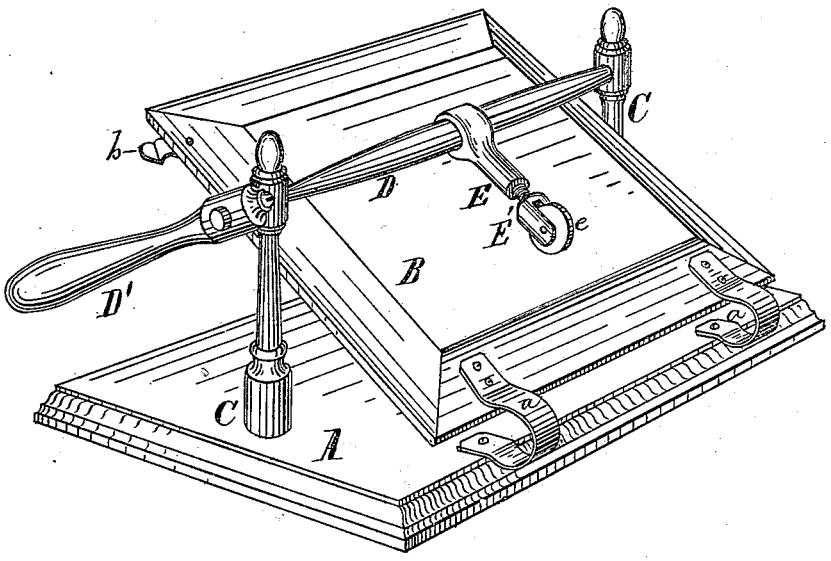
G. A. SMITH.

COPYING-PRESS.

No. 192,300. Patented June 19, 1877.



WITNESSES

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GEORGE A. SMITH, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN COPYING-PRESSES.

Specification forming part of Letters Patent No. **192,300**, dated June 19, 1877; application filed June 13, 1877.

To all whom it may concern:

Be it known that I, GEORGE A. SMITH, of Boston, county of Suffolk, State of Massachusetts, have invented a new and useful Improvement in Copying-Presses for Papyrographic and other Purposes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, and which represents a perspective view of my improved copying-press.

The object of my improvement is to facilitate the operation of taking papyrographic and other letter-press copies, and adapting them to be taken or made with much greater rapidity than is done in presses in ordinary use; and to this end the invention consists, first, in a novel manner of combining the follower or upper platen with the bed-plate of the press, whereby it is not only made self-retracting when the pressure is withdrawn, but is made to open upon hinges or springs arranged at one side of the press, as will be explained.

It further consists in a novel arrangement of lever and cam or roller, or equivalent devices for actuating the follower, whereby the necessity of reversing the movement of said devices for releasing the follower is obviated, and the movement of said devices in either direction serves to both move the follower up to its work, and to release the same and allow it to be retracted, as hereinafter explained.

In the accompanying drawing, A represents the bed-plate, made in the usual form, and B is the upper movable platen or follower, which is attached to the bed-plate at the rear side or edge by flat bent springs *a a*, which perform not only the function of yielding hinges, but serve the further purpose of upholding the front edge of the follower like the raised lid of a book, when not held down by the cam or lever for depressing it.

The form of the spring *a* may be varied; and, in some cases, it may be found sufficient to simply hinge the follower to the bed-plate and employ springs for raising the former when the pressure is removed. Springs performing both functions, as described, are preferred, however, as allowing the follower to adapt itself to different thickness of letter-press books or other interposed matter.

The bed-plate is provided at its ends with uprights C C, having suitable bearings in their upper ends for a rock-shaft, D, having at one end an arm or lever, D′, by means of which the shaft is vibrated. Midway between the standards C C, the shaft D has an arm, cam, or lever, E, rigidly secured to it, and shown, in the present instance, as provided with a threaded socket in its outer swinging end, in which is secured an adjustable extension piece, E′, having a friction-roller, *e*, mounted in its outer forked end, and provided at its inner end with a threaded shank fitting the socket in arm E, and adapting it to be readily adjusted therein for varying the length of the arm and adapting it to the throw required to be given to the follower B.

Instead of the threaded shank and socket, a shank, provided with a ratchet-face and a spring-retaining pawl, or other equivalent means for conveniently effecting the adjustment, may be used.

The arm or cam E E′ will be so adjusted in length, that when it is vibrated, depressing the follower B for taking a copy or impression, the required pressure will be attained as said arm or cam reaches a position perpendicular to the face of the follower, and passing said point or position the follower will be released and allowed to be retracted by the springs *a a*, as explained.

It will be seen that under this arrangement of parts, as the arm or lever D′ is vibrated back and forth, the follower B will be actuated by the movement of the arm or cam E in either direction, and that it is not necessary to reverse the movement of said arm or cam or its actuating devices in order to release and retract the follower. Considerable economy of time in duplicating copies or impressions is thus effected. The manner in which the follower is raised, viz., at its forward edge, also facilitates the removal and replacing of the copying-book, and where papyrographic copies or impressions are to be taken, the follower may be provided with angular buttons or clasps *b*, which are made to grasp the upper leaves or portion of the book, and thus to

open the latter, as the follower is raised, at the proper place for removing the copy taken and for the insertion of the sheet of paper for a new impression or copy, thus facilitating the operation of duplicating copies. These buttons are attached by screws or other suitable fastening devices, adapting them to be readily removed or applied, as required.

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

1. The upper movable platen, connected at one side or edge with the lower platen or bed-plate by spring-hinges or their equivalent, adapting said platen to be automatically raised at the front or opposite side or edge when the pressure is removed, in combination with the vibrating actuating-arm E, moving back and forth over said platen, substantially as described.

2. The combination, with the upper hinged movable platen B, of the buttons *b*, adapting the lid or cover of the copying-book or portfolio to be attached to and to move with said platen, as described.

3. The combination, with the rock-shaft D, of the arm E, adapted to be vibrated back and forth in the arc of a circle over the platen B, and to depress and release said platen at each swing or movement, as described.

4. The combination, with the vibrating arm E, of the friction-roller, made adjustable in the outer end of said arm or cam, substantially as described.

In testimony whereof I have hereunto set my hand this 9th day of June, A. D. 1877.

GEORGE A. SMITH.

Witnesses:

ROSCOE P. OWEN,

J. WALTER WELLS.