No. 632,395. Patented Sept. 5, 1899.

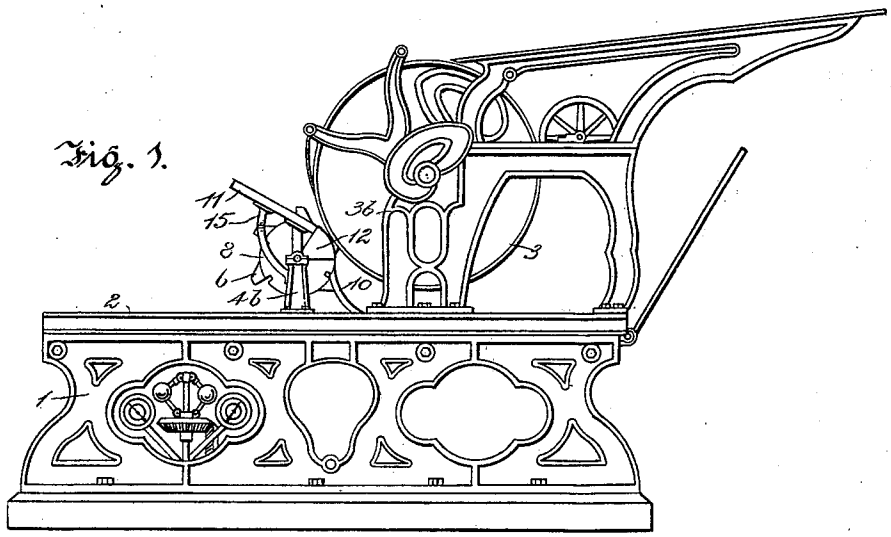
J. B. BELL.

ATTACHMENT FOR PRINTING PRESSES.

(Application filed Nov. 18, 1897.

(No Model.) 4 Sheets—Sheet 1.

Fig. 1.



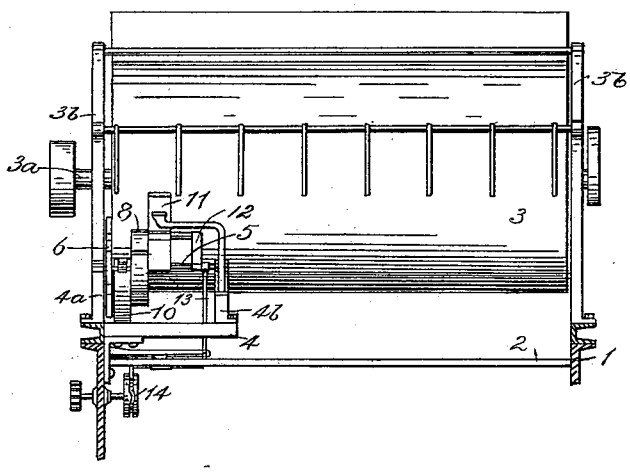


Fig. 2.

WITNESSES

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Fig. 3.

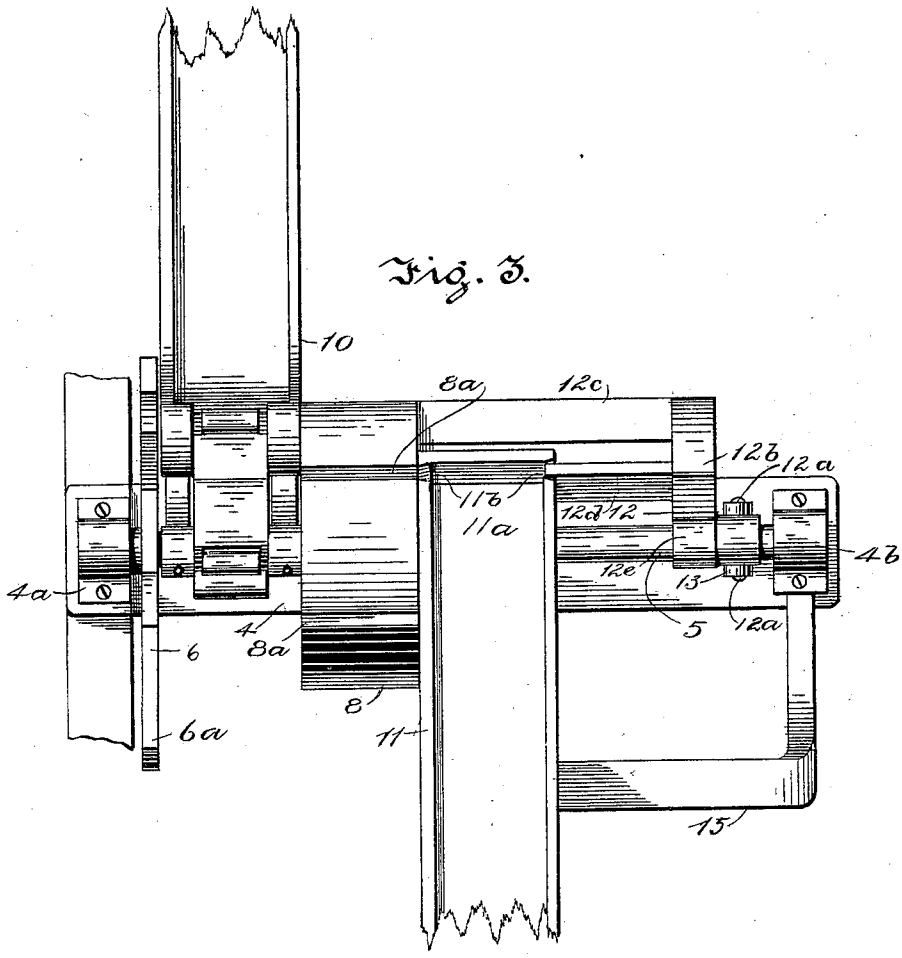


Fig. 7.

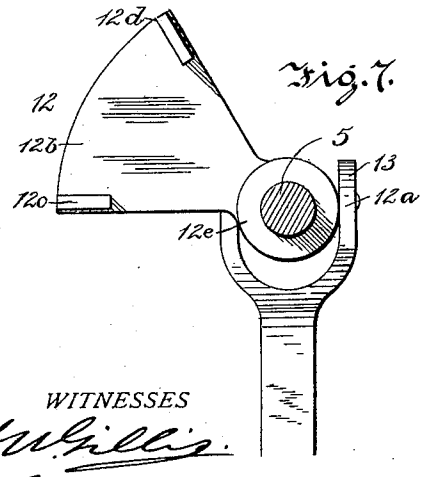
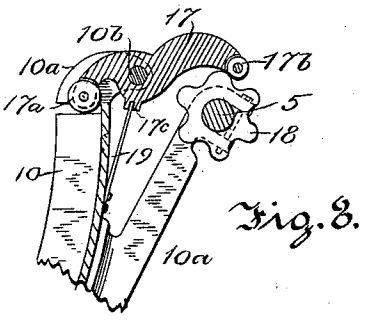


Fig. 8.



WITNESSES

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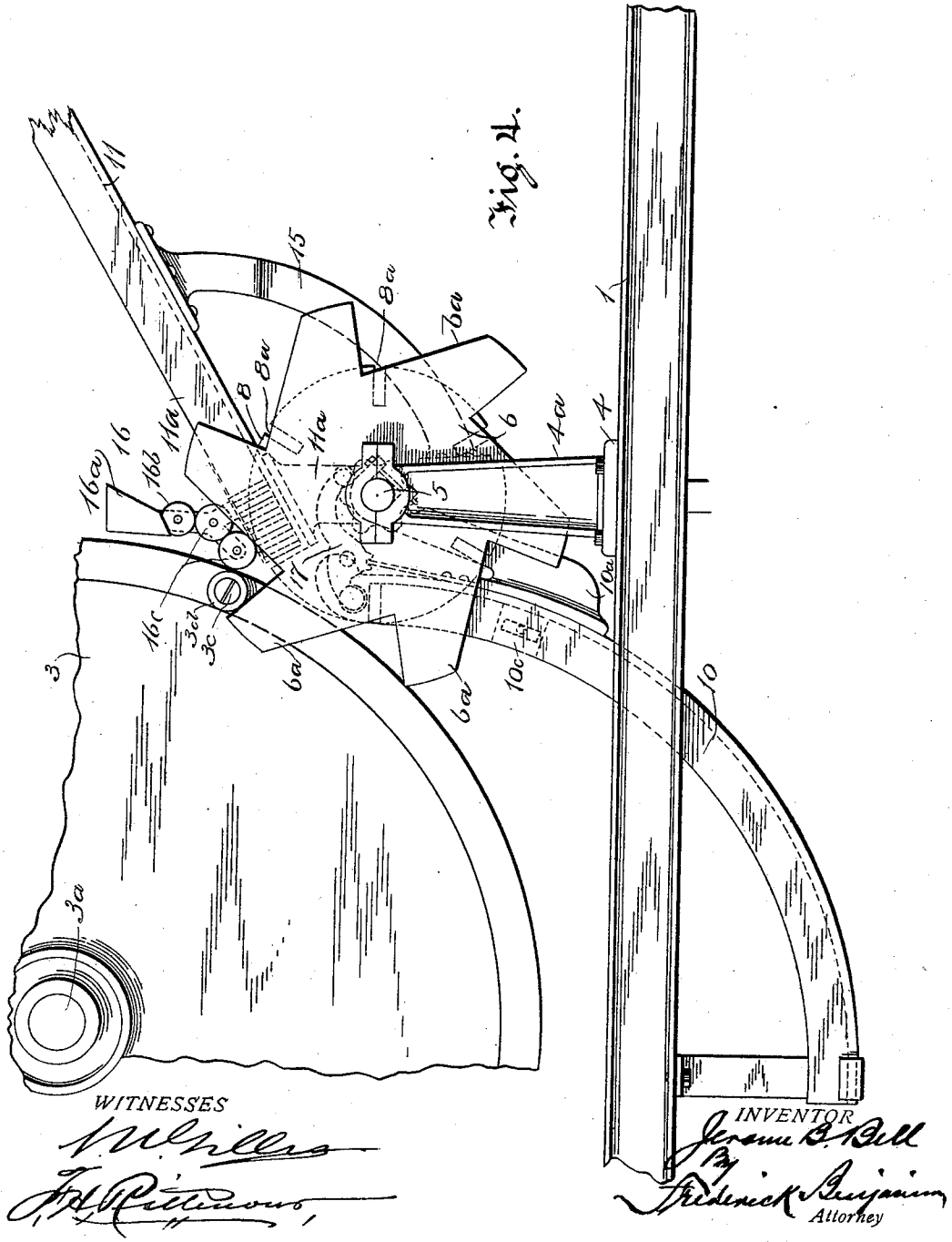
(No Model.) 4 Sheets—Sheet 3.

Fig. 2.



WITNESSES

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(No Model.) 4 Sheets—Sheet 4.

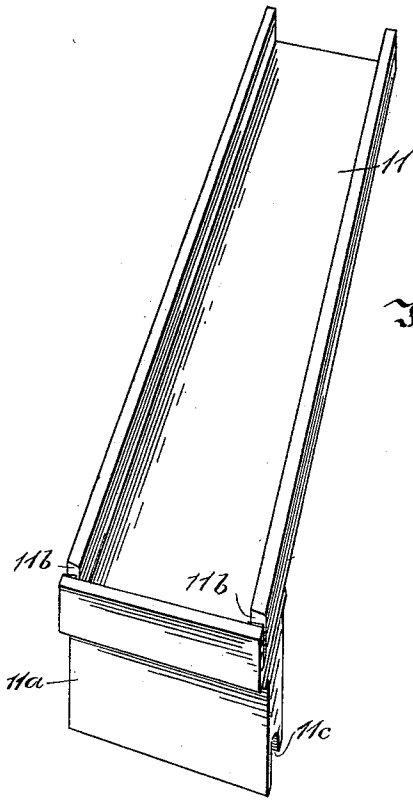

Fig. 5.

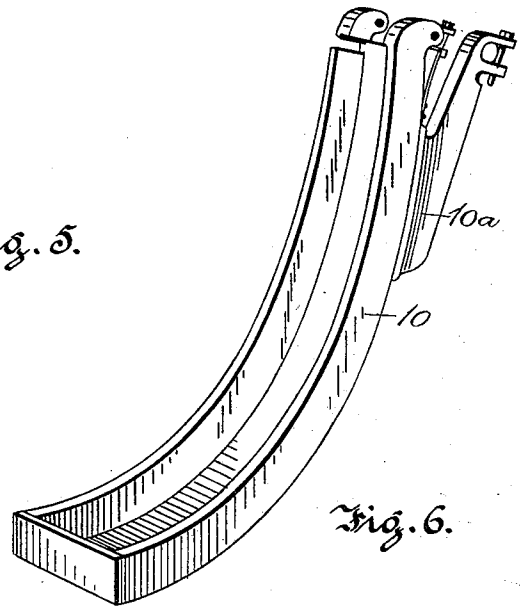

Fig. 6.

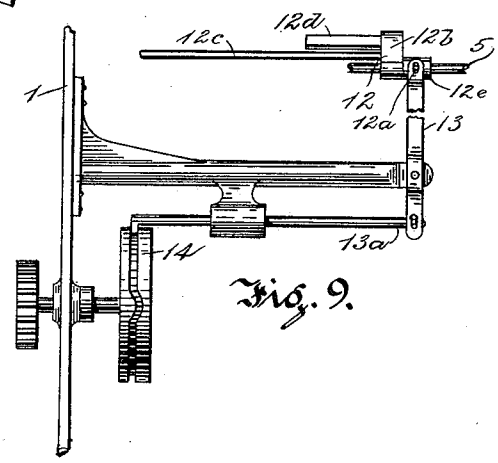

Fig. 9.

WITNESSES

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UNITED STATES PATENT OFFICE.

JEROME B. BELL, OF WILMINGTON, DELAWARE.

ATTACHMENT FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 632,395, dated September 5, 1899.

Application filed November 18, 1897. Serial No. 658,887. (No model.)

To all whom it may concern:

Be it known that I, JEROME B. BELL, a citizen of the United States, residing at Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Attachments for Printing-Presses; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in printing-presses, and more especially to attachments for such machines whereby a series of names and addresses or other matter in type, slug, or linotype form of no special construction may be printed in sequence on newspapers, wrappers, or envelops.

The object of my invention is to produce a device of the character described which may be readily and cheaply attached to any printing-press in which a revolving cylinder is used to carry the newspaper, envelop, wrapper, or other matter to be printed and whereby a plurality of lines of type or slugs may be supported or held in galleys of special construction, automatically inked, presented in regular order to the matter or surface to be printed, withdrawn, and returned in their same relative positions to other galleys in readiness for use again or repeated use, the power for driving the mechanism being obtained from the revolving cylinder in most part.

The construction and operation of my invention are fully set forth in the following description and illustrated in the drawings, which form a part of this application, in which—

Figure 1 is a side elevation of a common form of press with my invention attached thereto. Fig. 2 is an end view of the attachment and the press-cylinder. Fig. 3 is a top plan view of the attachment. Fig. 4 is an end view of the attachment. Fig. 5 is a perspective of the feeding-galley. Fig. 6 is a perspective of the receiving-galley. Fig. 7 is a front end view of the slug-ejector. Fig. 8 is a detail of a tilting lever. Fig. 9 shows one way of operating the slug-ejector.

Like reference-numerals indicate like parts in the several views of the drawings.

1 represents the frame of a well-known form of printing-press, in which there is a flat bed 2, and a paper-carrying cylinder 3 is mounted on a suitable shaft 3^a, journaled in the uprights 3^b. This form of press is here introduced for the purpose of showing clearly and plainly my attachment and its method of operation, and as the press is no part of my invention all of its parts are not shown in the drawings.

At a suitable point the edge of the cylinder 3 is tapped for the reception of a threaded pin 3^c, on which is loosely mounted a roller 3^d. For printing wrappers or envelops it might be necessary to have several of these rollers; but as the operation would be the same I have shown but one.

Bolted or otherwise secured to the side of the frame 1 is a bracket 4, having arms 4^a and 4^b, which support and form bearings for a horizontal shaft 5, which extends part way across the press above its bed. Mounted on the shaft 5 in the path of the roller 3^d is a wheel 6, having radial arms 6^a so arranged and formed that as the roller is carried around by the cylinder 3 it strikes the upper side of one of the arms at each revolution and partially rotates the wheel 6 and the shaft 5, to which it is secured. Next to the wheel 6 on the shaft 5 is placed a loose sleeve, upon which rests the upper end of the receiving-galley 10. Next beyond the sleeve and on the same shaft is a cylinder 8, which is provided in its periphery with a plurality of radial slots 8^a, which extend the full width of the cylinder and are of sufficient depth to receive the body of the slug or linotype. Next in line upon the shaft 5 is an extension 11^a of the lower end of the galley 11, and beyond this on the shaft is loosely mounted the ejector 12. This ejector is composed of a hub portion, which surrounds the shaft and is provided with trunnions 12^a on its opposite sides, which fit loosely in the slotted ends of the forked crank-arm 13, and of a segmental portion 12^b, which is provided with a long horizontal arm 12^c and a short horizontal arm 12^d, said arms being set radially to the center or hub portion 12^e and are of a thickness nearly equal to the cross-diameter of the slots 8^a in the cylinder

8. A reciprocating motion is imparted to the ejector 12 by the eccentrically-grooved cam-wheel 14 through the medium of the crank-arm 13 and the crank-shaft 13^a, which connect said ejector with said cam-wheel. Said cam-wheel may be driven in any suitable manner, the means employed depending in each case upon the peculiar construction of the press to which the attachment is applied. With the exception of the ejector the other parts mounted on the shaft 5 have a rotating movement with the shaft, the latter being driven by the wheel 6.

The slugs having on their faces the addresses or other matter to be printed from are held in a long galley 11, the lower end of which has an extension 11^a, in which is a groove 11^e, which fits loosely over the shaft 5, the latter serving to support the lower end of said galley, while the upper portion is supported by the standard 15, which is secured to the frame of the press in any suitable manner. The galley is held at approximately an angle of forty-five degrees. Supported above the galley in any suitable way is an inking device 16, which I have shown in the simple form of an ink-trough 16^a, a feed-roller 16^b, and distributing-rollers 16^c, by which the type-faces of the slugs are inked on their way to the point of impression.

It will be seen that I rely upon gravity to convey the slugs along the galley 11 to the point of ejection; but mechanical means may be resorted to, if desirable. At the lower end of the galley 11 the sides are slotted, as at 11^b, the slots being flaring and of sufficient width to permit the easy entrance of the short arm 12^d and the outlet of the slugs to the slotted cylinder before mentioned.

The receiving-galley 10 is preferably built on a curve, as clearly shown, and its sides have extensions 10^a at its upper end which form bearings for a spindle 10^b, upon which is mounted a small tilting lever 17, in the opposite ends of which are small friction-rollers 17^a and 17^b. The roller 17^a bears against the upper or top slug in the galley 10, and the roller 17^b travels over the teeth of the pinion 18, which is keyed to the shaft 5 at a point in line with the lever 17. The under side of the lever 17 is provided with a teat 17^c, which receives the free end of a spring 19, which is secured to the under side of the bottom of the galley 10, so that the tension of the spring normally serves to keep the roller 17^a away from the upper slug in the galley 10. (See Fig. 8.) That the slugs may be kept in an upright position in the galley 10 I provide a frictional block 10^c, which will give sufficient resistance to accomplish this object, but at the same time will not interfere with the operation of the lever 17, the purpose of which is to keep the slugs moving along the galley, in which function it is aided by gravity.

The cylinder 8 is so placed on the shaft 5 that at each partial revolution of the shaft one of the slots 8^a is registered with the slotted portion 11^a of the galley 11 and another one of the slots 8^a is registered with the slotted portion 10^d of the galley 10, and at the same instant the ejector 12 is given a forward movement and two of the slugs in the galley 11 are pushed by the short arm 12^d into the slot 8^a, which is opposite the slot 11^a. The same movement of the ejector causes the long arm 12^c to eject a pair of slugs from the slot 8^a, which has point of impression into the galley 10. The next revolution of the cylinder 3 causes the slugs which were placed in position in the cylinder 8 by the previous movement or revolution to print on the paper, wrapper, or other matter to be printed on.

An attendant keeps the feeding-galley supplied with slugs containing the matter to be printed and removes the same from the receiving-galley as it becomes filled, or a number of feeding-galleys may be used, and as one becomes emptied another can be substituted in its place and the empty galley placed at the bottom of the receiving-galley and receive the slugs therefrom.

It will be apparent that my attachment can be used to operate a single slug or two or more, as may be required, and that the printing-faces of the slugs may be inked by hand or by any suitable mechanical device, and that different forms of presses will require different methods of attaching and adjusting my invention, and I therefore do not limit myself to the use of two slugs, or to the particular form of inking device shown, or to the means described by which my invention is attached to a printing-press, or to any particular means for obtaining a reciprocating movement of the slug-ejector, as there are many well-known ways and forms for accomplishing these particular objects, and the methods shown are not essential features of my invention.

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

1. An address-printing machine composed of a slotted revolving cylinder, means for operating said cylinder, a feeding-galley, a receiving-galley, and means for pushing a type-slug into and another type-slug from said cylinder consisting of a reciprocating ejector having arms spaced to correspond with the slots in the cylinder, substantially as described.

2. An address-printing machine composed of a slotted revolving cylinder, a wheel having radial arms secured to said cylinder, means for engaging said arms for the purpose described, a feeding-galley, a receiving-galley, and an ejector whereby the slugs or lines of type are simultaneously pushed into and from the cylinder, substantially in the manner and for the purpose set forth.

3. An address-printing device composed of a slotted revolving cylinder, a wheel having radial arms secured to said cylinder, means for engaging said arms for the purpose described, a feeding-galley, a receiving-galley,

means for pushing along the slugs in the receiving-galley, and an ejector whereby the type-slugs are simultaneously pushed into and from the slotted cylinder, substantially as set forth.

4. In combination with the frame and impression-cylinder of a printing-press, a slotted revolving cylinder, a wheel having radial arms secured to said cylinder, a roller secured to the impression-cylinder so as to engage the said radial arms, a feeding-galley, a receiving-galley, a pusher in said receiving-galley, and a reciprocating ejector whereby the type-slugs are simultaneously pushed into and from the cylinder, substantially in the manner and for the purpose set forth.

5. In combination with the frame and impression-cylinder of a printing-press, a slotted revolving cylinder, a wheel having radial arms, secured to said slotted cylinder, a roller mounted on the impression-cylinder so as to engage the radial arms aforesaid upon the revolution of the impression-cylinder, a feeding-galley, an inking device adapted to ink the type-slugs while in the feeding-galley, a receiving-galley, a pusher in said receiving-galley, a reciprocating ejector having arms adapted to push one type-slug into the slotted cylinder and another type-slug from said cylinder, and means for operating said ejector, substantially as set forth.

6. In combination with the frame and impression-cylinder of a printing-press, a slotted revolving cylinder, a wheel having radial arms, secured to said cylinder, a roller secured to the impression-cylinder and adapted to engage the radial arms aforesaid, a feeding-galley having slotted sides, an inking device located above said feeding-galley, a receiving-galley, a pusher in said galley, a reciprocating ejector having a long and a short arm, and means for operating said ejector, substantially as set forth.

7. An address-printing device composed of a slotted revolving cylinder, means for revolving said cylinder, a slotted feeding-galley adapted to hold a plurality of type-slugs, an inking device located above said galley, a receiving-galley adapted to receive the type-slugs from the slotted cylinder, a pusher in said galley, a reciprocating ejector adapted to simultaneously push one type-slug into the slotted cylinder and another type-slug from said cylinder into the receiving-galley, and means for operating said ejector, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JEROME B. BELL.

Witnesses:

WILLIAM A. KIMMEY,

JAMES FRANK PIERCE.