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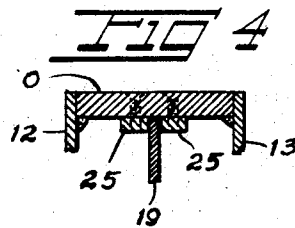
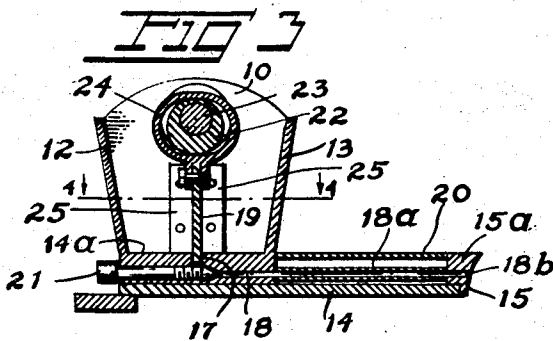
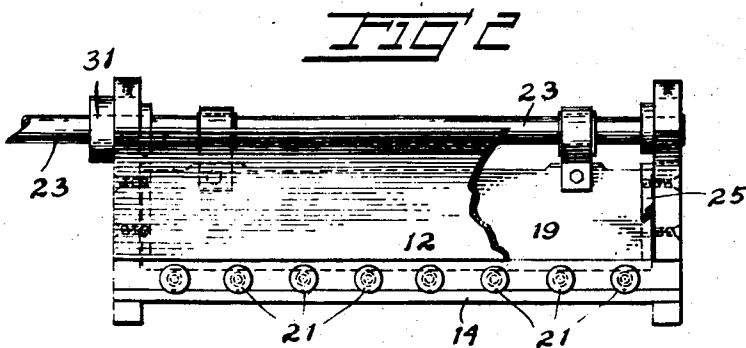
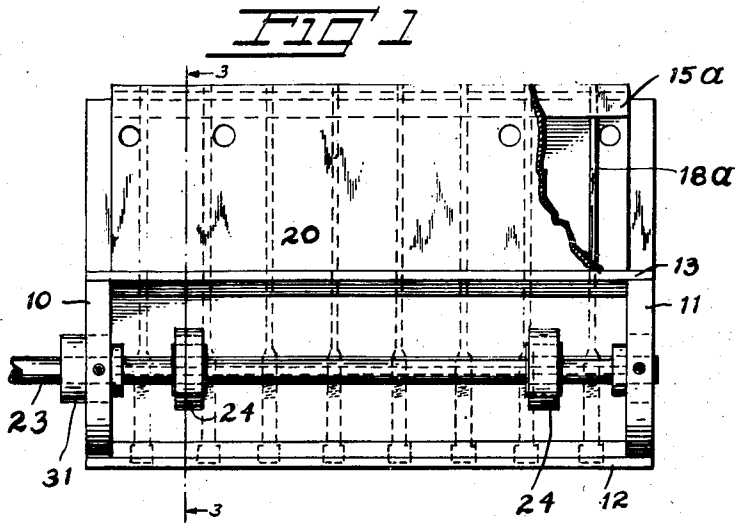
J. P. DORR

2,479,103

INK FOUNTAIN FOR PRINTING PRESSES

Filed May 29, 1946

2 Sheets-Sheet 1



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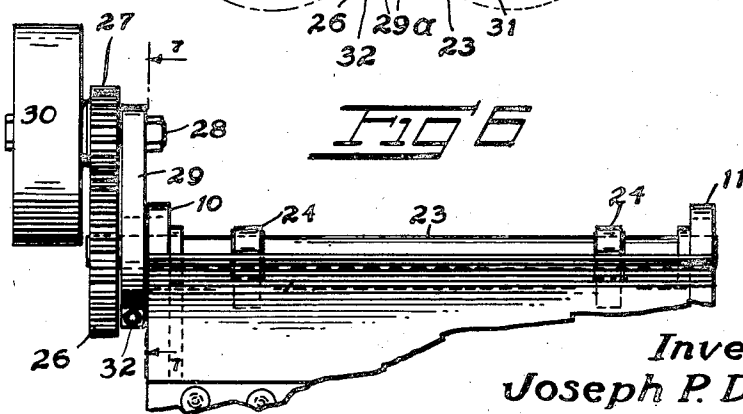
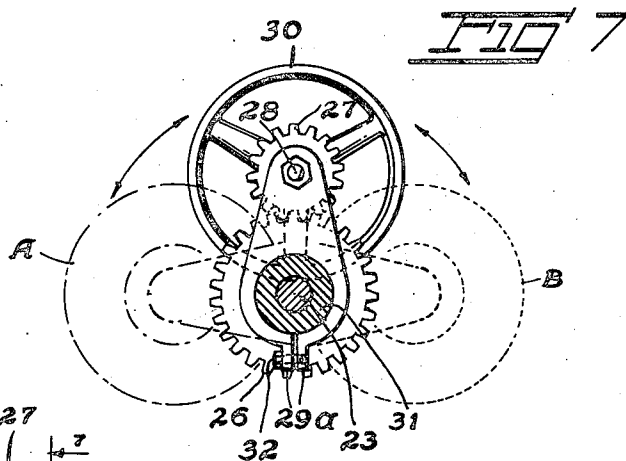
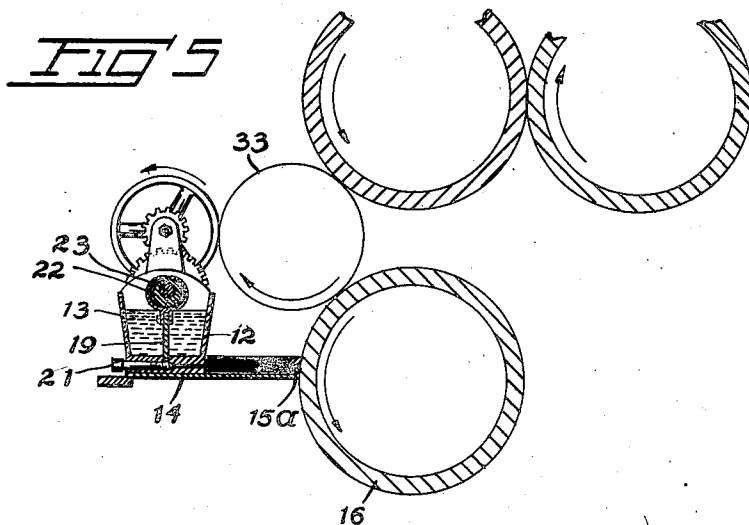
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INK FOUNTAIN FOR PRINTING PRESSES

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2 Sheets-Sheet 2



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INK FOUNTAIN FOR PRINTING PRESSES

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5 Claims. (Cl. 101—366)

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This invention relates to improvements in ink fountains of the pressure feed type for printing presses and the like.

One object is to provide a pressure feed ink fountain of simple but sturdy construction which will normally operate with maximum efficiency at all times and which may be readily disassembled for cleaning.

Another object of the invention is to provide a pressure feed ink fountain capable of use in conjunction with presses of different types in that the ink supply ducts can be readily positioned in operative relationship with the ink cylinder of the press and the feed actuating devices can be readily associated with a rotating member of the press which serves as the driving member for said actuating devices, more or less regardless of the location of said rotating member with respect to the ink cylinder.

Specifically, in the present fountain construction pressure is imposed on ink in the fountain reservoir by a plunger or piston vertically reciprocated within the ink reservoir by a shaft journaled in and projecting beyond the reservoir walls, a projecting end of said shaft having driving connections, including a driving pulley, which are adjustable circumferentially of said shaft whereby said pulley can be adjusted relatively to the shaft and the reservoir, both vertically and laterally, to assume various positions for engaging with a rotating part of the press which is to serve as the drive shaft, so to speak, for said plunger actuating connections.

A still further object of the invention is to provide a pressure feed ink reservoir which can be mounted and dismounted on the press expeditiously.

With these and other objects in view, the invention consists in certain details of construction and combinations and arrangements of parts, all as will hereinafter be more fully described and the novel features thereof particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a top plan view of the reservoir with the driving connections for the feed plunger omitted;

Fig. 2 is a side elevation of the reservoir but partly broken away to illustrate the interior of the reservoir at one end thereof;

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

Fig. 4 is a sectional view on the line 4—4 of Fig. 3;

Fig. 5 is a sectional view transversely of the

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reservoir and showing, more or less diagrammatically, the reservoir associated with feed elements of a printing press;

Fig. 6 is a side elevation of a portion of the reservoir and the drive connections for the feed plunger; and

Fig. 7 is a sectional view on the line 7—7 of Fig. 6.

While the ink reservoir may take various shapes of an elongated nature, it is shown in the present instance as consisting of end walls 10, 11, upwardly flaring side walls 12, 13, and a bottom preferably of sectional construction provided with ducts through which ink is supplied from the reservoir to the ink cylinder of the press. For instance, where the reservoir can be positioned in substantially the same horizontal plane with the ink cylinder, said bottom may comprise an extension 14 which projects laterally beyond the side 13 of the reservoir to a point where its extreme edge may be said to constitute an ink cylinder engaging edge or surface in a sense that the ink is delivered to this edge, indicated at 15, of the reservoir bottom and at which point it is deposited upon the ink cylinder 16 of the press. Preferably, the cylinder engaging edge or surface 15 is of concave formation, a separable rib 15^a having a dished surface and which actually forms a portion of the bottom 14 being mounted on the edge of said bottom in the present construction for purposes which will presently appear. Within the reservoir, said bottom is made of additional thickness and is formed with an elongated slot or recess 17. Extending from one wall of said recess to said ink cylinder engaging edge of the bottom there are one or more supply lines or ink ducts 18 whereby ink may flow from the reservoir through the channel or recess and the ducts to the point where it is discharged at the edge of the reservoir bottom on to the ink cylinder. Preferably, in order to effect economies in production, the bottom is made of increased thickness by the use of an additional plate 14^a within the area defined by the reservoir walls and the ink supply lines are formed by continuous ducts drilled through said plate 14^a and the side walls of the reservoir and small pipes or tubes 18^a which extend between said ducts and similar ducts 18^b in the rib 15^a on the ink depositing edge of the reservoir bottom. At least one end of the tubes 18^a should be fixedly attached with one of the ducts 18, 18^b in order to eliminate possibilities of accidental displacement. The tubes 18^a may be protected by a cover plate 20.

In order to supply the ink through these channels or ducts with a force feed there is a plate like plunger 19 adapted to be vertically reciprocated in the recess so that when the plunger is raised ink will have access to the recess and when the plate plunger is depressed ink in said recess will be forced through the ducts to the ink discharge point. The flow of ink from the recess through the ducts can be regulated by a series of valves 21 with which the cross-sectional area of the individual ducts can be varied. For instance, the valves 21 may be threaded in the reservoir bottom and provided with tapered inner ends which are adjustable axially of the ducts 18 by screwing said valves in or out of the reservoir bottom. Thus, the quantity of ink supplied to the ink cylinder through the several ducts may be varied while the pressure of such feed is constant.

Preferably, the plate plunger is reciprocated by eccentrics 22 mounted on a shaft 23 journaled in the end walls of the reservoir, said eccentrics being associated with the plunger by means of pitmans 24 whose lower ends are attached to the plunger 19 and whose upper ends are provided with elliptical openings in which the eccentrics are positioned and revolve. As will be understood, rotation of the shaft 23 and eccentrics will result in a vertical reciprocatory motion of the plate plunger, the latter being guided in its movements by guide members 25 mounted on the opposite end walls of the reservoir.

For the purpose of simplification, it is desirable to drive the plunger actuating shaft from one of the rotating rollers or cylinders of the press. In the present instance, this is accomplished by means of a gear 26 mounted on the plunger actuating shaft 23, said gear meshing with a second gear 27 mounted on a stub shaft 28 journaled in a bracket or frame 29 and on which shaft 28 there is a pulley 30 adapted to engage the rotating member of the press to serve as the drive member for the force feed mechanism. As the location of the rotating member of the press which is to serve as the drive member may occupy different positions with respect to the ink cylinder in presses of different constructions, it is essential that the drive pulley be readily adjustable in order that it may be operatively associated with the selected drive member without interfering with the more or less fixed relationship which must be maintained between the reservoir bottom and the ink cylinder of the press. For this purpose the bracket 29 in which the stub shaft 28 is journaled is releasably clamped on a bushing 31 projecting from the end wall of the reservoir around the plunger actuating shaft 23. For instance, as shown in Fig. 7, the bracket may be formed with separate arms 29^a at its lower end adapted to be adjusted toward and from one another by a clamping screw 32. As shown in Fig. 5, the drive pulley is in contact with the rotating cylinder or roller 33 of the press above the ink cylinder 16 but by loosening the clamping screw 32 it is apparent that the bracket carrying gear and drive pulley can be swung circumferentially of shaft 23 to various positions circumferentially of said shaft or vertically and laterally with respect to the reservoir. Two such positions of adjustment are illustrated in Fig. 7, the pulley 30 being located a. one side of the reservoir, as shown at A in dotted lines, and at the opposite side of the reservoir, as shown in dotted lines at B. Also, as the bracket 29, gears 26, 27, and pulley 30 are

all located beyond the end of the reservoir, it will be apparent that the bracket can be turned a full 360° on bushing 31. Thus, the drive pulley can be adjusted to any of these positions and the bracket again tightened on shaft 23, depending upon the position in which the drive pulley must be located to engage the rotating member of the press which is to serve as the drive member. Incidentally, the drive pulley is preferably formed with a rubber face to increase its frictional engagement with the drive member with which it is associated, although it will be understood that this particular form of pulley is not essential.

From the foregoing it will be apparent that the present fountain can be readily applied to presses of different constructions so far as concerns the relative position of the ink cylinder and that member of the printing press which is to serve as the drive member for the force feed used in supplying the ink from the reservoir to the ink cylinder. In other words, the position of the reservoir with its ink cylinder engaging bottom may remain substantially constant with respect to the ink cylinder of a press while, at the same time, the drive mechanism for the force feed is readily adjustable to operatively associate it with any one of a number of moving parts of the press regardless of the position of the latter with respect to the ink cylinder. It will also be appreciated that the present reservoir, with its operating connections, can be readily mounted or dismounted. This feature is particularly advantageous in connection with the successive use of inks of different colors during the printing operation. As the reservoir with its associated parts may be mounted or bolted on the press or a fixed member of the press frame in any suitable manner no specific form of mounting is shown or described but it will be appreciated that by reason of the adjustability of the driving connections for plunger 19 it is a comparatively simple matter to mount the reservoir in the proper position relatively to the ink cylinder and then adjust the driving connections to operatively associate them with a revolving part of the press. This ease of assembly lends to the interchangeable usage of plural reservoirs in printing, successively, with differently colored inks.

What is claimed is:

1. In a pressure feed ink fountain for printing presses and the like, a reservoir comprising side walls and a bottom, ink ducts communicating with the interior of the reservoir and terminating at one edge of said bottom, a reciprocatory plunger in the reservoir for forcing ink into said ducts, a drive shaft for said plunger, a gear mounted on said shaft, said shaft being journaled in opposite walls of the reservoir and projecting beyond one of said walls, a bushing for said shaft in the last mentioned reservoir wall, a bracket releasably clamped on said bushing, said bracket being adjustable circumferentially of said shaft when released from said bushing, and driving connections carried by said bracket and operatively associated with said gear.

2. In a pressure feed ink fountain for printing presses and the like, a reservoir comprising side walls and a bottom, ink ducts communicating with the interior of the reservoir and terminating at one edge of said bottom, a reciprocatory plunger in the reservoir for forcing ink into said ducts, a drive shaft for said plunger, a gear mounted on said shaft, said shaft being journaled in opposite walls of the reservoir and projecting beyond one of said walls, a bushing for said shaft in the

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last mentioned reservoir wall, a bracket releasably clamped on said bushing, said bracket being adjustable circumferentially of said shaft when released from said bushing, a stub shaft journaled in said bracket, a gear mounted on said stub shaft meshing with the gear on said drive shaft and a driving pulley mounted on said stub shaft.

3. In a pressure feed ink fountain for printing presses and the like, a reservoir comprising a bottom, side and end walls, ink ducts communicating with the interior of the reservoir, a reciprocating plunger in the reservoir for forcing ink into said ducts, a drive shaft for said plunger journaled in two opposite walls of the reservoir with the shaft projecting outwardly beyond one of said walls, a gear on the projecting end of the shaft, a bracket journaled concentrically of said shaft end, and driving connections carried by said bracket and operatively associated with said gear, said bracket and the driving connections being movable circumferentially of said shaft to adjust said driving connections vertically and laterally with respect to said reservoir.

4. In a pressure feed ink fountain for printing presses and the like, a reservoir, ink ducts extending from said reservoir, a reciprocating plunger in the reservoir for forcing ink into said ducts, a bushing mounted in and projecting outwardly beyond one wall of said reservoir, an operating shaft for said plunger journaled in said bushing, one end of said shaft projecting outwardly beyond said bushing, a gear on the projecting end of said shaft, a bracket releasably locked on the

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projecting portion of said bushing but adjustable circumferentially of said shaft and bushing when released, a stub shaft journaled in said bracket, a gear on said stub shaft meshing with the first mentioned gear, and a driving member mounted on said stub shaft.

5. In a pressure feed ink fountain for printing presses and the like, an ink reservoir, an elongated recess in the bottom of said reservoir, ink delivery ducts communicating with said recess, a reciprocating plate having one edge in registry with said recess, said edge being of a length substantially corresponding to that of said recess, and means for reciprocating said plate in said recess comprising a shaft journaled in opposite walls of the reservoir, a gear mounted on said shaft and driving connections for said gear rotatably supported on a bushing concentric with said shaft exteriorly of the reservoir and operatively associated with said gear, said driving connections being adjustable circumferentially of said shaft, and means for releasably locking said connections relatively to said bushing.

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