

Sept. 20, 1927.

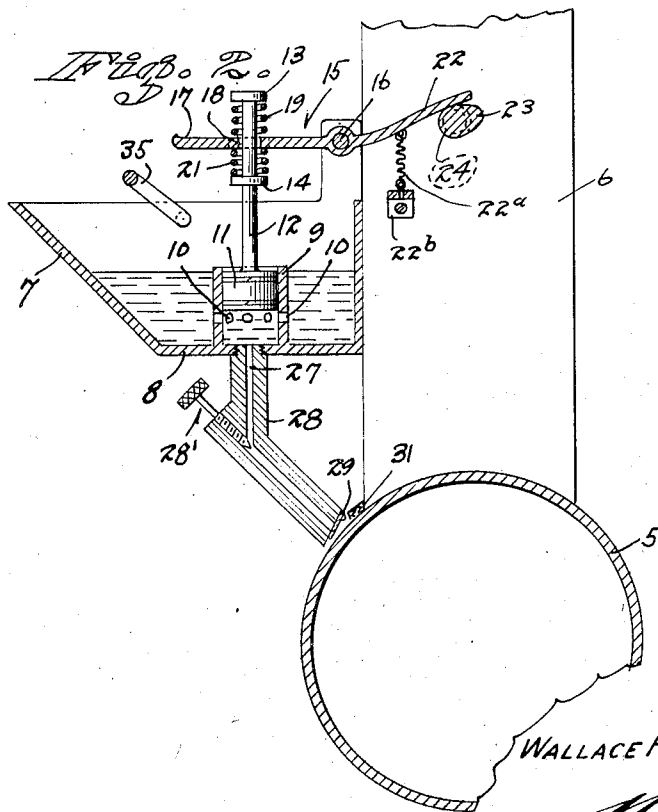
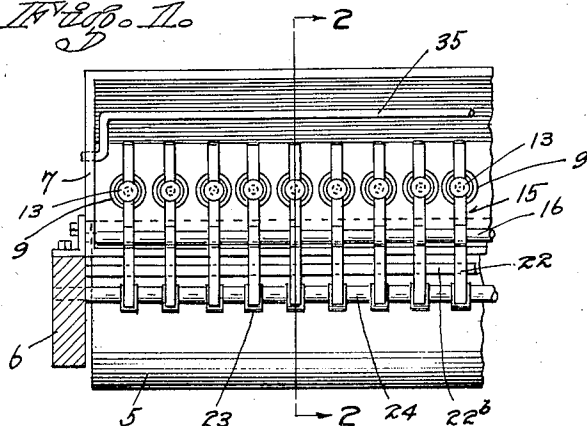
1,642,809

W. H. GRANGER

INK FOUNTAIN FOR PRINTING PRESSES

Filed March 6, 1926

Fig. 1.



Inventor
WALLACE H. GRANGER

Wm. H. Granger

1 334

Attorneys.

UNITED STATES PATENT OFFICE.

WALLACE H. GRANGER, OF SAN FRANCISCO, CALIFORNIA.

INK FOUNTAIN FOR PRINTING PRESSES.

Application filed March 6, 1926. Serial No. 92,932.

This invention relates to ink fountains for printing presses.

An object of my present invention is the provision of a simplified ink feed for printing presses.

Another object of my invention is the provision of an ink fountain which will eliminate the usual conductor rollers employed in connection with the ink feeding system.

A further object of this invention is the provision of an ink feed which will eliminate the use of compressed air, the latter system being unreliable.

A further object of my invention is the provision of an ink fountain which will distribute ink to the ink drums in the quantity desired and irrespective of the direction of the rotation of the drums or cylinders.

Another object of my invention is the provision of an inking fountain disposed in a more advantageous position on printing presses than has heretofore been practiced.

Another object of my invention is the disposition of an ink fountain in a more accessible position than has heretofore been done, and also in such a position that the setting of color is easier and safer for the pressman.

A still further object of my invention is the provision of an ink feeding system which will be simple and effective in action.

With the foregoing objects in view, together with such other objects and advantages as may subsequently appear, this invention resides in the constructions and arrangement of parts hereinafter described and claimed, and illustrated in the accompanying drawings, in which:

Figure 1 is a plan view of a fragment of the ink fountain hereinafter described.

Figure 2 is a sectional view of the ink fountain taken on line 2—2 of Figure 1, the ink fountain being shown as associated with actuated means and an inking cylinder.

Referring to the drawings for more detailed description thereof, the numeral 5 indicates an inking cylinder of a printing press and the numeral 6 indicates a vertical frame member of a printing press to which is secured an ink container 7.

The ink container 7, according to my invention is preferably placed substantially at

the level of the pressman's eyes and preferably on the outside of the press so that it may be readily accessible.

Positioned above the inking cylinder 5, the ink container comprises a bottom 8 from the upper surface of which extends a hollow cylinder 9 provided peripherally with a series of apertures 10, through which ink may flow into the cylinder 9. A piston 11 is adapted to reciprocate within the cylinder 9 and is provided with a vertical piston rod 12. The piston rod 12 is provided with a collar 13 at its top and with a collar 14 at some distance below the top. A lever 15 pivoted at 16 has an arm 17 provided with an aperture 18, through which the piston rod passes.

The diameter of the aperture 18 is greater than that of the piston rod 12, so that the arm 17 of the lever will not bind on the piston rod. A coiled spring 19 encircles the piston rod and is disposed between the rod 17 and the collar 13.

A coiled spring 21 also encircles the piston rod 12, being disposed between the lower surface of the arm 17 of the lever and the collar 14. The lever 15 also comprises an arm 22 which is adapted to ride on a cam 23 fixedly secured to a shaft 24 which may be rotated by a power transmission mechanism of a printing press.

It will be readily seen that the rotation of the cam will affect the upward and downward movement of the arm 17 of the lever according to the direction in which the cam is rotated; the coiled springs 19 or 21 functioning to reverse the piston rod and therefore the piston. When the cam turns in a counter-clock-wise direction the coiled spring also functions as a cushion for the arm 17 of the lever. A coiled spring 22^a is secured to the lower end of the arm 22 and to a member 22^b attached to the frame 6.

The downward motion of the reciprocating piston 11 is effective, after it passes the lowest portions of the apertures 10 in the cylinder 9, to express ink through an aperture 27 which has communication with the interior of the cylinder 9. The aperture 27 extends through an extension 28, which may be regarded as part of the ink container 7. A needle valve 28' is provided in the extension 28 and is adapted to regulate the

area of the passage 27 at the point of the valve. The extension 28 terminates close to the inking cylinder 5.

To that end of the extension 28 which is adjacent the inking cylinder 5, is secured a steel spring 29 extending across the passage way 27. This steel spring 29 normally closes the end of the passage way 27, but yields to the pressure of the ink when the latter is forced through the passage way 27 by the piston 11. The spring 29 functions as a valve and serves to break up the stream of ink emitted from the passage way 27 into a spray. A felt pad 31 is secured to the frame member 6 and is in contact with the inking roller 5 adjacent the spring plate 29. This felt pad functions to absorb ink which may be splashed on to it in rather large drops and later spreads the absorbed ink on to the inking roller.

The extension 28 and attachments thereto have been described. A plurality of such extensions form part of the ink container 7 and are connected with the body of the container in the manner described. A pump for pumping the ink from the container into the extension 28 has been described. There are series of such pumps linearly arranged and spaced within the ink container 7, each pump being adapted to pump ink into its extension 28. Means comprising a lever 15 and a cam 23 have been described for actuating the pump. Each of the pumps as shown in Figure 1 is provided with such actuating means, all of the cams 23 being mounted on the rotatable shaft 24.

In order to shut down the pumps or render them inactive while the shaft 24 is rotating, a pivoted bar 35 is provided. This bar runs across the ink container 7 and is adapted to engage the upper surface of the end portion of the arms 17 of the levers 15. The engagement of the bar 35 with the arms 17 of the levers 15 is effective to prevent the arms 17 from reciprocating and therefore to prevent the pumping action of the pumps.

Since printing ink consists of a considerable percentage of oil, which may amount to 60-70% of the ink, this oil will function to lubricate the pumps described.

I claim:—

1. In an ink fountain for a printing press, the combination of an ink container and a pump for pumping ink therefrom, said container having an outlet and a valve across said outlet, said valve being adapted to permit ink to flow through said outlet during the pumping action of said pump, said valve comprising a spring plate.

2. An ink fountain for a printing press, comprising an ink container having an ink outlet, a cylinder encircling the outlet and having one of its ends on the bottom of the container, said cylinder having an aperture in its side wall to allow ink to flow from the container into the cylinder, said aperture being above the bottom of the container, and a piston reciprocable in said cylinder, a rod extending from the piston, a lever pivoted intermediate its ends, one of the arms of the lever being adapted to actuate the piston rod and means at the other arm of the lever for moving the latter.

3. The structure of claim 2 in which resilient means is provided between the piston rod and one arm of the lever.

4. The structure of claim 2 in combination with means for holding the lever out of contact with the means for moving the lever.

5. An ink fountain for a printing press, comprising an ink container having an ink outlet in the bottom thereof, a cylinder rising from the bottom to surround the outlet and to be surrounded by ink and having an aperture formed therein intermediate its height, and a piston reciprocable in said cylinder, the piston uncovering the aperture during the upward stroke to allow ink to gravitate into the cylinder and forcing the ink through the outlet on the downward stroke.

WALLACE H. GRANGER.