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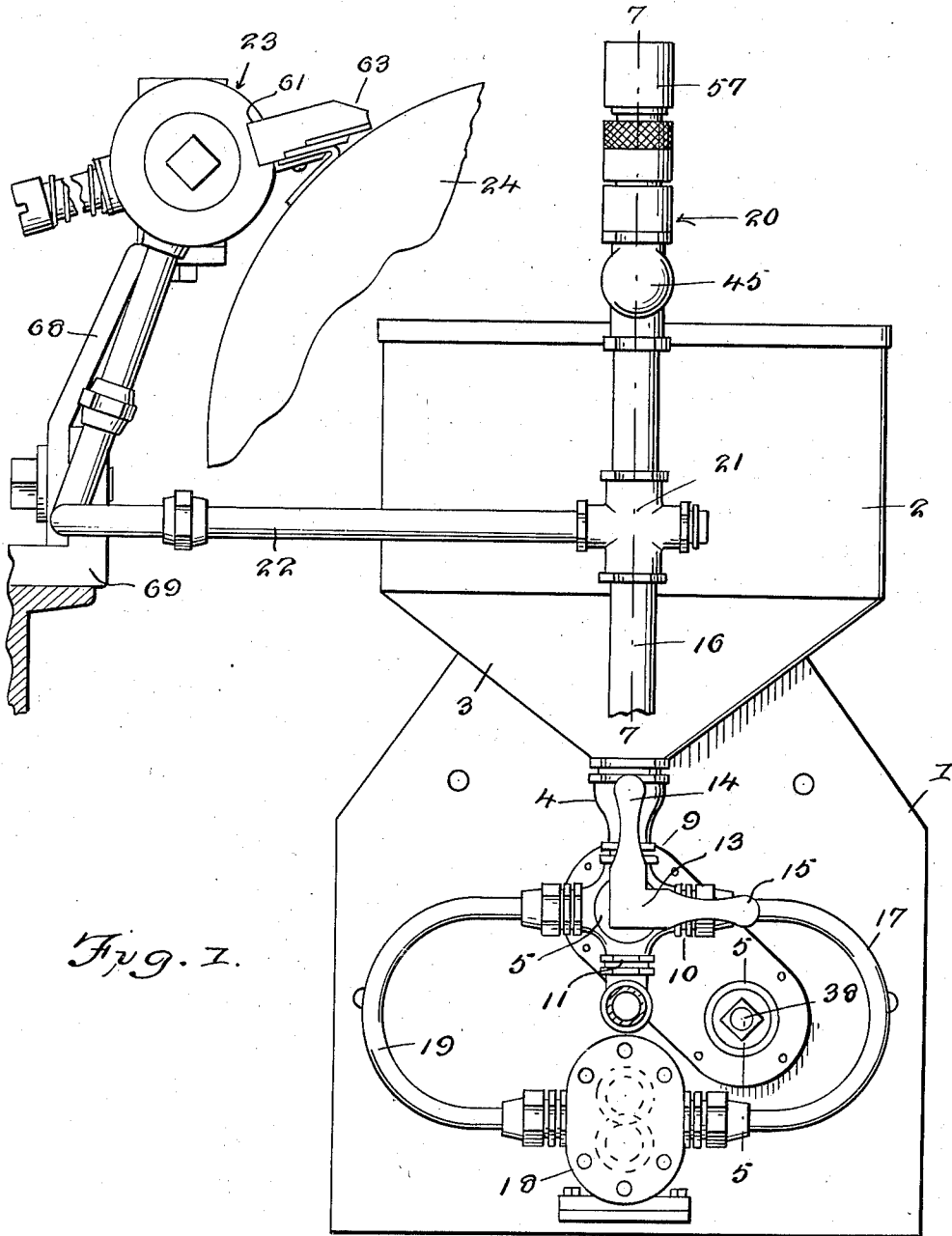
H. WEDEMEYER

2,130,659

PRINTING PRESS PORTABLE INK FOUNTAIN

Filed Aug. 14, 1936

4 Sheets-Sheet 1



H. Wedemeyer  
INVENTOR

BY Victor J. Evans & Co.

ATTORNEY

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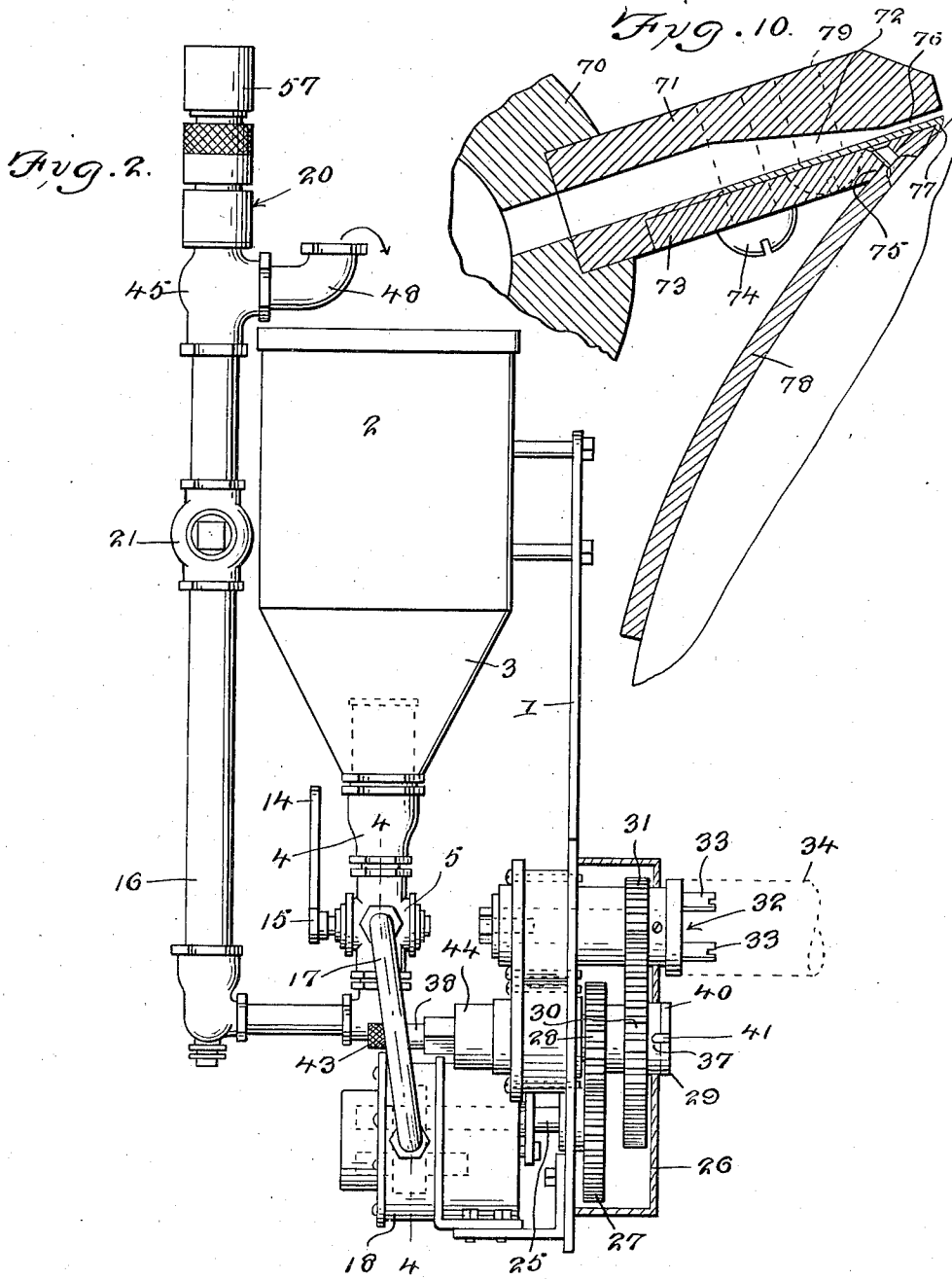
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H. Wedemeyer  
INVENTOR  
BY *Victor J. Evans & Co.*  
ATTORNEY

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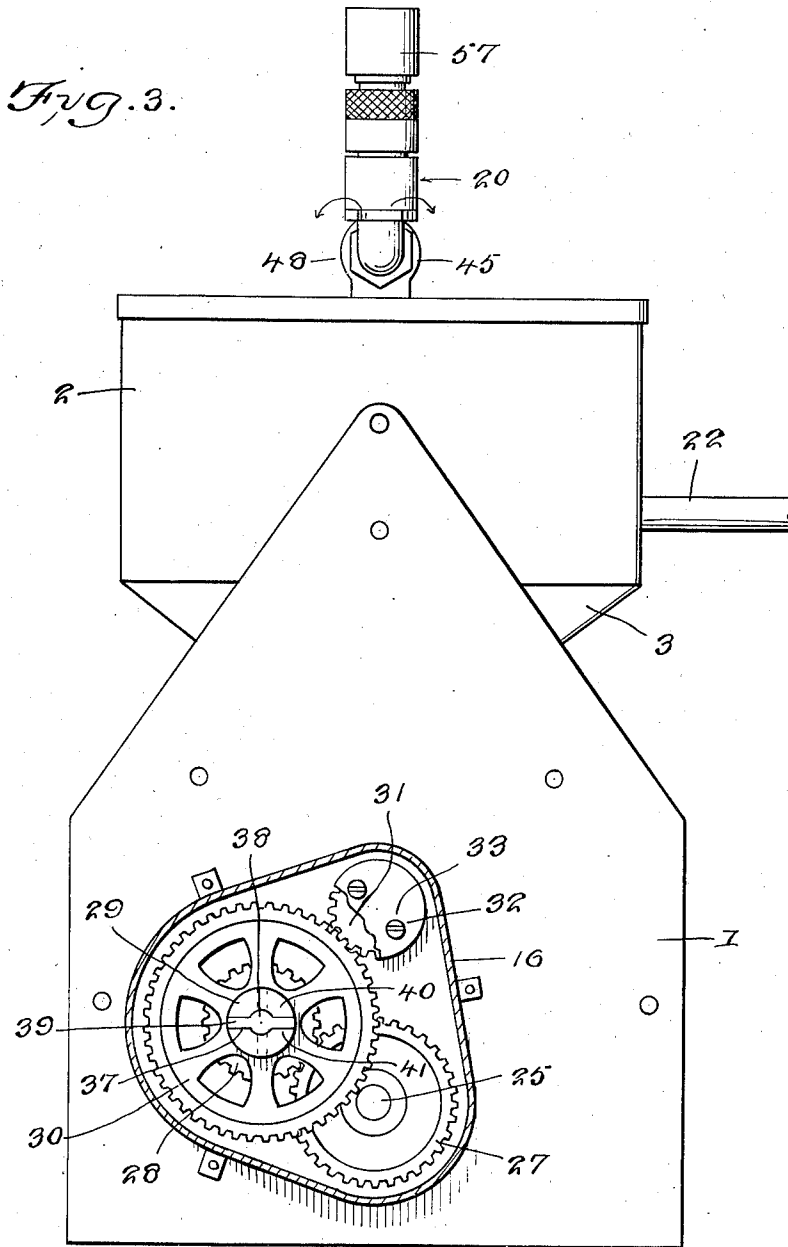
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H. Wedemeyer  
INVENTOR

BY *Victor J. Evans & Co.*

ATTORNEY

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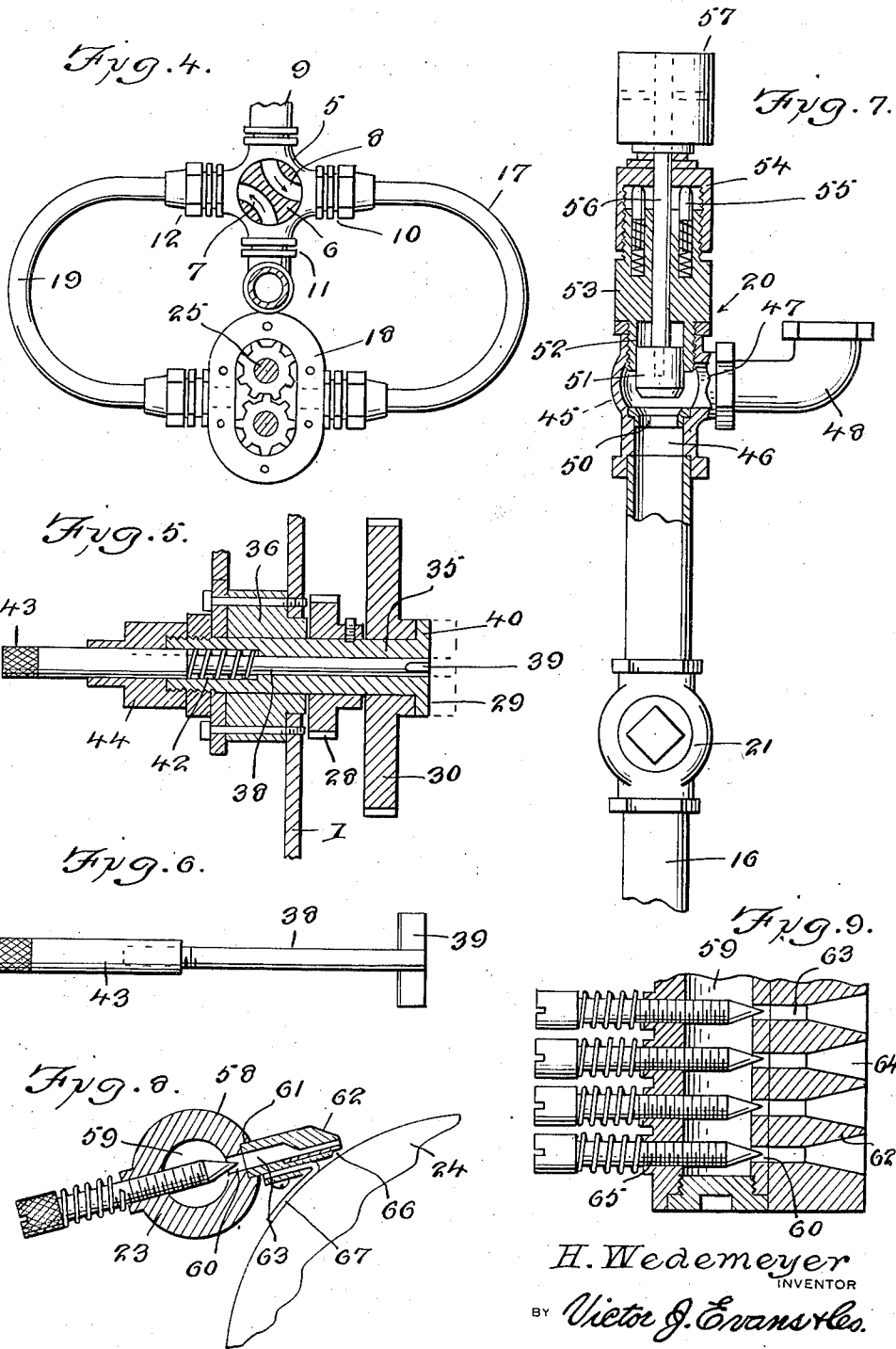
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INVENTOR

BY Victor J. Evans & Co.

ATTORNEY

# UNITED STATES PATENT OFFICE

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## PRINTING PRESS PORTABLE INK FOUNTAIN

Herman Wedemeyer, Detroit, Mich.

Application August 14, 1936, Serial No. 96,076

1 Claim. (Cl. 101—366)

This invention relates to a portable ink fountain for printing presses of the type employing ink drums or discs and has for the primary object the provision of a simple and efficient device of this character which may be readily adapted to a printing press and removed from the latter and adapted to another whenever desired and which will provide a supply of ink to the ink drum or disc in manually regulated amounts and which amounts will be automatically maintained during varying speeds of operation of the press.

With these and other objects in view, this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a front elevation, partly in section, illustrating an ink fountain constructed in accordance with my invention.

Figure 2 is a side elevation illustrating the same.

Figure 3 is a rear elevation, partly in section, illustrating the device.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a detail vertical sectional view illustrating clutch mechanism.

Figure 6 is a plan view illustrating a clutch pin.

Figure 7 is a sectional view taken on the line 7—7 of Figure 1.

Figure 8 is a detail sectional view showing the distributor.

Figure 9 is a fragmentary horizontal sectional view illustrating the same.

Figure 10 is a fragmentary vertical sectional view illustrating a modified form of distributor.

Referring in detail to the drawings, the numeral 1 indicates a supporting plate which may be detachably secured to a printing press in any well known manner. Mounted on the supporting plate 1 is a reservoir 2 having a conical-shaped bottom 3 to which is connected a nipple 4. A four-way valve 5 is connected to the nipple 4 and includes a rotatable valve element 6 and having passages 7 and 8. The valve 5 has ports 9, 10, 11 and 12. By adjusting the valve element 6 the ports 9 and 10 may be communicated and the ports 11 and 12 communicated or the ports 9 and 12 may be communicated and the ports 10 and 11 communicated. The valve element 6 is operated through a handle 13 having angularly related grips 14 and 15. The grips, as shown in Figure 1, posi-

tion the valve element to communicate the ports 9 and 10 with each other and the ports 11 and 12 with each other and by reversing the position of the handle 13 so that the grip 15 is disposed vertically and the grip 14 horizontally, the valve element 6 will be positioned to communicate the ports 9 and 12 and the ports 10 and 11. The port 9 is connected to the nipple 4 so that the supply of ink from the reservoir 2 may enter the valve. The port 11 is connected to a vertically arranged pipe 16 which will be hereinafter more fully described. A pipe 17 is connected to the port 10 and to one of the ports of a pump 18. A pipe 19 is connected with the port 12 and to another port of the pump 18.

The pump 18 is suitably mounted on the supporting plate 1 and is of the gear type which may be rotated in either direction by power derived from the printing press and the flow of ink thereto may be reversed by adjusting the valve element through the manipulation of the handle 13. The pipe 16 heretofore referred to receives continuous flow of ink from the pump and has connected thereto a pressure regulating valve 20 which also acts as a relief valve for permitting excess ink to return to the reservoir 2.

Connected in the pipe 16 below the valve 20 is a T-coupling 21 to which is connected a pipe 22 leading to a distributor 23. The distributor acts to supply ink in regulated amounts to an ink drum or disc of a printing press indicated generally by the character 24.

The shaft 25 of the pump 18 extends into a gear housing 26 secured to the supporting plate 1 and has secured thereto a gear 27 which meshes with a gear 28 forming a part of a clutch mechanism 29. Said clutch mechanism also includes a gear 30 which meshes with a gear 31 secured to a coupling mechanism 32. The coupling mechanism 32 includes spaced parallel pins 33 secured to a shaft thereof and which are adapted to enter sockets formed in a power take-off shaft 34 of the printing press. The clutch 29 when in engaged position will permit power derived from the power take-off shaft 34 to operate the pump and when disengaged will interrupt the drive to the pump from the power takeoff shaft and if desired, the pump then may be rotated manually or permitted to stand idle.

The clutch mechanism 29 includes a sleeve 35 journaled in a bearing 36 carried by the supporting plate 1. The gear 28 is keyed or otherwise secured to the sleeve 35 and the gear 30 is journaled thereon and the hub of said gear is provided with

oppositely arranged notches 37. A clutch pin 38 is slidably mounted in the sleeve and has secured to one end a cross member 39. One end of the sleeve 35 is provided with a flange 40 provided with oppositely arranged notches 41. The cross member 39 of the clutch pin 38 when positioned in the notches 41 and 37 establish a driving connection between the gear 30 and the sleeve. A spring 42 acts on the clutch pin 38 to urge the cross member 39 into the notches. Secured to the clutch pin 38 is a finger piece 43 whereby a pressure placed thereon will disengage the cross member 39 from the notches and thereby free the gear 30 from the sleeve 35. A nut 44 is threaded to the sleeve 35 through which extends the finger piece 43.

The combined pressure regulating and relief valve 20 includes a valve housing 45 provided with an inlet port 46 to which the pipe 16 is connected and an outlet port 47 to which an overflow fitting 48 is secured. The fitting 48 is disposed over the reservoir 2. A valve seat 50 is arranged between the ports 46 and 47 and operating in conjunction therewith is a valve element 51 slidably mounted in a guide 52 forming an integral part of a head 53 and which is threaded into the valve housing. An adjusting nut 54 is threaded to the head 53 and is chambered to receive spring pressed pins 55 carried by the head 53 whereby the adjusting nut 54 will be secured against accidental rotation. The valve element 51 has a stem 56 which extends through the head 53 and nut 54 and carries at its upper end a weight 57. The weight engages with the adjusting nut 54 and by adjusting the nut 54 on the head 53 the valve element may be moved towards and from the seat 50 to vary the pressure of ink furnished to the distributor 23 and any excess pressure will escape by way of the fitting 48 and return to the reservoir 2. Therefore, it will be seen that a selected pressure of ink to the distributor 23 may be had during the various speeds of operation of the pump, the speeds of operation of said pump being in accordance with the speed of operation of the press to which the device is adapted.

The distributor 23 consists of a body 58 of any selected length having therein a chamber 59 provided with a series of outlet ports 60 and an inlet port to which the pipe 22 is connected. One face of the body 58 is provided with a groove 61 to receive a distributing strip 62, the latter being secured to the body in any well known manner. Formed in the strip 62 is a series of passages 63 communicating with the outlet ports 60 and which provide jets or nozzles by having portions thereof flared, as shown at 64. The outlet ports 60 are controlled by needle valves 65 threaded in the body. The needle valves permit the flow of ink from each port to be regulated independently of the other.

A facing strip 66 is secured to the strip 62 for the purpose of protecting the surface of an ink drum or disc of a printing press if engaged thereby. The strip 66 is constructed of any material suitable for the purpose. A distributing strip 67 is secured to the strip 61 and is adapted to engage the drum or disc rearwardly of the jets so as to distribute the ink evenly on the drum or disc. The distributing strip 67 may be con-

structed of any material suitable for the purpose and of a material which will not mar or damage the drum or disc but still bring about an even distribution of ink thereon.

The body 58 of the distributor has detachably secured thereto arms 68 and these arms are adjustably and detachably connected to brackets 69 secured to the printing press. The arms 68 being adjustable on the brackets 69 permit the distributor 23 to be adjusted relative to the drum or disc of the printing press.

A device of the character described may be readily adapted to a printing press and removed therefrom when desired which permits a number of such devices to be used in conjunction with a printing press each having different colored ink so that when it is desired to change the color of ink after making a run on the printing press, all that is necessary is to remove the fountain and substitute in lieu thereof a similar fountain having the color ink desired for the second or next run. This will eliminate the present practice of having to clean out a fountain after each run when it is desired to use another color ink. This device when adapted to a press and operated therefrom will supply ink in regulated amounts under a selected pressure and any surplus pressure or amount of ink circulated by the pump will automatically be returned to the reservoir.

Referring in detail to Figure 10 the body of the distributor is indicated generally by the character 70 and is constructed similar to the body in the other form of distributor heretofore described and has secured thereto a nozzle strip 71 in which the nozzles 72 are formed. The nozzle strip 71 includes a removable plate-like portion 73 secured in place by a bolt 74 and one end thereof is beveled to form a seat 75. The removable section 73 clamps in position a metallic plate 76 terminating at the ends of the nozzles with a shoulder 77 which cooperates with the seat 75 in receiving one end of a distributing strip 78, the latter being riveted or otherwise secured to the removable section 73. The plate 76 is secured to the strip 71 by bolts 79. The distributing strip 78 may be constructed of any material suitable for the purpose and trails the discharge ends of the jets and in contact with the printing drum or disc so as to evenly distribute ink thereon discharged by the jets.

Having described the invention, I claim:

A removable ink fountain for printing presses comprising a vertical support removably mounted on a press, an ink reservoir supported vertically by said support, a reversible gear type pump mounted on said support directly under the reservoir, a manually actuated reversing valve connecting said pump and the reservoir, an outlet pipe connected to said pump and including an adjustable relief valve and an overflow fitting with its discharge disposed over the reservoir, an ink distributor connected with said pipe between the reversing valve and the relief valve, and a manually controlled clutch connected to said pump and including a detachable coupling for joining the clutch to the power means of the press.

HERMAN WEDEMEYER.