June 2, 1936. E. HOYLE 2,042,943

INK FOUNTAIN

Filed June 4, 1935

Fig. 1.

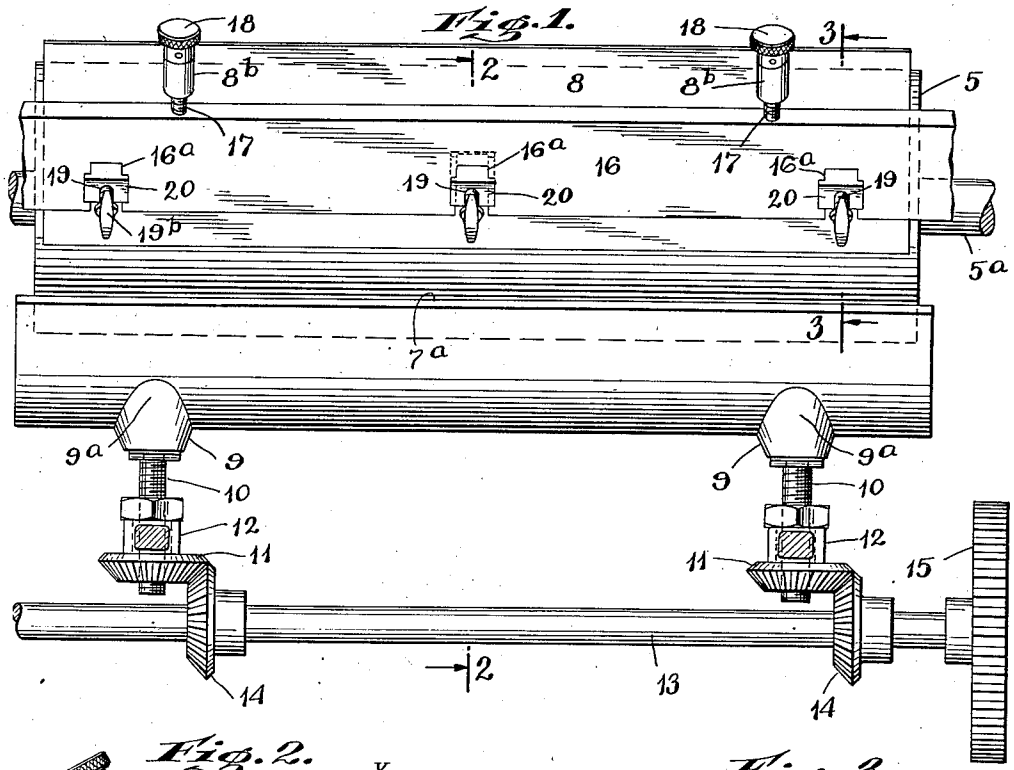


Fig. 2.

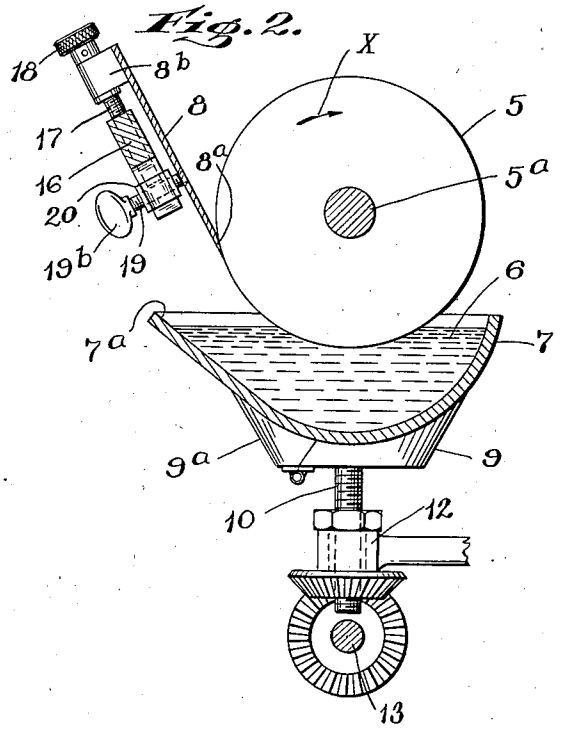
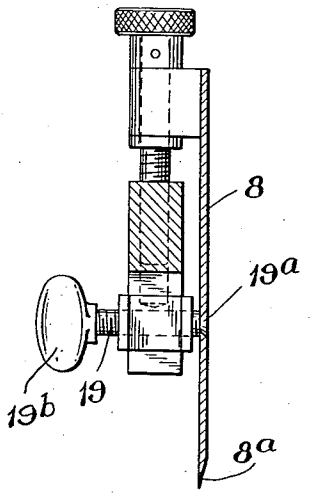


Fig. 3.



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INK FOUNTAIN

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5 Claims. (Cl. 101—365)

This invention relates to ink fountains utilized in the application or delivery of the required amount of ink to the feed rolls of a printing press; and the object of the invention is to provide a device comprising an adjustable blade cooperating with the fountain roll to control and regulate the application of ink to said roll and for delivery to the press; a further object being to provide mechanically operated means for automatically feeding the trough of the fountain toward the fountain roll to maintain the roll at all times submerged in the ink contained in the fountain; a further object being to provide means for supporting the blade at a tangent to the periphery of the fountain roll and for adjusting the blade toward and from said roll; and with these and other objects in view, the invention consists in a device of the class and for the purpose specified, which is simple in construction, efficient in use, and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a side view of the ink fountain diagrammatically illustrating the method of actuating the control thereof.

Fig. 2 is a partial section on the line 2—2 of Fig. 1; and,

Fig. 3 is a partial section on the line 3—3 of Fig. 1 on an enlarged scale.

In the accompanying drawing, I have indicated at 5 the roll of an ink fountain employed for transmitting the ink 6 from the trough or receptacle 7 of the fountain to the ink feed or delivery rolls of a press. The trough or receptacle 7 is substantially semi-circular in cross sectional form, and one side 7a thereof is extended to catch the ink scrape removed from the surface of the roll 5 by a blade 8. The receptacle 7 is supported on two or more supporting blocks 9 constituting part of elevating means employed for raising the receptacle toward the roll 5 to keep said roll constantly submerged in the ink 6 as the same is being consumed.

The blocks 9 include hinged or removable parts 9a which facilitate the insertion and removal of the receptacles 7 whenever desired. Supported in the blocks 9 are downwardly extending screws 10 and in threaded engagement with the screws are beveled gears 11 retained in position by brackets 12 supported in connection with the press in any suitable manner, it being understood that the rotation of the gears 11 will serve to feed the receptacle 7 upwardly in the direction of the roll 5, said roll being mounted on a shaft 5a in operative engagement with a suitable drive of the press in the customary manner.

Below the gears 11 is arranged a shaft 13 having beveled gears 14 meshing with the gears 11, the shaft 13 having at one end a ratchet wheel 15 adapted to be driven by a pawl, not shown, in operative engagement with the machine to provide a slow intermittent feed or drive of the shaft 13 to provide a corresponding slow upward feed of the receptacle 7. Any automatic means may be provided for stopping the upward movement of the receptacle 7 before the roll 5 reaches the bottom of said receptacle.

The blade 8 is mounted in a suitable supporting plate 16 arranged and secured to the frame of the press in any desired manner. The plate is so arranged as to dispose the blade 8 tangentially with respect to the surface of the roll 5 in the manner indicated in Fig. 2 of the drawing so as to produce a shear-like action of the lower beveled edge 8a of the blade upon the roll 5 to insure the removal of the required amount of ink to avoid the delivery or transmission of an excessive amount of ink, causing smudges such as are commonly experienced in the operation of presses.

Considerable difficulty has been experienced to gage, control or regulate the amount of ink remaining on the roll 5 for delivery to the press, but with my improved construction I have found from experience that by mounting the blade 8 in the manner illustrated and especially in providing adjustments therefor, later described, these objectionable features are overcome, and this is largely due to the tangential arrangement of the blade with respect to the roll.

The upper edge portion of the blade 8 is provided with spaced lugs 8b in which are rotatably mounted screws 17 having milled heads 18, the screws entering the supporting plate 16 and serving to control and regulate the adjustment of the edge 8a of the blade toward and from the surface of the roll in the tangential plane.

I also provide other means for adjusting the lower edge portion 8a of the blade toward and from the roll to vary the pressure of the blade thereon so as to provide, if desired, the application of more or less ink to different circumferential areas of the roll. For example, if more ink is required at the ends of the roll than centrally thereof, the blade 8 will be forced into closer

engagement with the roll at the central portion thereof and less pressure will be applied to the blade at the end portions thereof. For this purpose, a number of adjustment screws 19 are provided longitudinally of the blade 8 and plate 16. These screws are in threaded engagement with the blocks 20 which are mounted to slide in apertures 16a formed in the plate 16 in order to compensate for the tangential adjustment of the blade 8 by the screws 17. The screws 19 have countersunk heads 19a rotatable in the blade 8 and finger pieces 19b facilitating the rotation of said screws.

By providing the two adjustments for the blade 8, it will appear that a very positive control of the amount of ink on the roll 5 may be regulated, and the number of adjustments by means of screws 19 may be varied depending upon the length of the blade and the particular type of printing to be performed. By virtue of the simplicity of the parts, the same may be readily replaced or interchanged from time to time. While certain structural details are illustrated, my improved fountain may be modified in its structure within the scope of the functions and results attained by the structure herein illustrated.

Upon a consideration of Fig. 2 of the drawing, it will appear that the roll 5 is rotated in the direction of the arrow *x*, and it is preferred that the bevel 18a of the blade 8 engage the surface of the roll at a point adjacent or slightly below the longitudinal or horizontal center of the roll so that the ink removed therefrom will drop by gravity into the receptacle and be guided in this operation by the extension 7a of the receptacle.

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

1. An ink fountain comprising a roll, an ink receptacle disposed beneath the roll and into which the surface of the roll passes for application of ink thereto, a blade supporting plate arranged longitudinally of and in spaced relation to said roll, a blade for controlling the amount of ink to be transmitted by said roll for supply to a press, means for adjustably mounting said blade in connection with said supporting plate and in a plane tangential with respect to the peripheral surface of said roll, said means comprising blocks slidably engaging said supporting plate, and other means mounted in connection with said blocks and engaging the blade at longitudinally spaced intervals for adjusting the position of the free edge of the blade toward and from said roll.

2. In an ink fountain of the class described employing a roll and a blade adjustable toward and from the roll to regulate the removal of ink from the roll, an elongated sheet metal ink trough, channel-shaped members including hinged sections disposed at opposite end portions of and beneath the trough to support the same adjacent and beneath said roll, and said trough being quickly attachable and detachable with respect to said supporting members.

3. In an ink fountain of the class described employing a roll and a blade adjustable toward and from the roll to regulate the removal of ink from the roll, an elongated sheet metal ink trough, channel-shaped members including hinged sections disposed at opposite end portions of and beneath the trough to support the same adjacent and beneath said roll, said trough being quickly attachable and detachable with respect to said supporting members, and means including downwardly extending screws on said supporting members for automatically feeding the trough in the direction of the roll to maintain the roll constantly submerged in the ink arranged in said trough to insure delivery of ink by said roll.

4. In an ink fountain employing a roll and an ink reservoir for supplying ink to the roll, means for controlling and regulating the removal of ink from the roll in the transmission of ink by said roll to the ink feed of a press, said means comprising a blade supported tangentially to said roll with one edge of the blade adjacent the roll, means for adjusting the blade toward and from the roll in the longitudinal plane of the blade, and means involving a plurality of members attached to the blade at longitudinally spaced intervals for adjusting the position of the first named edge of the blade toward and from the surface of the roll in a substantially radial direction with respect to said roll.

5. In an ink fountain employing a roll and an ink reservoir for supplying ink to the roll, means for controlling and regulating the removal of ink from the roll in the transmission of ink by said roll to the ink feed of a press, said means comprising a blade supported tangentially to said roll with one edge of the blade adjacent the roll, means for adjusting the blade toward and from the roll in the longitudinal plane of the blade, means involving a plurality of members attached to the blade at longitudinally spaced intervals for adjusting the position of the first named edge of the blade toward and from the surface of the roll in a substantially radial direction with respect to said roll, said last named means comprising adjustment screws mounted in blocks, and a blade supporting plate in connection with which said blocks are slidably mounted in the first named adjustment of the blade.

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