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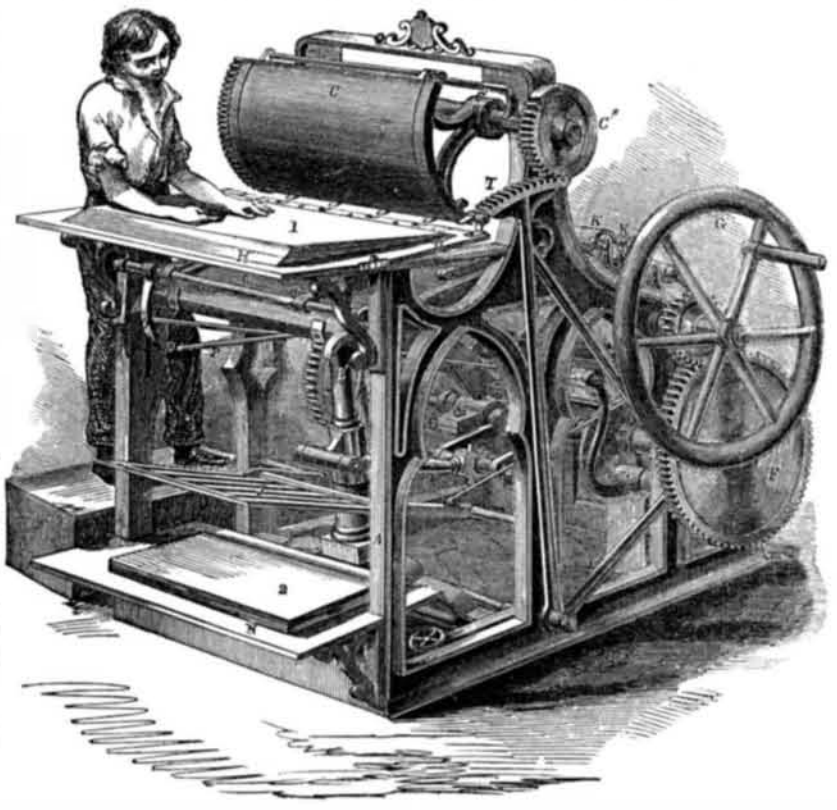
Improved Printing Press.

The first printing presses held the type on a plane horizontal bed, and forced the paper thereupon by the pressure of a flat platen descending vertically like the follower in a cider press. In fact, we think cider presses have been used for printing purposes under some extraordinary circumstances, and such or any of the forms of screw press probably constitutes the slowest practical printing press in existence. The fastest style of press yet constructed, or which can probably ever be imagined, requires that the type be mounted on the surface of a cylinder, so that in short the paper is drawn through between two rapidly revolving rollers, like the iron in a rolling mill. One of the rollers or cylinders carries the type, the other is simply covered with sufficiently soft blankets to enable the type to make a proper impression.

There are several styles of press which involve this principle to some degree, without necessitating the mounting of the type in a cylindrical form. In other words, the blanketed roller is employed for rolling against a plane or flat form of type. The press now to be described is one of that class, and is already in quite extensive use, having been before the public for three or four years. Some improvements have lately been introduced, however, which add still more to its value. It prints with great rapidity and perfection, and is considerably cheaper than other presses of equal capacity in these respects. The form is placed on a bed which, instead of reciprocating or sliding backward and forward horizontally, oscillates or rocks to and fro, while a suitable device above, equivalent in effect to the blanketed roller above mentioned, presses the paper into contact, and prints a sheet at each oscillation.

The inventors are Merwin Davis, of New York City, and Charles Potter, Jr., of Westerly, R. I. Figure 1 is a perspective view of the whole, and figure 2 an outline diagram which serves simply to explain the arrangement and motions of the principal parts. A is the frame of the machine, and B the oscillating bed on which the type form is placed; B′ indicates the stout standard on which B is supported and enabled to rock on a suitable stout shaft below; B″ is a distributing table suitably curved, and attached to the end of B; C is the blanketed cylinder or portion of the cylinder which produces the impression; C′ is the center of motion or rocking shaft, on which this semi-roller is mounted; C″ is a segment fixed on the end of the shaft, C′. The bed, B, rocks on the standard, B, and changes into the position shown by the dotted lines in figure 2. As it effects this movement the semi-roller turns and changes to its dotted position. D is the stout connecting rod by which the motion described is communicated to B from the crank, E; F is a gear wheel on the driving shaft, and G a balance wheel and crank, to facilitate the working of the press by hand power; H is a fixed table or feed board, on which the paper to be printed is placed, and

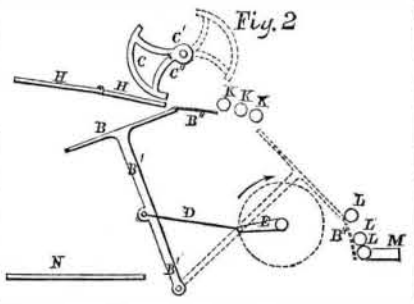
DAVIS AND POTTER'S OSCILLATING PRESS.



H′ is a lifting board hinged to H as represented, and which is, by suitable devices, lifted into contact with C at the proper moment for commencing to feed in a sheet. I is a segment fixed on a lever, J, and worked by a cam on the driving shaft, E, to give the proper motion to C. J is a "fly," by which the paper is removed from the tapes and laid on the receiving bank or fly-board, N.

K K K are inking rollers which are mounted in slots or deep notches in the frame, and urged down by springs, so that they are free to rise and fall to a considerable extent, as the bed moves past under them. L are distributing rollers, by which the ink from the

Fig. 2



the "doctor," M, is properly spread on the distributing table, B″. Both the perspective view, figure 1, and the strong lines in figure 2, represent the press in the position about commencing to receive a sheet. The light rock-shaft, O, mounted under the paper table, H, is worked by a rod extending from the cam on the driving shaft to the hanging arm, O′, and the rocking of this shaft by means of the horizontal arm or arms, O″, lifts the platform, H′, into contact at the proper moment.

Operation.—The platform, H′, rises into contact with C, and suitable grippers on the latter seize the edge of a sheet thus presented. The bed, B, commences to rock forward, and at the same moment, by the aid of the lever, I′, and the segment, C″, the semi-roller, C, commences to revolve. The type on the bed B, and the blankets on the semi-roller, C, are thus brought into contact, and as the surfaces roll together the sheet is rapidly printed and raised off the form, the grippers still holding its forward edge in contact with C. The distributing table, B″, during this movement, passes under and lifts the rollers, K, which subsequently by the onward motion of B, are in effect traversed across the whole face of the form. When the parts have arrived in the position shown by the dotted lines, the distributing table receives an additional coating of ink from the rollers, L, and in returning the form again travels under the rollers, K, which rollers receive in turn a fresh coating of ink from the properly-charged inking table.

To insure the perfect coincidence of the motions of the surfaces on the bed, B, and the periphery of C, there is nicely cut gearing, not represented, on the edges of the semi-roller, C, and corresponding racks on the edges of the bed, B, which lock together just before the operation of printing commences, and continue their union until the sheet has entirely passed. We should observe that while the bed, B. remains in the position shown by the dotted lines, entirely clear of C, and its attachments, the latter is, by the action of the lever, I′, rotated rapidly back to its original position, discharging, in so doing, the printed sheet down upon the fly, J, which lays it on N, so that although the motions of B and C coincide perfectly in one direction, the reverse movement of C is completed before that of B has fairly commenced.

It is evident that the front and rear edges of the bed, B, are further from the axis of motion than the middle, and that consequently the roller or semi-roller, C′, if perfectly cylindrical, and mounted in fixed bearings, could not be made to act on the form as we have described. To overcome this difficulty the surface of the semi-roller, C, although a portion of a perfect cylinder, is not described from the centre of motion, C′, but from a center indicated by a star. The effect of this form, when all the parts are properly proportioned, is to secure a perfectly even contact of the printing surfaces. The bed, B, is furthermore made capable of adjustment by screws at each corner, so that the strength of the impression on all parts of the form may be regulated with the most perfect delicacy. This is an important point in practice.

The first patent on this press is dated July 24, 1855, and the second for additional improvements dated June 2, 1857. The press is constructed with great skill and care in several sizes, and under the immediate supervision of the inventor. The form or bed, B, is easily accessible for correction and the like when in the position shown by the dotted lines.

We consider it the most desirable press for general jobbing purposes with which we are acquainted. It registers very perfectly, no tapes or strings are required either in carrying the sheets or throwing them out, and the impression is under perfect control.

Orders for the presses, or inquiries relating thereto, may be addressed to Chas. Potter, Jr., Westerly, R. I., or at No. 9 Spruce street, New York.

The Raising of Vessels at Sevastopol.

Up to a quite recent date the accounts received through foreign sources of the success of our countryman, Gowan, in raising the vessels of war sunk at Sevastopol are not as favorable as we had hoped. The line-of-battle ships, frigates, and other vessels which were sunk to form three lines at the entrance of the port, it has been found impossible to move. They are deeply imbedded in the sand above the bilge, and are heavily laden with stones and other articles, which were conveyed on board in order to fix them in their places. Seven small steamers which were anchored near the shore in rather shallow water, and were grounded rather than sunk, were the only vessels which had been taken up and repaired at Nicolaieff.

This is the substance of one account. Another, derived from a letter from one of the members of the expedition from Boston, says that the bark *Susan Jane* arrived there in forty-five days from Philadelphia, the quickest passage on record; but they cannot commence on the heavy work—raising the hulls, for some time yet, and are now engaged in taking out guns, and clearing the ships of their chains and anchors, preparatory to lifting them. The letter estimates that the work will be finished certainly in two years.

The importance of removing the ships on account of their obstruction to navigation is less than it would be if the place still retained its former importance. The point to which we believe the Russian government now directs its greatest efforts is Theodosia, or Kaffa, which is to be one of the heads of the line of railway, and is likely to become a great commercial port.

Base Line Measurement.

We briefly noticed last week the recent measurement of a base line in Maine for the coast survey. Professor Bache gave at the Montreal meeting of the Scientific Association an interesting paper on the subject. The line was about five and a half miles in length, and was graded like a common road, at an expense of $4500, in a rapid manner. The operations of measurement required extreme care, and the most uninterrupted attention. Their most successful measurements were at the rate of over a mile a day; and were so accurate that a re-measurement detected no error—that is, the two measures absolutely coincided. We mentioned last week that an error of a fraction of an inch was considered important in such measurements, but do not recollect any previous instance where two measurements of such length as this proved to agree exactly.

Flax Seed and Oil.

There are fifteen mills for grinding and pressing linseed within a range of sixty miles of Dayton, Ohio, and the proprietors met in that city recently to fix the price of the seed. There is a very abundant crop this season, and the price agreed on was from $1·00 to $1·20 per bushel according to the locality. Linseed cakes, the material after the oil has been expressed, are much valued in Great Britain as feed for cattle.