E. S. LADD.

DISTRIBUTING INK FOUNTAIN.

APPLICATION FILED SEPT. 16, 1909.

959,558. **Patented May 31, 1910.**

2 SHEETS—SHEET 1.

FIG. 1

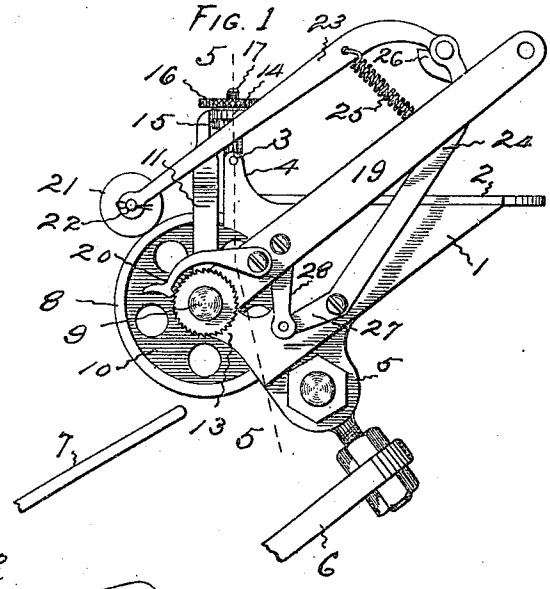


FIG. 2

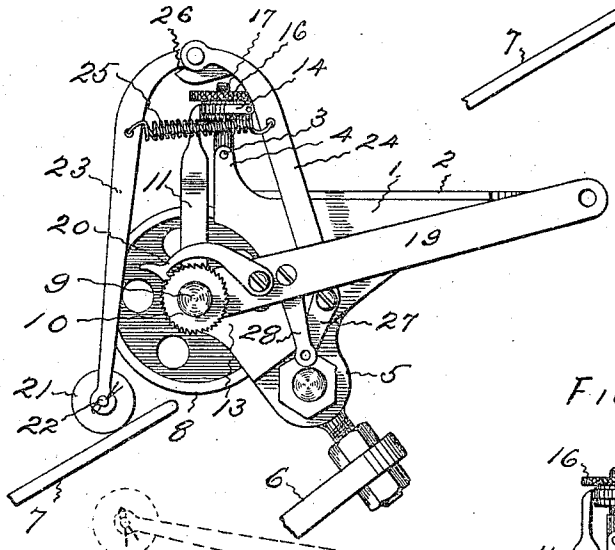
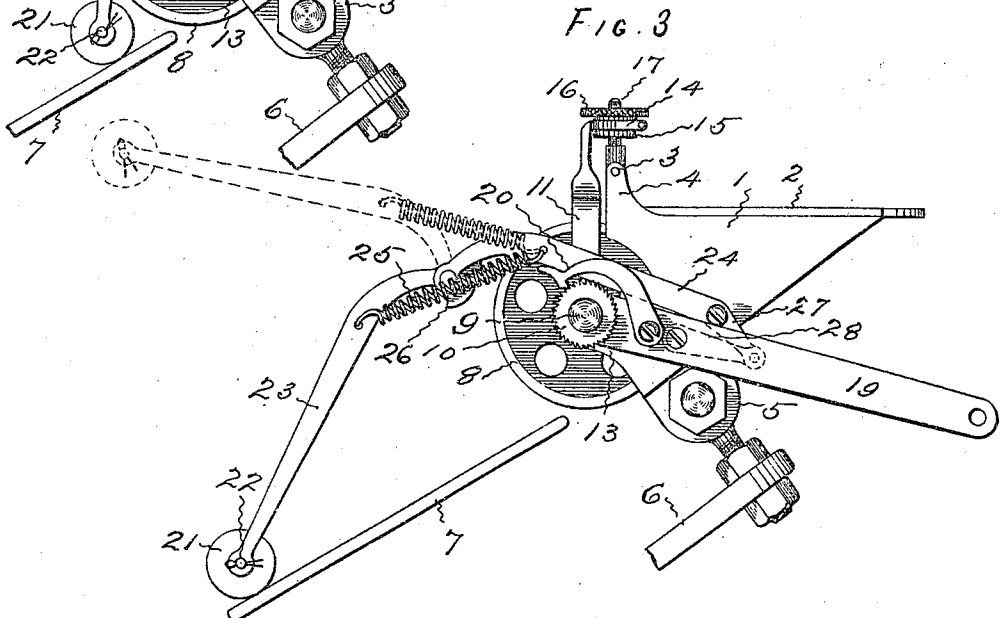


FIG. 3



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2 SHEETS—SHEET 2.

FIG. 4

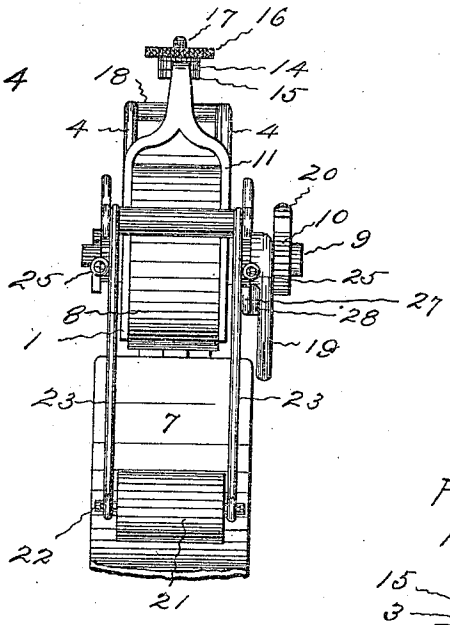


FIG. 5

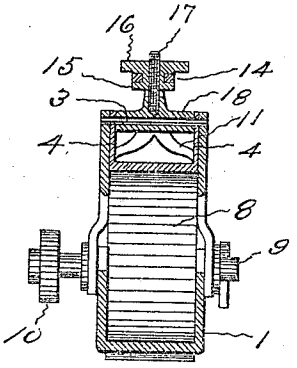
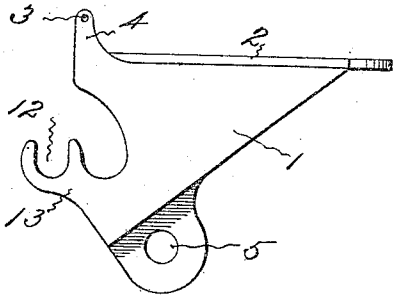


FIG. 6



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UNITED STATES PATENT OFFICE.

ELWOOD S. LADD, OF NEW YORK, N. Y.

DISTRIBUTING INK-FOUNTAIN.

959,558. Specification of Letters Patent. Patented May 31, 1910.

Application filed September 16, 1909. Serial No. 518,009.

To all whom it may concern:

Be it known that I, ELWOOD S. LADD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Improvement in Distributing Ink-Fountains, of which the following is a specification.

This invention relates to those fountains which are designed to be attached to the ordinary job printing presses, although it may be adapted to fountains provided for other classes of presses, for the purpose of supplying ink to and distributing ink on the ink plates or disks from which the ink is taken by the form rollers and applied to the forms to be printed.

The object of the invention is to provide a simple and convenient fountain which can be easily attached to any of the common forms of presses and readily adjusted so as to supply just the necessary quantity of ink and evenly distribute that quantity of ink upon the surface of the ink plate or disk in such manner that no streaks will be left to be transferred by the form rollers to the form. This object is attained by providing a simple means for supporting and adjusting the rotatable ink supply roller that occupies the mouth of the ink receptacle or font, whereby the fountain can be easily cleaned and just the proper amount of ink brought out of the font on the surface of the roller at all times, and so mounting and connecting the automatic brayer roller with the operating mechanism that the brayer roller will make two movements down and back for distributing ink on the surface of the ink plate or disk between every impression of the press and will be lifted from the inked surface when the plate or disk moves or turns.

Figure 1 of the accompanying drawings shows a side elevation of a fountain which embodies this invention with the parts in the positions occupied when the brayer roller is on the supply roller. Fig. 2 is a similar view with the parts in the positions occupied just as the brayer roller leaves the supply roller and starts to roll down the ink plate or disk. Fig. 3 is a view showing the positions of the parts when the brayer roller is down on the ink plate or disk. In this view, by dotted lines, the position of the brayer roller when it is turned up so that it will not engage the supply roller and will not distribute ink on the ink plate or disk, is illustrated. Fig. 4 shows a view looking at the front of the fountain, with the brayer roller way down. Fig. 5 shows a vertical section of the fountain on the plane indicated by the dotted line 5—5 on Fig. 1. Fig. 6 shows a side elevation of the ink receptacle or font.

The font 1, which may be any convenient size, has an inclined bottom so that ink will flow toward the front end. A protecting cover 2 is desirably hinged on a pin 3 that is held by ears 4, which extend up from the side walls near the front end of the font. Projecting from the bottom of the font is a lug 5, that is adapted to be fastened to means for clamping the font to a bracket 6 or other projecting part secured to the press frame. The font is located a short distance back of and preferably on a line with the center of the ink plate 7, which plate is ordinarily mounted so that it can be given a rotation in front of the form holder of the press.

The front end of the font is open and occupying the opening is the ink supply roller 8. This roller which may be steel, brass, or any other suitable material, is keyed upon a shaft 9, that on one end has a ratchet wheel 10. The roller shaft is mounted in bearings in the lower ends of the yoke 11, which ends of the yoke are movably held in the vertical slots 12, in the arms 13 that extend forwardly from the side walls of the font. The upper end of the yoke is bent backwardly and has a fork 14 that embraces the grooved hub 15 of the thumb nut 16. This nut turns on a screw 17 that projects upwardly from the block 18 that is loose on the pin which hinges the cover. By turning this thumb nut one way or the other on the screw the yoke may be raised or lowered and the position of the lower surface of the supply roller, carried by the yoke, with relation to the bottom of the opening in the font, adjusted so as to determine the exact amount of ink which will be carried out of the font on the peripheral surface of the ink supply roller, as that roller is rotated.

One end of the actuating lever 19 is pivoted on the supply roller shaft. The other end of this lever is adapted to be connected with any convenient part of the operating mechanism of the press which will give the lever the necessary oscillation. Pivoted on the side of the actuating lever is a pawl 20, this pawl is adapted to engage the teeth of

the ratchet wheel on the supply roller shaft so that the oscillations of the actuating lever, through the pawl and ratchet, will impart an intermittent rotatory motion to the ink supply roller in such direction that as much ink will be carried out of the font on the surface of the roller as can pass through the opening between the lower surface of the roller and the bottom of the font. When desired the pawl may be lifted out of engagement with the teeth of the ratchet wheel, then the supply roller will remain stationary although the actuating lever may continue to oscillate.

The brayer roller 21, desirably made of common printing roller composition, is loosely mounted on an arbor 22 at the ends of the arms 23 that form the outer section of the brayer frame. These arms are hinged to the arms 24 which are pivoted to the sides of the font back of the supply roller shaft, and which form the inner section of the brayer frame. Springs 25 are arranged to draw the sections of the brayer frame together, and to keep the brayer roller against the supply roller or on the upper surface of the ink plate. It is desirable to provide the outer ends of the inner section of the brayer frame, near the joints, with lugs 26 shaped to engage the inner ends of the outer section and prevent the outer section from being pulled in so much as to become caught beneath the supply roller. The springs also hold the outer section of the brayer frame up, as shown by dotted outline in Fig. 3, when that section is thrown back to render it temporarily inoperative for distributing ink.

One of the arms 24 of the inner section of the brayer frame has a finger 27 that extends a short distance downwardly and forwardly, from the point of pivotal connection of the arm with the side of the font. This finger or extended portion of the arm is connected by a short link 28 with the actuating lever 19.

The supply roller may be removed from the opening in the front of the font for cleaning the roller and the font by disengaging the forked upper end of the yoke from the adjusting nut and then lifting the yoke and the roller out of the slotted arms which hold them. The pivotal connection of the link 28 and the finger 27 is preferably made detachable so it will separate and disconnect the brayer frame when the supply roller is removed.

As a result of the pivotal connections of the parts of the organization described, when the actuating lever is at its lowest position the brayer roller is at its lowest point of contact with the surface of the supply roller. As the lever moves up the brayer roller is rolled out on the surface of the ink plate until the longitudinal axes of the link and lever are parallel then is rolled back on the ink plate and up on the supply roller. When the actuating lever is at its highest position the brayer roller is at its highest point of contact with the surface of the supply roller. As the lever moves down the brayer roller rolls down the supply roller and out on the ink plate until the link and lever are again parallel, after which time the continued downward movement of the lever causes the brayer roller to roll back on the ink plate and reach its position against the supply roller when the lever is again at its lowest position.

The brayer roller shown is one-third the size of the supply roller and the mechanism is so designed that the brayer roller passes over one-third of the surface of the supply roller, therefore, the brayer roller takes ink on its entire surface. As the outer surface of the supply roller is moving up when the brayer roller is running down against it the latter roller makes more than a complete rotation and thus is thoroughly covered with ink.

The brayer roller moves out and back on the ink plate twice during each complete oscillation of the actuating lever and consequently thoroughly distributes the ink on the plate. This action will distribute ink in two places on a rotatable ink plate between every impression of the press.

The invention claimed is:

1. An ink distributing apparatus having a font, an ink supply roller closing one end of the font, a sectional brayer frame, said sections being hinged together and one section being hinged to the font, a brayer roller carried by the outer section of the brayer frame, an actuating lever, means carried by said lever for rotating the supply roller, and a connection between the actuating lever and the inner section of the brayer frame for oscillating said frame.

2. An ink distributing apparatus having a font, an ink supply roller closing one end of the font, a yoke carrying the supply roller, means for raising and lowering said yoke and adjusting the roller in the end of the font, a sectional brayer frame, said sections being hinged together and one section being hinged to the font, a brayer roller carried by the outer section of the brayer frame, an actuating lever, means carried by said lever for rotating the supply roller, and a connection between the actuating lever and the inner section of the brayer frame for oscillating said frame.

3. An ink distributing apparatus having a font, an ink supply roller closing one end of the font, a shaft carrying said roller, a ratchet wheel secured to the shaft, a yoke supporting said shaft, means for raising and lowering said yoke, a sectional brayer frame, said sections being hinged together and one section being hinged to the font, a

brayer roller carried by the outer section of the brayer frame, an actuating lever pivoted on the supply roller shaft, a pawl pivoted on the said lever and engaging the ratchet on the supply roller shaft, and a connection between the actuating lever and the inner section of the brayer frame for oscillating said frame.

4. An ink distributing apparatus having a font, an ink supply roller closing one end of the font, a yoke carrying said supply roller, said yoke having a forked upper end, a screw swiveled to the top of the font, a thumb nut turning on said screw, said nut being embraced by the forked end of the yoke, a sectional brayer frame, said sections being hinged together and one section being hinged to the font, a brayer roller carried by the outer section of the brayer frame, an actuating lever, means carried by said lever for rotating the supply roller, and a connection between the actuating lever and the brayer frame for oscillating said frame.

5. An ink distributing apparatus having a font, an ink supply roller closing one end of the font, a brayer frame formed of two sections, said sections being jointed together and one section being hinged to the side of the font, springs arranged to draw the sections of the brayer frame together, a brayer roller carried by the brayer frame, an actuating lever, means carried by said lever for rotating the supply roller, and a connection between the actuating lever and the brayer frame for oscillating said frame.

6. An ink distributing apparatus having a font, an ink supply roller closing one end of the font, a jointed brayer frame with one section of said frame hinged to the side of the font back of the axis of the supply roller, a finger projecting from one side of the pivoted section of the brayer frame, an actuating lever mounted with its axis coincident with the axis of the supply roller, means carried by said lever for rotating the supply roller, and a link connecting the finger that projects from the brayer frame with the actuating lever at a point a shorter distance from the axis of said lever than is the axis of the brayer frame.

7. An ink distributing apparatus having a font with an inclined bottom, said font having an open front end and a supporting lug projecting from the bottom, an ink supply roller closing the open end of the font, a yoke carrying the supply roller, means for raising and lowering said yoke, a jointed brayer frame with one section hinged to the sides of the font, a brayer roller carried by the brayer frame, an actuating lever, means carried by said lever for rotating the supply roller, and a connection between the actuating lever and the brayer frame for oscillating said frame.

8. An ink distributing apparatus having a font, an ink supply roller closing one end of the font, a brayer frame formed of sections hinged together, the end of one section being hinged to the sides of the font, a roller carried by the end of the other section of the frame, springs connecting the frame sections and normally drawing them together, an actuating lever with its axis coincident with the axis of the supply roller, and a connection between said lever and the brayer frame for oscillating said frame.

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Witnesses:
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MATTHEW BRIGGS.