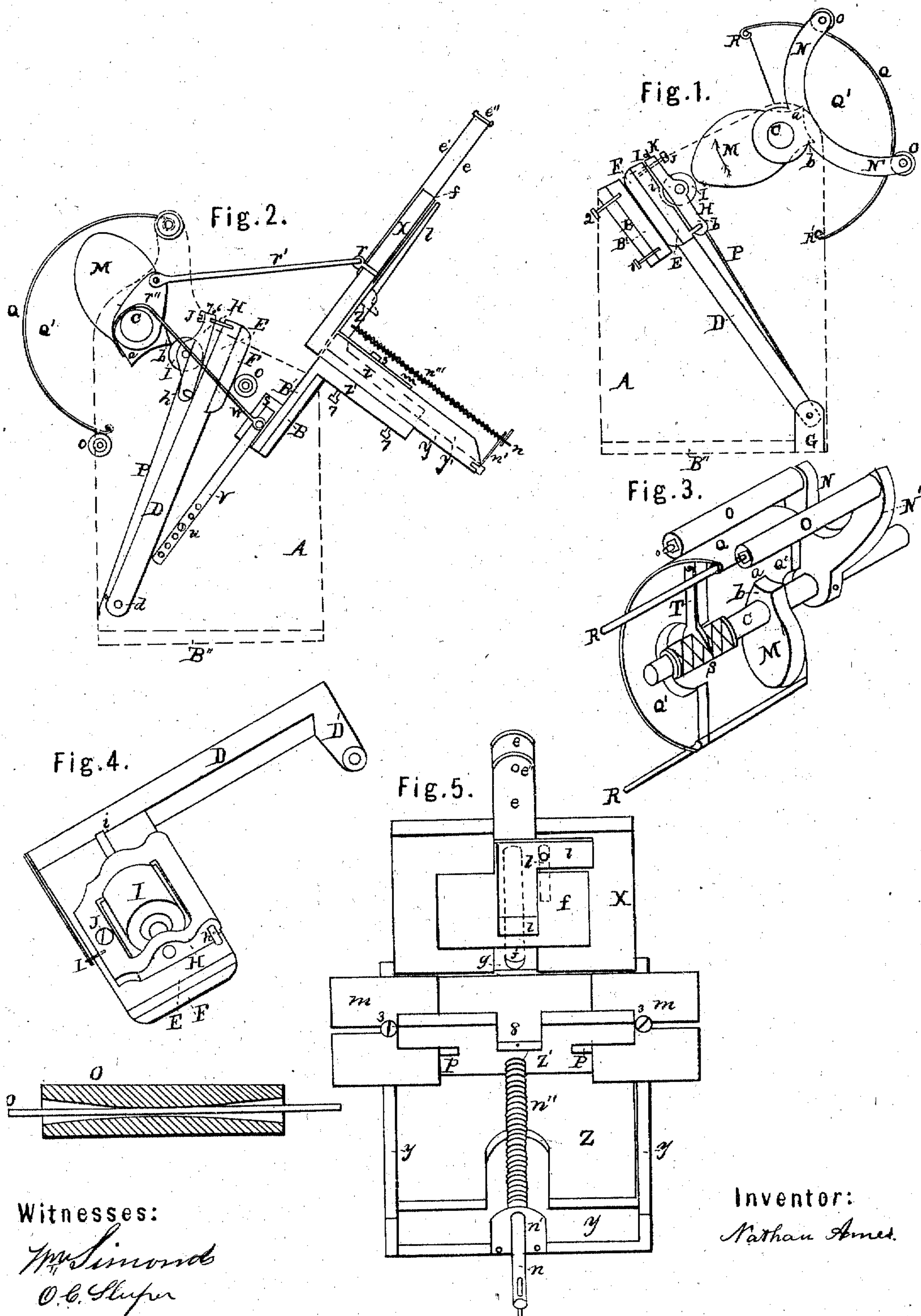


SELF FEEDING CARD AND BILL HEAD PRESS.

Patented Mar. 29, 1859.



UNITED STATES PATENT OFFICE.

NATHAN AMES, OF SAUGUS, MASSACHUSETTS, ASSIGNOR TO HIMSELF, AND NATHANIEL EVANS, JR., OF BOSTON, MASSACHUSETTS.

SELF-FEEDING PRESS FOR PRINTING CARDS AND BILL-HEADS.

Specification of Letters Patent No. 23,421, dated March 29, 1859.

To all whom it may concern:

Be it known that I, NATHAN AMES, of Saugus, in the county of Essex and Commonwealth of Massachusetts, have invented
5 a new and useful Self-Feeding Card and Bill-Head Press; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the
10 accompanying drawings, forming a part of this specification, in which—

Figure 1 is a view of the right (or crank) side, the feeding apparatus being removed, and the frame supposed to be transparent.
15 Fig. 2 is a view of the left side, with the feeding apparatus attached, the frame being represented in the same manner as in Fig. 1; Fig. 3 is a perspective view of the inking and distributing apparatus removed from
20 the machine; Fig. 4 is a detached perspective view of the vibrating type-bed and its appendages; and Fig. 5 is a front perspective view of the feeding apparatus removed.

To enable others skilled in the art to make
25 and use my invention, I will now describe its construction and operation.

A (Figs. 1 and 2) is the frame which may be either a thin continuous piece of cast iron, as represented in the drawings, or an orna-
30 mental skeleton frame.

B is a flat piece of cast iron,—as wide as the case, F, and about an inch longer,—placed between the two sides, A, A, and confined by screws; B'' being the bottom piece
35 which is also placed between the two sides and confined by screws.

B' is the platen which rests on the ends of four screws, 1, 2, (one at each corner of B) by means of which screws the platen may be
40 raised or lowered, so as to regulate the pressure as may be desired.

E is the vibrating type-bed (a perspective view of which is given in Fig. 4) of cast iron, the arm, D, D', being cast in the same
45 piece with it, or confined to it by screws.

F is the chase which may be confined to the typebed by screws, or a dovetail tenon, in the usual manner.

G is a stud attached to the bottom of the
50 frame, B'', about midway between the two sides. Through the upper end of this stud, and the left side of the frame is a round hole to receive the bolt, d, passing through, D'.

H is a piece of cast iron, shaped as seen in Fig. 4, and hinged to the type bed, E, by
55 means of a staple, h, or its equivalent.

I is an iron, or steel, roller, which turns on the bolt, i, there being a depression on the top of E to make room for the roller
60 when the impression is given.

J is a screw, passing freely through a smooth hole in H, and screwing into E, by means of which the type may be brought
65 nearer to the inking rollers, or farther from them at pleasure.

K is a pin projecting a short distance from the front of H, and L is a small straight spring resting on the under side of said pin, and thereby keeping the type
70 pressed as much as desirable against the inking rollers.

P is a long, straight spring the lower extremity of which is fast to the left side of the frame, the upper extremity bearing
75 against the under side of the projecting end of the bolt, i, (see Fig. 1). The action of this spring will obviously keep the roller I against the cam, M, and raise the type-bed from the platen, B', whenever the former is
80 not depressed by the cam.

C is the main shaft turning in suitable bearings in the two sides of the frame, and may be rotated by hand or power. In small
85 machines a small fly-wheel, attached to the main shaft and provided with a handle, is sufficient; but for larger machines, pinion wheels may be applied to increase the power.

N N' are cast iron arms made fast to the shaft, C, as shown in Fig. 3, into the ex-
90 tremities of which are fastened pins o, o, on which the inking rollers, O, O, revolve; said rollers being provided with a hole smaller at the center and flaring a little toward the ends, so as to rock freely, if necessary, in
95 order better to fit the distributor and type.

M, is a cam fast to shaft, C, and shaped as seen in Figs. 1, 2 and 3.

a and b, are projections on the cam, M, to operate in combination with the inking-
100 rollers and vibrating type-bed, so as to cause the latter to conform to the arc described by said rollers, when they are passing over the type. Thus, when one of the
105 rollers is in the position represented in Fig. 2, i. e. directly under the center of the type bed, were it not for the projection b the

roller would be at the greatest distance from the type, gradually approaching it on either side of the center; whereas by means of the projections the rollers are kept an equal distance from the type-bed at every part of its surface. The type is pressed against the rollers sufficiently hard by means of the spring, L.

Q is the distributor, formed of sheet iron, or other suitable material, confined to the semi-circular sides, Q', Q', and kept in place by means of a stiff pin, R, projecting from a boss (see Fig. 2) on the frame, and passing loosely through the round hole formed by turning over the sheet iron of the distributor, as seen in Figs. 1, 2, and 3. The lower half of the distributor is held up by means of a straight spring, R', which also gives the requisite elasticity to the distributor and presses it sufficiently hard against the rollers.

On the shaft C, as shown in Fig. 3, is a double screw, S, between whose threads the lower end of the forked carrier, T, (which is loosely attached to Q') plays, and thereby carries the distributor to and fro laterally, thus insuring the most perfect distribution of the ink.

6 (see Fig. 2) is the card stopper, or guide passing through the vibrating arm, U, at right angles with it, and extending over the entire length of the platen.

W is a rod, the lower end of which is attached to the projecting end of 6, the upper end being bent as seen in Fig. 2, and passing over the projecting end of the shaft, C, which is provided with a small cam, 4 to raise 6 at the proper time to release the printed card which then slides under it.

The lower part of U, is furnished with small holes into any one of which the screw, a, may be put, and thereby regulate the card-stopper so as to conform to cards of different sizes.

The feeding apparatus is shown in Figs. 2 and 5.

Z'', Fig. 2, is a piece of cast iron which may be either cast in one piece with the platen, B', or fastened to it by screws. To the upper side of Z'' is fastened by screws, 7, 7, the bottom of the card-holder, Y.

Y' Y' are side pieces cast with the bottom, Y, or confined to it by screws.

Z is a flat piece of iron, fitted between the sides, Y' Y' so as to slide freely. Z' is another piece of iron at right angles with Z, and cast in one piece with it. In Z' is a slot, 8, to receive the foot of the adjustable guide, l.

P P are narrow slots to receive the adjustable side guides, m, m, which are confined to the top edges of Y' Y', by means of the set screws, 3, 3. The design of these guides, m, m, is to prevent the cards from working laterally before they are fed

through, and also to operate as guides for placing in the package to be printed.

n, is a rod the upper end of which is fast in the bottom of the piece Z', the lower extremity passing through a hole in the piece, n', which is confined to the lower edge of Y by means of screws.

n'' is a spiral spring passing around n, the upper end resting against Z', and the lower end against the piece, n'. The use of this spring is to press Z' and the cards that rest upon it, toward the feeding plate, f.

X is a plate of cast iron, the lower end of which is fastened in between the side pieces, Y', Y', by means of pins or screws. This piece, as shown in the figures, is at right angles with the bottom of the card holder, Y, and parallel with the platen,—the under side of X being little more than the thickness of a card above the surface of B'; so that, as seen in Fig. 5, there is a space between Y and X sufficiently wide to admit of the passage of a single card at a time, and no more.

f is a plate of steel, as thick as a common card, and riveted to the under side of e which is bedded in the groove, g, so that the upper side of f fits closely to the under side of X. The design of having e bedded in the groove, g, is to prevent the possibility of the cards ever getting under between f and X.

e and e' are made of sheet steel and united at their upper extremities, as seen in Fig. 2, by means of the pin, e'', and at their lower extremities by means of the screw, r, the point of which screws into e.

j is a slot through X, as shown in Fig. 5, for the screw, r, to play in.

r'' is a crank attached to the main shaft, C, as shown in Fig. 2; and r' is a pitman one end of which is attached by a pin to the crank, r'', and the other end (being bent at a right angle) passing through a hole in the head of screw, r. As the crank, r'', is rotated, it is obvious that the feeder, f, will be pushed up and down;—as it goes up, passing under the cards, and as it comes down, driving one card before it onto the platen, B', ready to receive the impression.

To prevent the card next to plate, f, from being pushed up by it, as it (f) is passing back over the card, I have an adjustable slide, l, the lower end of which is provided with a projecting foot, as shown in Fig. 2. This slide, l, is confined to X by means of a set-screw, l'; and as l' passes through a slot in X (as shown in dotted lines, Fig. 5) it follows that l may be readily adjusted to cards of different sizes. And as l fits close to f, it is plain that the foot of l will prevent the upper card (and the whole pack) from starting back by the friction of the feeder plate upon it, in its backward motion.

When it is desirable to use the press for

bill-heads or any other work than cards, it is obvious that the feeding apparatus may be quickly removed and laid aside, leaving the press as represented in Fig. 1.

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

1. The little cams, or projections, *a*, *b*, arranged in reference to the ink rollers, and operating in connection with them and the vibrating type-bed, substantially as, and for the objects, described.

2. The combination and arrangement of the spring, *P*; hinged piece, *H*; type-bed, *E*, and spring, *L*, substantially in the manner, and for the purposes, set forth.

3. Attaching the type-bed, *E*, (as shown in Fig. 4) at one of its sides only, to the arm, *D*, so that the inking rollers, *N*, *N'*, may pass over, and under, it, substantially as described.

4. The pitman *r'*; screw, *r*; top piece, *X*; slot, *j*, and slides, *e*, *e'*, when combined ar-

ranged and operating, substantially as set forth.

5. Attaching the feeding plate, *f*, as described to the slide, *e*, and causing the latter to move in the groove, *g*, so that, while the upper side of, *f*, bears on the surface of *X*, the thickness of *e*, extending below it, prevents the card from ever getting between the surfaces of, *f* and *X*.

6. The adjustable guide, *l*, constructed and arranged substantially as, and for the purpose, described.

7. The adjustable lateral guides, *m*, *m*, arranged as set forth and for the purpose described.

8. The card pusher, *Z'*, provided with the slots, *p*, *p*, and 8, substantially in the manner, and for the purposes described.

NATHAN AMES.

Witnesses:

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