

No. 633,665.

Patented Sept. 26, 1899.

W. L. SPAULDING.
LETTER COPYING PRESS.

(Application filed Jan. 31, 1899.)

(No Model.)

Fig. 1.

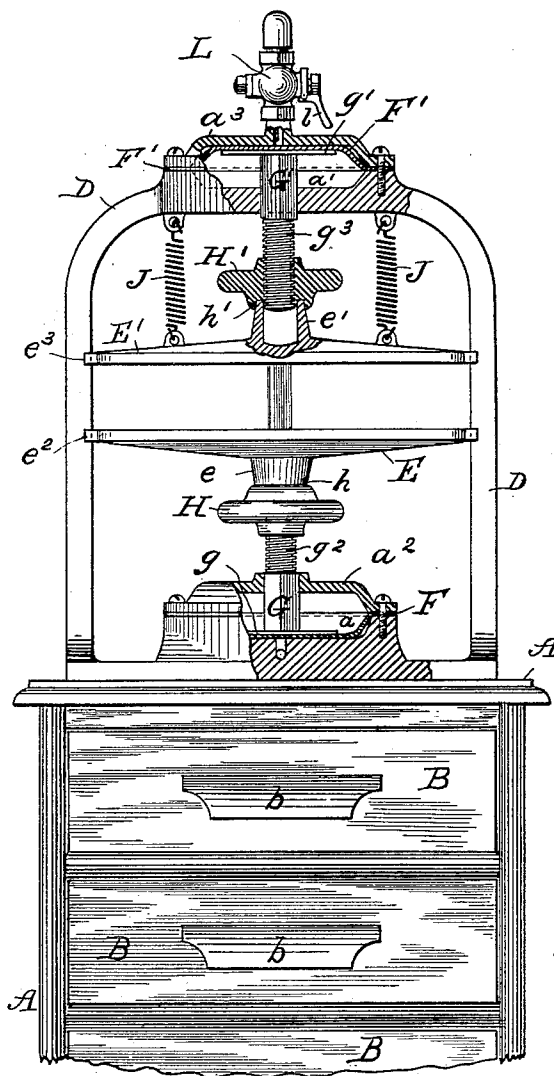
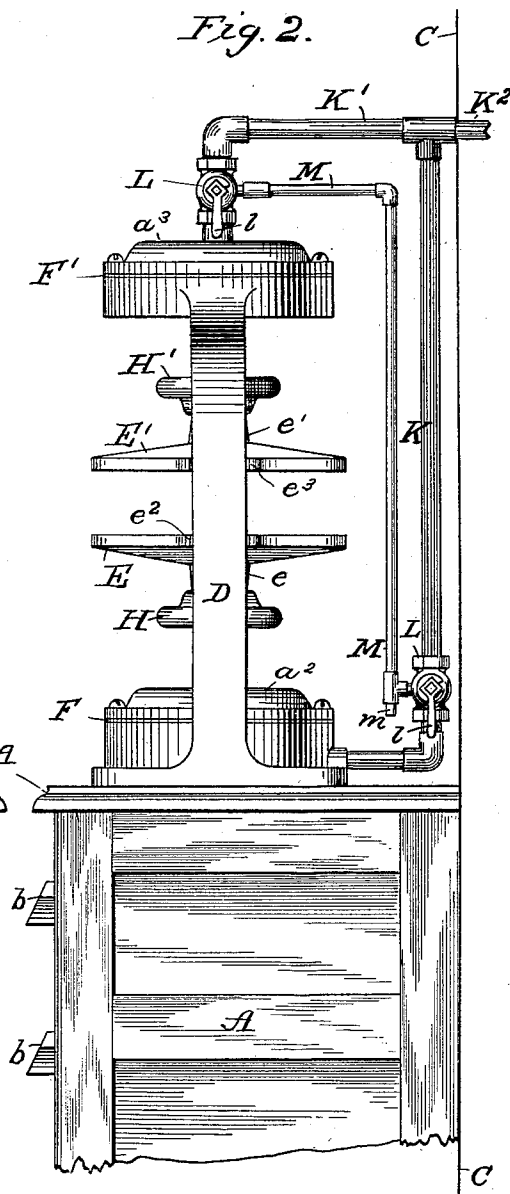


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

WESLEY L. SPAULDING, OF MANCHESTER, NEW HAMPSHIRE, ASSIGNOR TO
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LETTER-COPYING PRESS.

SPECIFICATION forming part of Letters Patent No. 633,665, dated September 26, 1899.

Application filed January 31, 1899. Serial No. 703,955. (No model.)

To all whom it may concern:

Be it known that I, WESLEY L. SPAULDING, a citizen of the United States, residing at Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Letter-Copying 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.

This invention relates to means for applying the necessary pressure upon a letter-copying book to produce a clear legible copy, and it may be made an attachment to an ordinary letter-copying press or embodied in an improved construction of a letter-copying press, as will be fully set forth in the following specification and claims and clearly illustrated in the drawings accompanying and forming a part of the same, which construction possesses many advantages over those to be gained by its use as simply an attachment.

All who use a letter-copying press have found repeatedly that they cannot place perfect reliance upon obtaining a satisfactory result even after having used their best efforts, and this is frequently the result of insufficient pressure upon the book, although other causes combine which prevent making a clear and distinct copy—such for instance, as the use of an inferior quality of paper in a copying-book or not properly wetting the leaves, or the sheets of oiled paper may have become warped, and boys or young ladies who are often intrusted with this work lack sufficient strength to apply power to the hand-wheel operating the screw of an ordinary letter-copying press to flatten the warped surface of these oiled sheets.

In the office-buildings of the present day water is always available, and in some instances compressed air is also, and many would be glad to discard the ordinary screw letter-copying press if the change would not involve too great expense.

Hence the object of the present invention is to provide means for operating a letter-copying press by hydraulic or pneumatic

force; and the invention consists in providing a letter-copying press with one or more flexible diaphragms adapted to be operated by either water or compressed air.

The accompanying drawings clearly illustrate the invention, and consist of two views, of which—

Figure 1 is a broken front elevation of my improved press mounted upon a suitable stand which may contain drawers, as shown, Fig. 2 being an end elevation of the same mounted on a stand placed against the wall of an apartment, the latter being designated by a single line.

Similar reference-letters denote corresponding parts in both views.

A is a stand which may contain drawers B, having handles or pulls *b*, by which they may be opened, and the vertical line C represents the wall of an apartment.

D is the frame of my improved letter-copying press, and if very thick letter-copying books are to be used or for any reason it becomes desirable to obtain or provide a greater space between the book rest or bed and the follower-plate or pressure-plate than can be conveniently obtained by the adjustment of said pressure-plate an adjustable bed-plate may be used, as shown in the drawings; but for ordinary use sufficient adjustment of the pressure-plate may be obtained with a fixed bed, which is a much cheaper construction. It may be mentioned that with an adjustable bed pressure may be applied also to the bed-plate, and this construction is shown in the drawings, although it is obviously an unessential feature of my invention.

E represents an adjustable bed-plate, and E' an adjustable pressure-plate, which are nearly identical in form and construction, each being provided with a socket or hollow projection *e e'*, respectively, and each having ears at their ends *e² e³*, respectively, by which they are guided in their vertical movement on the frame D, as shown.

At the base of the frame is centrally located a circular recess *a*, and at the top of said frame is provided another similar recess *a'*, each being provided with a cap, respectively, *a²* and *a³*, and these caps are firmly secured

in place by bolts or screws, as shown, and under each cap is secured a flexible diaphragm F F', respectively, against which will rest the follower-plates $g g'$, attached to the
 5 pistons G G', which bear, respectively, in the hollow projections $e e'$ of the plates E E', and by the admission of hydraulic or pneumatic pressure into the chambers containing the diaphragms F F' the plates E E' are forced
 10 together or toward each other upon a letter-copying book or books which may have been placed between said plates E E'.

Either or both plates E E' may be made adjustable by cutting threads upon a portion of
 15 the pistons G G', as shown at $g^2 g^3$, and fitting, respectively, thereon the hand-nuts H H', which limit the distance which said pistons shall enter the hollow projections $e e'$. Said nuts H H' are preferably recessed, as at
 20 $h h'$, to receive the projections $e e'$, upon which they rest, thus acting as a guide for the said pistons.

The pressure-plate E' requires some support, which should be a yielding one, and for
 25 this purpose I show springs J, connecting said plate with the upper part of the frame A, said springs being simply strong enough to sustain the weight of said plate. The diaphragms F F' are supplied with pressure
 30 through the pipes K K', connected by a T connection with a main pipe K², each pipe K K' being preferably supplied with a stop and waste cock L and their waste-opening connected one with the other by a tube M, to
 35 which a rubber tube can be attached at m and conduct the waste (when water is the force used) to a pan.

It will be readily seen that my improved letter-copying press is very simple to operate,
 40 requiring practically no labor or strength. After placing a letter-book upon the bed-plate E it is only necessary to swing the handle l of either cock L, which enables the force against the diaphragm to do its work, and an
 45 important advantage my improvements possess over a screw letter-copying press is that whatever the pressure obtained it is certainly wholly maintained until the force upon a diaphragm is released or cut off. To remove
 50 the book, the handle l is first thrown back to

its normal position, when the weight of the bed-plate E (if the diaphragm F were used) or the spring force of the pressure-plate E' (if the diaphragm F' were used) returns the
 55 piston to its normal position, discharging the water between the cock and diaphragm into the tube M.

Having described my improvements, what I claim is—

1. In a letter-copying press, a spring-sup-
 60 ported pressure-plate having a central projection provided with a socket, a piston adapted to enter said socket and provided with a follower, a chamber containing a flexible dia-
 65 phragm in contact with said follower, and means for conducting hydraulic or pneumatic pressure to said diaphragm.

2. In a letter-copying press, a spring-sup-
 70 ported pressure-plate having a central projection provided with a socket, a piston having a threaded portion near one end and a
 75 follower-plate at the other end, a hand nut or wheel threaded to said piston and adapted to rest upon central projection of said pressure-plate, a chamber, a flexible diaphragm
 80 therein and in contact with said follower-plate, and means for conducting hydraulic or pneumatic pressure to said diaphragm.

3. In a letter-copying or book press, a spring-
 85 supported pressure-plate and a bed-plate each adapted for adjustment to various thicknesses of books by a screw, the said screws, and means for applying the desired hydraulic or pneumatic pressure to said plates after
 90 their proper adjustment by said screws.

4. In a letter-copying or book press, the combination of an adjustable pressure-plate, and adjustable bed-plate, a suitable screw
 95 connected to each plate for moving them toward or away from each other, and means for applying the required pneumatic or hydraulic pressure to each of said plates after their proper adjustment by said screws.

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

WESLEY L. SPAULDING.

Witnesses:

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 EMILE H. TARDIVEL.