

## IMPROVED PRESSING MACHINE.

Mr. J. W. Jones, of Harrisburg, Pa., has invented a machine which will probably work a revolution in the dry-pressing of printed sheets. It is in practical use in the Government Printing Office at Washington, and in the State Printing Office at Harrisburg, and also at the bindery of Mr. John Mills, 14 Vesey street, New York. This machine will press printed and folded sheets, without set-off, and without fuller or glazed boards being interposed between them.

When the form is being printed it is usually done in this way: the paper is first printed on one side, making the indentations all one way; it is then turned and printed on the other side; this operation is called backing up. It makes the same number of indentations as the first impression, and carries with it nearly all of the indentations made by the first impression. These indentations are concavo convex. The sheets now being printed on both sides are folded. The first fold makes the indentations opposites—concave against concave, or convex against convex, depending on which half of the whole sheet it is. The sheets, being usually of double size when printed, are cut before folding; one half of each sheet, when cut, will have the indentations on one side, while the other half will have them on the opposite side. The sheet receiving the second fold, the opposites are multiplied; when it receives the third fold, they are again multiplied; and this multiplication is continued with every fold the sheet receives. The indentations are more easily removed when the sheets are folded than they could be if they were placed from two to six or more between fuller or glazed boards and subjected to great pressure. It will be readily seen that by placing the sheets in the press, flat, the indentations form, to a great extent, a mould or counterpart for each other, consequently requiring more pressure to remove them.

The sheets being folded, and the indentations being opposed to each other, as described, about 500 are placed in the trough of the machine, with end boards to secure an even pressure over the entire surface, and also to prevent the marring of the outside sheets by the cords, and hydraulic pressure is applied, which is so regular that it causes no heat or friction on the sheets being pressed, consequently there is no set-off. The sheets, while under pressure, are tied with cord around the bundles endwise. The machine is then opened, and the bundle removed and set aside, with the pressure retained by means of the tie, until the sheets are wanted for gathering. The bundles are more easily ranked up, take up much less room than is required when they are piled up loose or bundled by hand, and being more compact there is less fire risk. While pressing them smoothly as the cumbersome hydraulic press, it breaks their backs as effectually as a crushing machine, and takes out all the "kinks," which are wont to bother a binder. After passing through it, the work is more readily handled through all the stages a book has to pass during the process of binding, and is more firm and solid when finished.

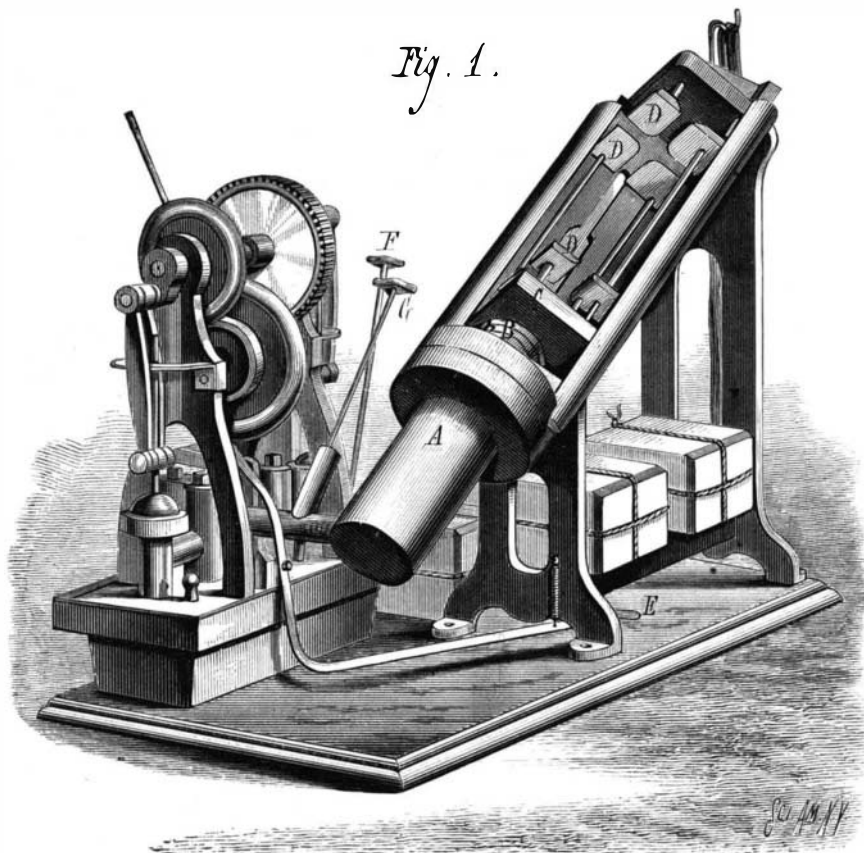
It is impracticable to state all the advantages that this new process has over the ordinary methods of dry pressing. The machinery employed will be understood by reference to the engravings. The press is supported in an inclined position for convenience in arranging the sheets to be pressed, and the frame in which the platen moves forms an angular trough for receiving the corners of the sheets to be pressed; the arrangement obviates the necessity of arranging the sheets, and saves a great deal of time, besides insuring accuracy in the position of the sheets.

The cylinder, A, contains the plunger, B, having the head, C, which supports the four sections, D, of the platen by means of the short stout standard. The stationary end of the press is similarly arranged, and the sides of the press frame are slotted to permit of tying the bundles pressed by the machine. Before placing the sheets in the press a strong board having beveled edges is placed upon the platen, then as many sheets as are to be operated on are placed in the trough

and another board is placed above them. The pressure is then applied by means of the hydraulic pumping machinery, which is set in operation by touching the foot to the pedal, E. The water supplied to the hydraulic cylinder, A, passes through a valve, F. An electric alarm is provided which sounds when the limit of pressure is reached. The

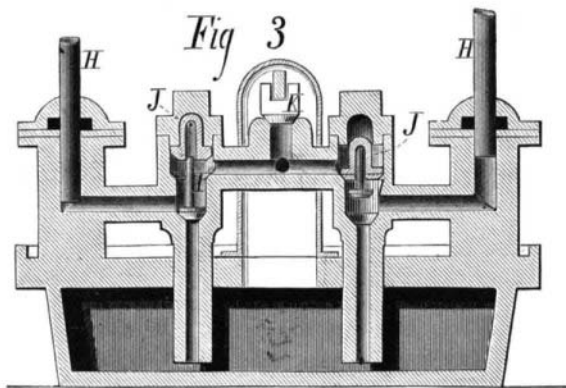
five minutes. The arrangement of valves and pump plungers is shown in Figure 3—H H, being the plungers; I I, the induction valves; J J, the eduction valves, and K, the safety valve. The pumps are mounted on a small cistern, which contains the water supply.

Any further information regarding this invention may be obtained from its inventor, whose address is given above.



JONES' PRESSING MACHINE—FRONT.

bundle is then tied with a strong cord which passes around it in two directions.



By turning the valve, G, the water in the cylinder, A, is allowed to escape to the cistern beneath the pumps, and the bundle is removed to give place to another. The sheets thus placed under pressure and tied are retained under pressure as long as may be desired independently of the press. The time required is from 10 to 24 hours. The time required to place the sheets under pressure is less than

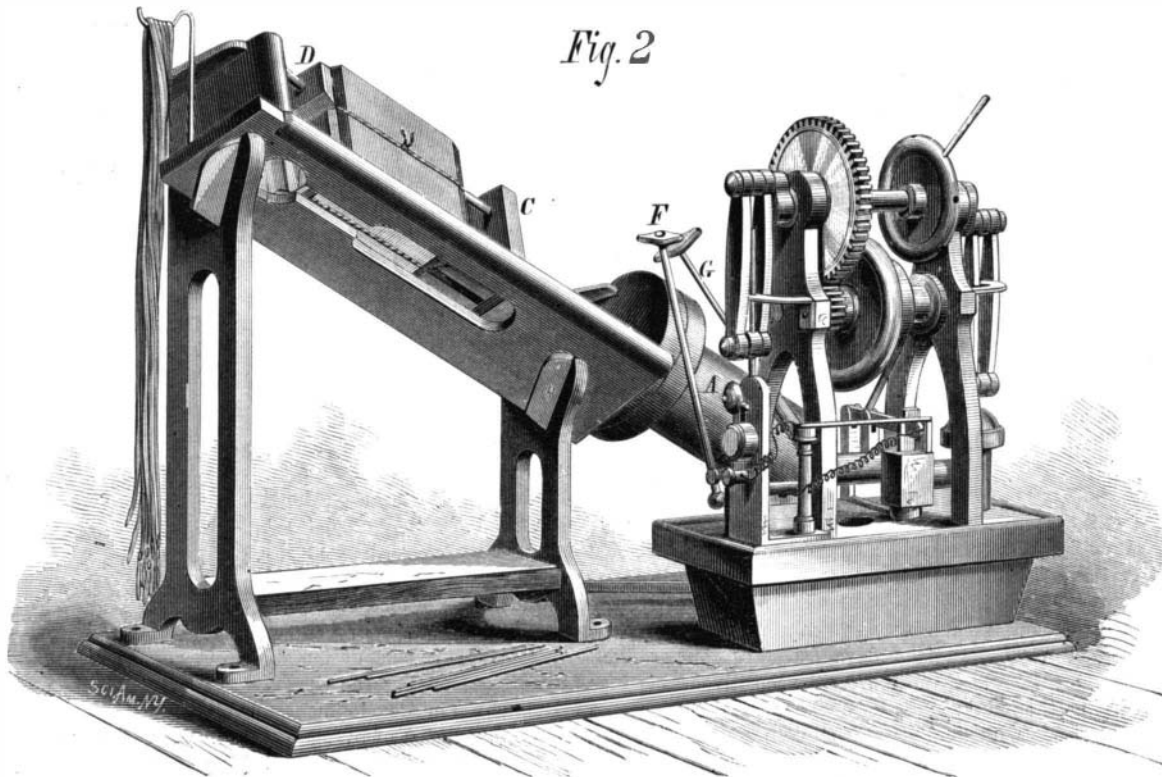
weather plates thus prepared remain too soft and adhesive to work satisfactorily. Better results are obtained when a larger proportion of barium sulphate—say  $3\frac{1}{2}$  instead of  $2\frac{1}{2}$  ounces—are used and the mixture is heated for an hour on the water-bath.

## San Francisco's Big Ferryboat.

The Central Pacific Company's new ferryboat, Solano, measures as follows: Length, 424 feet; height of sides in center, 18 feet 5 inches; height at ends, 15 feet 10 inches; width over guards, 116 feet. The Solano will have two vertical beam engines of 60 inch cylinders and 11 foot stroke. The wheels are 30 feet in diameter, with buckets having a face of 17 feet. Eight steel boilers, each 28 feet in length, will be provided, and will be made in pairs. Four Pratt trusses give a longitudinal stiffness, and connect the deck and bottom of the boat in true bridge style. She is a double-ender, and has four rudders at each end, worked by a hydraulic steering apparatus operated by an independent steam pump. The engines work independently, each moving one wheel, which revolves independently of the others. The boilers are placed upon the deck to prevent the escaping steam from rotting the wood. The hold is divided into eleven watertight compartments, which render her less liable to sink and also strengthen her. Four tracks will be placed upon her decks, which will accommodate 48 freight cars or 24 passenger coaches. Her slips will be provided with aprons 100 feet in length, which will admit of cars being taken aboard without uncoupling from the engine. The Solano is intended to run between Martinez and Benicia, where slips are being built for her. By this route the distance between San Francisco and Sacramento will be but 85 miles, instead of 140 miles by the way of Livermore, and 151 by the way of San Pablo.

## Sign of Prosperous Times.

The President of the Board of Emigration in this city informs us that emigrants, at the rate of 3,000 per week, are arriving at this port. A noteworthy feature is the large proportion of Germans and Russians among them, all of whom immediately push westward. He states, moreover, that the arrivals this season are a very superior class, and as such the Western States are to be congratulated in having them added to their permanent population.



PRESSING MACHINE—REAR VIEW.