

2 Sheets—Sheet 1.

No. 526,148.

Patented Sept. 18, 1894.



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# UNITED STATES PATENT OFFICE.

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## STEREOTYPING-PRESS.

SPECIFICATION forming part of Letters Patent No. 526,148, dated September 18, 1894.

Application filed May 24, 1893. Serial No. 475,310. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM J. EGAN, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Stereotyping; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to effect a saving of time and labor in the production of papier-maché stereotype molds; and it consists in a certain peculiar method and apparatus hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a vertical longitudinal section of a machine constructed according to my invention for the carrying out of my improved method of making papier-maché stereotype-molds, the section being taken on line 1—1 of the third figure; Fig. 2, an under side view of the lifting or platen portion of the machine, the same having parts thereof broken away to better illustrate the construction; Fig. 3, a section taken on line 3—3 of Fig. 1, and Fig. 4 a similar view taken on line 4—4 of the preceding figure.

Referring by letter to the drawings, A represents the stationary portion of my apparatus in the form of a cast-metal stand, herein shown as comprising a series of parallel vertically disposed strengthening ribs *b* and a chamber *c*, the latter inclosing continuations *d* of the ribs. These continuations of the ribs are cut away at suitable intervals to form passages *e* for the circulation of steam admitted to the chamber *c* through a pipe B and exhausted therefrom through another pipe C these pipes being shown in Fig. 1, as preferably provided with steam controlling valves, the latter being of any suitable construction, and accessible through openings in the sides of the stand. This provision for steam-heating of the stand is made as a matter of convenience rather than necessity, as gas or other fuel may be utilized for the same purpose. The stand is designed as a support for type-forms and is made in the manner above specified in order to obtain the requisite strength

to withstand the pressure that is exerted thereon in the manner hereinafter set forth.

The strengthening ribs *b* of the stand A extend in opposite directions therefrom alternate with like ribs *f* on a platen-plate D, and at one side of the machine a pintle E loosely engages these alternate ribs to thereby form a hinge for a platen-plate, certain ribs of the latter being provided with rod-like extensions *g* for counter-weights E', a portion of one of these counter-weights being shown in Fig. 1. At the other side of the machine the ribs of the stand and platen-plate have suitable registering openings for engagement with a detachable bar F that serves to lock said platen-plate in a horizontal position when the operation of making a stereotype-mold takes place.

A continuous ledge D' on the under side of the platen-plate is provided with a series of depending screw-threaded pins *h* that engage a sheet G of rubber or other suitable yielding fluid-proof material and a clamp-frame H, the latter being held in place against the fluid-proof material by means of nuts *i* run on said pins, whereby I provide a compartment *j* having an entrance in the form of a slot *k* in said platen-plate. Cast with the platen-plate is a cylinder I transverse to the ribs *f* and parallel to the slot *k* with which it communicates, and as herein shown valve-controlled fluid inlet and outlet nipples communicate with the compartment *j* above specified, the inlet nipple being for detachable connection with a hose or other conveyer leading from a source of fluid supply. Extending into the cylinder I through a suitable stuffing box J in which it has its bearings is a screw-rod K provided at its outer end with a hand-wheel L or other suitable actuating device. Engaging the screw-rod K is the tapped head of a hollow cylindrical plunger L' this head being shown as preferably consisting of a screw-plug M having interior threads matching those on the rod. The plunger is of such diameter as to leave a water-space *m* between itself and the cylinder I, and said plunger has ports *n* adjacent to the head that engages the screw-rod. The plunger also extends through a gland O at the rear end of the cylinder and has its outer head preferably in the form of a screw-plug N, as best illustrated in Fig. 3.

The plate D and the several parts in connection therewith, independent of the stand, constitute the platen of my machine, the face of this platen being the yielding fluid-proof material G, and having now described the construction and relative arrangement of the elements necessary to the preferred form of said machine I will now proceed to describe my method of producing a papier-maché stereotype-mold. The plunger portion of the platen is run out on the adjusting screw and water or other fluid admitted to said platen to fill all the existing space therein, the undue strain that would otherwise subsequently come upon said plunger being equalized by the volume of fluid admitted thereto through the ports above specified, and by these ports I prevent the backing up of the fluid against said screw, as would be the case were said ports omitted and said fluid found its way into the afore-said plunger along the screw-threads. The fluid inlet and outlet nipples being closed the platen is swung up on its hinge and a form of type positioned on the stand. A moist papier-maché matrix is now placed on the type-form and blanketed in the usual manner after which the platen is swung down to its horizontal position and locked in place, the yielding fluid-proof portion of said platen being in contact with the uppermost matrix blanket. The screw-rod is now actuated to exert a draw on the plunger portion of the platen and as this plunger gradually approaches toward the operator there is a corresponding displacement of the fluid in the cylinder through the slot in the platen-frame into the adjacent lower compartment thereby causing a proportionate pressure against the matrix on the type, and the yielding lower side of said compartment permits of a compensation for inequalities in the face of the type-form or blankets. By the fluid-pressure thus exerted the matrix is indented to form the stereotype mold and coincident with this operation said mold is dried by heat radiated from the stand. The mold having been completed, the platen is unlocked and again swung up out of the way to permit the removal of said mold from the type-form. From the foregoing it will be seen that I do away with the usual beating in of the matrix prior to the exertion of pressure thereon, and by the direct application of fluid-pressure and the yielding nature of the pressing surface I avoid mashing of the type-form and otherwise obtain better results than is usual in the art, while at the same time I may dry the mold coincident with the impression of the matrix on said type-form. The machine herein described is at present my preferred means for carrying out my method of making papier-maché stereotype molds, but this method contemplates broadly the employment of yielding pressure, either hydraulic or pneumatic primarily exerted against the matrix or the blankets laid there-

on, these blankets being necessarily employed in connection with the drying of the impressed matrix, but not absolutely essential to that step in said method that contemplates obtaining the impression, and hence it is more a matter of convenience than necessity to dry a mold coincident with its formation on a type-form, although by this step in the art I effect an additional saving of time and labor.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A stereotype-machine consisting of a suitable stand, a platen embodying a plate having a depending continuous ledge bounding a compartment, a sheet of yielding fluid-proof material clamped to the ledge, a cylinder on the plate in communication with the compartment, a screw extending through one head of the cylinder, a plunger movable on the screw through the other end of said cylinder; and suitable means for introducing fluid to the space within said platen, substantially as set forth.

2. A stereotype-machine consisting of a suitable stand, suitable means for heating the same, a platen embodying a plate having a depending continuous ledge bounding a compartment, a sheet of yielding fluid-proof material clamped to the ledge, a cylinder on the plate in communication with the compartment a screw extending through one end of the cylinder, a plunger movable on the screw through the other end of said cylinder, and suitable means for introducing fluid to the space within said platen, substantially as set forth.

3. A stereotype-machine consisting of a suitable stand, a platen embodying a plate having a depending continuous ledge bounding a compartment, a sheet of yielding fluid-proof material clamped to the ledge, a cylinder on the plate, in communication with the compartment, a screw extending through one end of the cylinder, and a hollow plunger movable on the screw through the other end of said cylinder and provided with ports communicating therewith; and suitable means for introducing fluid to the space within said platen, substantially as set forth.

4. A stereotyping-machine comprising a stationary stand for the support of type-forms, a hollow platen hinged to the stand and having an under face of flexible fluid-proof material, suitable means for locking the platen in its working position, and other suitable means for exerting fluid-pressure within said platen, substantially as set forth.

5. A stereotyping machine comprising a suitable stand, a hollow platen having an under face of flexible fluid-proof material, a cylinder on the platen in communication with the interior of the same, a screw extending through one head of the cylinder, a plunger movable on the screw through the other end

of said cylinder, and suitable means for introducing fluid into said platen, substantially as set forth.

5 6. A stereotyping machine comprising a suitable stand, suitable means for heating the stand, a hollow platen having an under face of flexible fluid-proof material, a cylinder on the platen in communication with the interior of the same, a screw extending  
10 through one head of the cylinder, a plunger movable on the screw through the other end

of said cylinder, and fluid conveyers leading into said platen, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in 15 the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

WM. J. EGAN.

Witnesses:

N. E. OLIPHANT,  
HENRY DANKERT.