

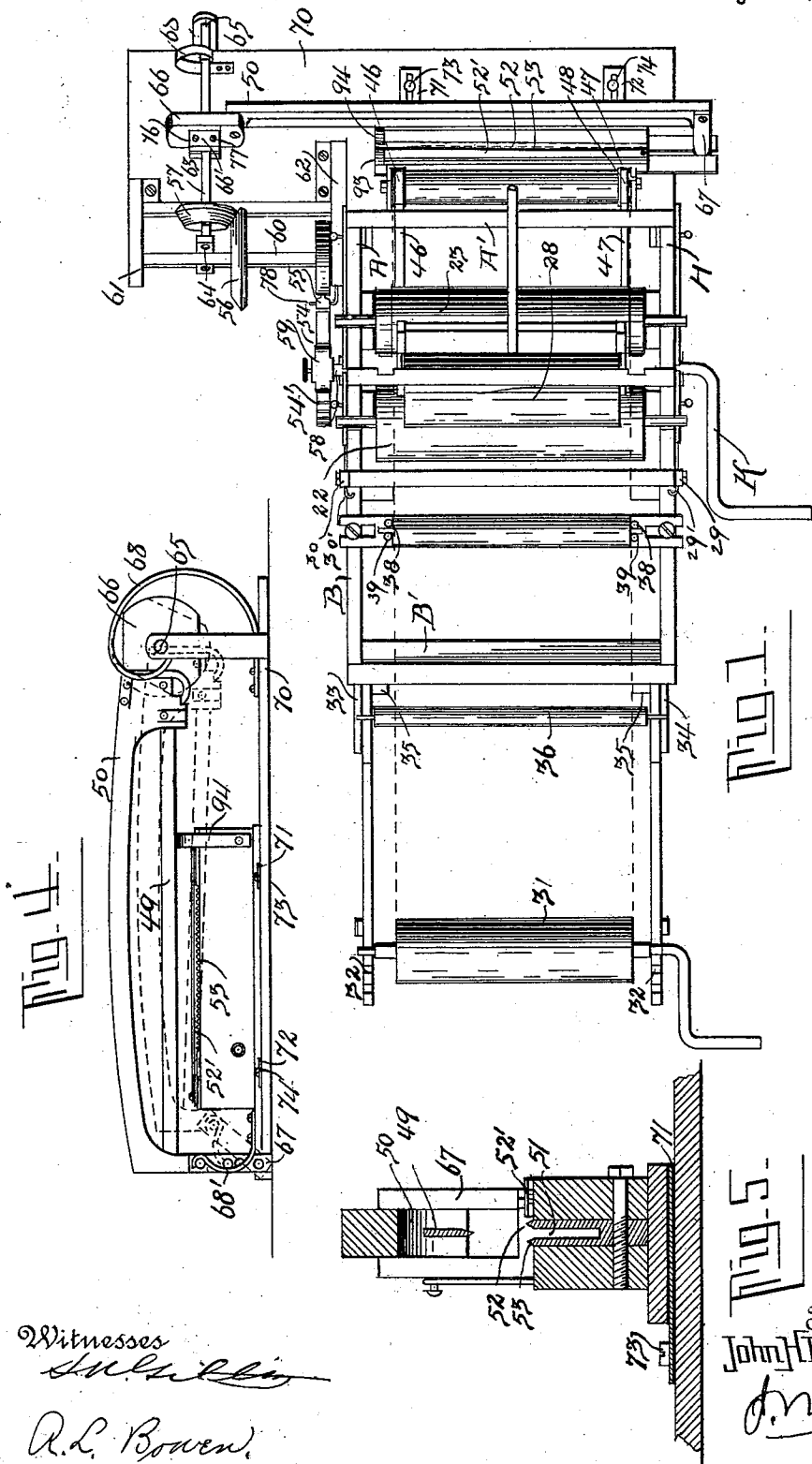
(No Model.)

4 Sheets—Sheet 1.

J. H. MASTER.
PRINTING PRESS.

No. 543,036.

Patented July 23, 1895.



Witnesses
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R. L. Bowen

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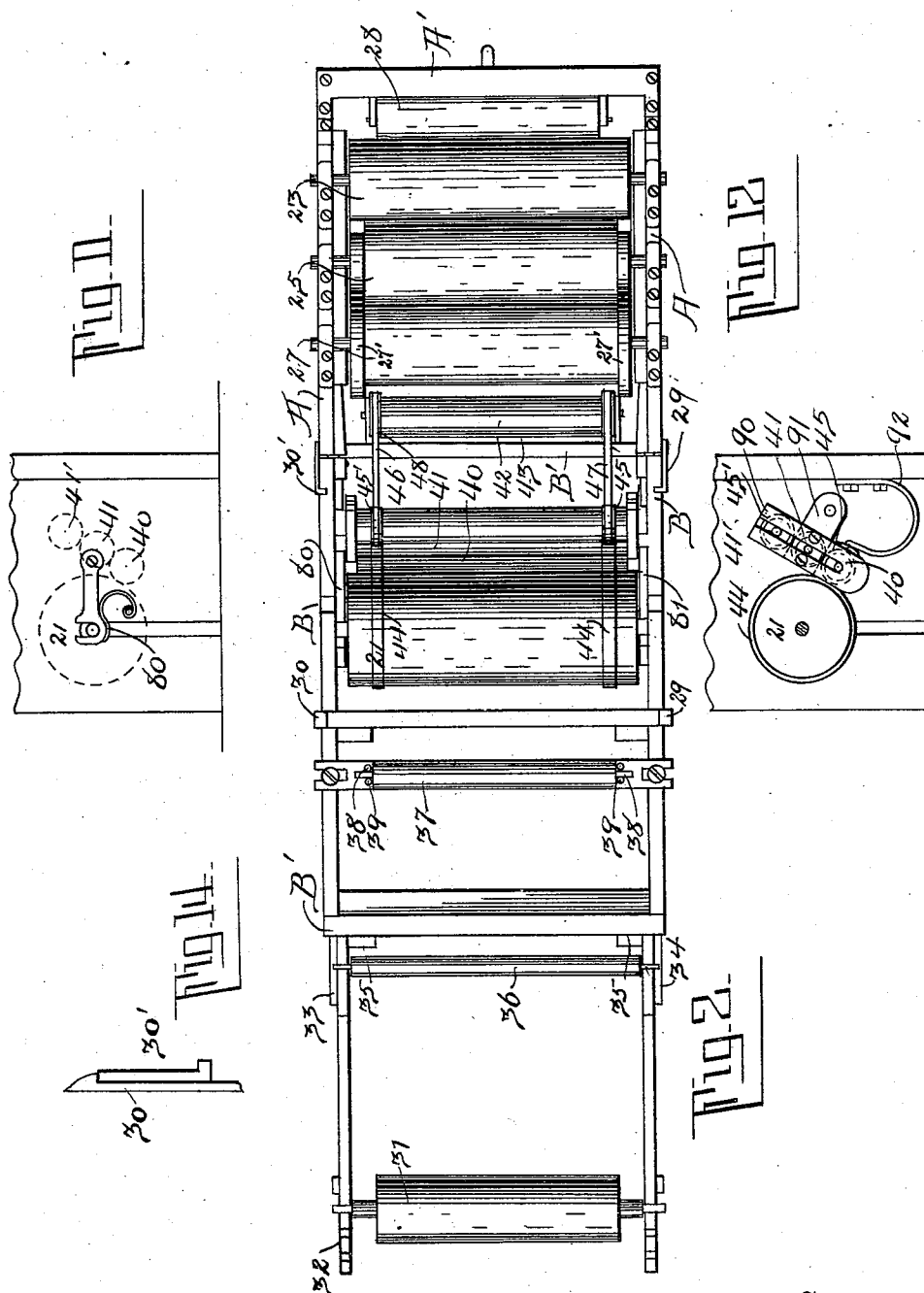
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4 Sheets—Sheet 2.

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PRINTING PRESS.

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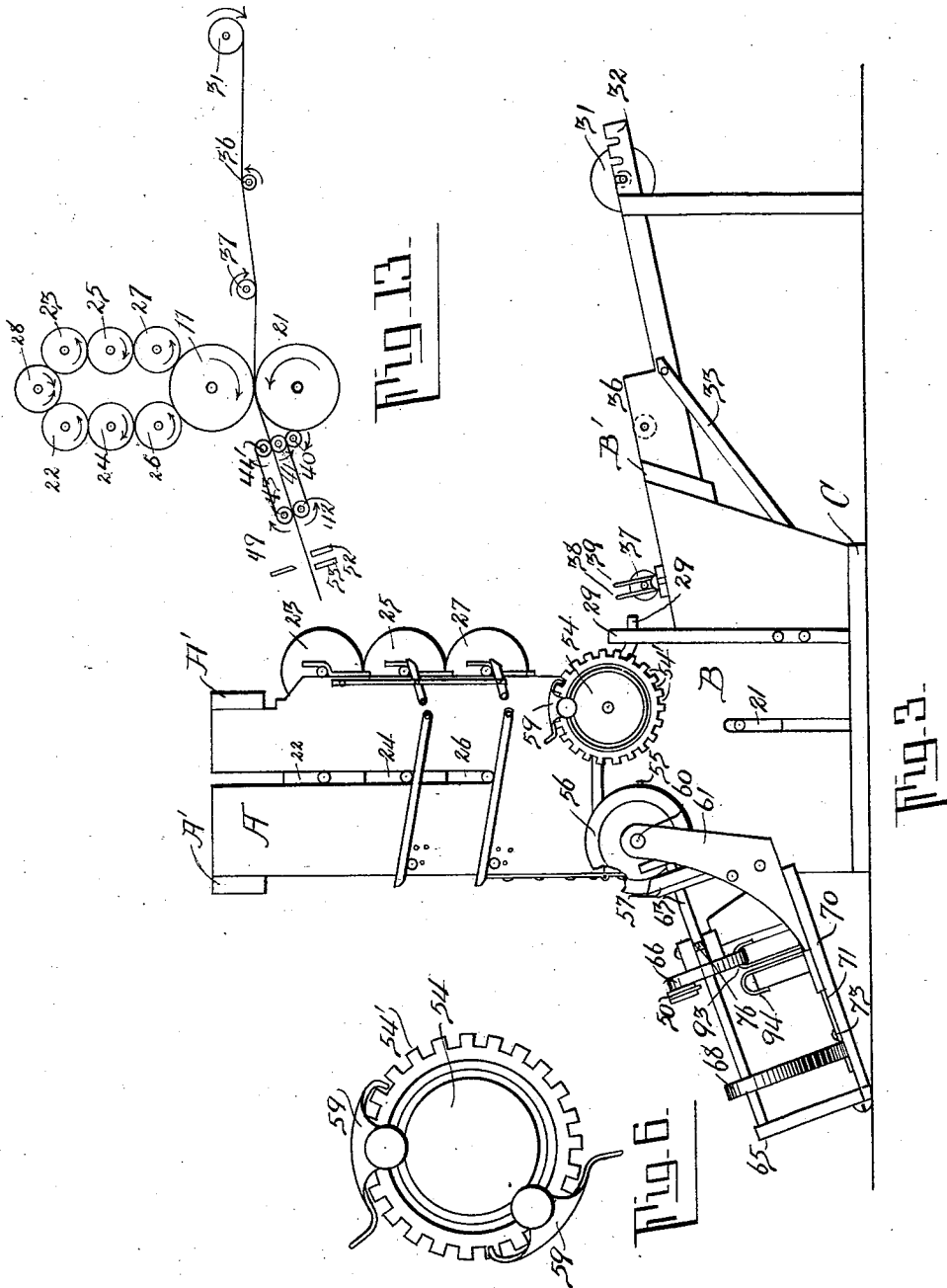
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4 Sheets—Sheet 3.

J. H. MASTER.
PRINTING PRESS.

No. 543,036.

Patented July 23, 1895.



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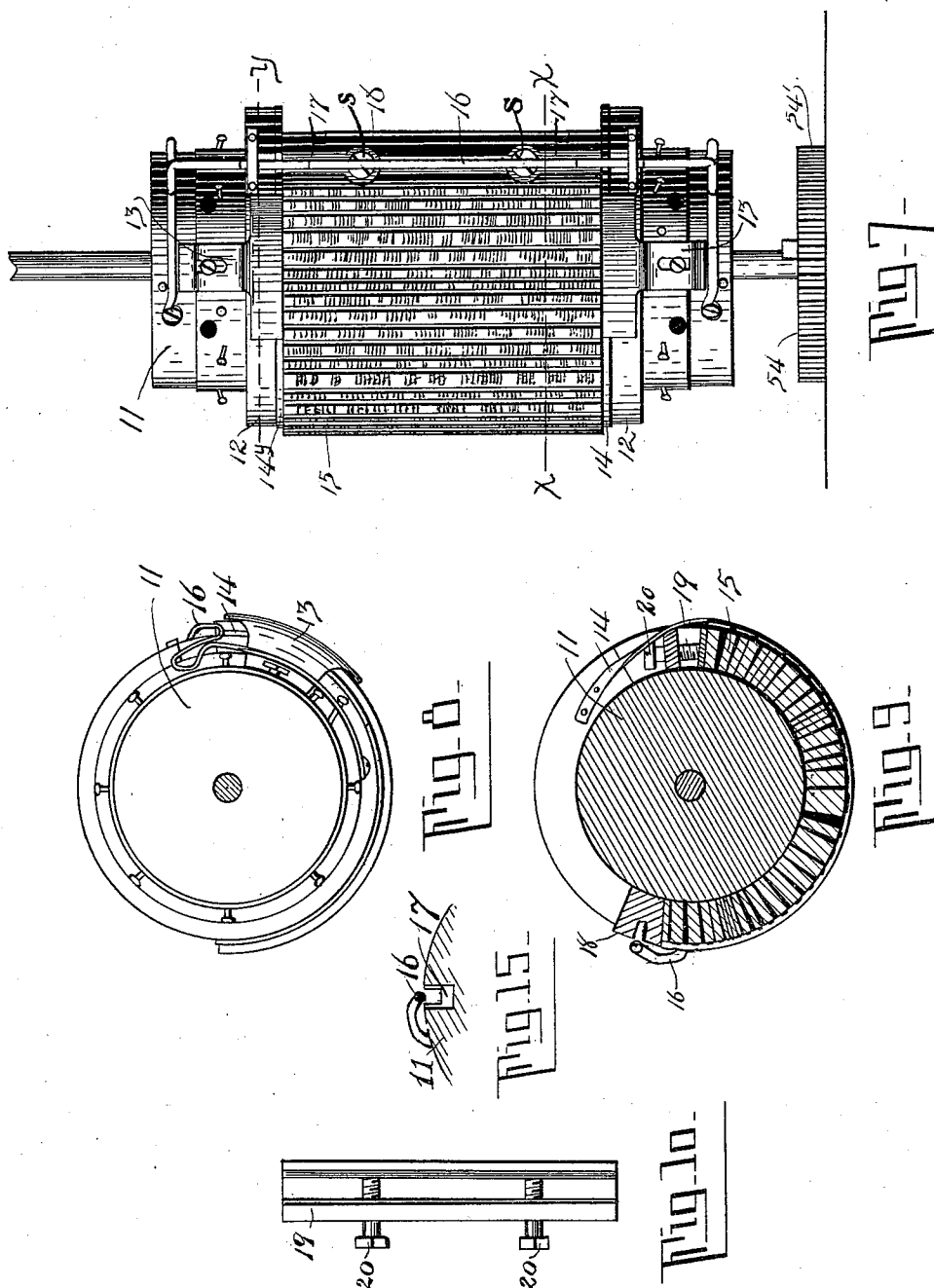
(No Model.)

4 Sheets—Sheet 4.

J. H. MASTER.
PRINTING PRESS.

No. 543,036.

Patented July 23, 1895.



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UNITED STATES PATENT OFFICE.

JOHN H. MASTER, OF MINERSVILLE, ASSIGNOR OF ONE-HALF TO JAMES W. SALLADE, OF POTTSVILLE, PENNSYLVANIA.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 543,036, dated July 23, 1895.

Application filed April 25, 1894. Serial No. 508,957. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. MASTER, a citizen of the United States, residing at Minersville, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Printing-Presses, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in printing-presses, and has for its object to provide a cheap and effective device for printing circulars from a continuous roll of paper, and I attain my object by the mechanical means hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of my machine. Fig. 2 is the same view, the hinged top thrown back, and type-cylinder removed. Fig. 3 is a side elevation. Fig. 4 is a detail of the cutter in front elevation. Fig. 5 is a detail showing a section of the cutter. Fig. 6 is a detail of the cogged wheel attached to the type-cylinder to actuate the cutter, arranged to cut two lengths of paper on each revolution of the type-cylinder. Fig. 7 is an enlarged longitudinal view of the type-cylinder. Fig. 8 is an end view of the same. Fig. 9 is a section view of the same. Fig. 10 is a detail showing a portion of the locking mechanism. Fig. 11 is a detail of the pressure-roller. Fig. 12 is a detail of the paper-feed rollers. Fig. 13 is a diagrammatic view. Fig. 14 is a detail of the latch to hold the hinged top in place. Fig. 15 is a partial cross-section of the type-roller, taken on line *y y* of Fig. 7.

Like characters of reference indicate the same parts throughout the several views.

The frame of my machine consists of the hinged top having sides *A A* and cross-braces *A' A'* and the base having sides *B B* and cross-braces *B' B'*, resting on longitudinal supports *C C*.

The type-cylinder 11 is journaled in the sides *B B* of the base and is provided with the annular movable flanges 12 12, (shown in Fig. 7,) between which the form is adjusted to the type-cylinder and held in place thereon by means of the clamps 13 13, attached to the

flanges 12 12 and claspings the metallic bands 14 14, which embrace the projecting ends of the leads 15. For the purpose of assisting in moving the paper forwardly from the roll 31 there is attached to the type-cylinder the feeding-spring 16, extending across the face of the type-cylinder, which is retired into the groove 17, when the form is in contact with the paper to make an impression, the groove 17 being prepared for the reception of the feeding-spring in brace 18, which with brace 19 is attached to the type-cylinder in any suitable manner, the braces forming end bearings for the form, the brace 18 being attached to the type-cylinder by the screws *s s*. (Shown in Fig. 7.) The form is further held in place by the adjustable screws 20 20 in brace 19, as shown in Fig. 10.

Beneath the type-cylinder at such a distance that its padded surface will come in suitable contact with the form when set in the type-cylinder is the pressure-roller 21, (see Fig. 13,) journaled in the side frame *B B*.

The rollers 22, 23, 24, 25, 26, and 27 are designed for receiving, distributing, and applying ink to the form on the type-cylinder. These rollers are of ordinary construction and are journaled in the hinged top in two vertical rows, one vertical row embracing rollers 22 24 26 and the other vertical row embracing rollers 23, 25, and 27. The peripheries of the rollers in each vertical row are in contact with the rollers 26 and 27 applying the ink to the form. The upper rollers 22 23 receive the ink from a supply-roller 28, or in any of the well-known means of ink-supply. The ink is then distributed by the intermediate rollers 24 25 to the inking-rollers 26 27. By my arrangement of the receiving, distributing, and inking rollers, I am enabled to supply a maximum of surface for ink-distribution in a minimum of space. The inking-rollers 26 27 are each supplied with outer rims 27', (shown in Fig. 2,) which come in contact with feeding-spring 16 to hold the spring away from the inking-rollers upon rotating the type-cylinder.

By hinging that part of the frame carrying the mechanism for receiving, distributing, and applying the ink in the manner herein de-

scribed and shown I am enabled to quickly uncover the form on the type-cylinder with a view to its inspection or removal. The hinged top is held in place by means of the latches 29 30 and catches 29' 30'.

The paper is supplied from a roll 31, which is held to turn in the rack 32, attached to the frame-base by the braces 33, 34, and 35. (See Figs. 1 and 3.) The antifriction-rollers 36 37 are supplied for the purpose of assisting the feed of the paper, and the standards 38 39 extending upwardly from the frame on either side of the bearings of the antifriction-roller 37 afford lateral guides for the paper on its way to the form.

The roller 40, the guide-rollers 41, 41', 42, and 43 (see Fig. 13) are for the purpose of actuating and directing the printed paper on its way to the cutter.

The rollers 40, 41, and 41' are supported by and turn in a slotted frame 90, which is revolvably attached to the main frame B by the bar 91. The spring 92 presses against the lower end of the slotted frame 90 and forces the roller 40 to keep in contact with the impression-cylinder 21.

Motion is communicated to roller 40 from pressure-roller 21 through the rims 44. (See Fig. 12.) Roller 40 in turn communicates motion to roller 41 through the rim 45, and the same motion is transmitted to roller 41' from roller 41 by means of rim 45', and like motion is transmitted to roller 42 (see Fig. 13) from roller 41 by means of the endless tapes 46 47, and to roller 43 from roller 42 through rim 48. The endless tapes 46 47 (see Fig. 2) also serve to supply rests for the printed paper on its way to the cutter.

The cutter (see Figs. 4 and 5) consists of the knife 49, mounted in the frame 50 and operating in the slot 51, having on each side thereof serrated edges 52 53 and provided with the knife-guides 93 94, (shown best in Fig. 3,) and provided with the flat spring 52' to disengage the paper from the cutter-edge 52. The knife is actuated to cut the paper at predetermined intervals by means of the wheel 54, (shown in detail in Fig. 6,) which is attached to the projecting end of shaft 58, Fig. 1, of the type-cylinder, the wheel 54 carrying pawl 59, which engages stud 55 upon shaft 60 (see Fig. 1) to actuate the bevel gear-wheel 56, also mounted on shaft 60. Shaft 60 oscillates in supports 61 62. (Shown in Figs. 1 and 3.) The bevel gear-wheel 56 meshes with the bevel gear-wheel 57 mounted on shaft 63, which is held to oscillate in bearings 64 65. Mounted on shaft 63 is the block 66, which is attached at one end to the end of the knife-frame 50 by a loose joint, the opposing end of the knife-frame being hinged at 67. The return-spring 68, attached at one end to the base-board and at the other to the shaft 63, and the return-spring 68' at the opposing end of the knife-frame are provided to return the

knife to its normal position after a cut has been made. The pawl 59 is adjustably attached to the wheel 54 in cogs 54' in such a position that when the type of any form on the type-cylinder has completed its impression (or as soon thereafter as the printed paper has progressed a desired distance beyond the knife to clear the same and leave a suitable bottom margin) the pawl will engage the stud 55 to actuate the knife to a downward movement through the described mechanism for the purpose of severing the paper at the desired point. By multiplying the number of pawls on wheel 54 and so adjusting each pawl upon wheel 54 that it will engage the stud 55 upon the completion of an impression, or at such time thereafter as will permit the printed matter to pass under the knife when the cut is to be made, the number of forms may be multiplied upon the type-cylinder, the impression of each form being cut from the continuous paper-roll at such intervals as may be desired.

The supports 61 62 are rigidly attached to the base-board 70, which in turn is attached to the base of the press-frame. Stop 78, Fig. 1, is supplied to prevent stud 55 from a too-great downward movement on its return to prevent engagement with pawl 59. The cutter is mounted on ways 71 72, Fig. 1, which are adjustably attached to base-board 70 by screws 73 74 for the purpose of placing the knife at a desired distance from the type-cylinder. The block 66 is held to be movable longitudinally of the square shaft 63 by the clamp 66', held in place by screws 76 77.

The operation of that part of my device not yet described is as follows: When the form is in place on the type-cylinder the free end of the paper is carried by hand and brought into engagement with the feeder-spring 16, which by its resiliency holds the paper against the surface of the presser-roller 21 and insures the paper being caught between the type-cylinder and the presser-roller. Motion is then communicated to the type-cylinder by means of hand-power applied to the crank K, or any other power similarly applied. The paper is then carried forward between the type-cylinder and pressure-roller, passing under the type to be printed, the pressure of the type-cylinder and pressure-roller being sufficient to carry the paper forward until it is taken up by guide-rollers 41 41'. These continue the movement of the paper toward the cutter over the endless tapes 46 47, which carry the paper to guide-rollers 42 43, which in turn forward it under the cutter. The means of operating the cutter from the type-cylinder has heretofore been described. Motion is communicated to the inking mechanism, the paper-reel, pressure-roller, endless tapes, guide-rollers, and cutting mechanism by actuating the type-cylinder when the form is in place, as hereinbefore described.

For the purpose of cushioning the pressure-roller I provide the springs 80 81 under its bearings.

Having fully described my invention, I claim—

1. In a rotary printing press a type cylinder having in combination annular movable flanges, between which the form is adjusted, metallic bands embracing the projecting ends of the leads, clamps attached to the annular movable flanges and end supports to the form, as and for the purposes specified.

2. In a rotary printing press a type cylinder in combination with a feeding spring, extending across the face of the type cylinder and attached to the type cylinder at its ends and a groove located longitudinally on the type cylinder into which the feeding spring may be retired, as and for the purposes set forth.

3. In a rotary printing press a type cylinder in combination with a feeding spring extending across the face of the type cylinder and attached to the type cylinder at its ends, a groove located longitudinally on the type cylinder into which the feeding spring may be retired and a presser roller substantially as described.

4. In a rotary printing press a type cylinder in combination with a feeding spring extending across the face of the type cylinder and attached to the type cylinder at its ends, a groove located longitudinally on the type cylinder into which the feeding spring may be

retired, a presser roller and inking rollers having rims to prevent the feeding spring from coming in contact with the inking rollers, substantially as described.

5. In a rotary printing press in combination the herein described type cylinder, a feeding spring extending across the face of the type cylinder attached at its ends to the type cylinder for the purpose of moving the paper forwardly from a roll, a groove located longitudinally of the type cylinder into which the type cylinder may be retired, a presser roller actuated by rotating the type cylinder and a cutter mediately actuated by a rotary movement of the type cylinder to sever the paper at predetermined intervals after each impression of the type, substantially as described.

6. In a rotary printing press in combination the herein described type cylinder, a feeding spring attached at its ends to the type cylinder for the purpose of moving the paper forwardly from a roll, a presser roller actuated by rotating the type cylinder a pawl adjustable upon a wheel attached to the projecting end of the shaft of the type cylinder and a cutting knife mediately actuated by the pawl substantially as described.

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

JOHN H. MASTER.

Witnesses:

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JOS. J. MORAN.