Oct. 31, 1939. J. S. DANIELS 2,178,070

INKING MECHANISM

Filed April 25, 1936

FIG. 1.

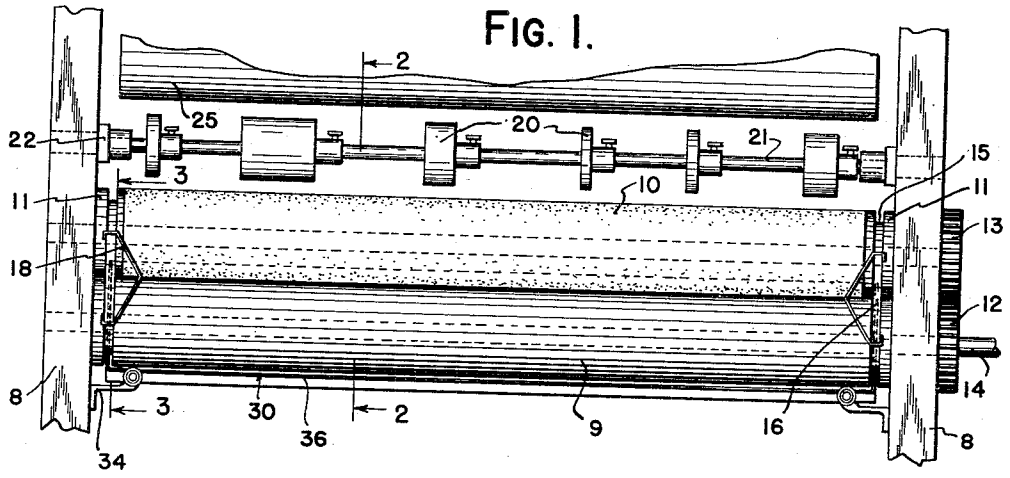


FIG. 2.

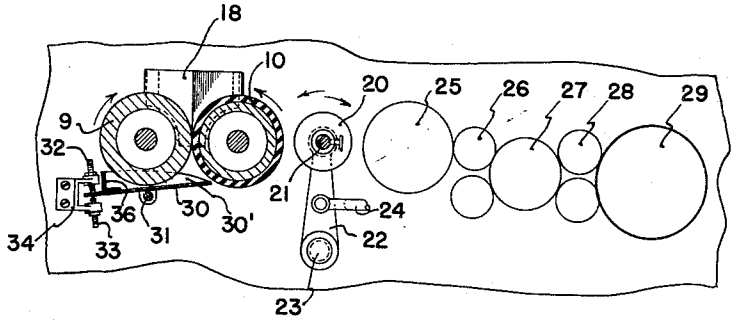


FIG. 7.

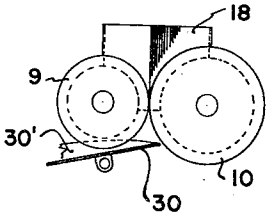


FIG. 4.

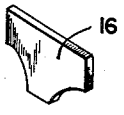


FIG. 3.

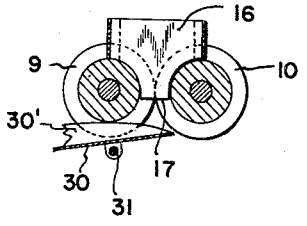


FIG. 5.

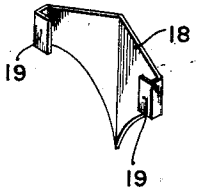
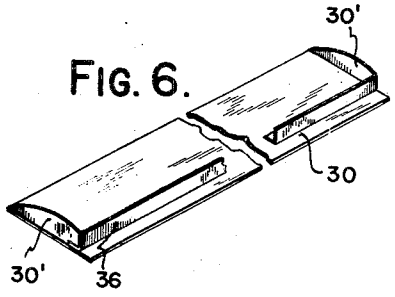


FIG. 6.



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INKING MECHANISM

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Application April 25, 1936, Serial No. 76,344

3 Claims. (Cl. 101—350)

The invention relates to inking mechanism for printing presses.

In the usual inking mechanisms the ink is held in a reservoir formed in part by a roller and a scraper bearing on said roller and regulating the amount of ink supplied to a single ductor roll of a length substantially equal to that of the tank roll. It has been found that in this usual equipment the friction of the scraper blade on the tank roll generates considerable heat, and this is especially noticeable and objectionable when using certain inks where the abrasive effect of the ink accentuates the heating effect and drives off volatile constituents, and with some inks such as metallic bronzes the heat tends to cause certain constituents to break down. Furthermore, it is necessary with such fountains to use special agitating devices to prevent separation of the solid portions thereof. The object of the present invention is to provide an inking mechanism in which the parts of the fountain itself insure a constant agitation of the ink without friction or milling and the generating of heat which tends to drive off the volatile constituents and to provide for a preliminary regulation of the amount of ink available from the fountain and to preferably further regulate the amount of ink eventually supplied to the inking rolls by a variable faced ductor roll.

The invention further consists in the several features hereinafter set forth and more particularly defined by claims at the conclusion hereof.

In the drawing:

Fig. 1 is a plan view of inking mechanism embodying the invention, parts being broken away;

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a detail sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a detail perspective view of one of the parts of the fountain;

Fig. 5 is a detail perspective view of another of the fountain parts;

Fig. 6 is a detail view of the regulator blade;

Fig. 7 is a detail view of the fountain showing certain modifications.

In the drawing, the numeral 8 designates side frame members in which a pair of spaced fountain rolls 9 and 10 are journalled so as to be substantially in contact with each other, one being preferably of harder material than the other, for example, the roll 9 may be steel roll and the roll 10 a rubber covered roll except at the end portions 11. The shafts for these rollers have meshing gear wheels 12 and 13 thereon, and one end 14 of one of these shafts is the driver and adapted to be connected to any suitable drive mechanism or source of power.

The rolls 9 and 10 are grooved at each end as indicated at 15, and spacer plates 16 of bronze or other suitable metal fit in between the rolls at their end portions and within alined grooves thereof with the lower end 17 of said plates depending below the line of centers between the rolls. These rolls may be of the same diameter or one may be larger than the other, as shown in Fig. 7, to increase the agitating effect. The two rolls with the end plates constitute a reservoir or fountain to receive ink, and as the rolls are constantly rotating, the ink therein is kept in a constant state of agitation without, however, generating appreciable heat or having a milling effect on the ink. In order to deflect the ink away from the ends, deflector members 18 are detachably mounted on the plates 16 by hook-shaped ends 19 slidably engaging therewith and are inclined inwardly toward the center of the fountain and extend downwardly to the meeting or substantial meeting edges of the rolls.

The ink is taken from the roll 10 by an oscillatory ductor roll which I preferably form of a series of small rolls 20 of various widths which I call a variable faced ductor roll. This roll has its shaft 21 mounted on spaced arms 22 carried by a pivot shaft 23 and is adapted to be swung back and forth in known manner by any suitable mechanism connected to it, as by a link 24. This ductor roll assembly works back and forth so as to bring the rollers thereon alternately into contact with the tank roll 10 and the usual vibrator roll 25 which feeds to the inking rolls 26, 27, and 28, the rolls 28 being associated with the plate cylinder 29. By using several ductor roll sections of varying widths I am able to get an efficient distribution of the ink from a relatively thick coated tank roll 10.

In order to regulate the thickness of the coating of the ink on the tank roll, I may use a blade 30 associated with said roll, but in most instances spaced therefrom, so as to be out of contact therewith and providing a preliminary regulation of the amount of ink available from the fountain and also a levelling effect on ink carried by the roll 10. This blade is shown as pivoted intermediate its width upon a shaft 31 and is adapted to be moved and held at different angular positions of adjustment by oppositely positioned set screws 32 and 33 mounted in a frame 34.

Where the blade 30 is used it preferably has

side end portions 30' and a back portion 36 form-ink a dike and extending above the bottom of the roll 9 and adjacent thereto so that ink taken off by the blade from the film of ink on the roll 10 will collect on the blade and be returned to the fountain by the roll 9 as it dips into any ink temporarily held by the blade.

With the above apparatus I am able to handle efficiently volatile base inks including metallic inks such as metallic bronze ink without danger of losing its volatile constituents and without the necessity for frequent shut downs occasioned by the use of the usual equipment.

I desire it to be understood that this invention is not to be limited to any particular form or arrangement of parts except in so far as such limitations are included in the claims.

What I claim as my invention is:

1. An inking fountain comprising a pair of contacting fountain rolls, plates at the end portions of the rolls to form a trough therebetween, means for driving the rolls in opposite directions, an adjustable blade cooperating with one of said rolls to level the ink thereon, a vibrator roll, and a variable faced ductor roll mounted to oscillate and alternately engage said vibrator roll and the fountain roll cooperating with said blade.

2. An inking fountain comprising a pair of contacting rolls, plates on the end portions of the rolls to form a trough therebetween, means for driving the rolls in opposite directions, and an adjustable blade cooperating with one of said rolls to regulate the thickness of the ink thereon, said blade formed to provide an ink receptacle adjacent the other of said rolls to permit said last named roll to return ink to the fountain.

3. An inking fountain comprising a pair of contacting rolls, end plates at the end portions of the rolls to form a trough therebetween, means for driving the rolls in opposite directions, a single deflector plate detachably connected to each end plate, said deflector plates extending into the recess formed by the rolls and forming therewith a trough and deflecting the ink away from the end plates.

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