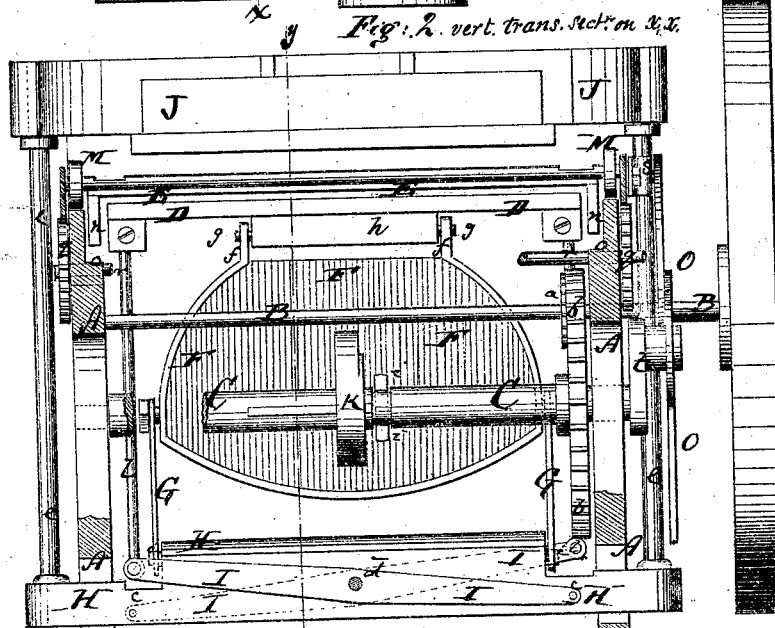
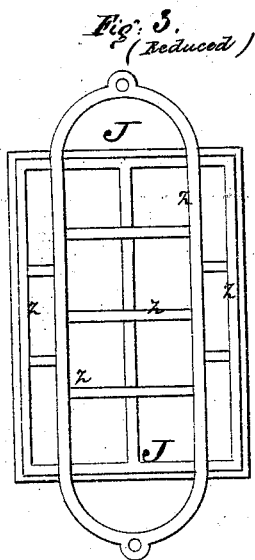
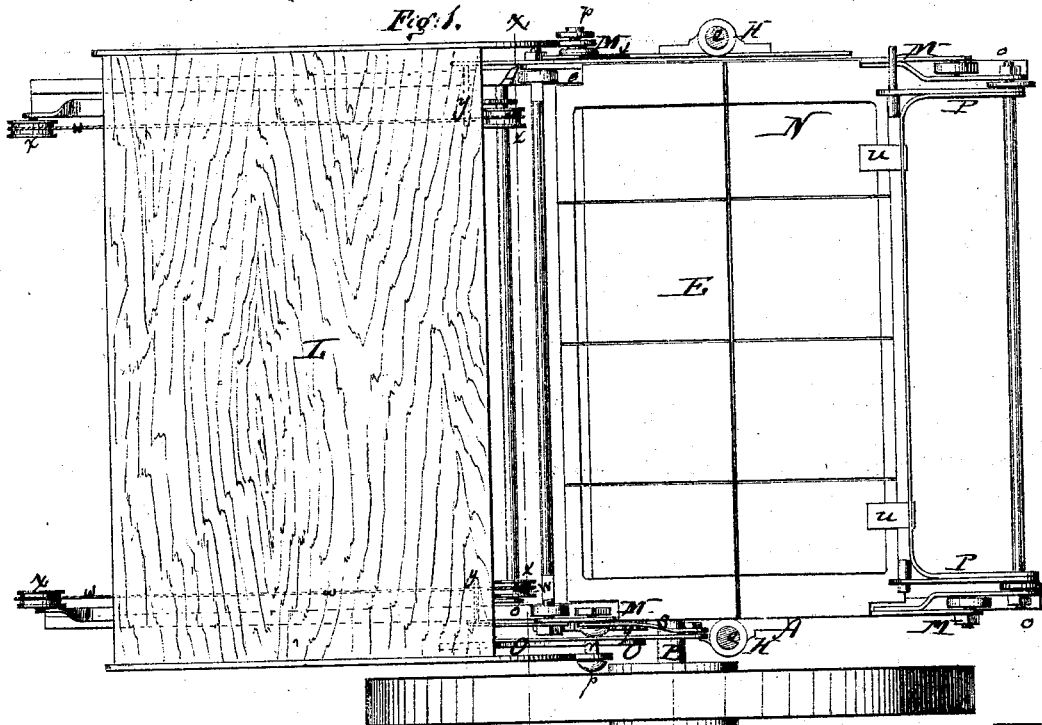


T. H. IDE.

Improvement in Printing Presses.

No. 116,060.

Patented June 20, 1871.



Witnesses:

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L. S. Mosher

Inventor:

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Fig. 4.

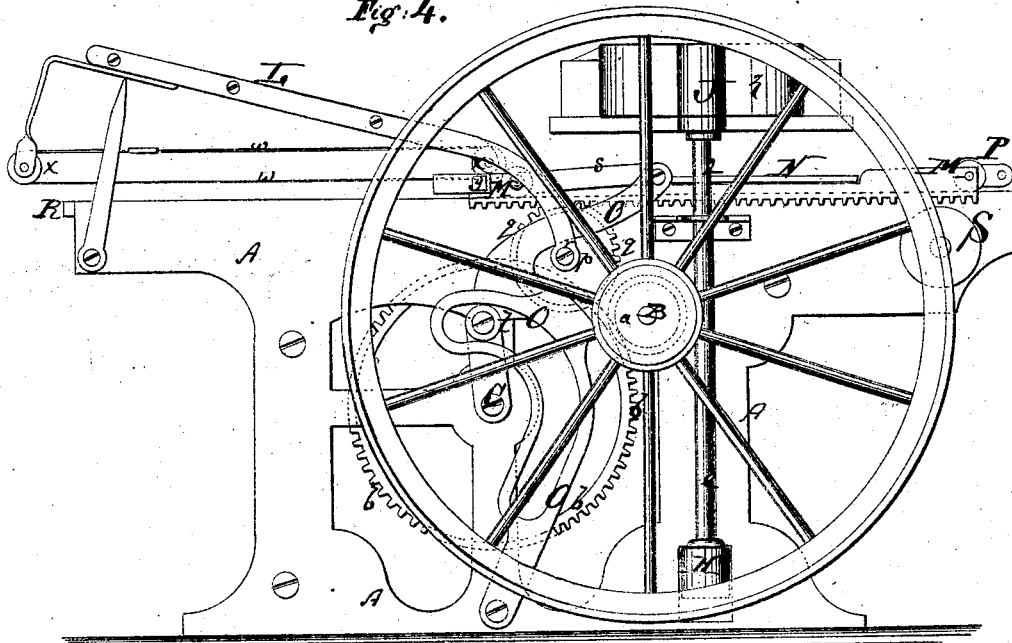
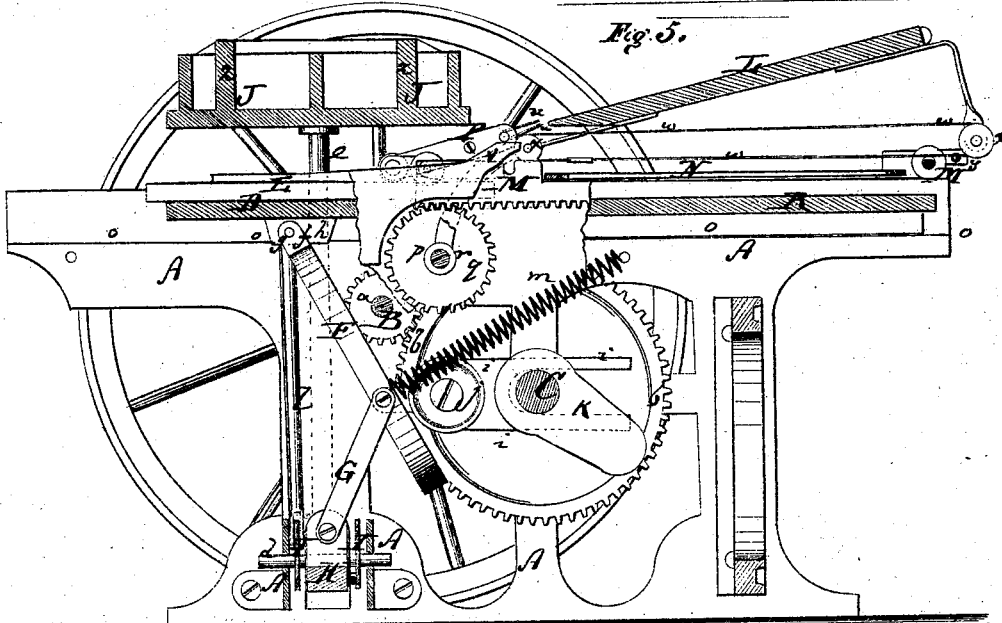


Fig. 5.



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UNITED STATES PATENT OFFICE.

TRUMAN H. IDE, OF CLAREMONT, NEW HAMPSHIRE.

IMPROVEMENT IN PRINTING-PRESSES.

Specification forming part of Letters Patent No. 116,060, dated June 20, 1871.

To all whom it may concern:

Be it known that I, TRUMAN H. IDE, of Claremont, in the county of Sullivan and State of New Hampshire, have invented a new and Improved Printing-Press; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 represents a plan or top view, partly in section, of my improved printing-press. Fig. 2 is a vertical transverse section of the same, *x x*, Fig. 1, being the section line. Fig. 3 is a detail plan view of the platen. Fig. 4 is a side elevation of the press. Fig. 5 is a vertical longitudinal section of the same on line *y y* of Fig. 2.

Similar letters of reference indicate corresponding parts.

This invention relates to a new construction of printing-press of that class of presses in which a reciprocating platen is employed. The invention consists chiefly in a new lever mechanism for simultaneously moving the printing-platen and type-bed toward and away from each other.

A in the drawing represents the frame-work of my press, and B the fly-wheel. C is the crank or cam-shaft, hung parallel to the shaft B in the frame A. A pinion, *a*, on the latter shaft, meshes into a gear-wheel, *b*, which is mounted upon the shaft C and imparts rotary motion thereto. D is the type-bed, or rather the table for supporting the same, as the type is actually placed upon the bed-plate E, which rests in its elevated position upon the table D. The table D is, by toggle-levers F G, connected at the under side with a transverse beam, H, which is made vertically adjustable, being near its ends pivoted by pins *c c* to two levers, I I, which are, by a common pin, *d*, pivoted to a strong portion of the frame A, as shown in Fig. 2. From the ends of the beam H project posts *e e*, which support, at the upper ends, the platen J directly above the table D. The upper and central member of the toggle-levers is made of great strength and consequent breadth, so that it resembles a swinging plate. It has ears *f f* at its upper end, which are, by pins *g*, pivoted to a strong rib, *h*, on the under side of table D. The lower members G of the toggle-levers are pivoted to

the rods of the lever F, and at their lower ends to shoulders *c'* formed on the beam H. A forked arm, *i*, is pivoted to the middle portion of the lever F, and projects toward the shaft C, straddling the same, as is clearly indicated in Fig. 5. A friction-roller, *j*, is arranged on the side of the arm *i*. K is a cam fitted upon the shaft C so that it will act against the roller *j* or arm *i*.

Whenever the cam K presses against the roller *j* to extend the toggle-levers the beam H will be lowered, and will, by means of the posts *e*, draw down the platen. The downward motion of the beam causes the levers I I to swing on their pivot *d*, so that their outer ends, which are not connected with the beam, will be carried upwardly. These outer ends of the levers I are, however, by means of rods *l l*, connected with the table D, and serve, in fact, together with the toggle-levers, to support and hold the said table. Whenever, therefore, by the aforesaid downward motion of the beam H, the levers I are swung on their pivot *d* the table will be elevated. The downward motion of the platen and upward motion of the table are, consequently, simultaneous. It becomes thereby evident that the weight of the platen is balanced by that of the table, and that but a light spring, *m*, will be required to draw the table up and the platen down again after each impression. The pin *d*, it will be seen, does actually sustain the entire weight of the platen and table and all their appendages. Both ends of each lever I being of equal length, it is evident that platen and table will be moved equal distances.

The bed-plate E has near its ends downward-projecting ribs *n n* that rest on longitudinal rails *o o* of the frame A as long as the table D is lowered. But when such table is elevated in the manner above described it will raise the bed-plate off the rails and carry it against or toward the platen. The rails *o* extend from end to end of the press, and enable the bed-plate, therefore, to be moved toward the rear clear of the table. It can thus be carried under the inclined plate L, on which the blank paper is placed, the said plate L being pivoted to the frame A at *p*, so that it can be swung up to clear and uncover the rear portion of the press.

When the bed-plate E has been conveyed to

the rear and the plate L swung up the type can be arranged on such bed-plate, and the same, when all is properly placed, can, on the rails, be readily moved forward again over the table D. This provision permits the use of the press for arranging the type, while heretofore a separate table for such purpose was always required.

M is the reciprocating carriage, containing the frisket-carriage N and the device for taking and retaining the paper to be printed. The side bars of the carriage M are toothed. The carriage is, by means of a link, *s*, connected with a lever, O, which is pivoted to the side of the frame A. A crank, *t*, on the shaft C, enters a slot in the lever O and serves to swing said lever, and thereby impart reciprocating motion to the carriage M. The slot in the lever O is straight at its lower end and curved in the arc of a circle at its upper end. When the crank-pin is in the upper part of said slot—*i. e.*, while the carriage is in its forward position—the crank will not move said lever, owing to the circular form of said slot. The carriage is then retained stationary during the printing process. While the crank-pin is in the lower straight part of the slot it swings the lever, also when it acts against the outer edge of the circular slot. The toothed wheels *q*, on the shaft *r*, serve only to equalize the motion of the carriage, not to produce the same. The forward part of the carriage M carries a swinging frame, P, which contains the nippers *u u* for taking the paper from the plate L and conveying it under the platen. The frame P is carried up toward and against the lower end of the plate L, as in Fig. 5, by or on inclined station-cams *v*, which are formed on the frame A. In this position the nippers are, by suitable mechanism, opened to receive and then closed to hold the paper, and retain the same while the carriage moves forward during the printing process, and also during the return stroke. At the end of the return stroke the paper is released by the nippers *u*. These belts are placed over rollers *x* that are hung to pend-

ants of the plate L, and are connected with the carriage M by pins *y*, or otherwise, so that the motion of the carriage will serve to move said belts on their rollers.

The system of belts and nippers for taking the paper to the table R disposes of the cumbersome extensive conveyers heretofore required.

The inking-roller S receives its motion by belt or otherwise from the driving-engine directly and not from the shafting on the press, so that such inking-rollers may be started before press is set in motion.

The cam on the shaft C, for moving the toggles, is longitudinally adjustable thereon, being held by feather or otherwise, and can be readily thrown clear of the forked arm *i* or the roller *j* to stop the action of the press without discontinuing that of the carriage, which may be desirable for bringing the carriage to a special position after printing.

The platen J is made different from those now in use in having its upper face provided with longitudinal and transverse ribs *z z*, which are evenly distributed throughout the entire length and breadth, reaching to the edges, as in Fig. 3. The object of this arrangement is to strengthen the outer parts of the plates as much as the inner, while heretofore, by a central rib only, the central portion was made strong, the sides having to be underlaid.

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

1. The bed-plate E, supported and adjustable on the rails O, when combined, as described, with table D, for the purpose specified.

2. The vertically-adjustable beam H, held by the crossed levers I, and connected with the platen, and by said levers with the table D, substantially as herein shown and described.

TRUMAN H. IDE.

Witnesses:

DANIEL M. IDE,
MARY E. IDE.