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THE
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### New Printing Press.

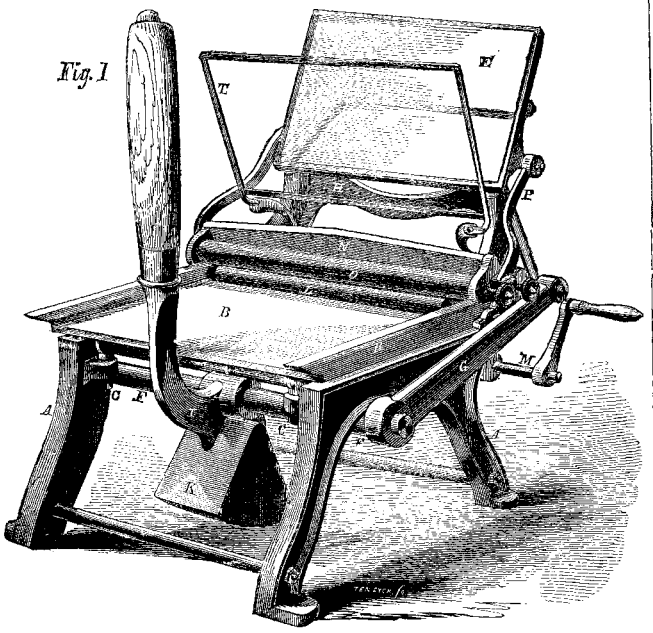
The accompanying engravings represent different perspective views of an improvement in printing presses, invented by J. H. Utter, a practical printer in this city, and for which application for letters patent, is now pending. Too much importance can hardly be attached to any improvement in the "art preservative of all arts." This invention is not of a class designed to expedite what may be called rapid power printing; but to render easier and faster the operation of what is ordinarily termed a hand-press, or one in which the motive power is entirely manual. It is well understood that hand-presses produce the best work, and that fine wood engravings, and the like, when it is necessary to give them the best possible effect, are always worked on some form of this species of press.

Those familiar with the operation of the common hand-presses, will readily appreciate the importance of this improvement, on learning that the whole operation of rolling the form, flying the frisket, folding down the tympan, moving the bed, and producing the impression, is, with this press, performed by a single movement of the lever or handle I. A is the frame, and B the stationary bed on which the form is supported. C C are screws which serve to regulate the height of either side or the whole of the bed, to produce a perfectly even impression, or to balance any preponderance of type or engraved face which may offer more resistance to the impression on one side than the other. D D are centers, to which are rigidly hinged the platen E, the face of which carries the blankets, which serve their usual purpose of softening and equalizing the impression. F is a stout shaft mounted in suitable bearings beneath the bed. G G represent stout levers, keyed on each extremity of F. H represents a casting which acts as a toggle lever, to transmit the force of the impression to the platen. I is a stout handle fixed on F, by which the motion is imparted. K is a heavy mass, cast on I, and which serves partially to balance the gravity of the other parts. L is an ink distributing roller, mounted in fixed bearings, and which receives both motion and ink, from other rollers, actuated (when commencing to work) by giving a few turns to the crank M. N is a light frame, in which are mounted the soft inking rollers O. The frame N is connected to the platen E by the links P, and is free to travel across the bed on the side bearers R, whenever such motion is imparted by the movement of E. S is a shaft, mounted nearly in the axis of motion of E. It carries a light frisket, I, which is impelled by a coiled spring shown in Fig. 2, into tolerable vigorous contact with the face E, so as to confine a sheet thereon, in the usual manner, by covering its edges.

Fig. 1 represents the press in the proper position to receive a form of type on the bed B, and to receive a sheet of paper on E. The frisket T is held away from the face of E, by its contact with a fixed stop, not represented. On imparting a downward motion to the handle, the arms G are elevated, and through the medium of the casting H, the platen E is moved forward, clasping the paper between itself and T, and descending into contact with the form, on the bed B, when it assumes the position represented in Fig. 2. Meantime, the links, P, have pushed the frame N, and with it the inking rollers O, across the form, and laid the ink thereon, in the usual manner. The final termination of the downward motion of I acts, as will be observed, from the position of the parts in Fig. 2, at a great purchase, so

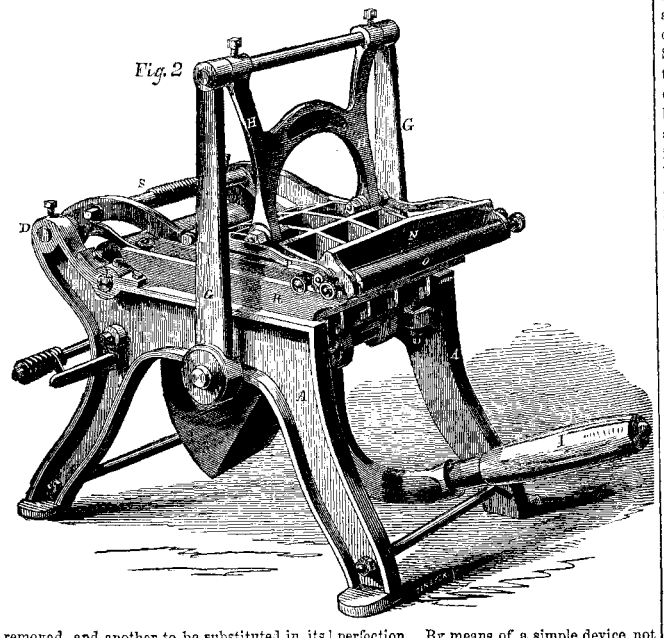
## UTTER'S PRINTING PRESS.

*Fig. 1*




as to produce a very powerful impression on the form. On lifting I, all the motions are reversed, the levers G move backward, acting on H, to elevate the platen E, and while these parts are returning to their places, the rollers O are drawn again across the form, inking it for a new impression. As the platen E recedes into the position represented in Fig. 1, it leaves the frisket T in the position indicated, and allows the printed sheet to be readily

*Fig. 2*




removed, and another to be substituted in its place. It will be observed that the inking rollers O, which are two in number, are compelled by the motion of N to travel twice across the form—once, as the platen is brought down, and again as the platen is elevated—so that the types are liberally and uniformly inked as by the ordinary arrangement, and the whole operation is conducted not only rapidly and easily, but with a very high degree of perfection. By means of a simple device, not distinctly represented, motion is imparted to the distributing apparatus M L, at each movement of E, so that the crank M does not require to be touched after the operation of printing is fairly commenced, and is only employed to give a suitable distribution of the ink at the commencement. We have seen the press in operation, working very rapidly. There are many points in this machine, among which may be mentioned the ordinary axial motion of the rollers, &c., which being common to all of the best presses, we have not deemed it necessary to describe. As a whole, the press appears highly efficient and durable, and we predict for it a quite extensive use for printing all moderate sized jobs. For further information the inventor may be addressed at No. 9 Spruce street, this city.

### The Benefits of Machinery.

The *British Workman*, a periodical devoted to literature as connected with mechanical pursuits, contains in its number for the past month a very able article on improvements in the "pottery art," in which it very graphically sets forth the benefits conferred upon workmen by improved machinery. It says:—

"Time works many changes both in men and things, and the last thirty years have shown not a few instances which at the time were regarded by the working classes as *injurious*, have, in the course, of time, been found to be 'blessings in disguise.' Within the recollection of many persons, horses and even hand power were in use at the Lambeth potteries for crushing the clay; and the potters all used wheels, called 'kickers,' which were turned by the foot. When Mr. Green determined to introduce the new wheel into his manufactory, *the whole of the workmen struck*. All the men left, except one, who was allowed to continue at his kicker until his death, a period of fifteen years. He earned 30*s*. a week, while the man with the improved lathe, who sat next to him, earned double that sum. So much quicker could the potter work at the new wheel than the man at the kicker, that he could make as many stoneware ink bottles for 6*d*. as the other could throw off by his machine for 1*s*. 3*d*. Since the day of the kicker the number of men and boys employed at Mr. Green's pottery alone has increased fivefold. What strikes and riots were witnessed in Lancashire and Yorkshire in bygone years on the introduction of power looms and other machinery. Shortsighted policy said—'These will injure the working classes, and reduce the number of hands employed.' The result, however, has been very different from what the desponding and faint-hearted dreamed of. Those very inventions which were regarded with such bitter hostility, have, in the providence of God, been the means of extending the commerce of our nation to an extent previously unknown.

The old kickers could not possibly have supplied the present demand for pottery, neither could the old hand looms have produced one-half of the cloth now required for the clothing of the people. Men and women are now employed by tens of thousands in the weaving mills throughout the manufacturing districts, and they can produce far more work and earn better wages than under the old system. What was thought to be a national evil has proved a national good."

### Iron Churches.

Iron churches, 70 feet long, 40 feet wide, and 20 feet high, capable of accommodating 700 persons, and costing about $5000 each, have been erected recently in the neighborhood of London. They are lined with wood, and papered. They can be taken down and moved to other locations, if desired. Although more iron houses have been built in New York than in other city in the world, we have never heard of an iron church having been erected in any of our cities.

We learn from the *Lake Superior Journal*, of the 20th ult., that there was plenty of ice in the Lake on that date. This has been the most backward season on record.

### Virginia Mechanics' Institute.

The *Cotton Plant* of the 20th ult. contains the address of Governor Wise, of Virginia recently delivered before the above named institution, organized in the city of Richmond. It is an eloquent production, and it affords us pleasure to place some extracts from it before our readers:—

"The utility of Mechanics' Institutes is at once presented to the mind by the wonderful developments of the age in improvement. The Titans and the Tubal Cains are at work among men, and the Vulcans are thundering on their anvils among the gods. The enterprises of earth are so monstrous that piety is almost afraid lest human power is exceeding the bounds of humility toward heaven. Never in any age was there such a stir amidst the atoms of matter. Material nature is vexed in all the dust of her dominion, and earth and air, and ocean and light, in all their parts and elements, are put into the whirl of motion. The years of old Time are quickened into seconds; the miles of space are shortened to a span; power is multiplied in the ratio from the mere might of animal muscle to the fearful potence of steam and electricity; a farthing candle is turned into more than 'Aladdin's lamp,' which pours its floods of light over cities, and along pavements and highways; and the sun himself has turned painter and printer. . . . . The result of this is plenty of food and raiment, and locomotion without limit, and habitations up to crystal palaces, and all the world for immediate neighborhood by a quick intelligence, and human comforts and luxuries of mind and body, which exalt and dignify us with a civilization which the world has never known before, and which, guided by a sound Christian philosophy, foreshadows 'peace on earth and goodwill to man' (Cheers.) Wonderful! wonderful! and all these wonders come from the wand of mechanism! Every humble operative in the world contributes to the grand result. Toil on, then, patient and lonely laborer! To invent, to apply, to control, to guide this magic power, is the necessity for Mechanics' Institutes. They are founded on the co-operation of labor, and the principle that industry is essentially social. . . . . The objects of Mechanics' Institutes are:—

1. To perfect the mechanic arts. So important is this that every source of power and production depends upon them, and the people who do not keep pace with their improvements, and who do not make their products of themselves, will fall back in the race of nations. Agriculture depends upon them and their perfection for all its implements—its plows, its chains, its sowing and planting and reaping machines. Manufacturing and mining and the forests depend upon them for all their machinery—their engines, their levers, their shafts, their spinning jennies, their planing machines, their machine seamstresses, their saw mills, their grinding mills, their every variety of cogs and wheels, in all the mazes of minute and mammoth construction. Commerce is dependent upon them for its ships and its cars, and for all the appliances of transportation and navigation, by land and by sea. . . . . And the learned professions—theology, law, and medicine—are really dependent upon the mechanic arts for their perfection. Where would all have been but for the mechanism of printing? But the tongues of men and angels could not enumerate these innumerable dependencies. They are infinite in variety and connection.

2. The object of the Institutes is to exalt the dignity of mechanic labor. Who shall despise the arts upon which all else is dependent? What civilization shall despise a labor upon which every civilization depends? Who shall tread upon the arts by which man is fed and clothed and housed and transported, and is raised to refinement, and the taste of the fine arts, and the enjoyment of an elevation in the moral scale which cannot be reached but by physical improvements? Morse is a mechanic, Fulton was a mechanic, Franklin was a mechanic, Sir Christopher Wren was a mechanic, God is a mechanic. . . . . .

3. The third object of the Mechanics' Institutes is to multiply occupations among men, particularly in the agricultural States.

A few professions and vocations in a nation will not and cannot support a dense population and raise a people to wealth and power, and sustain them in any grand progress.—Virginia has heretofore been peopled by planters, divines, lawyers, doctors and manual operatives. She has not been distinguished at all for mechanism, and has relied mainly upon one power only for production—the science of agriculture. The mechanic arts have not been honored, fostered and promoted as they must be, and as our best interests require. I rejoice that Richmond and Lynchburg, Petersburg and Wheeling, are beginning to lay hold on this lever of power and progress. Never was there such a workshop for mechanics as Virginia now is. She has inexhaustible mines of iron coal, copper and salt, and interminable forests of timber. Wood, iron and coal are all that mechanics want. All we want is for the popular mind to be aroused, and for the proper beginning in the right way to be made. And though we have reason proudly to thank some benefactors, such as an Anderson, of Richmond, (proprietor of the Tredegar Iron Works,) and a Sweeney, of Wheeling, and others, their fellow laborers and coadjutors, for pioneering in the work, yet we can hardly be said to have made a beginning. The ghost of Jefferson would vanish with shame were it to come and be told that we still buy our household furniture and utensils, our plows, hoes, axes and helves, and ox yokes, horse buckets, broom handles, brooms, clothes-pins, carriages, harness, and clothes, hats, shoes, boots, coats, vests, pants, everything—something of everything from Old and New England."

The above are only a few extracts from this address; they will show that Governor Wise treated the subject in a broad, generous, common sense and elegant manner. We hope his words will have a powerful effect in arousing the people of Virginia to a sense of their responsibility in cultivating the mechanic arts.

### Preparations for Laying the Atlantic Telegraph Cable.

The frigate *Niagara* was expected to be complete in her alterations on the 20th ult., on which day she was to leave Portsmouth for Liverpool to take in her share of the submarine cable. It is to be stowed in five separate coils, connected together, each wound around a large wooden cone, to prevent fouling when running off. Two coils will be placed aft, the lower one on the "orlop," and the second one on the "berth deck;" the three other coils placed forward will be arranged one above the other on separate decks, the lower one being on the hold floor. The cable will be run out at the stern through a hollow cone, and pass over friction rollers. It weighs nearly one tun to the mile, and will be 1250 miles long. This cable is now finished, and lying at Birkenhead. It was completed by the contractors, Messrs. Newall, of Liverpool, in eighty days, three weeks before their term for executing it had expired. The manufacture of the cable employed 100 machines for making spun yarn, with which the gutta percha insulation is covered. The cable consists of a main strand of 7 copper wires covered with three coats of gutta percha, served from end to end with the spun yarn, and over this are laid eighteen strands of twisted wires, seven wires in each strand, forming the exterior of the cable. There are in all 25,000 miles of covering strand — total wires, 175,000 miles — long enough to go seven times round the world.

When the cable was finished, on the 8th of June, the contractors gave a dinner to the workmen employed on it and to their wives, seven hundred being present at the party. On that occasion, W. Reid, an electric engineer, who was present, stated that he had made an experiment with the cable that day, and had established perfect telegraphic communication through its whole length with a very minute battery which he exhibited, the plates of which were only one quarter of an inch square. It is no doubt much easier to work a telegraph on land than in water, but several engineers present who had doubted the practicability of working the cable had their doubts removed by Mr. Reid's statement.

The Atlantic Telegraph and the steamship *Great Eastern* are the two most gigantic enterprises of the present age.

### Cambridge Professors and the Spiritualists.

Some time since, an offer of $500 was made through the *Boston Courier* to any one who could exhibit in the presence and to the satisfaction of certain Professors of the Natural Sciences in Harvard University, any such marvelous phenomena as were commonly reported by spiritualists as having transpired through the agency of "mediums." This challenge was accepted, through Dr. Gardner, and several persons professing to have spiritual communications, met in the Albion Building, Boston, on the last week of June to show their powers, and among the number were the "Fox girls," so celebrated for their achievements in this line.

The committee appointed to judge in the case, consisted of Professors Pierce, Agassiz, Gould, and Horsford, of Cambridge. The spiritual experiments were conducted for several days, and the mediums allowed ample and fine opportunities of making demonstrations; but like the priests of Baal, in the days of Elijah, they failed to call down their deities.

The following is a portion of the report of the committee:—

"The committee award, that Dr. Gardner, having failed to produce before them an agent or medium who 'communicated a word imparted to the spirits in an adjoining room,' 'who read a word in English, written inside a book or folded sheet of paper,' who answered any question 'which the superior intelligences must be able to answer,' 'who tilted a piano without touching it, or caused a chair to move a foot;' and having failed to exhibit to the committee any phenomenon which, under the widest latitude of interpretation, could be regarded as equivalent to either of these proposed tests, or any phenomenon which required for its production, or in any manner indicated a force which could technically be denominated spiritual, or which was hitherto unknown to science, or a phenomenon of which the cause was not palpable to the committee, is, therefore, not entitled to claim from the *Boston Courier* the proposed premium of $500."

### Stopping Table Turning.

One of our exchanges states that Professor Leibig stopped table turning in Munich Bavaria, by a very simple expedient. It seems that table turning succeeded marvelously in that city for a short time when it was first tried, and intelligent people were amazed at the phenomenon, and really believed, either that spiritual forces were at work in the mahogany, or that some new physical power was unfolding itself. "They naturally went to the great philosopher to obtain his opinion. He simply said: 'Place your hands under the table, and not on it.' They did so, and no table, however light, though running on castors over the polished floor under the smallest impulsion, would budge a hair's breadth. The good people of Munich, again astonished at the facility with which they had deceived themselves, thanked Liebig for opening their eyes; for it is not the custom there to consult men of science on obscure subjects, and then abuse them if their opinions do not happen to coincide with the popular madness of the hour—the table turning has never troubled Munich since. The explanation, of course, was, that when their hands were under the table, they could not push it without a conscious effort, inasmuch as the force of gravitation was against them. And, as they were honest people, they would not push, and, as the table was an honest table, it would not go."

### Care of China and Glass.

The manufacture of pottery in all its branches of earthenware, china, delfware, porcelain, &c., is now denominated the *Ceramic* art. This name, which is derived from the Greek, signifying burnt clay, was originally given to the art of pottery by the French. Like many other arts, it had its rise prior to the known date of its history; but from the period when Jeremiah was commanded to "go down to the potter's house," the Ceramic art has till the present day been steadily improving, calling to its aid every resource of mechanical and chemical science to co-operate with painting and sculpture, till at length it has become one of the most valuable departments of the industry of all nations.

When common clay is molded into a form and baked, it is called earthenware, and it is pretty certain that this was the first step in the art of pottery. When clay is mixed with flinty earth, and afterwards baked, it forms a semi-transparent mass; and as this compound was first known in China, and imported from that country into England, the ware thus made received its present familiar name of "china." A similar compound was first made in Europe, in the island of Majorca, about 450 years ago. The articles there made were called "porcelana," from the Portuguese word, which interpreted means "a cup;" and hence we have the word porcelain, to denote the finer kinds of pottery.

One great object for those who have sets of china or glass is to render it capable of withstanding a sudden change of temperature, so that it will be capable of exposure to sudden heat and cold without being broken. This is best done by placing the articles in cold water, which must gradually be brought to the boiling point, and then allowed to cool very slowly, taking a whole day or more to do it. The commoner the materials the more care in this respect is required. The very best glass and china is always well seasoned, or "annealed," as the manufacturers say, before it is sold. If the wares are properly seasoned in this way, they may be "washed up" in boiling water without fear of fracture, except in frosty weather, when, even with the best annealed wares, care must be taken not to place them suddenly in too hot water. All china that has any gilding upon it must on no account be rubbed with a cloth of any kind, but merely rinsed, first in hot and afterwards in cold water, and then left to drain till dry. If the gilding is very dull, and requires polishing, it may now and then be rubbed with a soft wash-leather and a little dry whiting; but remember, this operation must not be repeated more than once a year, otherwise the gold will most certainly be rubbed off, and the china spoiled. When the plates, &c., are put away in the china closet, a piece of paper should be placed between each, to prevent scratches. Whenever they "clatter," the glaze or painting is sustaining some injury, as the bottom of all ware has little particles of sand adhering to it, picked up from the oven wherein it was glazed. The china closet should be in a dry situation, as a damp closet will soon tarnish the gilding of the best crockery.

In a common dinner service it is a great evil to make the plates too hot, as it invariably cracks the glaze on the surface, if not the plate itself. We all know the result—it comes apart; "nobody broke it," "it was cracked before," or "cracked a long time ago." The fact is, that when the glaze is injured, every time the "things" are washed the water gets to the interior, swells the porous clay, and makes the whole fabric rotten. In this condition they will also absorb grease; and being made too hot again, the grease makes the dishes brown and discolored. If an old, ill-used dish be made very hot indeed, a teaspoonful of fat will be seen to exude from the minute fissures upon its surface. These latter remarks apply more particularly to common wares.

In a general way, warm water and a soft cloth is all that is required to keep glass in good condition; but water bottles and wine decanters, in order to keep them bright, must be rinsed out with a little muriatic acid, which is the only substance that will remove the fur which collects in them; and this acid is far better than ashes, sand, or shot; for the ashes and sand scratch the glass, and if any of the shots are left in by accident the lead is poisonous. A little soda dissolved in warm water, is also very excellent for washing bottles.

Richly cut glass must be cleaned and polished with a brush like a plate-brush occasionally rubbed with chalk; by this means the luster and brilliancy are preserved.

SEPTIMUS PIESSE.