unequal parts; that on the left hand is the narrowest, and takes up little more than one-third of the cupboard, and is filled with wheels, cylinders, levers, and other pieces of clock-work. In that on the right, are also seen, some wheels, spring-barrels,



barrels, and two horizontal quadrants. The rest contains a box, a cushion, and a tablet, on which are traced some characters in gold. The inventor takes out the little box, and places it on a small table, which stands near the machine; he does the same by the tablet, which is to be placed on the chess-board as soon as the game is over, to enable the Automaton to answer such questions as may be put to him; of which more hereafter; and now, good night.

D 2            L E T T E R

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## L E T T E R III.

September 14.

I Must turn back, in order to add some observations here, which I ought, doubtless, to have made in my former letters, but I know, my dear friend, you do not expect my account to be as regular as a mathematical demonstration; what signifies being so scrupulously exact; if I succeed but in satisfying your impatience; Return we then to the cupboard. In the drawer above-mentioned, are red and white ivory chess-

chefs-men on a board, on which they are taken out and placed by the chefs-board. There is also a small oblong box, containing six small chefs-boards, which shew, each the conclusion of a difficult and different game, which the Automaton plays, when the men are placed in order on his chefs-board, and which he certainly wins, whether he plays with the red or white men.

I had likewise forgot to observe, that the inventor not only opens the front, but likewise the back doors of the cupboard, so that the wheel-work becomes so exposed, as to afford the most thorough conviction that no living being can possibly be concealed; and in order to do this more effectually, the inventor generally places a wax-light in the cupboard, which enables  
you

you to see every corner of it ; he then lifts up the Automaton's robe, and turns it over his head, so as to display completely, the internal structure, which consists, in like manner, of levers and wheel-work, of which the body of the Automaton is so full, that there is not room to hide a kitten. Even his breeches, which are in the Turkish taste, have a little door which opens, to remove even the shadow of suspicion. [See the second plate.]

Do not you fall into the error that many have fallen into, viz. that the inventor shuts one door as soon as he opens another ; no ; *you see at one and the same time, the naked Automaton, with his garments tucked up, the drawer and all the doors of the*

*the cupboard open.* In this situation he moves it from place to place, and submits it to the inspection of the curious. After allowing a sufficient time to examine it closely, he shuts all the doors, and places it behind a balustrade, which serves to prevent the company's shaking the machine, by leaning upon it while the Automaton is at play, and leaves room for the inventor to walk about, and approach the cupboard either on the right hand or the left, never touching it, however, except when he winds up the works. He then introduces his hand into the body of the Automaton, in order properly to arrange the movements, and finishes by placing a cushion under that arm of the Automaton, with which he plays.

I must

I must not forget to mention the little case which—M. de Kempelen places on a small table near the machine; there is, however, no visible communication, either between the machine and the table, or the machine and the case, to which nevertheless, the inventor frequently has recourse while the Automaton is playing the game, for he opens it from time to time, to examine its contents, which are unknown to the company. It has been pretty generally supposed, that this case is a totally detached piece, merely calculated to distract the attention: the inventor, notwithstanding, has given me the most positive assurances, that it is so indispensibly necessary, that the Automaton could not play without it; and he farther says, that whenever he discovers his secret, the world will be convinced of the truth of this  
assertion.

assertion. The golden characters, which are traced on the tablet, which I have mentioned to you, are intended for a different amusement, after the game of chess is finished. It is then placed on the chess-board, and the Automaton answers the questions proposed by the company, by placing his finger successively on the different letters necessary to form his answer. Preparatory to this, the inventor arranges some of the interior parts of the machine, and this is the only instance in which I have ever seen him touch it; he never does during the game of chess.

E. LETTER

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## L E T T E R   I V .

September 18.

**W**E are now prepared to see the machine play. I must, in order to be exact, inform you, that the Automaton plays with his left hand; I enquired into the reason of this, and found it was originally owing to inattention in the inventor, who did not discover it till the work was too far advanced to rectify this small mistake, of little consequence in itself. What does it signify whether Titian painted with  
his



his right hand, or his left? The Automaton when he is to move, lifts up his arm leisurely, and directs it to that side of the chess-board where the piece is, which he wants to move; he carries his hand to it, opens his fingers to lay hold of it, takes it, removes, and places it on the spot intended for it, withdraws his arm, and rests it again on the cushion; if he wants to take one of his adversary's men, he repeats the above movements to take it, removes it off the board, returns to take his own, and puts it down on the place of that which he had removed. Every move he makes, a small noise of the wheel-work is heard, somewhat resembling that of a repeater. This noise ceases as soon as the move is made, and the Automaton's arm replaced on the cushion; and not till then can the adversary make a

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fresh

fresh move. The Automaton has always the first move; an incivility this, easily overlooked, and a trifling advantage, which may be readily granted to a *wooden* player. Every move the adversary makes, he moves his head, and looks over the whole board. When he gives *check to the queen*, he nods his head twice; and thrice when he gives it to the king.

If the adversary makes a wrong move, he shakes his head; this often happens, for either the adversary, or some of the company, are desirous to see how he acts upon such an occasion; but he is not satisfied with barely shaking his head; for instance, if you move a bishop, as a knight should move, the Automaton replaces the bishop on the square he moved from, and continues to move his move, by which  
means

means the adversary loses his move, as a punishment either for his inattention, or wilful mistake. This is another trifling advantage, which the inventor has reserved to himself, to facilitate, as much as possible, his winning the games, his attention being so much otherwise engaged, as to prevent his paying much to playing the game well or ill; which must, to every reasonable beholder, appear a matter of indifference; for, in fact, what does it signify whether the Automaton wins or loses the games, provided the moves he makes, be just and regular?

The inventor entreats those who play with the Automaton, to be attentive in placing the men exactly in the middle of the squares; 'tis necessary to use this precaution, lest the Automaton, in opening  
his

his hand to take the man, should miss it, or receive damage, in case one of his fingers should press on the top of the man, instead of laying hold of its side. When a move is made it must go: this rule is strictly observed by the Automaton, and is equally binding to the adversary.

The machine cannot make above ten or a dozen moves without being wound up again; but you agree with me, my friend, that the simple operation of winding up the springs of the arm of the machine, can produce no other effect than that of restoring to it the *vis motrix*, without having any influence on its *vis directrix*, or in other words, the power of moving it as in different directions, as circumstances may require. In this, however, consists the principal merit of the machine, and  
you

you will readily agree with me, that of all the circumstances relating to this wonderful machine, the most inconceivable is, that this operation, so indifferent in itself, is the only one the inventor is seen to perform, this being the only time of his touching the Automaton. Mathematicians of all countries have examined it with the most scrupulous attention, without being able to discover the least trace of its mode of operation. I have frequently been in the apartment, where the Automaton was at play, with twenty or thirty more people, who kept their eyes rivetted on the inventor; we never saw him attempt to approach within two or three yards of the machine, nor do aught else, than look occasionally into the box which I mentioned, nor ever betray himself by the least motion, which to us appeared capable of influencing

fluencing the machine in any shape whatever.

Those who have made themselves thoroughly acquainted with the singular effects of the loadstone, in those mathematical recreations, which have made so much noise at Paris, are of opinion, that the loadstone is the means employed to regulate the motions of the Automaton's arm; but without taking notice of the many objections to which this supposition is liable, the author, to destroy it at once, permits any one to place the strongest loadstone possible on the machine, without fearing it should produce the least alteration in its movements.

The

The circumstance of the machine moving the knight all over the chess-board, is too curious to pass unnoticed. It is this; when all the men are removed, one of the spectators places a knight on any square he chuses; the Automaton immediately takes it, and regularly observing the manner in which the knight moves, places it successively on each of the sixty-four squares of the chess-board, without missing one, or putting it twice on the same; this is ascertained by, one of the spectators putting a counter on each square he then touches, putting a white one on the square he sets out from, and red ones on each of the others he successively touches. Try to do as much on your chess-board, you may, perhaps, be more successful than I have been; all my attempts have proved fruitless. I think I may now flatter my-

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self

self that I have satisfied your curiosity, removed your doubts, and obviated every possible objection. It now only remains for me to bring you acquainted with M. de Kempelen's personal qualities, to give you some idea of his merit, and to inform you of some particulars, which were the occasion of producing this *chefs-player*, these shall be the subject of some future letter,

LETTER



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## L E T T E R V.

September 21.

**H**OW high will the spirit of invention dare to soar! Is it possible to conceive any thing more rash, than to undertake to make a wooden figure play at chess; the more I reflect on it the greater is my astonishment; nor is your's, I dare to say, less. M. de Kempelen's Automaton engages the eyes and understanding, but in a very different degree, to what M. de Vaucanson's performer on the flute, does the ear.

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In

In 1769, M. de Kempelen happening to be at Vienna, on business relative to his charge, was ordered to court, to be present as a connoisseur, at some magnetic performances, which one Pelletier, a Frenchman, was to exhibit before the late Empress. Her Majesty having vouchsafed to enter into familiar conversation with M. de Kempelen, during this exhibition, he was led to drop a hint, that he thought himself capable of making a machine, whose effects should be more surprizing, and the deception more complete, than any thing her Majesty had then seen. The Empress took him at his word, and expressed so earnest a desire to see it carried into execution, that she obtained a promise of him to set about it immediately. He kept his word, and in six months time, completely finished an Automaton, far surpassing every thing of the kind.

As

As soon as this master-piece was finished, it was brought to Vienna, when it excited the admiration and surprize of her Majesty, and her august family, of the court, of foreign ministers, of the learned, of artists, in short of every one, who either saw the Automaton play, or played with it. An account of it soon spread through great part of Europe; the papers and journals were eager to announce its marvellous works, the result of which was, as is the case with all accounts handed about from mouth to mouth, that they became daily more wrong, exaggerated, and contradictory.

The inventor, was far from coveting such celebrity, nor did he wish his machine to be considered as a prodigy. He passed it for no more than what it was, a machine

chine not void of mechanical merit, and whose effects seem the more wonderful, for the boldness of the thought, and the happy choice of means employed in the deception. This induced me in the year 1773, to draw up a more exact account of it, which I then published in some of the German journals, and have since inserted it in my geography of the kingdom of Hungary. M. de Kempelen, thinking himself sufficiently rewarded by the applause which his machine had procured him, and unwilling to part with the pleasure of being sole possessor of the secret, refused several considerable offers made him by people who hoped to make a fortune by the acquisition of it. He went so far as totally to neglect the Automaton, in order to give himself up to new researches, and mechanical inventions of a more serious

rious nature, and more calculated for public utility. He refused to gratify his friends, and many curious people of different countries, who wished to see this boasted machine, under a pretence that it had received damage by being removed from place to place. He had, in fact, in some measure, taken it in pieces, and left it for many years in a ruinous state, in which condition it might have lain much longer, if the Emperor, who suffered nothing to escape him that would contribute to amuse the Count and Countess of the North, during their residence at his court, had not luckily recollected M. de Kempelen's machine, who, in compliance with the desires of his august sovereign, set about the numberless repairs, which so long a neglect had rendered necessary, with so much application and activity, that

that in five weeks time he put it into condition to be exhibited to those august strangers, whom it struck with surprize and admiration; and who, as well as the principal nobility, advised him to send it into foreign countries. The Emperor approved of this idea, and gave the inventor leave of absence for two years, for that purpose. These circumstances at length determined him to gratify the wishes of a curious and enlightened public, who, for many years, with a perseverance so flattering to him, had testified the most earnest desire to see and admire this wonderful work. But as many considerable alterations were necessary, in order to facilitate the putting up, and taking down of this machine, and packing it up for the voyage, they took up so much time as to prevent the inventor's finishing another machine,

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machine, more worthy of admiration, and which shall be the subject of my next letter; in the mean time, guess if you can, what it is.

**G**            **LETTER**

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## LETTER VI.

September 25.

**H**OW do you think M. de Kempelen is now employed? about a *mere trifle*, a speaking machine! Agree with me, that to undertake a project of this kind, a man must be endowed with a *creative* genius, a daring and indefatigable mind; yet inconceivable as it is, he has every reason to flatter himself with succeeding to his utmost wishes. He has so far already succeeded, as to prove it possible



possible to make such a machine, and to merit the approbation of the learned, whose attention is engaged by this new, and hitherto unknown invention. It answers several questions clearly and distinctly enough; its voice is soft and agreeable, only its pronunciation of the letter *r* is thick and rumbling. If its answers be not clearly understood, it repeats it more deliberately, and if required to do it again it repeats it accordingly, but with a tone of voice, expressive of displeasure and impatience. I have heard it pronounce very well and distinctly, in different languages, the following words and phrases: *Papa, Mamma, my Wife, my Husband, A-propos, Marianne, Rome, Madam, the Queen, the King, at Paris, Allons, Mamma loves me, my Wife is my Friend, &c. &c.*

G 2

You

You will perhaps tell me, that this too is a matter of deception; no, my friend, it is entirely the effect of art. I have seen, placed upon a table, a small box, about the size of a middling bird-cage, with a small pair of organ bellows by its side, and at each answer I have seen the inventor put his hand under the curtain. I must here tell you an anecdote, which this invisible speaker gave rise to, a young lady of my acquaintance, came into the room where this machine was; the inventor happening to be alone, received, and spoke to her, but a different voice from his being heard at the same time, calling her distinctly by her Christian name, she was so affrighted that she ran away as fast as her legs could carry her, and it was with difficulty she got the better of it, on having it explained to her, and convincing

convincing her, by shewing her the machine

This speaker has not, as yet assumed the human form; it is at present merely a box, with several apertures, into which the inventor introduces his hand, in order to put in motion several shifts, springs, &c, according to the word which the machine wants to articulate. In order to stow his baggage in the smallest compass possible, the author has deferred putting on its external garb till it arrives at Paris, when he intends to give it the appearance of a child of about six years old, its voice resembling that of a child of that age. Besides, it is somewhat analogous to the present state of the machine, which is far from being arrived at perfection; should it happen to pronounce some words indifferently,

differently, it will, in its childish appearance, more readily meet with that indulgence which it as yet stands in need of.

M. de Kempelen, himself, only looks on this machine as an attempt, and is far from thinking, or declaring it a finished piece. He is the first to acknowledge, that it will cost him infinite pains to bring it to perfection; he is, in the mean time, satisfied with having, by his attempts and discoveries, not only convinced himself, but been able to convince the learned, that it is possible to make a speaking machine. What lights will not the learned, one day, be enabled to draw from this new invention, to rectify upon surer principles, the theory of speech. I anticipate the pleasure of seeing the  
many

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many dissertations it will give birth to  
at Paris, where it is to make its first ap-  
pearance.

LETTER

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## L E T T E R VII.

September 30.

**Y**ES, my dear friend, I will introduce to you a man, whose merit, talents, and rare qualities, have justly rendered him famous! Intimately connected with him, and honored with his friendship, for many years, I could give you a complete history of his life, did I not think myself bound to mention only that part of it which characterizes him as an artist. M: Wolfgang de Kempelen is an Hungarian gentleman,

gentleman, about 46 years of age, an Aulic Counsellor in the Royal Chamber of Domaines in Hungary. From his earliest youth he has been addicted to the study of natural philosophy and the mathematics, which have led him to an astonishing progress in the latter. His ruling passion is invention, in which he spends almost every moment that can be spared from the duties of his employment; his perseverance has, in many instances, been crowned with success; and I know many inventions, which were originally his, some of which no doubt you are acquainted with. He has sacrificed the greater part of his fortune, in endeavouring to perfect and simplify the English machine for raising water by fire; and has, by different essays, of different dimensions, made himself so completely master of the the-

H

ory

ory of this utmost effort of human genius, that he can explain it with the greatest ease and perspicuity, to the meanest capacity. He has shewn me several new and important experiments on this head, and which certainly had never been attempted by any before him. What is most surprizing, you will seldom hear him talk about mechanics, though it be his hobby-horse, and yet, if by any means the subject be introduced, he is extremely communicative, without affecting the least mystery, with regard to his inventions, more especially if he meets with a connoisseur.

One of the most important, as well as extraordinary inventions of the age, is that which he has employed in the cascade, at the imperial Palace at Schoenbrun,



brun, where, by means of an horizontal cylinder, he makes use of the re-action of the water, which falls from the mountain, by the conducting pipes, to set at work a sufficient number of pumps to re-supply the cascade with a body of water equal to that which gives motion to the cylinder. But as his modesty is too great to suffer him to proclaim his inventions to the literary world, by giving descriptions of them himself, I propose, as soon as leisure will permit, to publish a regular analysis of this machine.

Of all his inventions, his Automaton chess-player is that which he prides himself least on; he frequently speaks of it as a mere bagatelle; and though considering it merely as a machine, whatever be the mode of putting it in motion, it

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certainly

certainly has great mechanical merit, he, with a modesty peculiar to himself, is the first to acknowledge, that great part of the reputation which it has acquired, is owing to an happy deception. For my own part, I am convinced, that if M. de Kempelen, in shewing his Automaton, chose to discover the secret influence which directs its motions, there would be found as much real merit in that invention, and the success alone of so bold a thought, would excite as much admiration as it would give satisfaction to the spectators. The invention of a mechanical arm, so natural in all its motions, which takes hold of, lifts up, and puts down, the men so gracefully, were it even guided by both the inventor's hands, would be a matter so difficult in  
itself,

itself, as to be sufficient to establish the reputation of many an artist.

He is now preparing for a tour to Germany, France, and England. He originally intended sending his machines under the care of trusty people, without accompanying them himself; but upon mature reflexion, his experience convinced him, that if any of the almost unavoidable accidents, incident to so long a route, should cause any derangement, he must either submit to have it repaired by foreign artists, or lose the expence of the voyage. This consideration has obliged him to accompany them, merely with a view to attend to the necessary repairs, without engaging himself to shew them personally, which will be done by persons appointed for that purpose. It is much

to be feared that his countrymen will not again have the satisfaction of seeing among them, those effects of an Hungarian genius, to which, however, they have so great a claim, and which they so justly boast of. I can readily conceive the desire you have, of seeing in person all that I have related of this machine, you have only an hundred leagues to travel, and you may satisfy your inclination, I embrace and am wholly

Yours,

*C. G. de Windisch.*



# FRONTISPIECE.

