A. S. ADAMS.

Printing Press.

No. 31,760. Patented March 19, 1861.

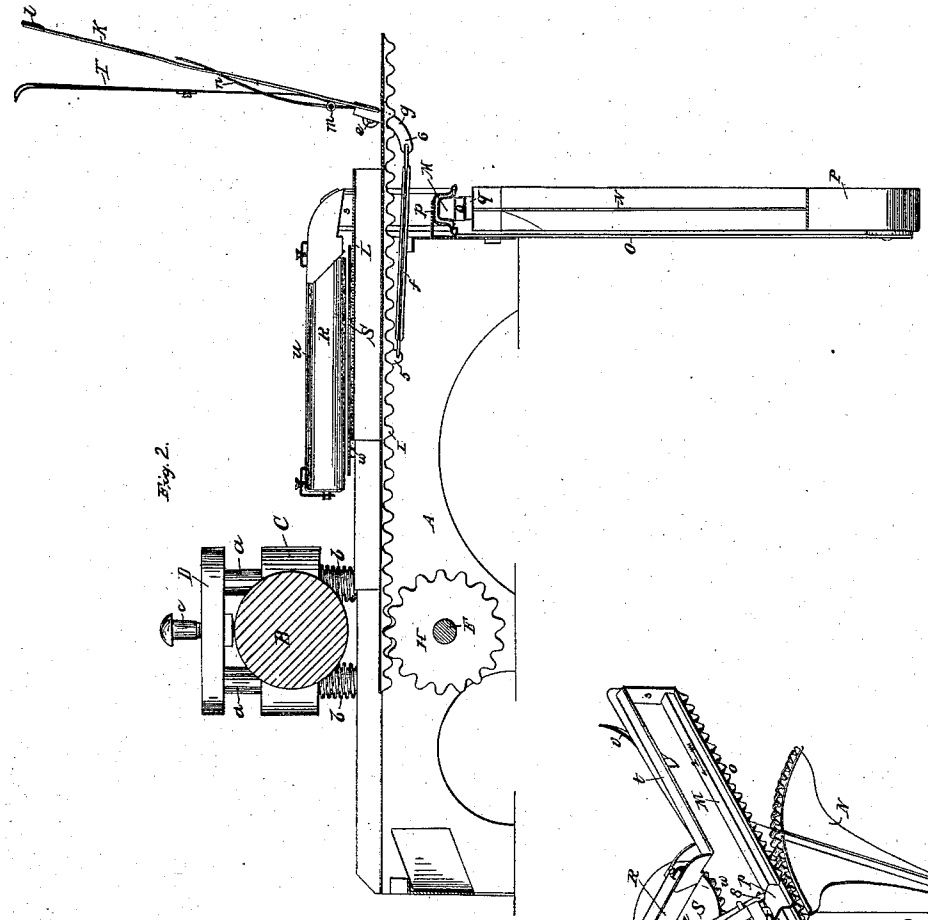


Fig. 2.

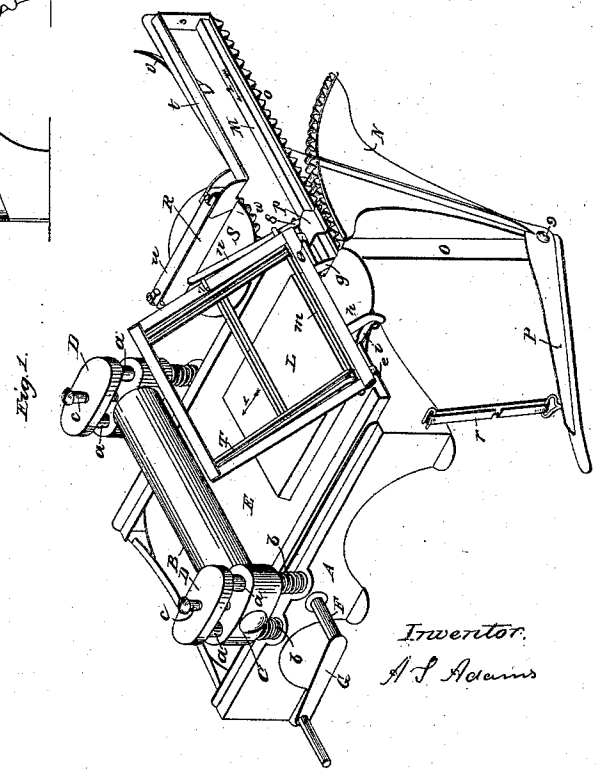


Fig. 1.

Witnesses:
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UNITED STATES PATENT OFFICE.

ALBERT S. ADAMS, OF CHELSEA, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND JOS. WATSON, OF BROOKLYN, NEW YORK.

PRINTING-PRESS.

Specification of Letters Patent No. 31,760, dated March 19, 1861.

To all whom it may concern:

Be it known that I, ALBERT S. ADAMS, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Printing-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a view of a press with my improvements attached. Fig. 2, a longitudinal vertical section through the same on the line *x x* of Fig. 1.

My present invention relates to that class of hand printing presses in which a traveling bed or table carries the form of type beneath a fixed impression roller.

The first part of my invention consists in automatically depressing the tympan before it reaches the impression roll, by means of a dog or projecting piece on the tympan which bears against a cam or curved piece on the frame of the machine.

I am aware that the tympan has been depressed by the impression roll as the tympan passed beneath it, the roll first striking the tympan on that side on which it was hinged to the traveling bed; this answered for a single press, or one in which the form after being passed under the roll to give the impression, was passed back again from under the roll on the same side from which it entered, a spring being used to raise the tympan when it had passed from under the roll. But in a double acting press, in which an impression is to be taken each time the form passes beneath the roll, it becomes necessary to provide a means of depressing the tympan onto the form, before it reaches the roll, when it is approaching the roll from the side opposite to where the tympan is hinged, as the roll cannot act to close the tympan, at this part of the traverse of the bed. In presses of this class—viz. hand printing presses, when the form has passed from under the impression roll, and the tympan has been raised from it, by its spring, the operator usually presses out the frisket from the tympan with his hand to remove the sheet which has just received an impression, and to introduce another.

The second part of my invention consists in operating the frisket automatically, by means of a spring which presses the frisket up to the tympan until the tympan is raised to or nearly to its extreme height, when the end of the spring (or a piece connected therewith) which has held up the frisket, strikes the traveling bed or carriage, and the frisket is thrown off from the tympan.

The inking of the type is to be performed when the traveling bed is at one end or other of the press, and the tympan is raised out of the way. In most presses of this class, this is performed by hand, the operator standing at the side of the press.

The object of the third part of my invention is to so arrange the inking roll that it may be operated by the foot of the attendant who thus has his hands free to manage his paper. As when the traveling bed is in the position shown in the drawings, the tympan prevents the ink roll from being operated from the end of the press, this roll must necessarily be carried over the type, from the side of the press opposite to where the operator stands. This part of my invention consists in supporting the inking roll on a bent or U shaped bar, which allows the roll to pass above the bed, while the sliding part which is supported on the frame of the press, passes beneath the bed, where it is out of the way, and may readily be operated by a treadle.

That others skilled in the art may understand and use my invention I will proceed to describe the manner in which I have carried out the same.

In the said drawings A is the frame of the press, which is to be placed on a suitable stand. B the impression roll, the journals of which run in boxes C made adjustable in height in the following manner. A cap D is supported on two pillars *a* which rise from the frame A and pass through the box C. A spiral spring *b* surrounds each pillar *a* beneath the box C and tends to raise it, while a set screw *c* which passes down through the cap D and bears on the top of the box C, regulates the height to which the box can be raised. E is a traveling bed or carriage which runs in suitable ways on the frame A and is traversed from end to end of the press, in the following manner. A shaft F, which has at its bearings in the sides of the frame A has at its outer end a crank G, and also carries a pinion H, (Fig. 2) which engages with a rack I secured to the

under side of the carriage E. The tympan K is hinged to the carriage E at *e*, it is raised from the carriage into the position shown in Fig. 2 by a spring *f* attached at 5 to the under side of the carriage E, and at 6 to a curved piece or dog *g* which projects from the tympan below the point *e* where it is hinged. Another curved piece or dog *h* projects from the tympan, and in the path of this dog *h*, but attached to the frame A, is a cam *i* which is curved at its end to correspond with the curve of the dog *h*.

When the carriage E is near the end of its traverse, in the position shown in Fig. 1, the curved piece *h* by following over the end of the cam *i* permits the tympan to be raised by its spring *f*, but when the carriage E is moved toward the opposite end of the press, the dog *h* by riding up onto the cam *i* closes the tympan down onto the carriage E, or onto the form L placed thereon. The cam *i* is continued a sufficient distance in on the frame, to hold the tympan down until its upper end *l* passes beneath the impression roll B. As the form passes out from beneath this roll, on the opposite side, the tympan is again raised by its spring *f;* the dog *h* having now passed off from the cam *i* does not prevent its rising. By this arrangement of parts, the tympan is automatically depressed when the carriage is traveling in the direction of the arrow 1, with the open end of the tympan toward the roll B, as well as when the carriage is moving in the opposite direction, or with the hinged end of the tympan toward this roll; in the latter case the roll itself serving to depress the tympan.

The frisket T which is a light frame composed of adjustable bars, is attached at one end to a rod *m* which has its bearings in each of the side bars of the tympan K. One end of this rod *m* projects beyond the side of the tympan and has attached to it a spring *n* the longer end of which bears against a pin 7, projecting from the tympan, the action of this spring is to press the frisket close up to the tympan as shown in Fig. 1 to hold the paper which is to be printed. The opposite or short end of this spring *n*, which projects down from the rod *m* lies clear of the carriage E when the tympan is depressed, or during its rise, until it has reached the vertical position shown in Fig. 2, when the end 8 of this spring strikes against the end of the carriage and the frisket is thrown off from the tympan to release the paper. So soon however as the tympan begins to descend, the end 8 of this spring is relieved from contact with the carriage and the long end of the spring is permitted to act, and to press the frisket up to the tympan. The operation will be the same when the tympan passes from under the impression roll B at the opposite end of the press.

I will now describe the inking apparatus. A stout bar M slides transversely of the press, in two brackets *p*, which project from the end of the frame A, beneath the path of the carriage E. On the under side of this bar is a rack *o* which engages with a rack *q* on a segment N. This segment is pivoted at 9 to a post O, which is firmly secured to the frame A. A treadle P, attached to the lower end of the segment N and projecting at right angles therefrom is held up toward the frame A by a spring *r*. The bar M, is bent up at its outer end, and a portion *s* of it is carried up vertically; it is again bent over, and is returned horizontally at *t* for some distance the portion *t* being high enough to pass over the carriage E. To the end of the portion *t* is attached a frame *u*, in suitable bearings in which the ink roll R is carried. A circular ink table S is supported on a pivot which rises from an arm attached to the side of the frame A. The ink is placed on this table, and the surface of the roll R, passes in contact with it, as the roll is carried back and forth across the press. In order to keep the ink level on the table S, this table is revolved a short distance at each traverse of the roll R, by means of a spring dog *v* attached to the side of the portion *t*, of the bar M, which engages with the cogs *w*, on the underside of the table, so that as the bar M is moved in the direction of the arrow 2 to carry the roll R over the form L to ink it, the spring *r* slips past one of the cogs *w*, but when the bar returns in the opposite direction to carry the ink roll back, the end of this spring strikes the cog and revolves the table S a short distance.

When the carriage E has been brought to the end of the press, as shown in the drawings, and the tympan has raised out of the way, the operator presses his foot on the treadle P and by vibrating the segment N draws the bar M, in the direction of the arrow 2, and carries the ink roll R over the form L, inking the type. As soon as he raises his foot the spring *r* vibrates the segment in the opposite direction and carries the roll R, back over the table S, where it is inked.

Some other equivalent mechanical device may be employed in the place of the segment N for operating the bar M, without departing from the spirit of my invention.

A similar inking arrangement may be applied at the opposite end of the press.

What I claim as my invention and desire to secure by Letters Patent is—

1. The dog, *h*, on the tympan, and stationary cam, *i*, for the purpose of automatically depressing the tympan before it reaches

the impression roll, whereby the tympan can be operated on by said roll when the former comes under from either direction as hereinbefore described.

2. The combination of the spring *n*, with the frisket T, and tympan K, the whole arranged and operating as specified for the purpose set forth.

3. The inking roll R carried by the bent or U shaped bar M, substantially as described.

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Witnesses:
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