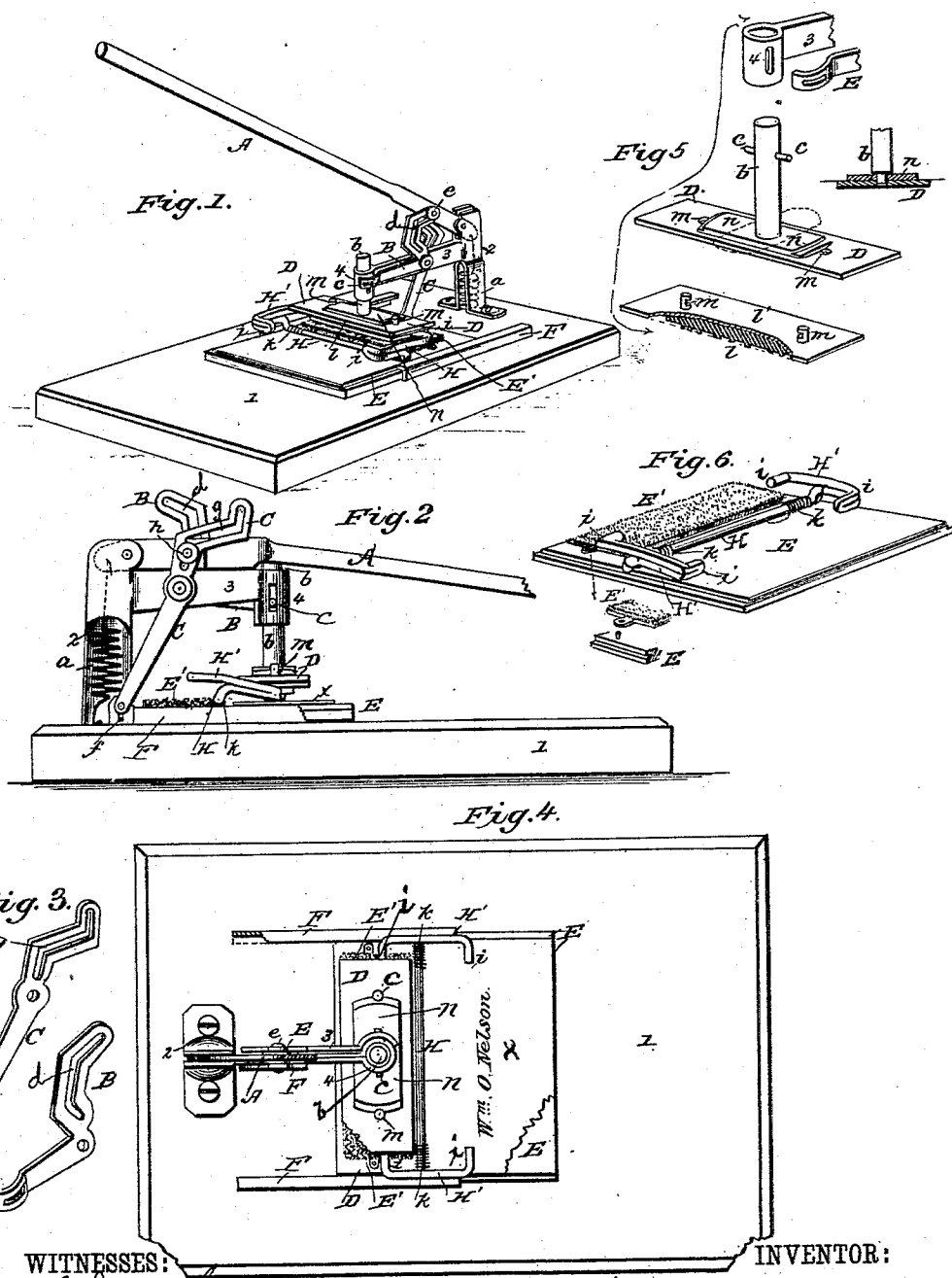


(Model.)

W. O. NELSON.
HAND PRINTING MACHINE

No. 401,455.

Patented Apr. 16, 1889.



WITNESSES:

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WILLIAM O. NELSON, OF BALTIMORE, MARYLAND.

HAND PRINTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 401,455, dated April 16, 1889.

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To all whom it may concern:

Be it known that I, WILLIAM O. NELSON, of Baltimore city, in the State of Maryland, have invented a new and useful Improvement in Hand Printing-Machines, of which the following is a specification.

My invention is a machine intended for printing or stamping letters, names, addresses, numbers, dates, &c., upon cards or paper slips. It is particularly adapted for desk use in offices, it being light, compact, simply constructed, and easily and quickly operated. Various forms of type or type-plates may be used; but I prefer to employ a cast-rubber type-plate, such as is commonly used on small and cheap hand-stamps. It is attached to a flat bed-plate or type-carrier that reciprocates vertically and descends into contact alternately with the inking-pad and surface to be printed. The said pad is attached to a horizontally-reciprocating platen. Both the said platen and the bed-plate are reciprocated alternately by slotted levers, which are in turn vibrated by a hand-lever that vibrates vertically.

I will now describe the above and other parts of the machine in detail, and specifically indicate the features believed to be novel.

In the accompanying drawings, Figure 1 is a perspective view of the machine with the movable parts in normal position, the type-plate being pressed on the ink-pad. Fig. 2 is a side view of the machine in the printing position, part of the post or standard being broken away. Fig. 3 is a side view of the platen-lever and bed-plate or type-carrier lever; Fig. 4, a plan of the machine, a portion of the hand-lever being cut away. Fig. 5 is a perspective view of the bed-plate and connected parts detached from each other. Fig. 6 is a perspective view of the platen and its attachments.

The fixed or immovably-connected parts of the machine are the flat base 1, the hollow vertical standard or post 2, and its horizontal arm 3, carrying at its outer or free end a vertical tube or sleeve, 4.

The main or hand lever A, by which all the other movable parts are operated, is pivoted just above the arm 3 in a lateral projection of the top of standard 2, and extends therefrom normally at an angle of about forty-five

degrees, Fig. 1, it being held thus elevated by a spring, *a*, placed in the standard and connected with the short arm of the lever A, so as to exert downward traction thereon, as will be readily understood. When the lever A is depressed, Fig. 2, it vibrates two smaller slotted levers, B and C, which are pivoted and arranged vertically in parallel planes on opposite sides of the arm 3, and respectively connected with the bed-plate or type-carrier D and platen E.

For convenience of description I shall hereinafter designate these levers, according to their connections and functions, as the "platen-lever" and the "bed-plate lever." The vertical stem *b* of the bed-plate D slides in the sleeve 4 of standard-arm 3, and has lateral pins *c*, that work in vertical slots formed in opposite sides of said sleeve. The slots serve as guides for the pins *c*, thus preventing the bed-plate from turning. The bed-plate lever B is elbow-shaped, and the end of its horizontal arm is provided with a slot to receive the pins *c* of the bed-plate stem *b*. The upper or vertical arm of said lever curves rearward, and has an angular slot, *d*, formed of three straight parts, different as to length, and each placed at an obtuse angle to its neighbor. A pin, *e*, projecting from the side of the hand-lever A, works in this slot, as shown, Fig. 1.

The platen-lever C is also essentially elbow-shaped, and its longer vertical arm is loosely connected with the sliding platen by a pin and slot, *f*, Fig. 2. The upper and shorter arm of this lever extends rearward, and is provided with the slot *g*, having two vertical portions joined by a longer intermediate one, which is nearly horizontal. A lateral pin, *h*, of the hand-lever A works in this slot.

The platen E slides in line with the standard 2 on the base 1 in fixed ways, formed by the parallel internally-flanged bars F. A detachable inking-pad, *E'*, is held on its rear portion by pins projecting from the platen through holes in flanges fastened to the ends of the pad. Just in front of the pad and attached to the platen is arranged the transverse rock-shaft H, forming the main part of the clamp or gripper for holding the card to be printed.

Each end of the rock-shaft has double arms

H' formed on or attached to it. The main portion of each arm H' is at a right angle to the shaft, while its ends *i* are bent inward at a like angle to said main portion. The two-fold function of these arms H' *i* is to grip or clamp the card or slip to be printed, and to arrest the descent of the bed-plate D, so that the rubber type-plate *l* attached to it, Fig. 5, may not be pressed on the pad E' or the card X, Figs. 2 and 4, so hard as to injure the type. Spiral springs *k* are applied to the shaft H and attached to the base at its respective ends, so as to tend to hold the arms H' pressed down upon the platen in front of the shaft.

The operation of the machine can now be easily understood. When the lever A is raised as high as practicable, (see Fig. 1,) the platen E is pushed out from the standard 2 as far as possible, and the bed-plate D is pressed on the ink-pad E'. In its descent the ends of the bed-plate D have come in contact with the rear ends, *i*, of the arms H' and pressed them down, thus rocking the shaft H against the tension of its springs *k*. The forward ends, *i*, of the arms H' are consequently raised, as shown, and thus held in position to allow a card, *x*, to be placed under them and on the forwardly-projecting portion of the platen. Now, upon depressing the lever A, the first effect is that the bed-plate D rises, and the arms H' being thereby released, the springs rock the shaft H forward and throw the forward portions, *i*, of the arms H' down on the card *x*, thus clamping it as required. The platen E then moves back, or toward the post 2, and the bed-plate D descends on the card, as shown in Fig. 2, the ends *i* of arms H' projecting under the bed-plate, as before, and similarly serving as stops to prevent undue compression or flattening of the soft type. Upon raising the lever A the platen E slides forward and the former position, Fig. 1, is resumed, the card *x* being at the same time released by the clamps H'. It will thus be seen that the inking and printing are done alternately; but in case there is at any time an excess of ink on type it is easy to hold the bed-plate out of contact with the pad and continue printing until the surplus ink has been used.

It will be noted that the stem of the type-carrier is of such length, relative to height of the sleeve or guide 4 above the base 1, that it projects above the sleeve when the bed-plate is depressed. This is an important feature, because it permits the pressure requisite for printing to be applied directly to the bed-plate by the hand-lever A, which bears on the stem, as shown in Fig. 2, and consequently the weak elbow-lever is relieved of undue strain, and has no office save to raise and lower the bed-plate. The rubber type-plate *l*, Fig. 5, is attached to a metal plate, *l'*, having vertical studs *m*, which are provided with notches in their inner sides. This plate *l'* is attached to the bed-plate D,

the said studs *m* passing through holes formed in the latter and projecting above it, so as to engage with a button, *n*, whose ends are curved and of suitable thickness to adapt them to enter the notches in the studs and crowd against them, so as to cause the button to retain its normal position by friction. The said button *n* lies on the bed-plate and turns on the stem *b* of the latter, as will be readily understood. This construction enables the type-plate to be readily detached from the bed-plate and a new one substituted when required.

What I claim is—

1. The combination, with the horizontally-reciprocating platen, and an inking-pad attached to it, of the bed-plate or type-carrier reciprocating in a vertical guide over the platen, pivoted levers connected with said platen and bed-plate, and the main or hand lever, which is connected with and vibrates the first-mentioned levers, substantially as shown and described, so that when the hand-lever is elevated to its limit the bed-plate descends and is forcibly pressed on the inking-pad and when the lever is depressed to its limit the bed-plate is forcibly pressed on the surface to be printed, as set forth.

2. The combination, with the vertically-reciprocating type-carrier and horizontally-reciprocating platen, and slotted pivoted levers for operating them, of a vibrating hand-lever having lateral pins which work in the slots of the other levers, as shown and described.

3. The combination of the following parts: the vertically-reciprocating bed-plate, the horizontally-reciprocating platen, and operating-levers, pivoted as described, and having angular slots in their upper arms, which extend in opposite directions from their pivot, and a hand-lever having lateral pins that work in the slots of the other levers, as shown and described.

4. The combination of the pivoted hand-lever, the standard, a tubular guide, H, fixed in position, the bed-plate and its stem working in the guide and made of such length as to project above it when the bed-plate is down, and a pivoted elbow-lever connecting the hand-lever with the bed-plate and serving to elevate and depress the latter, all as shown and described.

5. The combination, with the vertically-reciprocating type-carrier and the horizontally-reciprocating platen, of stops or guards which project forward and backward on the platen from a point intermediate of the inking and printing positions of the type-carrier, so as to arrest the downward movement of the type-carrier in both positions, as specified.

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Witnesses:

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WILLIAM H. BERRY.