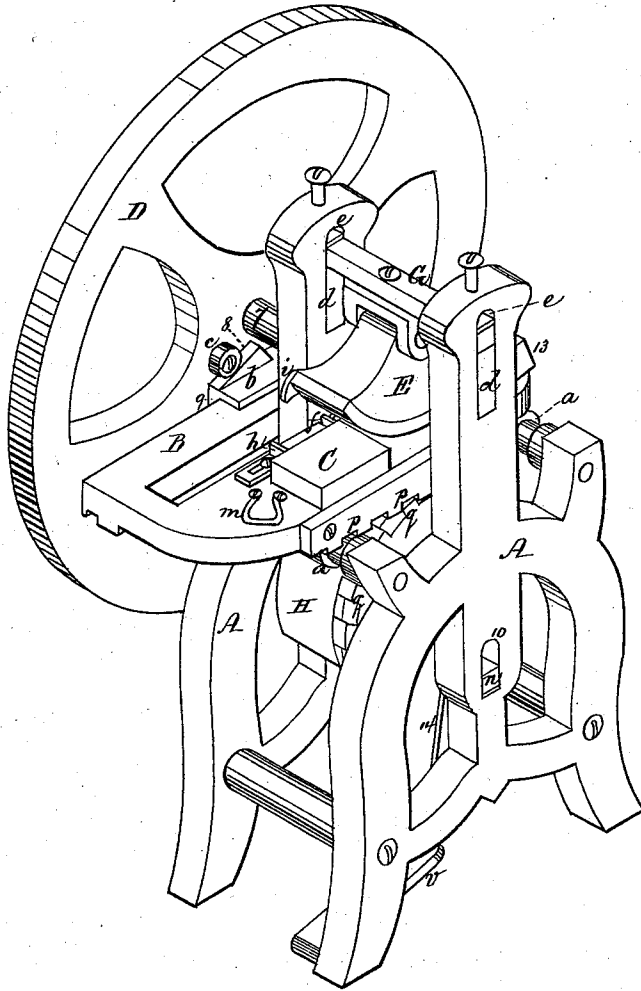


T. S. BATES.
Plate-Printing Presses.

No. 155,695.

Patented Oct. 6, 1874.

Fig. 1



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Fig. 2

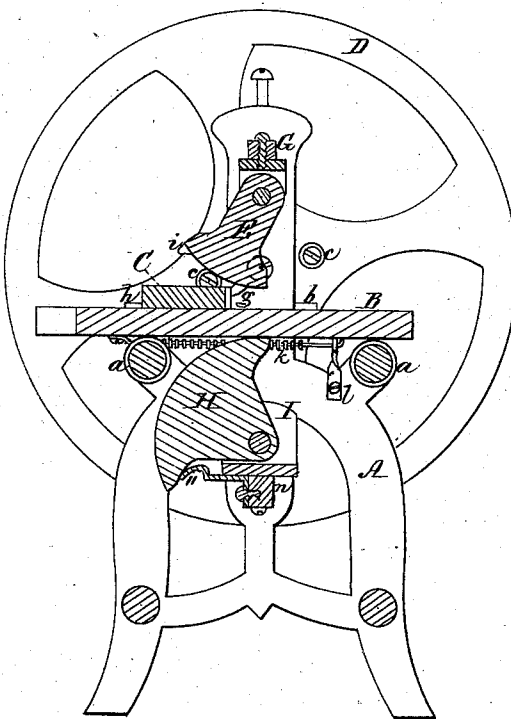
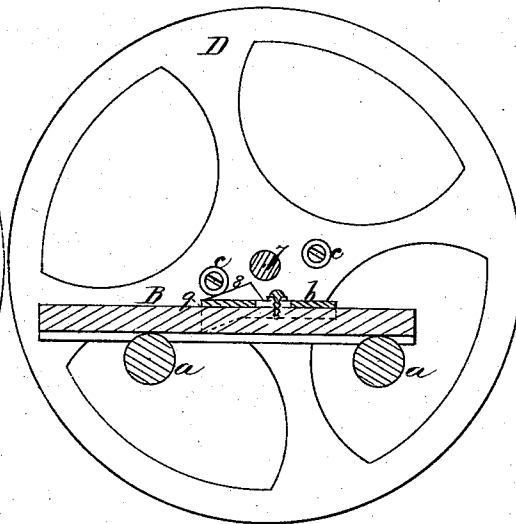


Fig. 3



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Fig. 4

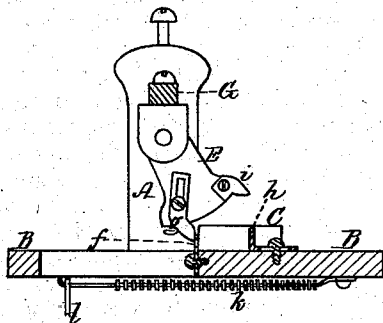
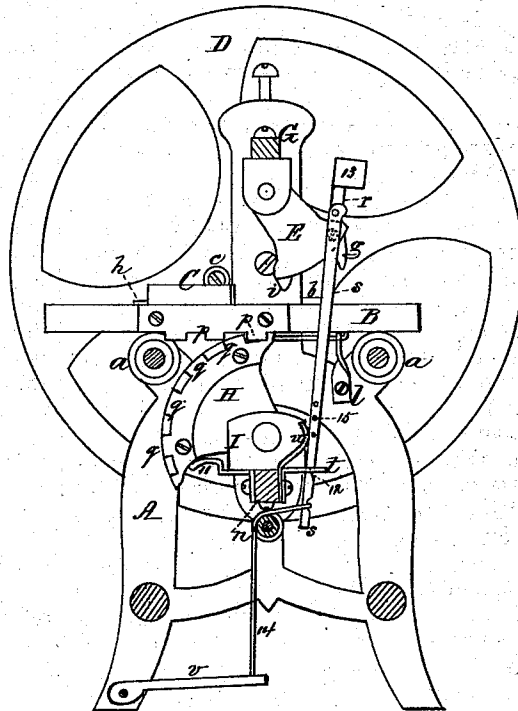


Fig. 5



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UNITED STATES PATENT OFFICE.

THOMAS S. BATES, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN PLATE-PRINTING PRESSES.

Specification forming part of Letters Patent No. **155,695**, dated October 6, 1874; application filed July 21, 1874.

To all whom it may concern:

Be it known that I, THOMAS S. BATES, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Plate-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 perspective view of my improved plate-printing press; Figs. 2, 3, 4, and 5, vertical longitudinal sections.

My present invention has for its purpose to provide a press especially adapted for printing cards; and my invention consists in certain combinations and arrangements of parts, hereinafter described and explained.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the frame-work, in suitable bearings in which revolve the rollers *a*, upon which rests a table, B, provided with a bed, C, on which the plate (not shown) for giving the impression is to be placed. To one side of this table is secured a piece, *b*, made adjustable thereon by a screw and slot, this piece being provided with an inclined surface, 8, and a vertical surface, 9, (see Figs. 1 and 3,) against which rolls *c* on the inner face of a hand-wheel, D, revolving on a stud, 7, come in contact, and as the wheel is turned, one of the rolls passes down the surfaces 8 9, carrying the table, with the bed-plate and card thereon, under a segment, E, which gives the required pressure to produce the impression. This segment is pivoted at its upper end to a bifurcated block, secured to a cross-bar, G, the ends of which rest on springs *d*, placed in slots *e* in the frame-work, the cross-bar being adjusted by means of set-screws, whereby the lower surface of the segment E may be set to correspond to the thickness of the plate from which the card is to be printed.

Very little power is required to move the table up to the point where the pressure commences, and this movement is effected by the action of one of the rolls *c* on the incline 8. As soon, however, as the roll *c* passes down

the vertical surface 9, a great leverage is exerted by the wheel, as is necessary to carry the plate through, the leverage being such that but very little power is required to be applied to the wheel.

Rising above the top of the table, near the front of the bed C, is a projection, *f*, which, as the table is moved forward, strikes against an adjustable projection, *g*, secured to one side of the segment, which is thus moved by the projection *f*, with the bed, until the surface of the card commences to receive the pressure, when the friction of the parts is sufficient to cause the bed and segment to move together. As soon as the pressure on the card commences to be relieved another adjustable projection, *h*, rising from the table comes in contact with a projection, *i*, on the segment E, by which means it is caused to move with the table until raised up out of contact with the card, when it is held up by a device presently to be described. The table is now returned to its starting-point by the recoil of a spring, *k*, surrounding a rod secured to the under side of the table, and sliding through a guide, *l*, the end of the rod being turned up so as to strike against the guide, and arrest the motion of the table when it has returned to its original position.

A greater or less portion of the under surface of the segment is employed, according to the size of the card to be printed, the adjustment for which is effected by changing the position of the projections *g h*, and the piece *b* is correspondingly adjusted in order that the roll *c* may strike its vertical portion 9 at the moment that the pressure on the card commences.

Where two rolls *c* are employed, as shown, a half-revolution of the hand-wheel D is required for each impression; but where four rolls are employed, but a quarter of a revolution is necessary. I therefore intend to vary the number of these rolls, as may be found desirable.

The plate which gives the impression, after having once been adjusted in place, remains unmoved until the required number of cards are printed. *m* is a handle, by which the table may be moved by hand, when desired, without moving the hand-wheel.

The sliding table B rests on and is supported by a broad segment, H, pivoted to a bifurcated block, I, secured to a cross-bar, *n*, the ends of which rest in slots 10 in the frame; and the height of this bar may be adjusted by set-screws (not shown) as the upper surface of the segment H wears away. The table B rests lightly on the rollers *a*, the principal part of the pressure of the upper segment being resisted by the lower segment H, which prevents undue friction on the rollers, which would increase the power required to move the table. One side of the bottom of the table is provided with teeth or projections *p*, which engage with corresponding teeth *q* at the upper edge of one side of the segment H, by which they are caused to move simultaneously together with a positive motion, thus keeping the same surfaces of the segment H and table always in contact, the advantage of which is that the wear is uniform, and the impressions are always alike; whereas with a cylinder, as heretofore, different portions of its surface were brought uppermost to receive the pressure, and as this surface varied in hardness the wear was unequal, and, consequently, the pressure would vary, producing impressions unlike each other. Furthermore, a segment of a cylinder of large diameter may be employed where it would be impossible to use a whole cylinder of the same diameter on account of its bulk, weight, and expense; and I am thus enabled to obtain increased leverage, which thus lessens the power to operate the press. 11 is a stop, which serves as a guard to prevent the lower segment H from dropping in case of its becoming disengaged from the table.

I will now describe the device by which the upper segment E is held up out of contact with the bed to allow the table to be returned by its spring *k* after an impression has been made. To one side of the segment E is secured an arm, *r*, provided with a weight, 13, which serves to throw the segment E beyond its center, or sufficiently far back to be in the right position to commence its work. To the

arm *r* is secured the upper end of a rod, *s*, the lower end of which passes through a slotted plate, *t*, secured to the cross-bar *n*. Near the lower end of the rod *s* is a notch, 12, which, when the segment E is swung forward sufficiently to clear the card on the bed, catches over the edge of the slot in the plate *t*, the rod being held in this position by a spring, *u*, and the segment E is thus supported in this position until the table is returned to its starting-point. A cord, 14, connects the lower end of the rod *s* with a treadle, *v*, by depressing which the rod is liberated, in order to allow the segment E to swing down to its working position, the foot being kept on the treadle to enable the operator to ease it down gradually, the treadle being also employed to swing the segment forward out of the way when not in contact with the bed, to obtain access to the plate to remove or adjust it. The distance to which the segment E is carried back by its weight 13, to bring it into the position required for the particular size of the card to be printed, is controlled by a pin, 15, passing through the rod *s*, and striking the slotted plate *t*, the position of this pin being readily changed by putting it into different holes in the rod.

The above-described press is especially adapted for printing cards.

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

1. The sliding table B, with its adjustable piece *b*, provided with inclined and vertical surfaces 8 9, in combination with one or more rolls, *c*, on the hand-wheel D, substantially as and for the purpose specified.

2. In combination with the pivoted segment E, the weight 13 and the rod *s*, provided with a catch, and connected with a treadle, *v*, operating substantially in the manner and for the purpose described.

Witness my hand this 17th day of July, A. D. 1874.

THOS. S. BATES.

In presence of—

P. E. TESCHEMACHER,
W. J. CAMBRIDGE.