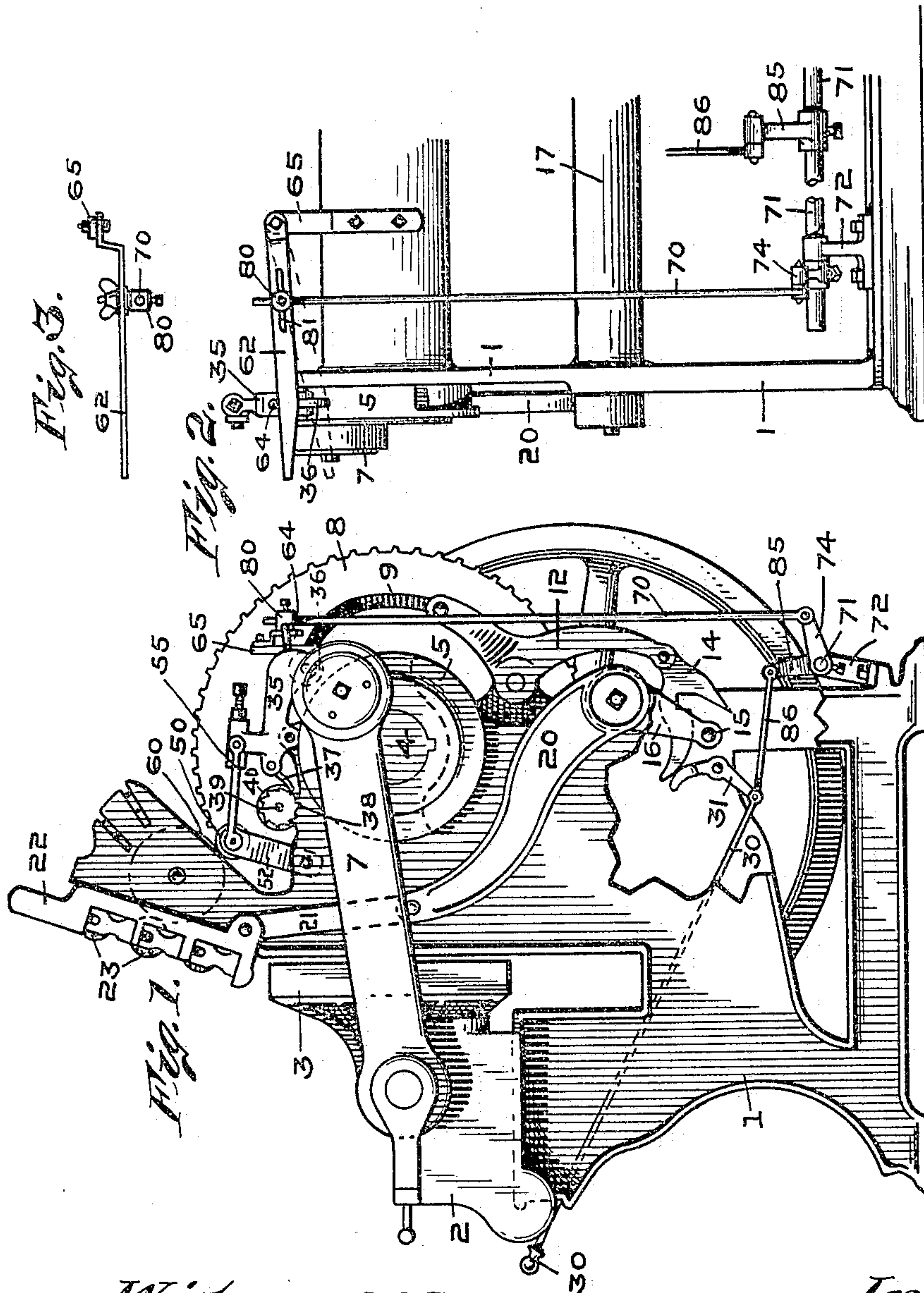


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H. NATHAN.
FOUNTAIN LOCK FOR PRINTING PRESSES.

APPLICATION FILED NOV. 15, 1904.



Witnesses

L. Shute.
L. B. Koerner.

Inventor,

Henry Nathan,
Minturn & Koerner,

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY NATHAN, OF INDIANAPOLIS, INDIANA.

FOUNTAIN-LOCK FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 793,317, dated June 27, 1905.

Application filed November 15, 1904. Serial No. 232,822.

To all whom it may concern:

Be it known that I, HENRY NATHAN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Fountain-Locks for Printing-Presses, of which the following is a specification.

This invention relates to a fountain-lock for printing-presses which is so arranged that when the form-rollers and their supporting-carriages are resting the roller that carries the ink from the ink-fountain to the ink-cylinder is also at rest. This arrangement of parts prevents an excess of ink accumulating on said ink-cylinder during the period of time that the form-rollers are resting, so that when said rollers are again set into motion they receive approximately the same amount of ink from the ink-cylinder for distribution over the printing-plates that existed before the inactive period of said rollers.

One of the chief and expensive objections experienced by all printers that accompanies the employment of the various presses is the inability of regulating the supply of ink furnished to the ink-cylinder. All presses are constructed so that the operator can suspend the operation of the form-rollers, and thus prevent them from passing a second time over the printing-plate when there has been a failure to remove the printed sheet. To suspend the operation of the form-rollers is accomplished by disconnecting the roller-arm shaft which actuates the form-rollers from that mechanism of the press which imparts movement for operating both the roller-arm shaft and the form-rollers. No provision has been made, however, for stopping the pivotally-mounted ink-carrying roller from carrying the ink from the ink-fountain to and depositing same on the ink-cylinder. It will be readily seen that if the form-rollers are inactive for a considerable time a large and excessive amount of ink has been deposited on the ink-cylinder which must ultimately be delivered to the form-rollers, whence it is carried across the printing-plate. When the form-rollers are supplied with an excessive amount of ink, they readily fill the printing-form, especially

when the latter contains small type or a half-tone engraving which is composed of a myriad of shallow cavities, and it will be readily seen when doing this kind of printing a proper distribution of ink is of the highest importance. When said plate becomes filled with ink, which follows when the form-rollers are supplied with an excessive amount of ink, the subsequent impressions will be of a deeper tone and specked at various places. These defects destroy the value of the printing, which can only be remedied by entirely stopping the press and washing the printing-plate, which is both expensive and objectionable.

The object of this invention is to overcome these difficulties by providing a means whereby the ink-carrying roller that carries the ink from the ink-fountain to the ink-cylinder may be thrown out of operation simultaneously with the movement of the form-rollers or may be operated independently, as where the ink is delivered to the ink-cylinder in such quantities that are in excess of the consumption.

A printing-press embodying my said invention whereby the objects sought are attained will be more particularly described in the annexed specification and the novel features thereof then pointed out in the claims.

Referring to the accompanying drawings, which are made a part hereof and on which similar numerals of reference indicate similar parts, Figure 1 is a side elevation of a printing-press embodying my said invention, in which a part of the frame of said press is broken away to expose some of the mechanism to which said invention is attached. Fig. 2 is a fragmentary detail view, in rear elevation, of a portion of the press-frame, showing my invention in operating position. Fig. 3 is a plan view of the device.

In the drawings, 1 is the frame of an ordinary printing-press; 2, a bridge pivotally secured to the forward portion of the frame 1 and adapted to carry the platen 3, on which the matter to be printed is placed.

4 is a shaft which is driven in any suitable manner from the main drive and is provided at one end with a cam 5. A connecting-rod 7 is eccentrically mounted on the cam 5 at one end and is pivotally connected with the

bridge 2 at the other, so that with each revolution of the cam 5 a reciprocating movement is imparted to the platen 3. The shaft 4 is provided on the opposite end to which the
 5 cam 5 is secured with a gear-wheel 8, provided with an internal cam-groove 9. A cam-lever 12 is pivotally secured to the frame 1 and carries a friction-roller that meshes with the internal cam-groove 9 in the gear 8. The cam-
 10 lever 12 is provided at the lower end with a pivotally-connected hook 14, which passes between a pair of cranks 16 and engages with a pin 15, mounted in the end of said cranks. The cranks 16 are secured to a roller-arm
 15 shaft 17, that is suitably mounted in the rear portion of the frame 1. The roller-arm shaft 17 is provided at each end with a roller-arm 20 and by means of the connecting-links 21 is connected to the form-carriage 22, carrying
 20 the form-rollers 23, which pass over and apply ink to the printing-plate.

When the press operator for any cause fails to remove the printed sheet after an impression has been made, the form-rollers 23 can
 25 be prevented from again passing over the printing-plate by pulling the controlling-rod 30, which pivotally connects with a hook-lift 31, pivotally secured to the frame 1, which shifts the lift-hook into engagement with the
 30 hook 14, disengaging the latter from the pin 15, carried in the cranks 16, that are secured to the roller-arm shaft 17. By disconnecting these parts the major portion of the press continues to run and only the roller-arm shaft
 35 17, roller-arms 20, the form-carriage 22, and form-rollers 23 are at rest, which prevents further distribution of ink across the impression-plate or type matter.

Situated above the cam 5 and pivotally secured to the frame 1 is a ratchet-lever 35, provided at one end with a friction-roller 36, which rests on the periphery of the cam 5 and through which movement is imparted to said
 40 lever 35. The other end of the ratchet-lever 35 is provided with a pawl 37, that engages a ratchet 38, mounted on the end of the ink-fountain-roller shaft 39, that carries the ink-fountain roller 40.

It will be seen with each revolution of the
 50 cam 5 the ratchet-lever 35 is actuated through the latter's contact with the former, and by means of the pawl 37 the ink-fountain roller 40 is actuated. This same movement of the ratchet-lever 35 imparts a reciprocating move-
 55 ment to an ink-carrying roller 50, which is pivotally mounted on the frame 1 by means of the rock-bars 52. A link 55 connects the ink-carrying roller 50 with cam 5, so that at each revolution of the cam 5 the ink-carrying roller
 60 50 is moved out of contact with the ink-fountain roller 40 and into contact with the ink-cylinder 60, the latter being mounted in the upper portion of the frame 1 and which supplies the ink to the form-rollers 23 at each
 65 stroke of the latter.

It has previously been pointed out that the carriage 22 and the form-rollers 23 may be thrown out of operation by means of the controlling-rod 30, that actuates the hook-lift 31 and disengages the hook 14 from the pin 15, 70 mounted in the cranks 16, secured to the roller-arm shaft 17, the latter receiving its movement through the cam-lever 12, engaging with the cam-slot 9 in the gear-wheel 8. No provision has been made, however, to remove the
 75 ratchet-lever 35, which actuates the ink-carrying roller 50, from under the influence of the cam 5. During the period of time that the carriage 22 is at rest the ratchet-lever 35 and the ink-carrying roller 50 in the ordi- 80 nary presses are in continual operation, so that the latter is constantly carrying ink from the ink-fountain roller 40 to and depositing same on the ink-cylinder 60. To obviate the accumulation of ink on the ink-cylinder 60, I
 85 discontinue the operation of both the ratchet-lever 35 and ink-carrying roller 50 by the means that will now be described.

Examining Fig. 2 of the drawings, it will be seen that I secure to the rear portion of 90 the frame 1 a standard 65. An arm 62 is pivotally secured to the standard 65, and when the said arm is operated it engages with a pin 64, mounted in the end of the ratchet-lever 35, and through the pivotal mounting of the 95 latter the same is raised, which removes the friction-roller 36 out of contact with the periphery of the cam 5. The arm 62, by means of a connecting-rod 70 and crank 74, connects with a rock-shaft 71, mounted in the bearings 100 72, which are secured to the frame 1. The connecting-rod 70 passes through a head 80, which is adjustably mounted in a slot 81 in the arm 62, and by means of said slot and the adjustability of the crank 74 on the shaft 71 105 by a set-screw or similar means the throw of the arm 62 may be regulated. The rock-shaft 71 is also provided with a secondary crank-arm 85, connected with the hook-lift 31 by means of the connecting-rod 86, so that when 110 the controlling-rod 30 is pulled forward, as shown in Fig. 1 of the drawings, which disconnects the hook 14 from the cranks 16 by means of the connecting-rod 86, the rock-shaft 71 is operated. With this operation the arm 115 62, by means of the connecting-rod 70, is moved from the position shown in dotted lines to the position shown in full lines in Fig. 2. This movement raises the ratchet-lever 35, that controls the ink-carrying roller 50, out of en- 120 gagement of the cam 5, so that said lever and ink-carrying roller will be at rest.

It will be readily understood that while I have shown a single controlling-rod in the drawings for disconnecting the parts that con- 125 trol the form-roller carriage 22 from its driving mechanism, during which movement the ratchet-lever 35 and ink-carrying roller 50 are also thrown out of operation, a second rod may be provided that would attach in any 130

suitable manner with the rock-shaft 71, so that the ratchet-lever 35 and ink-carrying roller 50 may be operated independently of the controlling-rod 30 without departing from the spirit of this invention.

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

1. The combination, in a printing-press, an ink-cylinder, an ink-fountain, an ink-carrying roller pivotally mounted in the frame of the press and susceptible to movement between said ink-fountain and ink-cylinder, a cam mounted in the frame of the press, means engaging said cam and connecting with the ink-carrying roller, and means for moving the precedent means into and out of contact with said cam.

2. The combination, in a printing-press, an ink-cylinder, an ink-fountain, an ink-carrying roller pivotally mounted in the frame of the

press and susceptible to movement between said ink-cylinder and ink-fountain, a cam mounted in the frame of the press, means pivotally secured to the frame of the press that connects with and operates the ink-carrying roller, an arm pivotally mounted on the frame of the press that engages the pivotally-mounted means on the press-frame, a rod connecting with said arm that extends to and connects with the shaft mounted in the press-frame, a rock-shaft in the press-frame connecting with said rod, and means for operating said rock-shaft.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 9th day of November, A. D. 1904.

HENRY NATHAN. [L. S.]

Witnesses:

L. SHUTE,

F. W. WOERNER.