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 APPLICATION FILED APR. 10, 1909.

929,736.

Patented Aug. 3, 1909.  
 3 SHEETS—SHEET 1.

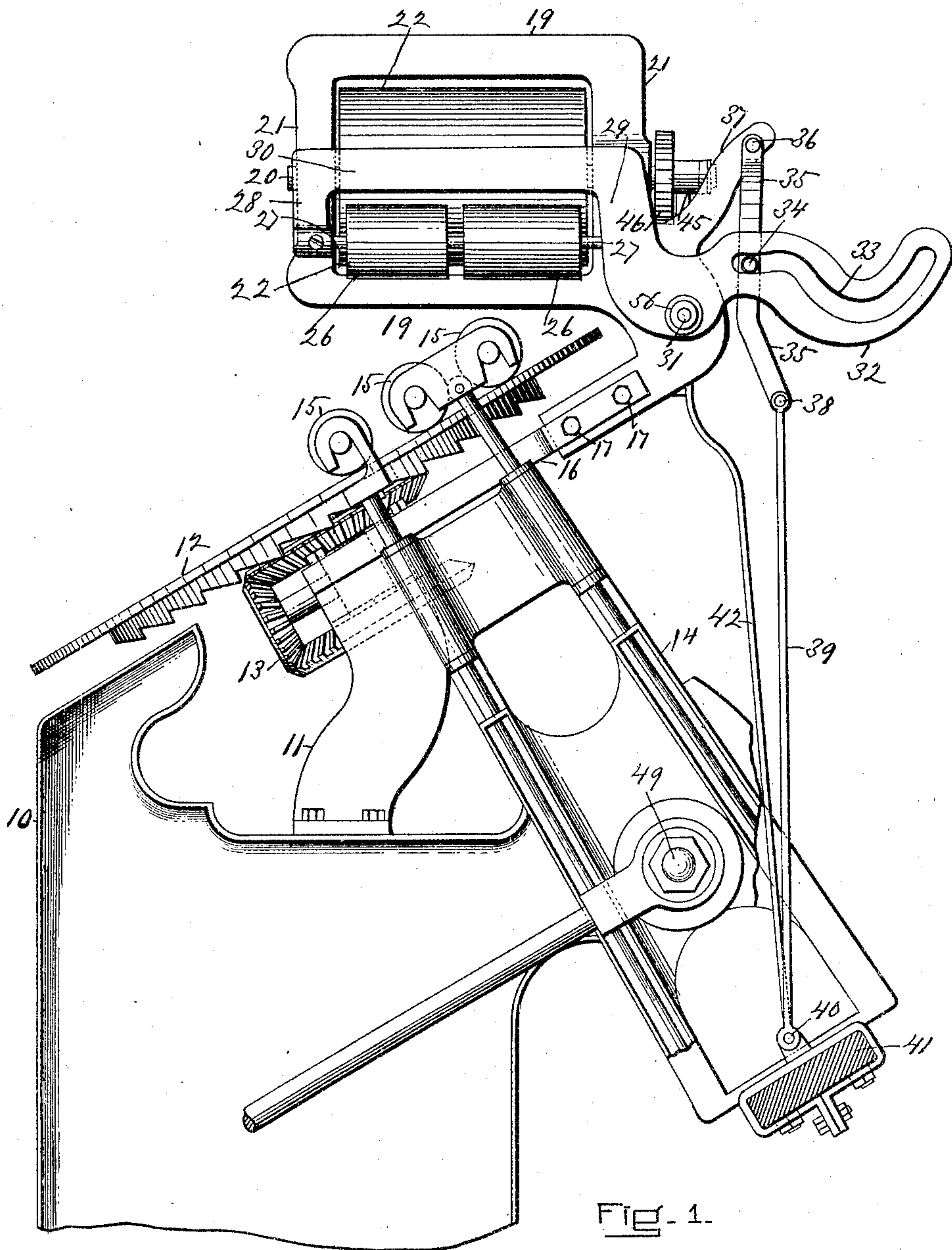


Fig. 1.

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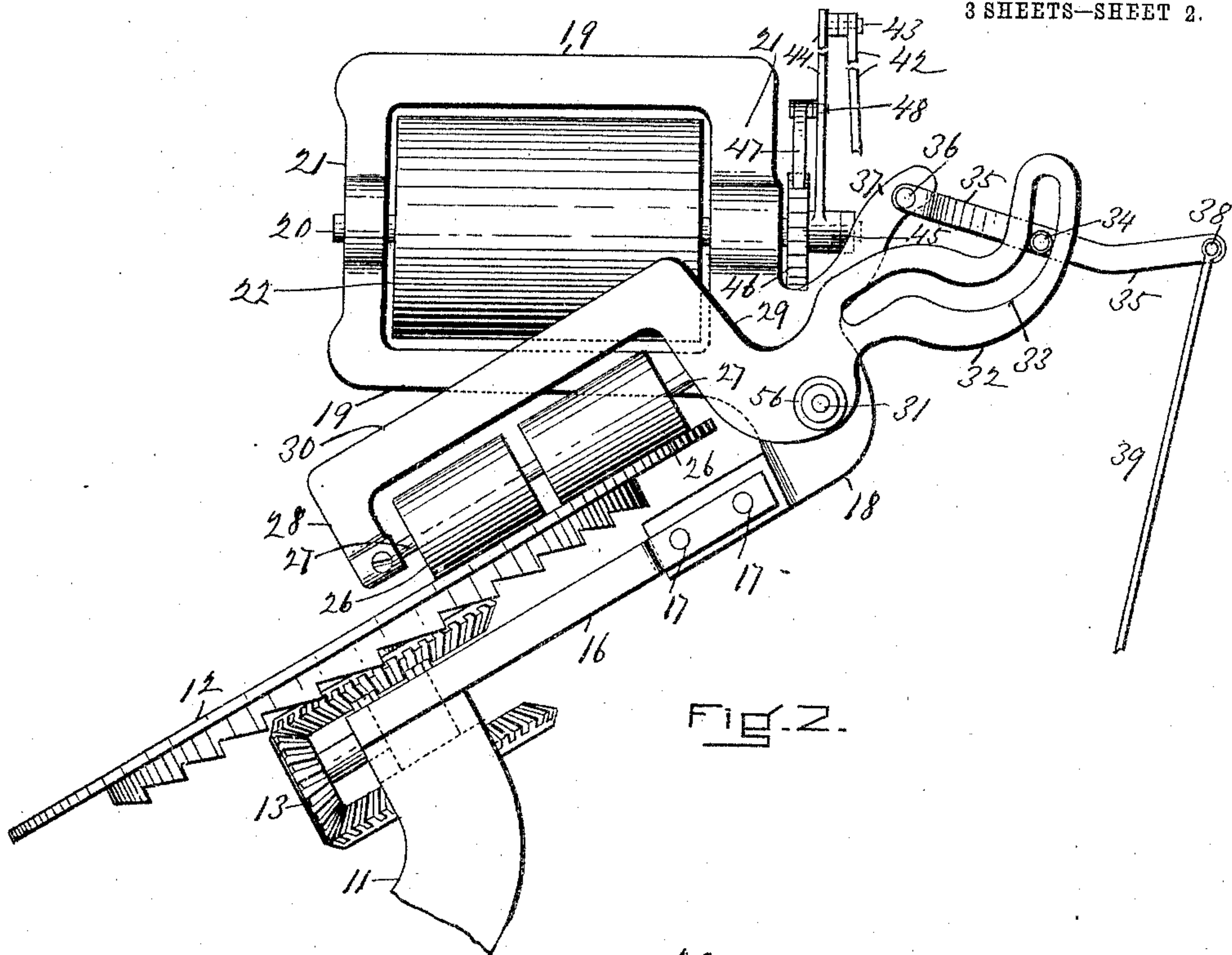


FIG. 2.

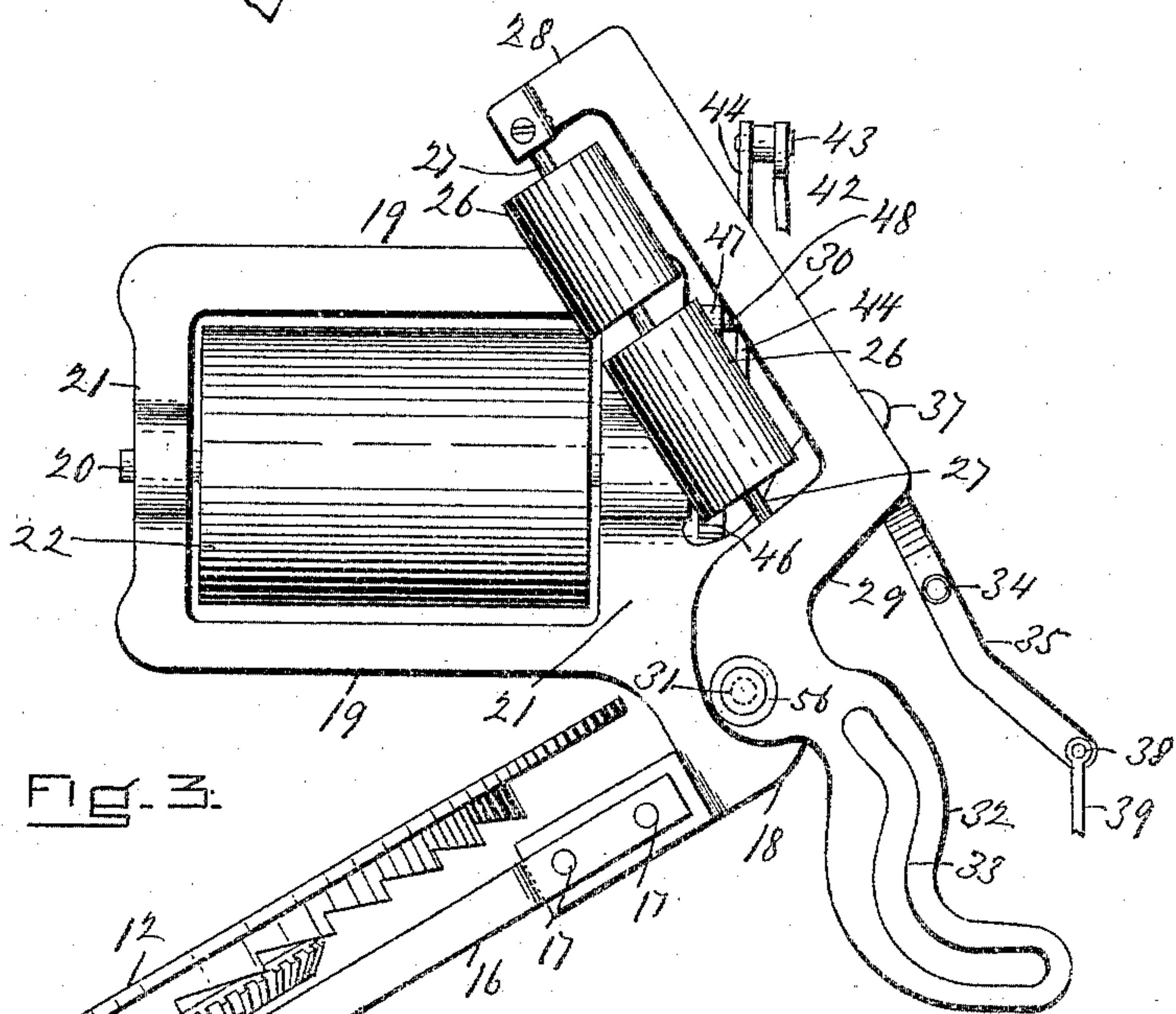


FIG. 3.

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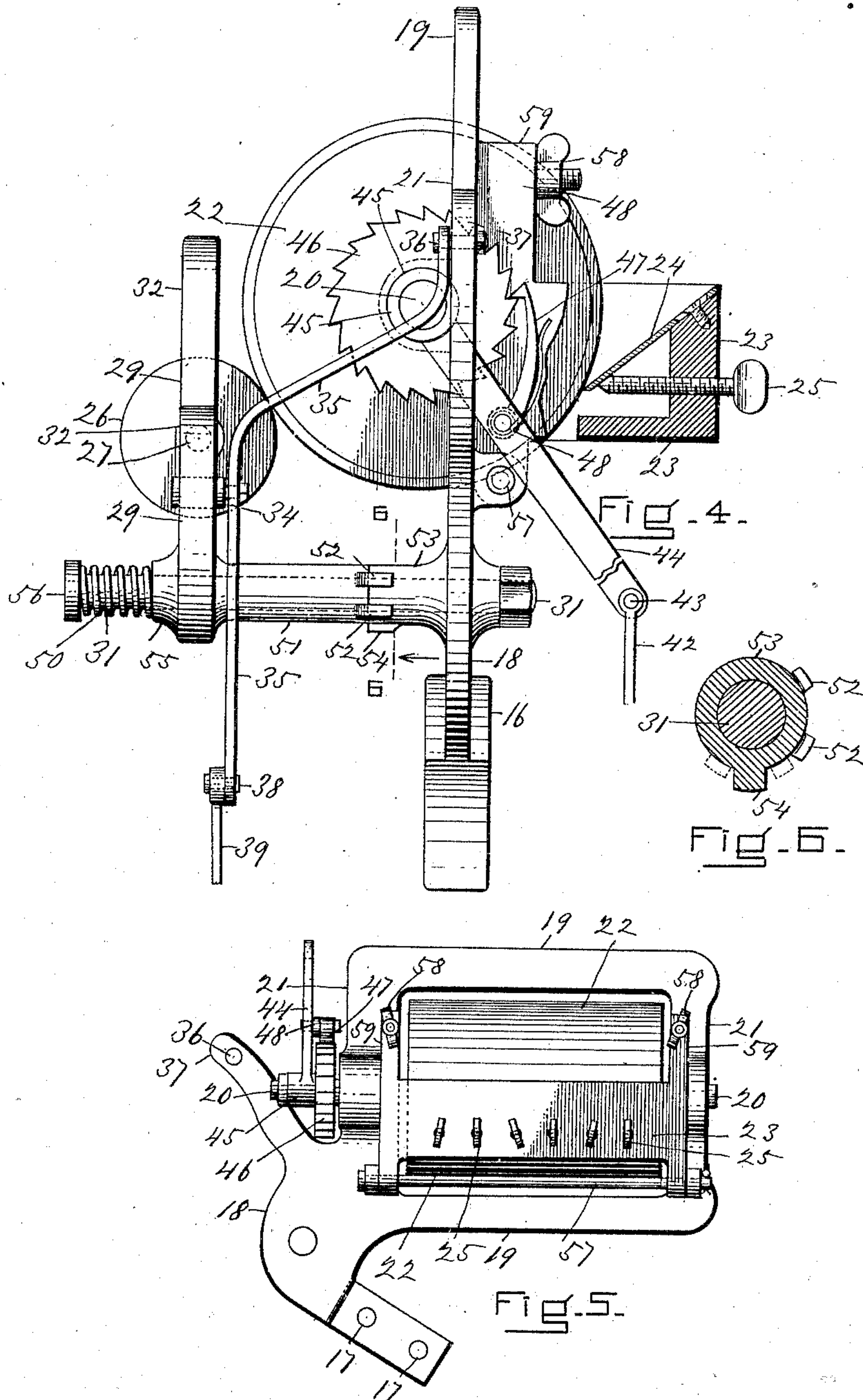
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# UNITED STATES PATENT OFFICE.

HENRY D. WASHBURN, OF SALEM, MASSACHUSETTS.

## INK-SUPPLYING APPARATUS FOR PRINTING-PRESSES.

No. 929,736.

Specification of Letters Patent.

Patented Aug. 3, 1909.

Application filed April 10, 1909. Serial No. 489,115.

*To all whom it may concern:*

Be it known that I, HENRY D. WASHBURN, a subject of the King of Great Britain, residing at Salem, in the county of Essex and State of Massachusetts, have invented new and useful Improvements in Ink-Supplying Apparatus for Printing-Presses, of which the following is a specification.

This invention relates to ink-supplying apparatus for platen printing-presses, where ink is applied to the type by means of composition form-rollers; and the invention relates to a new and improved construction and arrangement of parts whereby the ink is conveyed from the ink-reservoir to the ink-disk of the press in an exceedingly even and thoroughly distributed condition.

The nature of the invention is fully described in detail below, and illustrated in the accompanying drawings, in which:—

Figure 1 is a view in side elevation showing my improved ink-supplying apparatus applied to a printing-press of the type mentioned, a sufficient portion of the press being shown to illustrate the operation of the invention. In this figure the attachment is shown with the distributing-rollers having just received a supply of ink from the cylinder. Fig. 2 is an enlarged view in side elevation of the apparatus with the distributing-rollers down and depositing a film of ink on the ink-disk. Fig. 3 is a similar view with the distributing-rollers fully raised and out of contact with the ink-cylinder. Fig. 4 is an enlarged view in end elevation showing a part of the ink-reservoir in vertical section, the parts being in the position indicated in Fig. 1. Fig. 5 is an elevation of the rear side of the ink-reservoir and adjacent parts. Fig. 6 is a section taken on line 6—6, Fig. 4.

Similar numerals of reference indicate corresponding parts.

Reference-numeral 10 represents a portion of the main frame of a printing-press of the character referred to, and 11 represents a bracket or frame which supports the circular ink-disk 12 in the ordinary manner, the mechanism 13 for rotating the ink-disk, and the mechanism 14 with which the form-rollers 15 are connected. The frame 11 has rigidly secured to it the bracket 16 to which at 17 is bolted a downward extension 18 rigid with and making a part of a horizontal frame 19 which supports the horizontal shaft 20 which has its bearings in the op-

posite end-portions 21 of said frame, said shaft supporting the ink-cylinder 22, said shaft 20 and ink-cylinder 22 being at right angles to the form-rollers 15, and said cylinder rotating in a plane which is at right angles with the plane of rotation of said form-rollers. This ink-cylinder extends down into the ink-reservoir 23 in the ordinary manner in presses of this character, said reservoir being parallel with the ink-cylinder, constructed as usual and provided with the ordinary flexible blade 24 and adjusting thumb-screws 25—the reservoir being sustained by the frame 19, 21 as illustrated in Figs. 4 and 5.

26 represents the composition distributing-rollers supported by a shaft 27 whose opposite ends are sustained in the portions 28 and 29 of a vertically swinging frame 30, said frame being pivotally supported at 31 by the extension 18 from the reservoir-frame 19, and the frame 28, 29, 30 being provided with an integral cam 32 whose slot 33 is engaged by a cam-roll 34 extending horizontally from a cam-lever 35 whose upper end is pivotally connected at 36 to an arm 37 extending diagonally upward from and rigid with the extension 18 of the frame 19. The cam-lever 35 is pivotally connected at its lower end at 38 with the rod or link 39 whose lower end is connected at 40 to the form-roller frame 41 of the press—the operation of which, as is well known, is to swing the form-rollers 15 after they have been receiving ink from the ink-disk 12, to the form of type. Another rod 42 is pivotally connected at 40 to the form-roller frame 41 and its upper end is pivotally connected at 43 to an arm or lever 44 rigid with a hub 45 which slips on the shaft 20. Rigid on this shaft 20 between the hub and the frame 19, 21, is a ratchet-wheel 46 on which rests a pawl 47 pivotally secured at 48 to the ratchet-arm 44.

As is well known in printing-presses of this character, the form-roller frame 41 reciprocates on an arc of a circle whose center is at 49, Fig. 1, such movement of the form-roller frame being for the purpose of carrying the form-rollers 15 from the ink-disk 12 to the form for the purpose of transferring the ink from the ink-disk to the type. My attachment is operated by means of the connection of the rods 39 and 42 at 40 to the form-roller frame 41. When the parts are in the position illustrated in Figs. 1 and 4, the ink-cylinder 22 and the distributing-roll-



ers 26 and their frames and shaft are parallel and horizontal and the distributing-rollers have just taken ink from the cylinder, and the form-rollers are taking ink from the ink-disk 12. As soon as the form-roller frame begins to swing upward the form-rollers are carried down (in the ordinary manner) along the ink-disk toward the form, and as they are moving over the lower portion of the ink-disk the upper end of the rod 39 which has been moved upward by the form-roller frame swings outward at 38, carrying with it the lower portion of the cam-lever 35, thus causing the cam-roll 34 to travel outward in the cam-slot 33. As soon as this cam-roll reaches the point where the horizontal portion of the slot leads into the curved portion thereof, the frame 28, 29, 30 is swung downward from the pivotal point 31 by reason of the dip of the slot 33 carrying with it the distributing-rollers 26 until they reach the surface of the ink-disk 12, as shown in Fig. 2—the said distributing-rollers therefore leaving a horizontal position in which their axes are at right angles to the axes of the form-rollers 15 and reaching the ink-disk just after the form-rollers have moved from under them, and lying on said ink-disk in a radial line, and still at right angles with the form-rollers. As soon as the distributing-rollers reach the ink-disk they are rotated by said ink-disk by means of the ordinary mechanism 13, said disk moving under them, the relative movement of the distributing-rollers being in a circle around the center of the disk, and practically covering in their travel the entire disk between its center and circumference, and always being radial therewith. At the same time, that is, while the form-roller frame 41 is swinging up, the rod 42 whose upper end is pivotally connected at 43 to the arm 44 swings said arm upward, carrying with it the ratchet-pawl 47 which slips over the ratchet-wheel 46 from the position indicated in Figs. 1 and 4 into that indicated in Fig. 2. When the form-roller frame 41 begins to return toward the position indicated in Fig. 1, the rod 39 is pulled down acting on the cam-lever 35 which by means of the cam-roll 34 operates on the cam 32 and swings up the frame 30, 28, 29, and hence the distributing-rollers 26; and the rod 42 swings down the arm 44, thus causing the pawl 47 to engage the ratchet-wheel 46 and rotate the ink-cylinder 22 rearward, causing it to apply ink to the distributing-rollers 26 as soon as they reach its surface. By the time the form-roller frame 41 reaches the lowest point of its throw, as illustrated in Fig. 1, the distributing-rollers have been provided with ink and are ready to be carried down again to the ink-disk 12. While the form-roller frame was descending, the form-rollers 15 were brought up in the usual manner by well

known mechanism into the position indicated in Fig. 1. Thus it will be seen that the distributing-rollers cover practically every part of the ink-disk, rolling in the same direction, and distributing the ink evenly over the entire disk, instead of over a portion only thereof as is the case when rollers or cylinders of any kind are reciprocated over a portion only of an ink-plate. Moreover, the distributing is rendered more even from the fact that the distributing-rollers themselves are turned or rolled by the disk.

Referring particularly to Figs. 4 and 6, it will be noticed that the shaft or pivot 31 extends forward from the portion 29 of the distributing-roller frame, and that a spring 50 surrounds the shaft between its headed outer end 56 and said portion 29. A sleeve or collar 51 integral with said portion 29 extends rearward therefrom around the shaft and is provided with fingers 52 which extend for a short distance over a sleeve or collar 53 integral with the portion 18. This sleeve 53 is provided with a peripheral lug 54. When the device is being operated the spring 50 holds the distributing-roller frame by means of the cam 32, cam-roll 34, cam-lever 35, and arm 37 into connection with the cylinder-frame. By pulling outward the sleeve 51 the cam-roll is withdrawn from the cam-slot, and the distributing-roller frame may be swung up into the position indicated in Fig. 3, and locked in such position by moving the sleeve 51 back with its fingers 52 on opposite sides of the lug 54. To move the parts back into operative position, the sleeve 51 and the distributing-roller frame are again pulled forward and swung down until the cam-roll is in engagement with the cam-slot, and the parts are in the position indicated in Figs. 4 and 6, being held in such position by the spring 50 which is partially compressed between the head 56 and the projecting portion 55 integral with the portion 29.

The ink-reservoir (see Fig. 5) is hinged at its lower end by means of the pin 57 to the cylinder-frame, and may be swung down for cleaning purposes by turning the thumb-screws 58 which lock the upwardly extending arms 59 to the cylinder-frame.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is:—

1. In an ink-supplying apparatus for printing-presses of the character described, an ink-disk, form-rollers for receiving ink from the ink-disk, a stationary ink-cylinder frame, a distributing-roller frame pivotally supported by the cylinder-frame and adapted to swing in a vertical plane, a cam extending from the distributing-roller frame, a cam-lever pivotally connected with the cylinder-frame and provided with a cam-roll which is normally in engagement with



said cam, and mechanism intermediate of the cam-lever and the operative portion of the printing-press whereby the distributing-roller frame may be swung from the ink-cylinder to the ink-disk in a plane which is at substantially right angles with the form-rollers, for the purpose set forth.

2. In an ink-supplying apparatus for printing-presses of the character described, an ink-disk, form-rollers for receiving ink from the ink-disk, a stationary ink-cylinder frame, a distributing-roller frame pivotally supported by the cylinder-frame and adapted to swing in a vertical plane, a cam extending from the distributing-roller frame, a cam-lever pivotally connected with the cylinder-frame and provided with a cam-roll which is normally in engagement with said cam, mechanism intermediate of the cam-lever and the operative portion of the printing-press whereby the distributing-roller frame may be swung from the ink-cylinder to the ink-disk in a plane which is at substantially right angles with the form-

rollers, and spring-mechanism for holding said cam normally in engagement with the cam-lever and allowing it to be withdrawn from such engagement, for the purpose set forth.

3. In an ink-supplying apparatus for printing-presses of the character described, an ink-cylinder, a frame supporting said cylinder, an ink-reservoir pivotally connected at its lower edge to the rear portion of the ink-cylinder frame, and means connected with the upper portion of the reservoir whereby it is locked normally in a raised and vertical position and swung down from such position for cleaning purposes.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY D. WASHBURN.

Witnesses:

HENRY W. WILLIAMS,  
M. A. ATWOOD.