

being then not very well with the Court, and pressed by many of his friends, he complied with the proposal; and, after employing an hundred men for two years, the work miscarried, the projectors went off, laying the blame entirely upon him, railing at him ever since, and putting others upon the same experiment, with equal assurance of success, as well as equal disappointment.

In a few days we came back to town, and his Excellency, considering the bad character he had in the academy, would not go with me himself, but recommended me to a friend of his to bear me company thither. My lord was pleased to represent me as a great admirer of projects, and a person of much curiosity, and easy belief; which, indeed, was not without truth; for I had myself been a sort of projector in my younger days.

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#### CHAPTER V.

THIS academy is not an entire single building, but a continuation of several houses on both sides of a street, which, growing waste, was purchased, and applied to that use. I was received very kindly by the warden, and went for many days to the academy. Every room hath in it one or more projectors; and, I believe, I could not be in fewer than five hundred rooms.

The first man I saw was of a meagre aspect,

with sooty hands and face, his hair and beard long, ragged and singed in several places. His clothes, shirt, and skin were all of the same colour. He had been eight years upon a project for extracting sunbeams out of cucumbers, which were to be put into vials hermetically sealed, and let out to warm the air in raw inclement summers. He told me, he did not doubt, in eight years more, he should be able to supply the governor's gardens with sunshine at a reasonable rate; but he complained that his stock was low, and entreated me to give him something as an encouragement to ingenuity, especially since this had been a very dear season for cucumbers. I made him a small present, for my lord had furnished me with money on purpose, because he knew their practice of begging from all who go to see them.

I saw another at work to calcine ice into gunpowder, who likewise shewed me a treatise he had written concerning the malleability of fire, which he intended to publish.

There was a most ingenious architect, who had contrived a new method for building houses, by beginning at the roof, and working downwards to the foundation, which he justified to me, by the like practice of those two prudent insects, the bee and the spider.

There was a man born blind, who had several apprentices in his own condition: their employment was to mix colours for painters, which their master taught them to distinguish by feeling and

smelling. It was, indeed, my misfortune to find them, at that time, not very perfect in their lessons, and the professor himself happened to be generally mistaken: this artist is much encouraged and esteemed by the whole fraternity.

In another apartment, I was highly pleased with a projector who had found a device of ploughing the ground with hogs, to save the charges of ploughs, cattle, and labour. The method is this: in an acre of ground you bury, at six inches distance, and eight deep, a quantity of acorns, dates, chestnuts, and other mast, or vegetables, whereof these animals are fondest: then you drive six hundred, or more of them, into the field, where, in few days, they will root up the whole ground in search of their food, and make it fit for sowing; it is true, upon experiment, they found the charge and trouble very great, and they had little or no crop. However, it is not doubted that this invention may be capable of great improvement.

I went into another room, where the walls and ceiling were all hung round with cobwebs, except a narrow passage for the artist to go in and out. At my entrance, he called aloud to me not to disturb his webs. He lamented the fatal mistake the world had been so long in of using silk-worms, while we had such plenty of domestic insects, who infinitely excelled the former, because they understood how to weave, as well as spin. And he proposed farther, that, by employing spiders, the charge of dyeing silks would be wholly saved;

whereof I was fully convinced, when he shewed me a vast number of flies most beautifully coloured, wherewith he fed his spiders, assuring us that the webs would take a tincture from them; and, as he had them of all hues, he hoped to fit everybody's fancy, as soon as he could find proper food for the flies, of certain gums, oils, and other glutinous matter, to give a strength and consistence to the threads.

There was an astronomer, who had undertaken to place a sundial upon the great weathercock on the town house, by adjusting the annual and diurnal motions of the earth and sun, so as to answer and coincide with all accidental turnings of the wind.

I visited many other apartments, but shall not trouble my reader with all the curiosities I observed, being studious of brevity.

I had hitherto seen only one side of the academy, the other being appropriated to the advancers of speculative learning, of whom I shall say something, when I have mentioned one illustrious person more, who is called among them the universal artist. He told us he had been thirty years employing his thoughts for the improvement of human life. He had two large rooms full of wonderful curiosities, and fifty men at work. Some were condensing air into a dry tangible substance, by extracting the nitre, and letting the aqueous or fluid particles percolate; others softening marble for pillows and pin-

cushions; others petrifying the hoofs of a living horse, to preserve them from foundering. The artist himself was at that time busy upon two great designs; the first to sow land with chaff, wherein he affirmed the true seminal virtue to be contained, as he demonstrated by several experiments which I was not skilful enough to comprehend. The other was, by a certain composition of gums, minerals, and vegetables, outwardly applied, to prevent the growth of wool upon two young lambs; and he hoped, in a reasonable time, to propagate the breed of naked sheep all over the kingdom.

We crossed a walk to the other part of the academy, where, as I have already said, the projectors in speculative learning resided.

The first professor I saw was in a very large room, with forty pupils about him. After salutation, observing me to look earnestly upon a frame which took up the greatest part of both the length and breadth of the room, he said, perhaps I might wonder to see him employed in a project for improving speculative knowledge by practical and mechanical operation. But the world would soon be sensible of its usefulness; and he flattered himself that a more noble exalted thought never sprang in any other man's head. Every one knew how laborious the usual method is of attaining to arts and sciences; whereas, by his contrivance, the most ignorant person, at a reasonable charge, and with a little bodily labour may write books

in philosophy, poetry, politics, law, mathematics, and theology, without the least assistance from genius or study. He then led me to the frame, about the sides whereof all his pupils stood in ranks. It was twenty feet square, placed in the middle of the room. The superficies was composed of several bits of wood, about the bigness of a die, but some larger than others. They were all linked together by slender wires. These bits of wood were covered on every square with paper pasted on them; and on these papers were written all the words of their language in their several moods, tenses, and declensions; but without any order. The professor then desired me to observe, for he was going to set his engine at work. The pupils at his command, took each of them hold of an iron handle, whereof there were forty fixed round the edges of the frame; and, giving them a sudden turn, the whole disposition of the words was entirely changed. He then commanded six and thirty of the lads to read the several lines softly, as they appeared upon the frame; and, where they found three or four words together that might make part of a sentence, they dictated to the four remaining boys who were scribes. This work was repeated three or four times, and at every turn, the engine was so contrived, that the words shifted into new places, as the square bits of wood moved upside down.

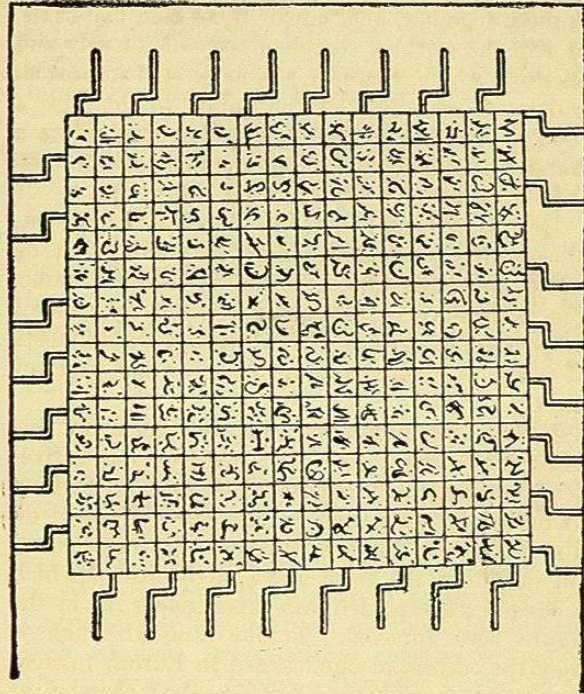
Six hours a day the young students were employed in this labour, and the professor shewed

me several volumes in large folio already collected, of broken sentences, which he intended to piece together, and, out of those rich materials, to give the world a complete body of all arts and sciences; which, however, might be still improved, and much expedited, if the public would raise a fund for making and employing five hundred such frames in Lagado, and oblige the managers to contribute in common their several collections.

He assured me that this invention had employed all his thoughts from his youth; that he had emptied the whole vocabulary into his frame, and made the strictest computation of the general proportion there is in books between the numbers of particles, nouns, and verbs, and other parts of speech.

I made my humblest acknowledgment to this illustrious person for his great communicativeness; and promised, if ever I had the good fortune to return to my native country, that I would do him justice, as the sole inventor of this wonderful machine; the form and contrivance of which I desired leave to delineate upon paper, as in the figure here annexed. I told him, although it were the custom of our learned in Europe to steal inventions from each other, who had thereby, at least, this advantage, that it became a controversy which was the right owner, yet I would take such caution, that he should have the honour entire, without a rival.

We next went to the school of languages, where



three professors sat in consultation upon improving that of their own country.

The first project was to shorten discourse by cutting polysyllables into one, and leaving out verbs and participles; because, in reality, all things imaginable are but nouns.

The other project was a scheme for entirely abolishing all words whatsoever; and this was urged as a great advantage in point of health, as well as brevity. For it is plain, that every word we speak is, in some degree, a diminution of our lungs by corrosion; and consequently contributes to the shortening of our lives. An expedient was therefore offered, that since words are only names for things, it would be more convenient for all men to carry about them such things as were necessary to express the particular business they are to discourse on. And this invention would certainly have taken place, to the great ease as well as health of the subject, if the women, in conjunction with the vulgar and illiterate, had not threatened to raise a rebellion, unless they might be allowed the liberty to speak with their tongues after the manner of their forefathers; such constant irreconcilable enemies to science are the common people. However, many of the most learned and wise adhere to the new scheme of expressing themselves by things; which hath only this inconvenience attending it, that if a man's business be very great, and of various kinds, he must be obliged, in proportion, to carry a

greater bundle of things upon his back, unless he can afford one or two strong servants to attend him. I have often beheld two of those sages almost sinking under the weight of their packs, like pedlars among us; who, when they met in the streets, would lay down their loads, open their sacks, and hold conversation for an hour together; then put up their implements, help each other resume their burthens, and take their leave.

But, for short conversations, a man may carry implements in his pockets, and under his arms, enough to supply him; and in his house he cannot be at a loss. Therefore the room where company meet, who practise this art, is full of all things ready at hand, requisite to furnish matter for this kind of artificial converse.

Another great advantage, proposed by this invention, was, that it would serve as an universal language, to be understood in all civilized nations, whose goods and utensils are generally of the same kind, or nearly resembling, so that their uses might easily be comprehended. And thus ambassadors would be qualified to treat with foreign princes, or ministers of state, to whose tongues they were utter strangers.

I was at the mathematical school, where the master taught his pupils after a method scarce imaginable to us in Europe. The proposition and demonstration were fairly written on a thin wafer, with ink composed of a cephalic tincture. This the student was to swallow upon a fasting

stomach, and for three days following eat nothing but bread and water. As the wafer digested, the tincture mounted to his brain, bearing the proposition along with it. But the success had not hitherto been answerable, partly by some error in the quantum or composition, and partly by the perverseness of lads; to whom this bolus is so nauseous, that they generally steal aside, and get rid of it before it can operate; neither have they been yet persuaded to use so long an abstinence as the prescription requires.

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#### CHAPTER VI.

IN the school of political projectors, I was but ill entertained; the professors appearing, in my judgment, wholly out of their senses; which is a scene that never fails to make me melancholy. These unhappy people were proposing schemes for persuading monarchs to choose favourites upon the score of their wisdom, capacity, and virtue; of teaching ministers to consult the public good; of rewarding merit, great abilities, and eminent services; of instructing princes to know their true interest, by placing it on the same foundation with that of their people; of choosing for employment persons qualified to exercise them; with many other wild impossible chimæras,