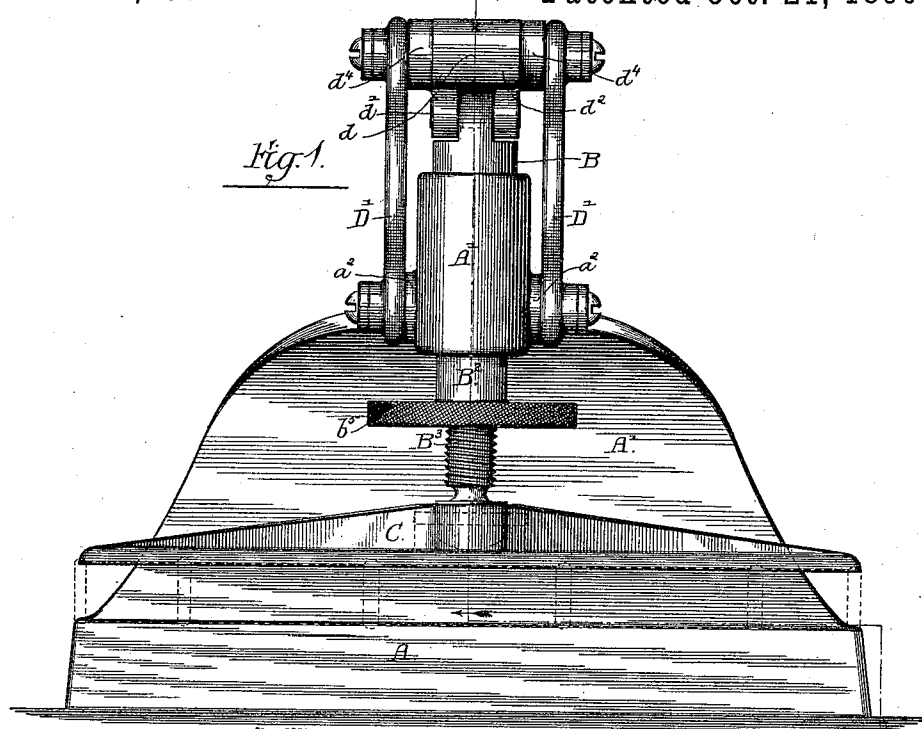
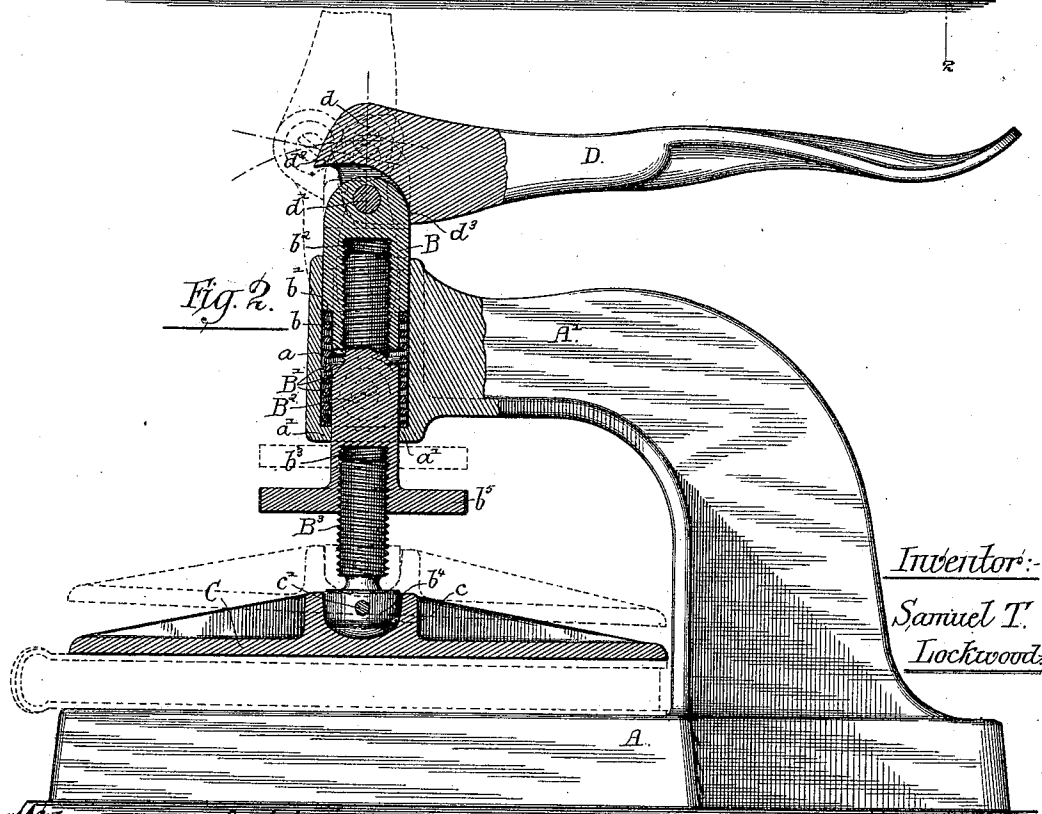


(No Model.)

S. T. LOCKWOOD.
COPYING PRESS.

No. 438,850.

Patented Oct. 21, 1890.



Inventor:-
Samuel T.
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Witnesses:-

Louis M. F. Whitehead }
Wm. F. Hemming }

by:-

By:- Dayton, Poole & Brown Attorneys.

UNITED STATES PATENT OFFICE.

SAMUEL T. LOCKWOOD, OF CHICAGO, ILLINOIS.

COPYING-PRESS.

SPECIFICATION forming part of Letters Patent No. 438,850, dated October 21, 1890.

Application filed June 17, 1889. Serial No. 314,578. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL T. LOCKWOOD, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Copying-Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a novel construction in lever-operated copying-presses, the object being to provide a device of this character which is simple and durable in construction and more convenient and rapid in its operation than ordinary screw-presses.

The invention consists in the features of construction and combinations of parts hereinafter fully described, and pointed out in the appended claims.

In the drawings, Figure 1 is a front end view of a copying-press constructed in accordance with my invention. Fig. 2 is a view in side elevation, and partly in vertical section, taken on line 2 2 of Fig. 1.

In said drawings, A indicates a bed of a copying-press, which is provided with an overhanging supporting-arm A'. The free end of the said arm is located over about the center of the said bed A, and is provided with a vertical opening or guide-recess *a*, having an inwardly-projecting annular flange *a'*, arranged at the lower end thereof.

B is a vertically-movable plunger working within the upper end of said guide-recess *a*, in which it fits and slides. The lower end of said plunger is provided with a central cylindric prolongation smaller than the main part of the plunger, as shown at *b*, so that a shoulder *b'* is formed between it and the upper portion. B' is a spiral spring located within the said recess *a*, and resting at its lower end upon the flange *a'*. The upper end of the said spring encircles the cylindric prolongation *b* of the plunger and bears upwardly against the shoulder *b'*. The function of said spring will be more fully explained hereinafter.

The plunger B is provided with a central screw-threaded recess *b''*, extending upwardly from its lower end, and which is adapted to

receive the screw-threaded upper end of an adjusting-spindle B², which in its lower or main part fits within and passes through the annular flange *a'* at the lower end of the recess *a*. The said adjusting-spindle B² is provided with a central screw-threaded recess *b''*, extending upwardly from its lower end, and which is adapted to receive the upper end of a screw-bolt B³. The lower end of the said screw-bolt B³ is formed with a rounded head *b''*, which is engaged with the platen of the press in a manner hereinafter described.

C is a platen of familiar construction, provided on its upperside with a socket *c*, within which the head *b''* of the screw-bolt B³ is pivoted by means of a pin *c'*, passing through the walls of the socket and through said head. It will be manifest that by means of this construction the platen is loosely connected with the rod B³, so that it has a slight vibratory or swinging motion thereon. The pivot-pin *c'* is located relatively to the head and socket, so that the force applied to the screw-bolt to depress the platen will not be communicated thereto through the said pin and the walls of the socket, but the said head will bear directly against the bottom of said socket, and thus provide a solid bearing and prevent the said pin from being bent or strained. The socket *c* is formed midway the sides of said platen, but slightly nearer the forward than the rear edge thereof, so that the platen will normally hang in an inclined position, with its forward edge somewhat elevated, as shown clearly in dotted lines in Fig. 2.

In place of the construction just described the platen can be weighted so that it will stand in an inclined position. This construction is provided to facilitate the insertion of a book or other article beneath the platen. Obviously the platen could be arranged to incline laterally, instead of from front to rear, with the same result, owing to the fact that three of the sides are open, instead of two, as is usual in most presses.

The adjusting-spindle B² is provided with a hand-wheel or milled head *b''*, by means of which it may be turned to change the distance between the platen and the bed, in order to adjust the press to receive copying-books or other articles of different thicknesses. I have shown in the drawings the

spindle B², having a right-hand screw-thread and the screw-bolt B³ as having a left-hand screw-thread. It is obvious that by reason of the presence of oppositely-arranged screw-threads on the said parts the platen will in turning the spindle be moved twice as fast as by a single screw.

D is an operating handle or lever, which is pivoted at one end to the upper end of the plunger B by means of a pivot-pin d'. Said lever is provided with a thick or wide part or head d at its end adjacent to the pivot d', and is also provided with two lugs or shoulders d² and d³, which limit the movement of said handle relatively to the plunger to an arc of about a quarter of a circle. The lug d³ is arranged upon the under or rear side of the head d, and is adapted to abut against the plunger, and thereby prevent a further movement of the handle when it is approximately in a horizontal position, and the lug d² will abut against the other or front side of the said plunger when the handle reaches an approximately vertical position.

D' D' are links pivoted at their lower ends to studs a² a² upon either side of the arm A' and at their upper ends to studs d⁴ d⁴ on the corresponding sides of the head d of the handle. The said studs d⁴ d⁴ are located at points above the pivot-pin d' when the handle is in a horizontal position, so that in moving the said handle it will turn upon the studs d⁴ d⁴ as a center, and the pivot-pin d', being distant from said center, will describe a partial revolution and carry with it the plunger B, while the links D' D' will swing about the studs a² a², and thus permit a sufficient lateral movement of the said head to allow the pivot-pin d' and the plunger to move vertically.

The several parts of my invention being constructed and assembled as described, the operation is as follows: The platen C is normally held in an elevated position by the action of the spring B' upon the lower end of the plunger B, and as said plunger rises the head d of the handle, which is pivoted at one side to the plunger and at its opposite side to the links D' D', will turn upon its link-connections as a pivot and make a partial revolution, the links in the meantime turning upon their pivots a² a², so that their upper ends pass to one side, causing them to stand at an incline, and thus permit a vertical movement of the pivot-pin d', which moves with and in the same direction as the plunger. The upward movement of said plunger is limited by the lug d³ upon the head d coming in contact with the plunger B. In this position the studs d⁴ d⁴ will stand at one side of the pivot-pin d', the links D' D' in an inclined position, and the handle D in an elevated position. The actuation of the handle or operating-lever in the manner described obviously affords only a small vertical movement in the plunger B, and in order to adapt the press for operating upon books or articles

of widely-different thicknesses the adjusting device consisting of the spindle B² and screw-bolt B³ is employed. In adjusting the platen to a book or pile of sheets to be pressed the book or pile of sheets will commonly be placed on the bed and the spindle turned by the hand until the platen is brought adjacent to or in contact with the book or pile of sheets. The platen may be adjusted by experiment to give greater or less pressure, as desired. After the desired adjustment of the platen C is attained for a copying-book of a certain size or thickness it is obviously unnecessary to change the adjustment as long as a book of the same thickness is used. After the platen is adjusted, as above described, the operator then depresses the handle, thereby causing the head d to turn upon the studs d⁴ d⁴ as a pivot, and thus carries downwardly the opposite side of said head and with it the plunger pivoted thereto. The downward movement of the platen is limited by the lug d' on the head, which strikes against the plunger as the said head revolves. The said lug is so located that it will permit a sufficient movement to allow the pivot d' to pass the center of the studs d⁴ d⁴, and thus lock the platen in its depressed position.

I claim as my invention—

1. A copying-press comprising a bed, a sliding plunger, a guide for said plunger, an operating-handle pivoted to the upper end of said plunger, and links pivoted to the operating-handle at a point adjacent to its point of pivotal connection with the plunger and to a piece or part having rigid connection with the bed.

2. A copying-press comprising a bed, a sliding plunger, a guide for the plunger, a platen connected with the lower end of the plunger, an operating-handle pivoted to the upper end of said plunger and provided with lugs or shoulders adapted to engage the plunger to limit the movement of said handle, and links pivoted at one end to said guide and at their opposite ends to the said handle at a point adjacent to its point of pivotal connection with the plunger, substantially as described.

3. A copying-press comprising a bed, a guide, a sliding plunger located within said guide, an adjusting-spindle connected at one end with said plunger by a screw-threaded joint and at its opposite end with a screw-bolt by means of an oppositely-screw-threaded joint, a platen pivoted to the lower end of said screw-bolt, and an operating-handle connected with said plunger, substantially as described.

4. A copying-press comprising a bed, a sliding plunger, a guide for the plunger, an operating-handle connected with said plunger, and a platen pivoted to said plunger and weighted to normally stand at an incline relative to said bed, substantially as described.

5. A copying-press comprising a bed, a guide, a sliding plunger located therein, an operating-handle connected therewith, said

plunger being provided at its lower end with a head, a platen provided with a socket in bearing with the said head, and a pivot loosely connecting the said head with the platen, substantially as described.

6. A copying-press comprising a bed, a guide-arm, a guide-recess formed in said arm and provided near the lower end thereof with an inwardly-projecting flange, a sliding plunger located within the upper part of said guide-recess and provided with a contracted cylindric prolongation at its lower end, an adjusting-spindle connected at one end with said plunger by a screw-threaded joint and at its opposite end with a screw-bolt by means of an oppositely-screw-threaded joint and adapted to project through the lower con-

tracted end of the guide-recess, a platen connected with the lower end of said screw-bolt, a spring located within the guide-recess around said prolongation and the upper end of the adjusting spindle which bears at its upper end against the main part of the plunger and at its lower end against the said flange of the guide-recess, and an operating-handle connected with said plunger, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

SAMUEL T. LOCKWOOD.

Witnesses:

C. CLARENCE POOLE,
HARRY COBB KENNEDY.