

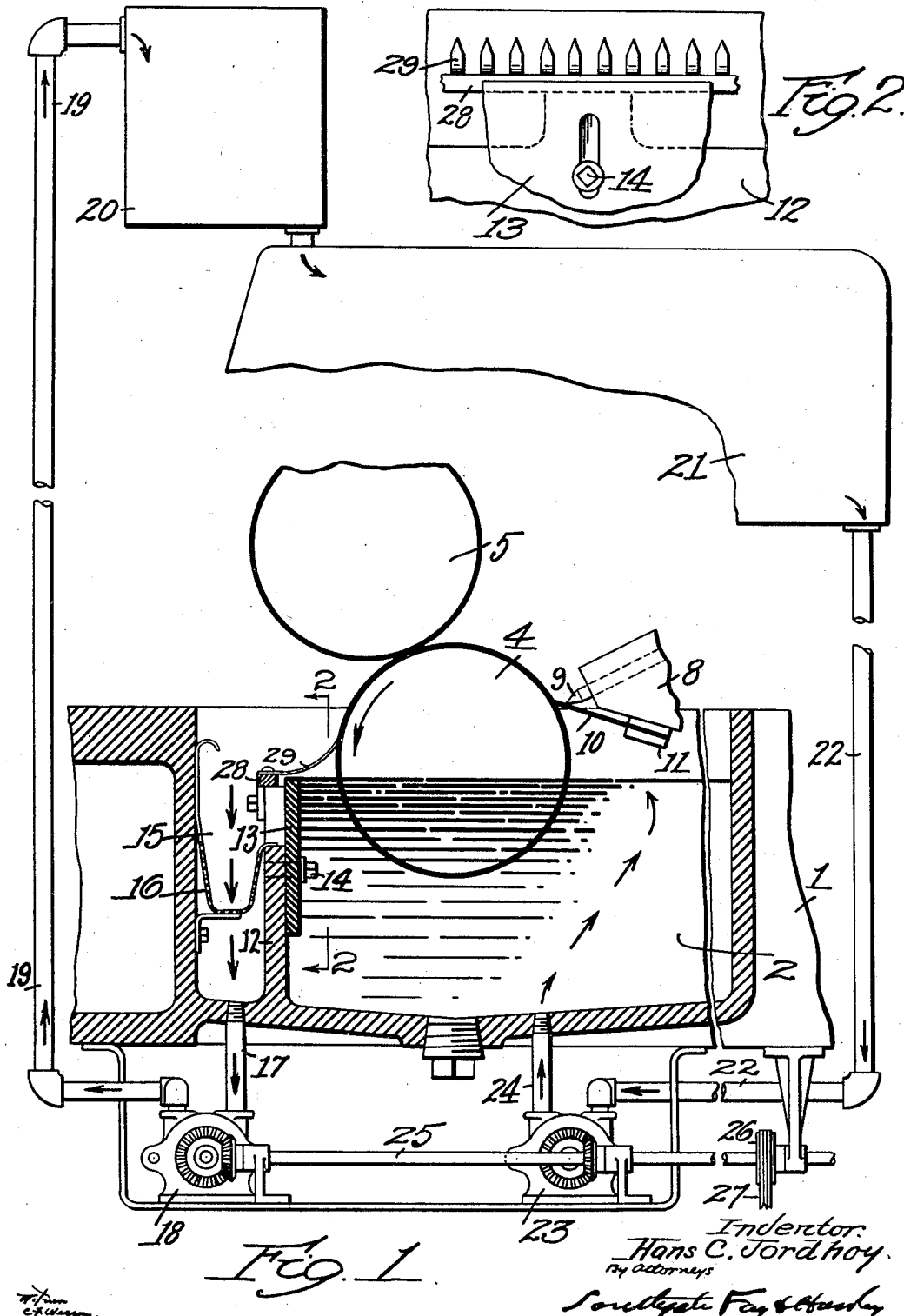
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CONSTANT LEVEL INK FOUNTAIN

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CONSTANT LEVEL INK FOUNTAIN

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This invention relates to an ink fountain for supplying ink to printing presses.

The principal object of the invention is to provide a fountain for maintaining the ink at a constant level so that the ink will always be supplied to the pick-up roll and other elements of the ink mechanism uniformly; to provide a simple and efficient circulating means by which the fountain can be kept full up to a predetermined level and, cooperating with it, an overflow dam cooperating with the ink supply means to keep the level of ink at a certain predetermined point at all times; to provide means for clearing the ink of foreign elements immediately after it overflows and again before it is re-circulated into the fountain, and, in the preferred form, to provide means run from the press for circulating the ink so that it will always run in proportion to the press speed but of course fast enough to provide a surplus of ink to the fountain.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawing, in which

Fig. 1 is a sectional view of an ink fountain and cooperating parts showing a preferred embodiment of this invention, and

Fig. 2 is a sectional view of the overflow dam on the line 2—2 of Fig. 1.

The desirability of maintaining the ink in an ink fountain for supplying a printing press at a constant level has long been known. If the level varies the depth of the color varies necessarily. Usually the means employed for keeping the ink level constant has involved a float-operated valve which opens or closes according to the level of the ink. Of course, this does not operate unless there is a difference in level. Therefore, fundamentally it is defective. Mechanism of this kind also gives considerable trouble on account of the sticking of the float from mechanical resistance as well as the caking of the ink at the surface where the float is located.

This invention is designed to overcome these difficulties by providing a fountain, the ink line of which is absolutely constant and not dependent on any mechanism that operates only when the level varies. It also involves means for keeping foreign matter out of the ink.

The invention is shown as applied to a type of fountain having a bed plate 1 providing compartments 2, one of which is shown for each fountain roll 4. This fountain roll cooperates with any desired type of pick-up roll 5 and supplies ink through any ordinary inking mechanism

to the printing cylinder, not shown. The fountain roll is shown as cooperating with a fountain back 8 providing a mounting for the usual ink regulating screws 9. These screws bear against a blade secured to the fountain back 8 by strips 11. The thickness of the film of ink supplied is regulated by the aperture between the fountain blade 10 and the fountain roll 4.

In accordance with this invention the fountain is built with one low wall 12 having an overflow plate or dam 13 adjustably secured to it by bolts 14. The level of this dam controls the level of the ink in the fountain as the top of the dam is lower than the other walls therearound. The dam of course extends entirely across the fountain.

When the fountain 2 is filled so that the level of the ink reaches the top of the dam any additional ink flowing into the fountain will flow over the top of the dam into an overflow compartment 15. Constituting the bottom and side walls of this compartment is a strainer 16 through which the ink freely flows but which retains pieces of paper and other foreign matter of any considerable size. The ink passes down into the bottom of the overflow compartment 15 below the strainer 16 and out through a drain pipe 17 to an exhaust pump 18, then through a pipe 19 to an ink filter 20. From this ink filter the cleared ink passes into an ink storage tank 21. The ink from this tank passes through a pipe 22 into a pump 23 and from there back to the fountain 2 through an inlet pipe 24.

The pumps 18 and 23 are provided preferably with a common driving shaft 25 which is driven in any convenient manner, but preferably by a sprocket 26 and chain 27, from the press unit. The speed of these two pumps will be the same and also will be proportional to the speed of the press and the speed with which the ink is actually being used. Preferably a supply pump and an exhaust pump are used for each fountain but that is not absolutely necessary. It is possible to use a single intake and a single exhaust pump for all fountains connected with a single press in accordance with this invention. It is also possible to so regulate an incoming valve on the inlet side that a supply pump would be unnecessary.

On the fountain wall 12 is mounted a bar 28 and springs 29 are carried thereby. These springs are pointed as shown in Fig. 2 and bear on the delivery side of the fountain roll 4 to clear it of any large pieces of paper or like material which may be dragged down from the inking mechanism by the

roll 4. Thus another means is provided for keeping the ink clear.

By the use of this invention the ink is kept in circulation, it is kept free from large and small impurities and it is kept at a constant level which does not have to change in order for the regulating means to operate. The ink level regulating means is without moving parts or other mechanism and one of its particular advantages is the fact that it does not involve a valve or float having the disadvantages above mentioned. It is free of faulty operation on account of foreign matter in the ink and because of the impossibility of any mechanical feature failing to work.

Although I have illustrated and described only one form of the invention, I am aware of the fact that modifications can be made therein by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited in this respect, otherwise than as set forth in the claims, but what I do claim is:

1. The combination of an ink fountain having a low wall on one side, a dam adjustably fixed to said wall to control the level of ink in the fountain, an overflow compartment for receiving ink overflowing said dam having means for straining impurities therefrom, a pump arranged to receive ink from said overflow compartment, an ink filter into which the pump delivers, a second pump, and means by which the second pump takes the ink delivered from the filter and delivers it into the fountain.

2. The combination with an ink fountain having an adjustable dam for regulating the height of the level of ink in the fountain, a pump for receiving the ink passing over said dam and taking it away, a pump for delivering ink to the fountain, and means by which both pumps operate at the same speed.

3. The combination with an ink fountain for delivering ink to a printing press having an adjustable dam for regulating the height of the level of ink in the fountain, a pump for receiving the ink passing over said dam and taking it away, a pump for delivering ink to the fountain, and means by which both pumps operate at a speed proportional to the speed of the printing press to which the ink fountain is designed to deliver ink.

4. The combination with an ink fountain having means for delivering ink to a printing press, of a dam constituting a low wall of said fountain over which the ink flows whenever the ink in the fountain is up to the level of the top of said dam, a pump for delivering ink to the fountain, and means for operating said pump in proportion to the speed of said press to supply enough ink to the fountain constantly to keep the level up to the top of said dam.

5. The combination with an ink fountain for delivering ink to a printing press, adjustable means for regulating the height of the level of ink in the fountain, means for receiving the ink passing over said adjustable means and taking it away, means for delivering ink to the fountain, and means by which both of said means operate at a speed proportional to the speed of the printing press to which the ink fountain is designed to deliver ink.

6. The combination of an ink fountain having means for delivering ink to a printing press, means over which the ink flows to maintain a constant level of ink in the fountain, a pump for receiving the ink that overflows from said dam, a pump for delivering the ink into the fountain, a shaft for operating both pumps at the same speed, and means for constantly operating said shaft in proportion to the speed of the press.

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