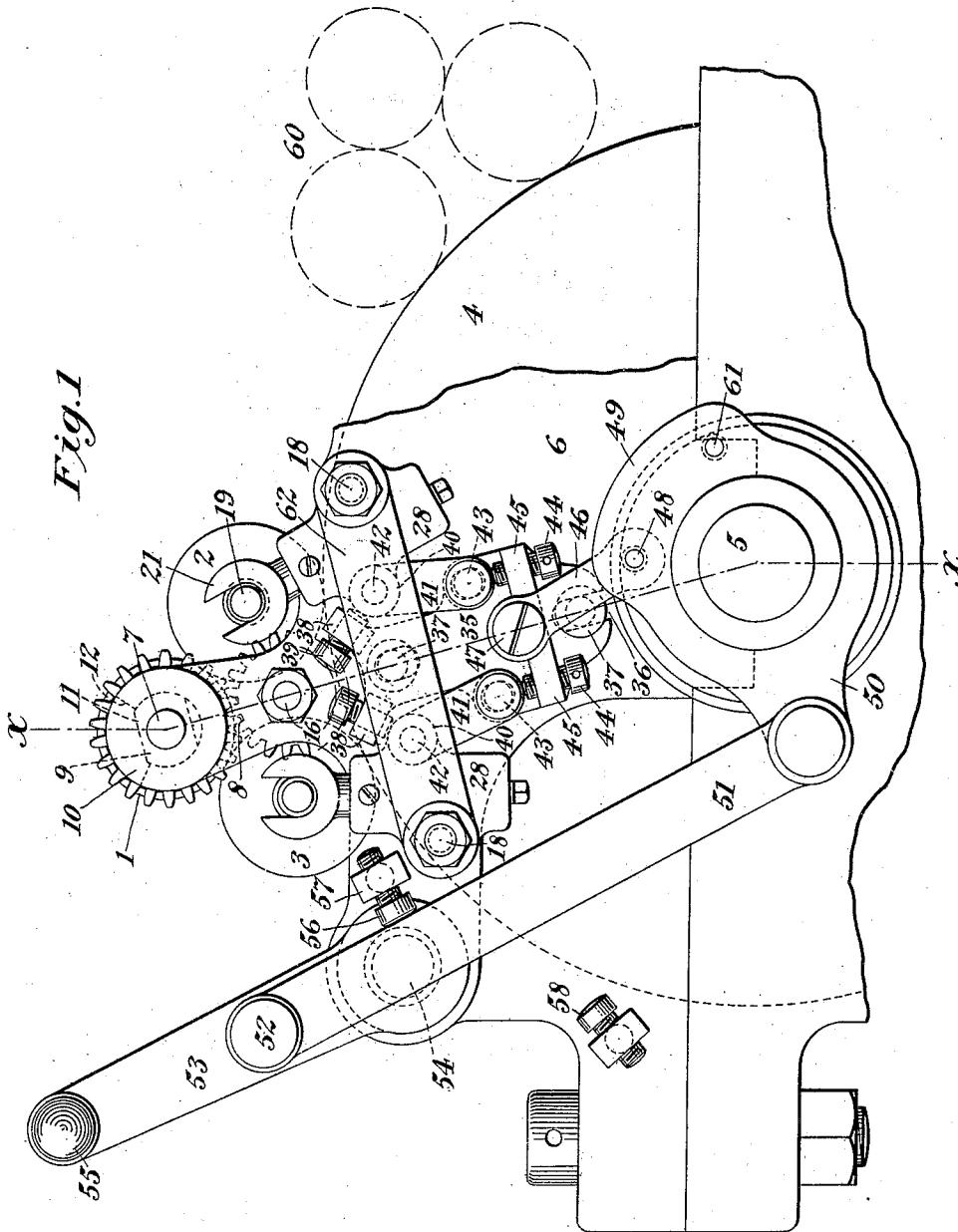


A. J. FORD.
 INKING MECHANISM FOR PRINTING PRESSES.
 APPLICATION FILED SEPT. 29, 1908.

917,037.

Patented Apr. 6, 1909.
 3 SHEETS—SHEET 1.



Witnesses:

Edward Town
Harry Seibert

Inventor:

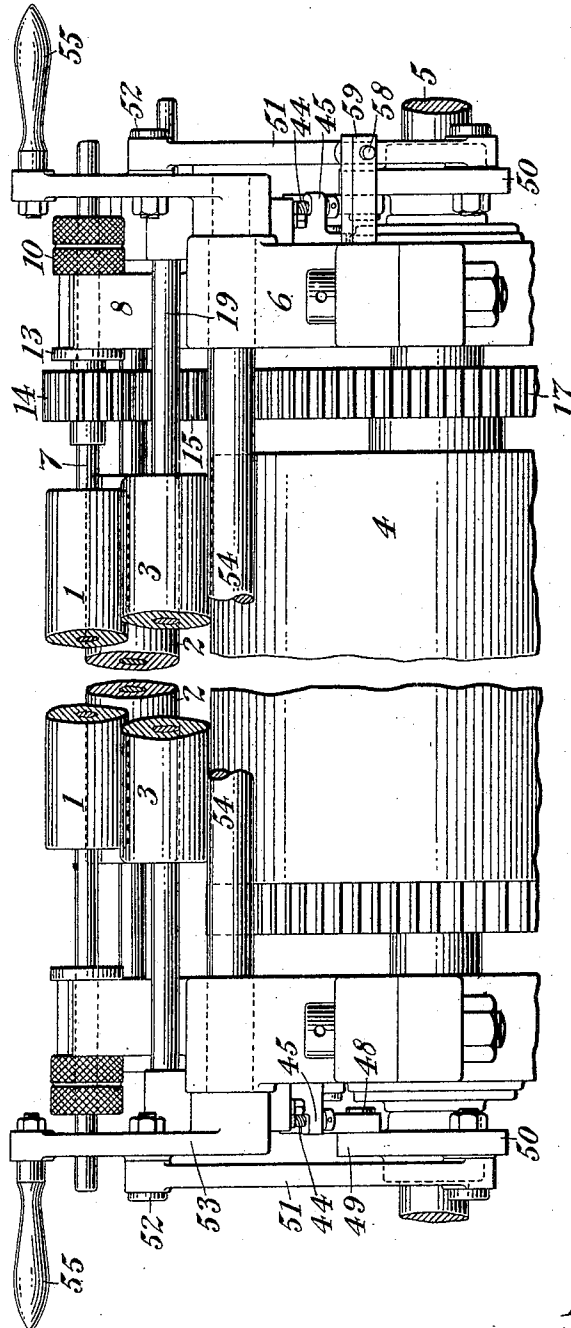
Albert J. Ford
 by *Henry D. Williams*
 Attorney.

A. J. FORD.
 INKING MECHANISM FOR PRINTING PRESSES.
 APPLICATION FILED SEPT. 29, 1908.

917,037.

Patented Apr. 6, 1909.
 3 SHEETS—SHEET 2.

Fig. 2



Witnesses:

Charles Lewis
Harry Lewis

Inventor:

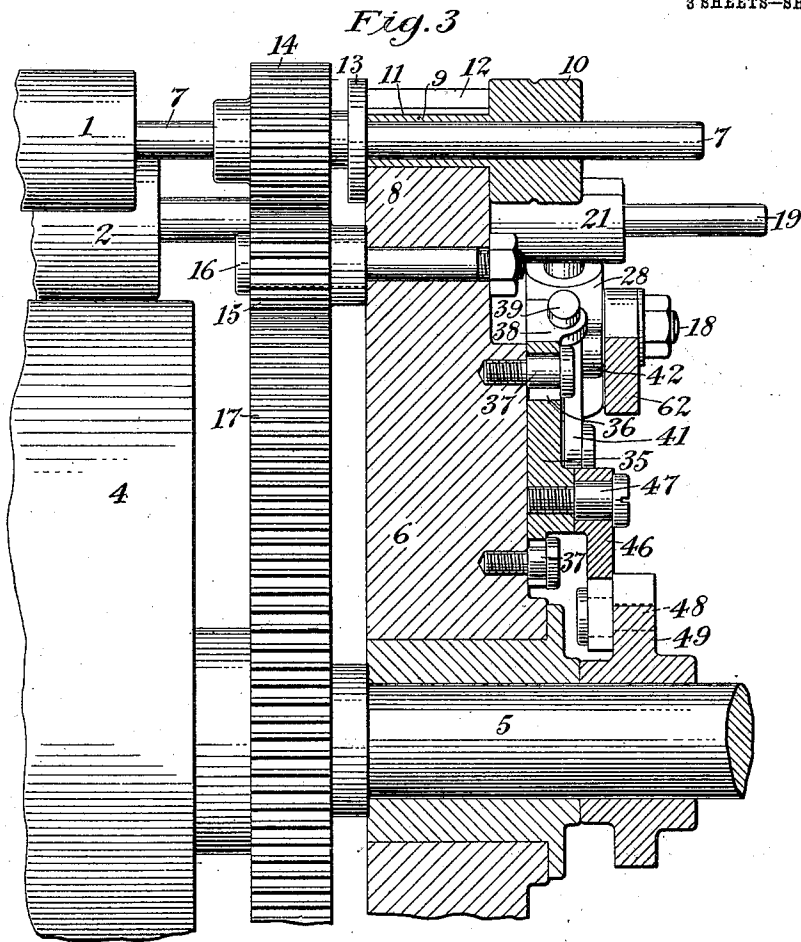
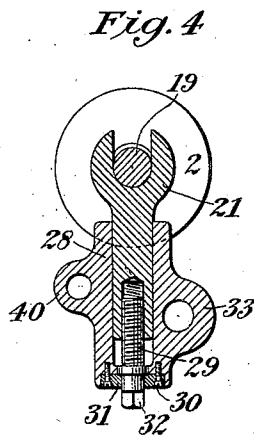
Albert J. Ford
 by *Henry K. Williams*
 Attorney.

A. J. FORD.
 INKING MECHANISM FOR PRINTING PRESSES.
 APPLICATION FILED SEPT. 29, 1908.

917,037.

Patented Apr. 6, 1909.

3 SHEETS—SHEET 3.



Witnesses:

Charles F. Ford
Harry Lewis

Inventor:

Albert J. Ford
 by *Henry B. Williams*
 Attorney.

UNITED STATES PATENT OFFICE.

ALBERT J. FORD, OF NEW YORK, N. Y., ASSIGNOR TO FUCHS AND LANG MANUFACTURING COMPANY, A CORPORATION OF NEW YORK.

INKING MECHANISM FOR PRINTING-PRESSES.

No. 917,037.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed September 29, 1908. Serial No. 455,321.

To all whom it may concern:

Be it known that I, ALBERT J. FORD, a citizen of the United States, residing at the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Inking Mechanism for Printing-Presses, of which the following is a specification, reference being had therein to the accompanying drawings, forming part thereof.

My invention relates to inking mechanism for printing presses, particularly to the means for supporting and adjusting the ink rollers and for throwing them into and out of operation.

The general object of the invention is to produce an inking mechanism of simple and reliable construction, and a more particular object is to produce such a mechanism having improved means for supporting and adjusting the inking rollers relatively to each other and to the form cylinder or plate of the printing press.

A further object of the invention is to provide such an inking mechanism with improved means for throwing the ink rollers into and out of operation and for holding them firmly in operative position.

Other objects of the invention will appear from the description of the illustrated embodiment thereof.

To the above ends the invention consists in the improved inking mechanism herein-after described, as defined in the succeeding claims.

I will now describe the embodiment of my invention illustrated in the accompanying drawings, and will thereafter point out my invention in claims.

Figure 1 is a side elevation of a portion of a printing press provided with an inking mechanism embodying the present invention. Fig. 2 is a bottom view of the subject matter of Fig. 1. Fig. 3 is a sectional view, seen from below, on the line X—X in Fig. 1, of the end of the inking mechanism shown particularly in Fig. 1, with adjacent portions of the printing press. Fig. 4 is a detail sectional view of a portion of the mechanism for adjustably supporting one of the ink rollers.

The drawings illustrate only a single set or group of ink rollers, but it will be understood that two or more such sets of similar construction may be, and usually are, used on a printing press. The set of ink rollers com-

prises three rollers, consisting of an intermediate distributing roller 1 and two similar rollers 2 and 3, which engage, when in operation, both the intermediate roller and the form cylinder of the printing press.

An ink fountain and suitable feeding rollers are used in connection with the set of rollers above described, to supply the ink to the intermediate roller 1, from which it is transferred to the form cylinder by the rollers 2 and 3. This arrangement is not illustrated, however, as it is familiar to those skilled in the art.

The form cylinder 4 is illustrated in part. This cylinder is mounted on a shaft 5 journaled in the frame 6 of the printing press.

The intermediate roller 1 is journaled in fixed position. It is mounted on a shaft 7 having a bearing at each side of the printing press, in a sleeve 9 mounted in a projection 8 on the frame 6. To permit the convenient removal and replacement of the roller 1 from the frame, each projection 8 is bored to receive the sleeve 9, and is also provided with a slot 12 opening into the bore. The slot is of less diameter than the bore, so that the sleeve, when in the position shown in Fig. 1, cannot pass through the slot and is held securely in place. The sleeve has flattened portions 11, however, and a knurled head 10, by which it may be turned, and when so turned through an angle of about 90 degrees, it may be removed through the slot, since its least diameter is less than that of the slot.

To insure the rotation of the ink rollers in unison with the form cylinder, the intermediate roller 1 is connected with the cylinder by gearing. A gear 14 fixed to the shaft 7 meshes with an intermediate pinion 15 which is journaled on a stud 16 on the frame 6. The pinion 15 meshes with a large gear 17 fixed to the shaft 5 on which the form cylinder is mounted. As the form cylinder rotates in the operation of the printing press, the gearing rotates the intermediate roller 1 at the same surface speed as the form cylinder rotates, and the intermediate roller rotates the rollers 2 and 3 frictionally at the same speed.

In order to permit the inking mechanism to be thrown into and out of operation by the operator of the printing press, the rollers 2 and 3 are mounted in movable journal members, which are pivoted upon studs 18 at each side of the printing press. Each

roller is mounted on a shaft 19, which turns in slotted bearings 21, as shown particularly in fig. 4. The stems 22 of the bearings 21 are mounted in rocker-sleeves 28, which have ears 33 by which they are pivoted upon the studs 18. When the rocker-sleeves are moved upon the studs by the mechanism provided for that purpose, the rollers are thrown into or out of contact with the form cylinder. Since the centers of the studs 18, the shafts 19 of the rollers 2 and 3, and the shaft 7 of the roller 1, are nearly in line in all positions of the rollers 2 and 3, the latter are not moved substantially from contact with the roller 1. The studs 18 are connected by a plate 62 to hold them rigidly in proper relative position.

To permit adjustment of the rollers 2 and 3 toward and from the roller 1, the stems 22 are arranged to be adjusted longitudinally in the sleeves 28. As shown in fig. 4, an adjusting screw 29 is threaded into the end of the stem and has a collar 30 engaging a ring 31 fixed to the end of the sleeve. By turning the squared head 32 of the screw to the left, the stem 22 may be forced outward from the sleeve so as to press the roller more firmly against the roller 1. The same adjustment is provided for both ends of both the rollers 2 and 3, and it permits regulation of the pressure of contact between the rollers 1, 2 and 3. The sleeves 28 are rocked on their studs 18 to throw the rollers 2 and 3 into and out of contact with the form cylinder by connections with sliding plates 35. Each plate 35 has slots 36 engaged by studs 37 fixed to the frame 6, and this construction secures the plate to the frame while permitting it a short longitudinal sliding movement. The plate is provided with two lugs 38 carrying adjustable screws 39 which engage lugs 40 on the rocker-sleeves 28. When the sliding plates are retracted or moved toward the shaft 5, the screws 39 act to rock the sleeves 28 and thus swing the rollers 2 and 3 toward and into contact with the form cylinder so as to throw the inking mechanism into operation.

The pressure of the contact between the ink rollers and the form cylinder may be adjusted by turning the screws 39 in the lugs 38 thus varying the final position assumed by the rocking sleeves 28.

To swing the ink rollers out of operative position, the rocking sleeves 28 are connected with the sliding plates 35 by thrust links 41. These links have studs 42 engaging holes in the ears 40, and the rear ends of the links are guided by pins 43 engaging slotted holes in the links and fixed in the sliding plates 35. The rear ends of the links are engaged by adjustable screws 44 threaded into lugs 45 on the plates 35. When the plates 35 are moved away from the shaft 5, the screws 44, by their thrust against the links 41, act to swing the rocking sleeves 28

in the direction to throw the ink rollers away from the form cylinder. The arrangement of the rear ends of the links permits adjustment to take up lost motion after the adjusting screws 39 have been arranged to secure the proper engagement between the ink rollers and the form cylinder. Thus the complete adjustment of the ink rollers depends upon the joint action of the screws 39 and the screws 44.

The sliding plates 35 are moved by manually-operated mechanism. Each plate 35 is actuated by a link 46 pivoted at one end on a stud 47 on the plate and, at the other end, on a stud 48 mounted on a rocker 49 journaled on the shaft 5. The rockers 49 have arms 50 which are actuated by means of links 51 pivoted on studs 52 fixed to two arms 53. These arms are fixed on the ends of a rocker shaft 54, which is journaled on the frame of the printing press. Each arm 53 is provided with a handle 55 for the convenience of the operator.

When the inking mechanism is in operation, the parts occupy the position shown in the drawings. The plates 35 are retracted, being held in this position by the links 46, which have been thrown off center by the rotation of the rockers 49 to the right. The rockers are maintained in position by the pull of the links 51, which, in turn, are retained by the arms 53. In this position, the links 51 and the arms 53 have the position of a locked toggle, being nearly in line, and they are maintained in this position by the opposed action of the pull on the links and of a stop screw 56 which is threaded into a lug 57 on the frame 6 and engages one of the links 51 when the links are in their uppermost position.

To throw the inking mechanism out of operation, the operator depresses either of the handles 55, which may be done conveniently from either side of the machine. The arms 53 being thus depressed, the toggles above described are "broken", the links 51 are moved to the right and the rockers 49 are rotated to the left through a small angle. This movement is limited by a stop screw 58, which is mounted on the frame 6 in position to be engaged by one of the links 51, and this screw is adjusted to permit the rockers 49 to be moved as above described until the ink rollers 2 and 3 have been moved out of engagement with the form cylinder without moving far enough to disengage the intermediate roller.

When the ink rollers are out of contact with the form cylinder, they still engage each other and are still rotated by the gearing hereinbefore described, and this is a feature of advantage, for it permits running the rollers together for a time in order to distribute the ink evenly upon them before they are thrown into operation.

Two sets of ink rollers constructed in accordance with the present invention may be used to apply the ink to the form cylinder, another set of rollers being arranged in the position indicated in Fig. 1 by the dotted lines 60, to apply the ink from the same fountain, and these rollers may be connected with the rockers 49 so as to be thrown into and out of operation in unison with the rollers 1 and 2. For this purpose studs 61 are mounted on the rockers for the connection of links similar to the links 46.

It is obvious that various modifications may be made in the embodiment of my invention hereinbefore described and illustrated in the accompanying drawings within the nature of the invention and the scope of the following claims.

I claim:

1. Inking mechanism for printing presses comprising, in combination with a printing element, an ink roller journaled in fixed relation and out of engagement with the printing element, a movable ink roller mounted in engagement with said fixed ink roller, and means for supporting and moving the movable ink roller comprising rocking members on which the movable roller is journaled, said rocking members being pivoted substan-

tially in line with the axes of the fixed and movable rollers and having provision for adjusting the movable roller toward the fixed roller, and adjustable manually-operable means for rocking said rocking journal members to move the movable ink roller into or out of engagement with the printing element without interrupting its engagement with the fixed roller.

2. Inking mechanism for printing presses comprising, in combination with a printing element, an ink roller journaled in fixed relation out of engagement with the printing element, a movably mounted ink roller engaging said fixed ink roller, journals for the movable roller mounted on stems, pivotally mounted rocking sleeves embracing the stems, means for adjusting the stems longitudinally in the sleeves, and manually-operable mechanism for moving the sleeves upon their pivots comprising sliding plates having adjustable connections with the rocking sleeves.

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

ALBERT J. FORD.

Witnesses:

HENRY D. WILLIAMS,
FARNUM F. DORSEY.