

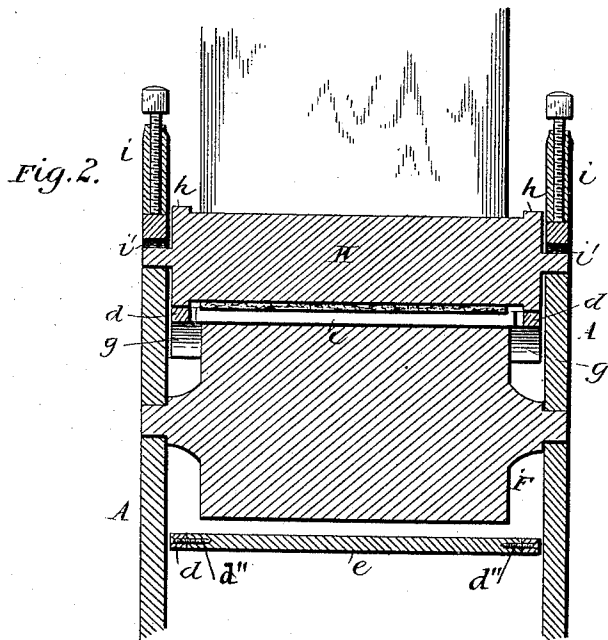
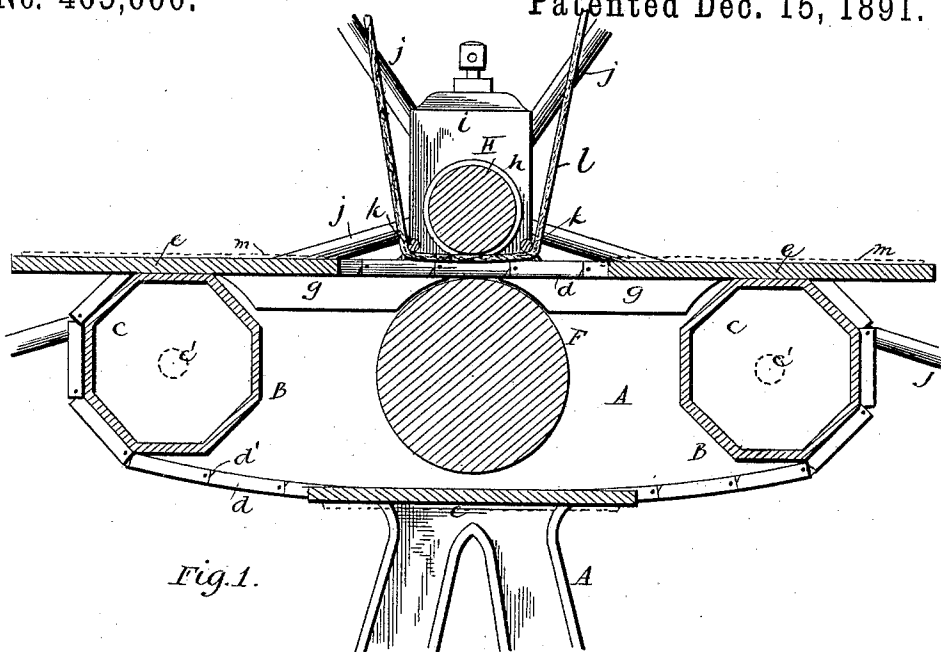
(No Model.)

2 Sheets—Sheet 1.

A. B. SCHOFIELD.
PLATE PRINTING PRESS.

No. 465,000.

Patented Dec. 15, 1891.



Witnesses:

Wm. S. Norton
J. W. Ireland

Inventor:

Andrew B. Schofield
J. L. Browne
his Attorney.

By

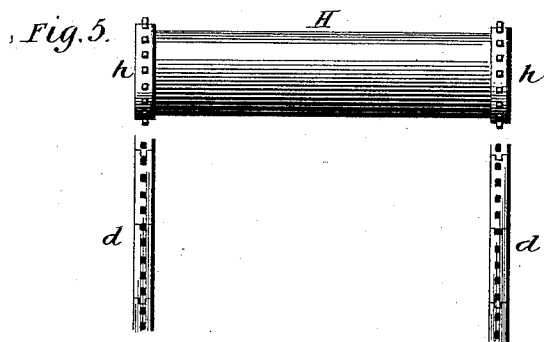
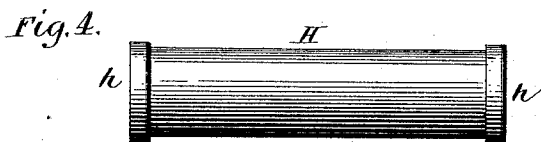
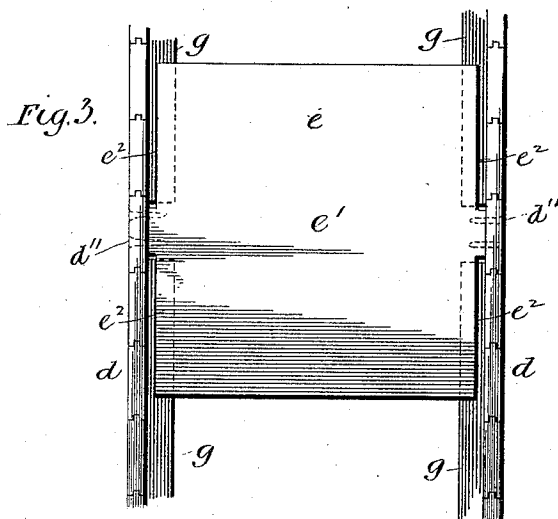
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UNITED STATES PATENT OFFICE.

ANDREW B. SCHOFIELD, OF WASHINGTON, DISTRICT OF COLUMBIA,
ASSIGNOR OF TWO-FIFTHS TO JAKE COVERT AND ADELBERT M.
DEWEY, OF SAME PLACE.

PLATE-PRINTING PRESS.

SPECIFICATION forming part of Letters Patent No. 465,000, dated December 15, 1891.

Application filed May 5, 1891. Serial No. 391,688. (No model.)

To all whom it may concern:

Be it known that I, ANDREW B. SCHOFIELD, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Plate-Printing Presses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to plate-printing presses designed for printing from copper and steel plates, and has especial reference to that class of presses in which the press is actuated by hand-power, and which are technically termed in the art "hand-presses."

In the presses now in general use means are employed for using but a single plate in connection therewith, the result being that the amount of work accomplished is necessarily limited, and the work involved of a very laborious character.

The objects of my invention are to lessen the labor employed in the operation of a press and to provide facilities for increasing its capacity.

To these ends my invention may be said to consist, generally, in providing a press of the class above referred to with a sectional endless carrier, upon which is mounted at equidistant portions thereof a series of tables or planks of new and novel construction, which supports and holds the copper or steel plates, and which is adapted to be rotated in one continuous direction and bring the tables or planks in turn between two rollers for giving the impression.

My invention also consists in the construction and relative arrangement of the several parts, all of which will be now fully and clearly explained, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a vertical longitudinal section of my improved plate-printing press. Fig. 2 is a transverse vertical section. Fig. 3 is a top view of one of the tables and a portion of the endless carrier. Fig. 4 is a detail

of the operating-roller, and Fig. 5 represents a modified form of roller and a section of carrier therefor.

Similar letters of reference in the several figures denote like parts.

A represents the frame of the machine, which is provided with the extensions B B, in the ends of which are journaled the shafts *c'* of the drums *c c*. These drums are octagonal in their cross-sections, although drums having any other suitable number of faces may be employed. Passing around these drums is an endless carrier *d d*, which is formed of sections hinged together, a tongue on one section entering a recess in the next adjacent section, as shown. The top and bottom surfaces of that portion of the carrier which is uppermost is unbroken, and sufficient play is allowed by reason of the inclined portions *d'* of the sections to give the requisite flexibility in passing around the drums *c c*. Secured to equidistant sections of the carrier by screws *d''*, as shown, or by other suitable means, are a series of tables or planks *e e e*, preferably three in number, as shown, and which support and hold the copper or steel plate (indicated by dotted lines *m*) from which the impressions are to be made. The portions of the tables or planks beyond the centers *e'* are cut away, as indicated at *e''*, Fig. 3, to prevent the binding of the ends thereof between the carriers.

F represents the lower or anti-friction roller, which is mounted centrally and transversely to the frame. Secured to the frame between this roller and the drums *c c* are supporting-rails *g g*, which are carried inward as near as possible to the point of contact of the cylinder, thus presenting a substantially unbroken support for the carriers and tables or planks and insuring a perfectly horizontal movement to the tables or planks as they pass over the lower roller.

H is the impression-roller, which is mounted in the upwardly-yielding bearings *i'* in the standards *i*, and which operates with the bottom roller to form the impression from the plate. This impression-roller is operated in

the usual manner by means of the cross-handle *j*, and is formed with its ends *h* of increased diameter, which are in frictional contact with the upper surface of the carrier and impart motion thereto. The portion of the roller between its ends *h* conforms in length to the width of the table or plank, and the blanket *l*, which is placed underneath the roller, is slightly thicker than the difference between the diameters of the middle portion of the roller and its ends, the object being to raise the roller and allow its ends to clear the carrier during the time the table or plank and plate are passing between the rollers. The function of this construction is to impart motion to the plate and its supporting-table by frictional contact between the table, blanket, and rollers, as I find that by this manner of operation the best results are attained. Arranged at each side of the impression-roller are revolving rods *k*, which are supported in any suitable manner in the standards. The blanket *l*, which is connected at each end to suitable ropes and pulleys arranged above the machine, passes around under these revolving rods and roller and travels with the roller and plate during an impression. As soon, however, as the plate leaves the roller the blanket, being properly weighted, returns to its normal position and is ready for the next impression. The rods are arranged so as to depress the blanket, in order to give as little friction as possible with the roller.

In Fig. 5 is shown a roller having a series of teeth formed in the periphery of its ends, which are adapted to engage a series of depressions formed in the upper surface of the tracks. This construction insures a positive motion to the carrier and may be used to advantage; but for ordinary purposes I prefer that the motion shall be imparted by frictional contact alone.

The operation is as follows: The handle is turned until the parts are brought in the position shown in Fig. 1—that is, with two of the tables arranged on the same plane and at either side of the impression-roller at the ends of the machine. The steel or other plates are then placed in position on the tables and are inked and polished and carried in turn between the roller and cylinder.

Among the advantages of my construction over the presses now in general use is that while one plate is giving an impression another plate may be prepared ready for use, and this may or may not be done by one person, as it is evident that an assistant could operate the press and ink the plates, and thus relieve the printer from much of the manual labor now required of him. With my construction the plates when once in position do not require rehandling, and the different op-

erations may be carried on each independent of the other.

The heating of the plates may be done in any known or preferred manner by jets within the drums or at any other positions along the line of travel of the carrier and tables or planks.

I claim—

1. In a plate-printing press, the combination, with two drums, of an endless carrier constituted of hinged sections and a series of plate-supporting tables or planks, each of which is rigidly connected centrally to opposite sections, but having their free ends extending beyond the same, substantially as described.

2. In a plate-printing press, the combination, with an endless carrier and with a series of plate-supporting tables or planks connected to such carrier, of an impression-roller having its ends adapted to bear on said carrier and having its intermediate portion of less diameter than its ends, and a blanket passing around the under side of the intermediate portion of the roller, all for the purpose set forth.

3. In a plate-printing press, and in combination with an endless carrier having a series of plate-supporting tables or planks connected to such carrier, a cylinder arranged below said carrier, supporting-rails extending at either side beyond said cylinder, an impression-roller the ends of which are in contact with said carrier and having its intermediate portion of less diameter, and the blanket operating with said cylinder, all substantially as and for the purposes set forth.

4. In a plate-printing press, and in combination with an endless carrier having depressions formed therein and having a series of plate-supporting tables or planks connected thereto, a cylinder arranged below said carrier, supporting-rails extending at either side beyond said cylinder, and an impression-roller the ends of which are provided with teeth adapted to engage the said depressions, all substantially as and for the purposes set forth.

5. In a plate-printing press, the combination, with an impression-roller and a plate-supporting table or plank, of two rods arranged at the front and rear of the roller and adapted to operate in connection with a blanket, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW B. SCHOFIELD.

Witnesses:

R. M. DEWEY,
P. J. MCHENRY.