

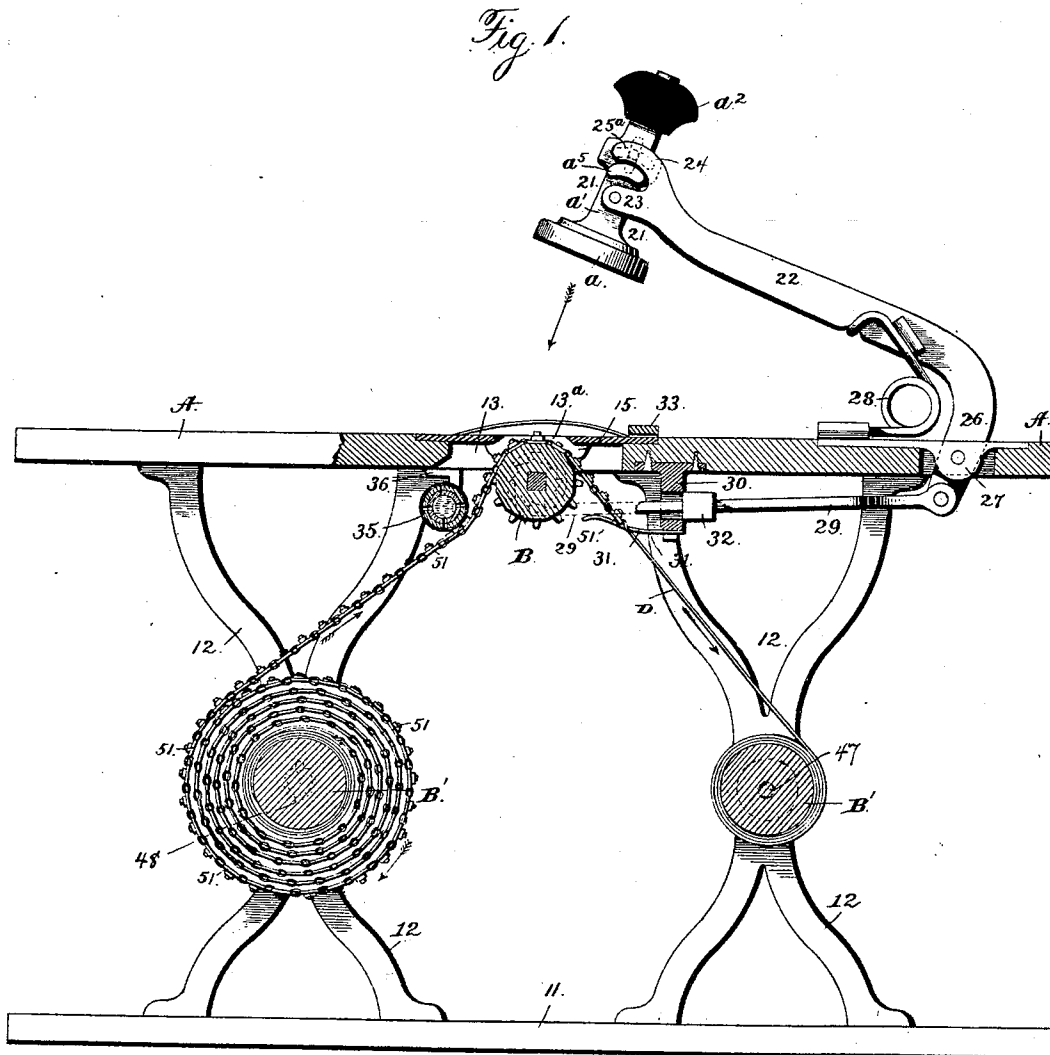
(No Model.)

4 Sheets--Sheet 1.

W. F. BARNES, I. S. MURRAY & L. LUCIA.
MAILING MACHINE.

No. 459,387.

Patented Sept. 15, 1891.



Witnesses:
Jas E Hutchinson.
G. F. Downing.

Inventors:
Wm F Barnes.
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By H A Surmon. Atty.

4 Sheets—Sheet 2.

MAILING MACHINE.

Patented Sept. 15, 1891.

Fig. 2.

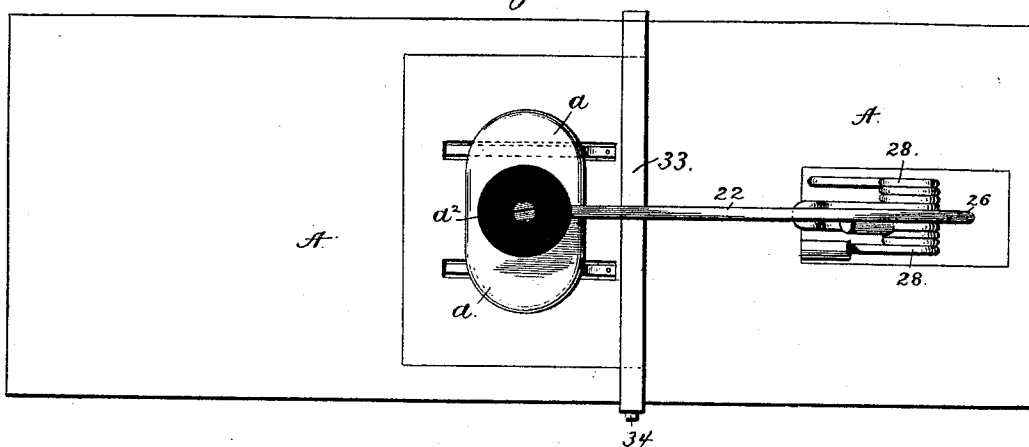
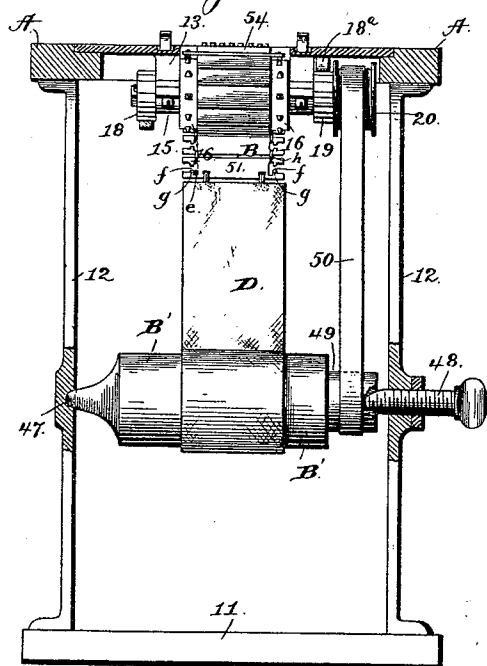


Fig. 3.



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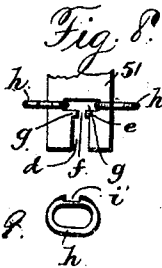
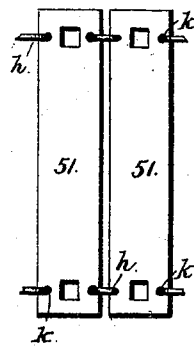
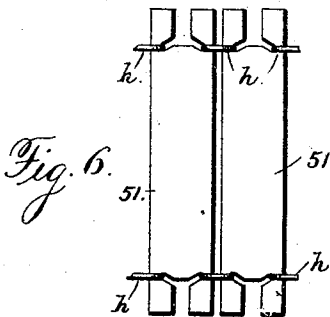
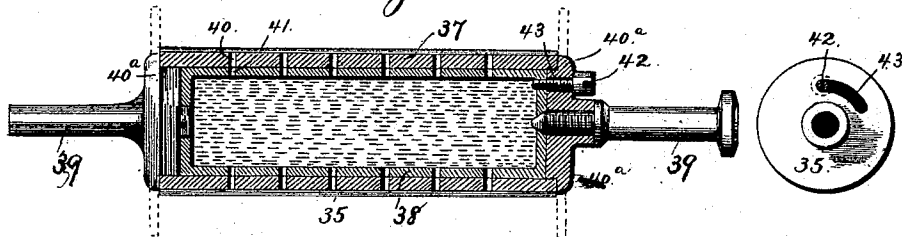
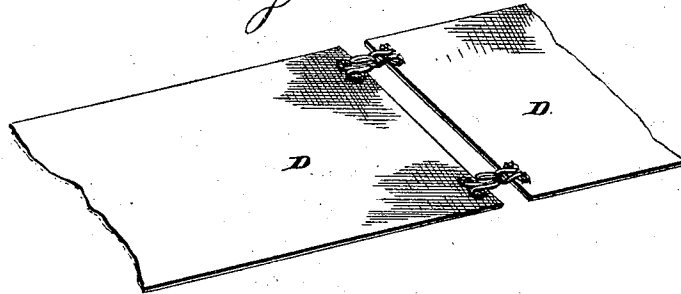
(No Model.)

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Fig. 8.

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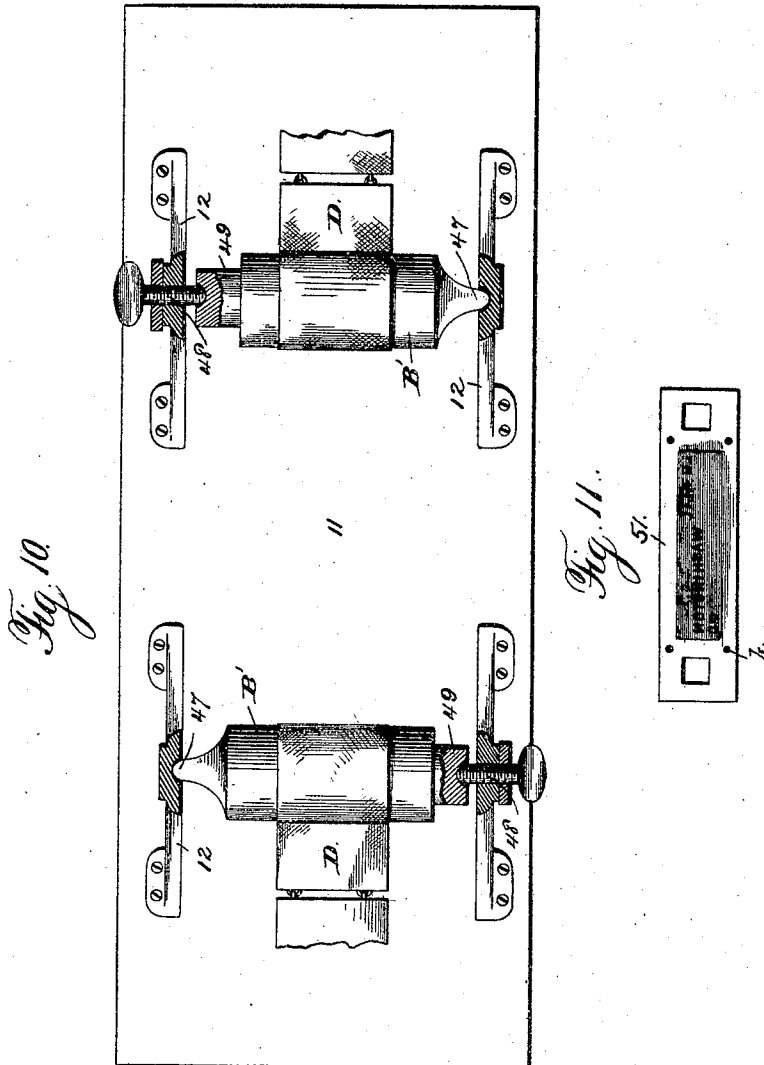
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W. F. BARNES, I. S. MURRAY & L. LUCIA.
MAILING MACHINE.

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UNITED STATES PATENT OFFICE.

WILLIAM F. BARNES, IRVING SCOTT MURRAY, AND LOUIS LUCIA, OF
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MAILING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 459,387, dated September 15, 1891.

Application filed July 8, 1890. Serial No. 358,043. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM F. BARNES, IRVING SCOTT MURRAY, and LOUIS LUCIA, of Orlando, in the county of Orange and State of Florida, have invented certain new and useful Improvements in Mailing-Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in mailing-machines. Addressing is accomplished entirely (except when written) by using type. Each subscriber's name and address is set up in type form, ready to be printed at each issue of the paper or matter to be mailed. This has to be kept in type continually, as it is liable to be changed at any time, thereby keeping a large amount of type for mailing purposes. After the subscriber's address is in type there are two methods of transferring the same to the paper to be sent him: First, a machine is used to make the impression on the paper directly from the type; but owing to the varying thickness of folded papers a very heavy pressure is necessary that all should be clearly printed, which quickly ruins the face of the type; second, this is to print at every issue the entire list on an ordinary printing-press on strips of paper in order to save this wear on the type. These strips are then rolled up, inserted in a machine that feeds each address out one at a time, cutting it off from the roll, and pasting it on the paper or other matter to be mailed.

The object of our invention is to avoid the use of type and have the list of subscribers' addresses arranged in such manner as to occupy but little space and convenient to work with, so that additions and corrections can be cheaply and quickly made, and also that a machine may print any number of addresses desired.

A further object of our invention is to provide a simple machine of few parts and convenient size capable of printing any number of addresses on newspapers or other articles.

A further object is to provide for easily changing one belt of names for another, or for

removing or inserting names at any time occasion may require it, so that the names may be kept in their proper belt, preferably according to towns, counties, wards, or states, as the case may be.

With these ends in view our invention consists in one or more belts composed of metal plates, each plate having an address produced thereon, in combination with removable spindles to which the said belts may be removably attached at its ends.

It further consists in peculiar fastenings for the plates constituting the belts, whereby plates may be removed and new ones inserted, accordingly as the subscription-list changes from time to time.

It further consists in a novel inking fountain or roll, means for raising the paper out of the reach of the dies as soon as the platen which forces them against the dies is removed, and in certain other novel features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in vertical longitudinal section through the machine. Fig. 2 is a plan view. Fig. 3 is a transverse section through one of the spindles. Fig. 4 is a view of the end of the band, showing the means of attaching mailing-belt. Fig. 5 is a section through the inking-fountain. Figs. 6, 7, and 8 are views of different forms of die-plates. Fig. 9 shows one of the connecting-links. Fig. 10 is a horizontal section taken through the reversible spindles, and Fig. 11 is a detail.

A represents a table supported on suitable standards 12 12, and the latter are preferably screwed at their lower ends to a base 11. The table is provided at or near its center with an opening 13, and the metal plate has a small transverse opening 13^a in its center, through which the printing is done as the dies traverse it. At each end of the opening 13^a depending hangers 15 are formed integral with the metal plate, and in these hangers the trunnions of the impression-drum B are journaled. At each end of the opening a hanger 15 is secured to the under face of the plate, in which hangers the trunnions of the impression-drum B are journaled. If, however, it is found

desirable in practice, the two hangers may be formed integral with the skeleton plate, the said plate in that event being attached to the table around the opening 13.

5 The impression-drum is polygonal in cross-section between the ends, and at each end a sprocket-wheel 16 is secured, constituting an integral portion thereof. At or near the end of each trunnion of the drum B a ratchet-wheel 18 and 19 is keyed or otherwise secured, the ratchet-wheel 18 serving as a feed-wheel and the other as a stop-wheel, being used in connection with a pawl 18^a, permitting the drum to be revolved in one direction only.

5 Upon the trunnion carrying the stop ratchet-wheel 19 a pulley 20 is fastened, over which a belt 50 passes to the spindle B. There is a depression around the circumference of drum at each end between sprocket-wheel to accommodate the bottom of link, so that the plate will rest squarely on the squared surfaces. Upon the top of the upper table a hammer 21 is located, comprising a platen *a* of sufficient size to cover the opening 13^a in the said table,

15 a shank *a'* and a knob *a*², or its equivalent, secured to and forming an integral portion of the upper part of the said shank. This hammer is adjustably attached to the inner end of an arm 22, which inner end is bifurcated, comprising a substantially straight member 23 and a curved member 24, provided with a set-screw 25 therein. The straight member 23 of the arm is pivotally secured to the shank *a'* of the hammer, and the curved member is

35 adjustably attached to the said shank through the medium of a curved slot 25^a in the shank, through which the set-screw passes, whereby the hammer when elevated may be made to descend perpendicularly or at an angle to the

40 table, as the character of the matter to be mailed may demand. The shank *a'* is also provided with a curved lug *a*⁵, which lies between the ends of the arm 22. This lug forms a stop for the shank by striking against the

45 crotch between the members 23 and 24. The arm 22 is made to extend rearward over the table 10, and the outer end of the said arm is projected perpendicularly downward, as illustrated at 26, within a housing 27, which housing is inserted in and projected perpendicu-

50 larly downward below the table, as is also best shown in Fig 1. In the said housing 27 the perpendicular member of the arm 22 is pivoted at or near its center, and the inner

55 end of the arm carrying the hammer is normally held in the elevated position, whereby the hammer is normally sustained above the table by a coil or other form of spring 28, attached at one end to the table and at the

60 other end to the side of the arm at or near the vertical member 26.

To the lower end of the vertical member 26 of the arm 22 one end of a push-rod 29 is pivoted, which push-rod is made to pass through and slide in a bracket or stud 30, secured to the under side of the table, and the inner end of the said push-rod is adapted,

when the arm 22 is in its normal or elevated position, to so contact with the ratchet-wheel 18 that it will revolve the same one tooth 70 each time the platen is being elevated. The inner end of the push-rod 29 is sustained by a strap-spring 31, secured to the under side of the bracket or post 30 at one end, the other end bearing against the under face of the 75 rod, as best shown in Fig. 1. This spring is of light tension, the tension of the spring being only sufficient to sustain the inner end of the push-rod in a horizontal position. The forward movement of the push-rod 29 is limited by a sleeve 32, rigidly secured upon the said rod and adapted to contact with the post or bracket 30 at the inward plunger of the rod.

Upon the upper surface of the table, to the 85 rear of the base of the hammer, a guide-block 33 is located, which extends transversely from side to side of the table, and the ends of the block are carried perpendicularly downward to contact with the side edges of 90 the said table. The block is adjustably secured by means of a set or thumb screw 34, passed through one or both of the perpendicular members of the block. The mail-matter is pushed against this block, so that 95 the address will appear in same place on all pieces, and by shifting it the address can be printed on any desired place on the matter.

Forward of the table-opening 13^a an inking-roller 35 is journaled transversely beneath 100 the table in suitable hangers 36. This inking-roller is illustrated in detail in Fig. 5, and consists of an outer tubular cylinder 37 and an inner tubular cylinder 38 fitted thereto. Both cylinders are provided with heads, and 105 removable trunnions 39 are screwed into or formed integral with the heads of the outer cylinder. The outer cylinder is provided with a series of longitudinally-arranged peripheral apertures 40, and the inner cylinder 110 is also provided with like apertures 41. The outer cylinder is provided with adjustable collars 40^a 40^b, and the flanges on these collars, being slightly curved outward at the outer edge, are adapted to guide the belt in 115 its passage over the roller and are made adjustable by a set-screw in the collar to engage face of roller. The inner cylinder is held to turn freely in the outer cylinder and is pivoted to the head of the latter at one end, the 120 other end being provided with an attached horizontal pin 42, which pin projects outward through a curved slot 43, formed in one head of the outer cylinder. In practice the outer cylinder is covered with a flannel belt 125 or other absorbent material adapted to receive and communicate the ink to the mailing-belt. By reason of this construction of the inking-roller, when the pin 42 is carried to one end of the slot 43 the apertures in the 130 inner cylinder, which contains the ink, are made to register with the apertures in the outer cylinder, and the ink is permitted to flow from the latter to its covering. By car-

rying the pin to the other end of the slot the apertures in the cylinders are thrown out of registry and the ink ceases to flow.

Between the standards 12 two removable bobbins or spindles B' B' are journaled. The spindles or bobbins are journaled between the standards, and this is effected by giving to one extremity of the spindle a conical shape adapted to enter a socket 47 upon the inner face of one of the standards 12, as shown in Fig. 3, and in the opposite end of the spindle a depression is made adapted to receive the conical end of a set-screw 48, which set-screw is passed through the opposite standard 12 to a contact with the depression in the spindle. Upon each spindle at the end contiguous to the set-screw a pulley 49 is secured, the pulley of the rear spindle being connected by a belt 50 with the pulley upon the drum-trunnion. These spindles are thus capable of being reversed by removing and interchanging them.

The mailing-belt D comprises a series of metal plates 51, preferably steel, which plates are preferably of a width essentially equal to the width of the peripheral faces of the drum. These plates may be differently constructed, as shown in Figs. 6, 7, and 8; but the preferred form is that shown in Fig. 8, in which notches *d d* are formed in the ends of the plates to receive the teeth on the drum, and in this connection it may be mentioned that the tendency of the bobbins or spindles is to draw the mailing-belt over a trifle too far forward with each motion; but by means of the teeth entering the notches the belt is stopped at the right position each time and the driving-belt 50 slips on its pulleys the required distance to compensate for this slight irregularity in gearing. A narrow and transverse slot *e e* is connected with each notch *d d* by narrow openings *f f* between the projections *g g*. The links *h h* are preferably flattened or made thin at *i i'* to pass through the openings *f f*, the balance of the link being thicker than this passage, so that when the belt is stretched out or in operation and the links are in their normal position there is no liability of the belt coming apart. By means of this construction the plates may be readily removed from or inserted in the belt by laying one plate to the back of the other, then pass the link at *i'* through the opening *f* and pull the link lengthwise over the end of plate, and the plates can then be pulled forward into position. The slots *e e* are placed just far enough from end of plate to allow the link to be of sufficient length to be passed lengthwise over the end of the plate and yet draw the plates close together.

In the form shown in Fig. 6 a slight change is shown. In this construction the links are preferably of the same thickness throughout, but the slots are made slightly different, as shown, they being a continuation of the inner ends of the notches and inwardly inclined and without the projections. In the other

construction shown in Fig. 7 small slots are formed simply to receive the teeth on the wheel. The plates in this instance are provided with holes *k k* to receive the links, which are pieces of annealed wire inserted in holes *k k* and then bent against surface of plate. To each of these plates or strips of metal we preferably attach a rubber pad 54, containing the name and address of a person or a firm; and we desire it to be distinctly understood that while the attachment of the pad to the various plates of the belt is preferred, the name and address may be produced thereon in any other suitable or approved manner. When a pad is employed, it is of less length than the distance between the links uniting the plates.

The belt D may contain any number of united strips or plates desirable, the length of the belt being preferably such that when wound upon the spindle it will conveniently accommodate the addresses belonging to such division of the subscription-list as that particular belt may represent.

The mailing-belt has a removable section at each end of sufficient length to reach from either spindle or bobbin to the drum, and this is made detachable by hook and eye or equivalent means, as shown. Each spindle also is provided with a short strip secured thereto, to the outer end of which the section is hooked. The other end of section is provided with hooks to catch in the notch *d* of the last plate in mailing-belt.

The paper, envelope, or other article to be addressed is placed beneath the hammer over the pad, when the hammer is pressed downward and the impression taken. When the hammer is released and returns to its normal position, the push-rod 29 forces the feed ratchet-wheel 18 around one tooth, which revolves the drum sufficiently to bring the next pad uppermost and beneath the hammer. The revolution of the drum also turns the belt 50, whereby the empty spindle is revolved and the slack of the belt taken up thereon. Thus the operation is repeated indefinitely or until impressions have been taken from every pad upon the list or belt, whereupon the empty spindle is placed between the rear standards, the spindle upon which the belt has been rewound being removed, and another spindle containing another list is placed between the forward standards and this belt attached to the band, the opposite end of which is then fastened to the rear spindle, and the operation of taking the impression is resumed. In this way the names on the belts may be confined as most convenient.

In recesses on the table slight springs are secured, they being adapted to raise the paper as soon as stamped, and the platen is removed so that it will not be blurred.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a mailing-machine, the combination,

with a frame, of interchangeable spindles or bobbins, the latter adapted to be reversed when interchanged and the frame constructed to require such reversal of parts when interchanged, substantially as set forth.

2. In a mailing-machine, the combination, with a frame, of interchangeable spindles or bobbins, the latter adapted to be reversed when interchanged and the frame constructed to require such reversal of parts when interchanged, and a mailing-belt connected with the spindle, substantially as set forth.

3. The combination, with a frame, of a pair of spindles or bobbins having conical ends adapted to enter sockets in the frame, set-screws adapted to be screwed into the opposite ends, pulleys on one end of the spindles, said spindles being removable, reversible, and interchangeable, and a mailing-belt detachably secured to the spindles, substantially as set forth.

4. The combination, with a pair of interchangeable and reversible spindles, of bands secured to the latter, and a mailing-belt having detachable sections on its ends adapted to be detachably secured to the bands on the spindles, substantially as set forth.

5. The combination, with reversible spindles having pulleys thereon and an impression-drum having teeth thereon, of a mailing-belt having holes therein to receive the teeth on the drum, and a driving-belt passing from the drum over the pulley on one of said spin-

dles, said belt adapted to drive the spindles and the teeth adapted to stop the mailing-belt at the proper place regardless of the movement of the spindles, substantially as set forth.

6. In a mailing-machine, an inking-roller consisting of an inner and an outer concentric hollow cylinder, each provided with a head at both ends, the inner cylinder being journaled in the outer cylinder and both cylinders provided with a series of longitudinal apertures, the inner cylinder being also provided with an adjusting-pin integral with one edge and extending through a slot in the head of the outer cylinder, and the outer cylinder having at each end an adjustable collar thereon, substantially as set forth.

7. The combination, with a table and a printing-drum, of a spring-actuated arm bifurcated at its free end and having a set-screw in one of the members, of a platen having a stem thereon, with a lug thereon and a curved slot therein in which the set-screw works, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

WILLIAM F. BARNES.
IRVING SCOTT MURRAY.
LOUIS LUCIA.

Witnesses:

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