July 14, 1953 B. B. PERRY 2,645,176

INK FOUNTAIN FOR PRINTING PRESSES

Filed March 14, 1950 2 Sheets-Sheet 1

FIG. 1.

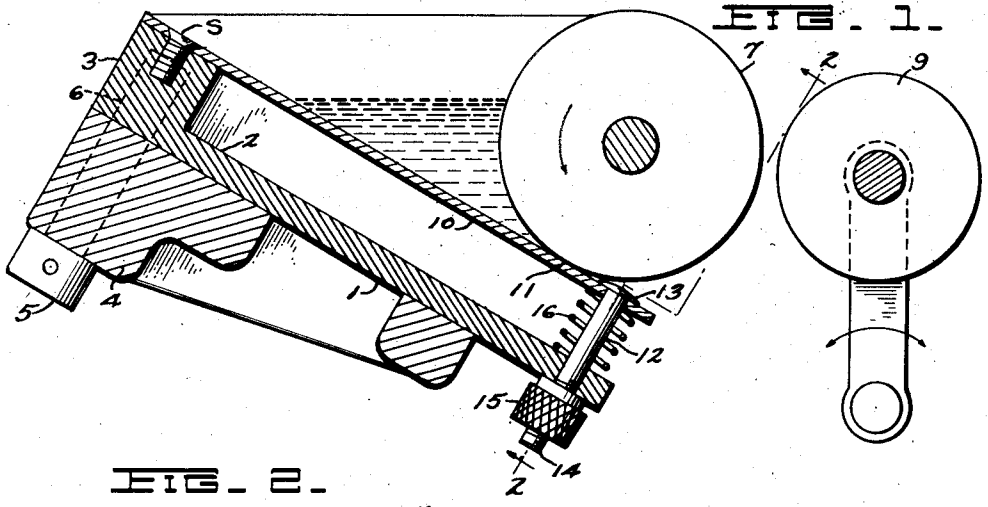


FIG. 2.

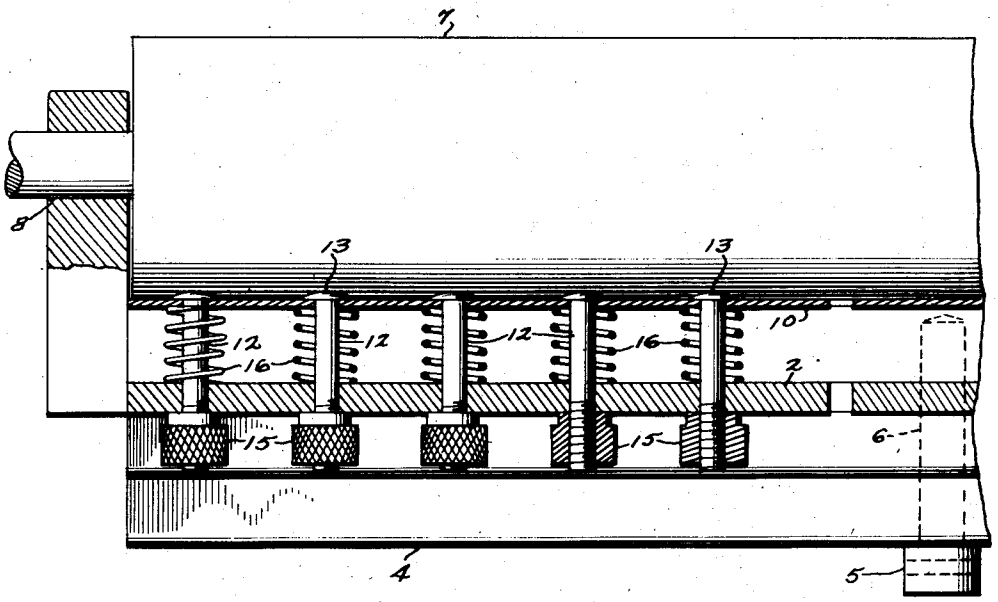
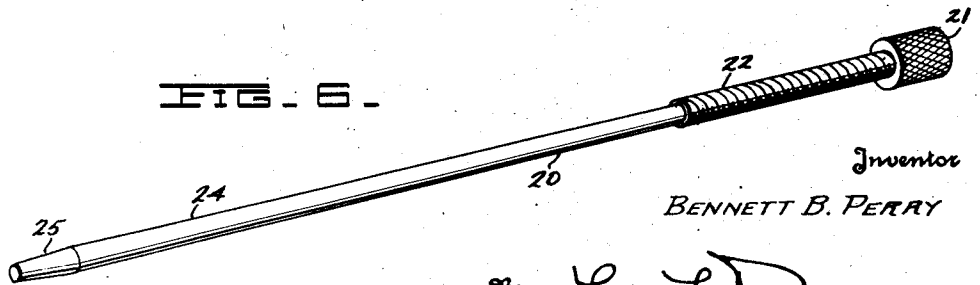


FIG. 6.



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July 14, 1953 B. B. PERRY 2,645,176

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Filed March 14, 1950 2 Sheets-Sheet 2

FIG. 3.

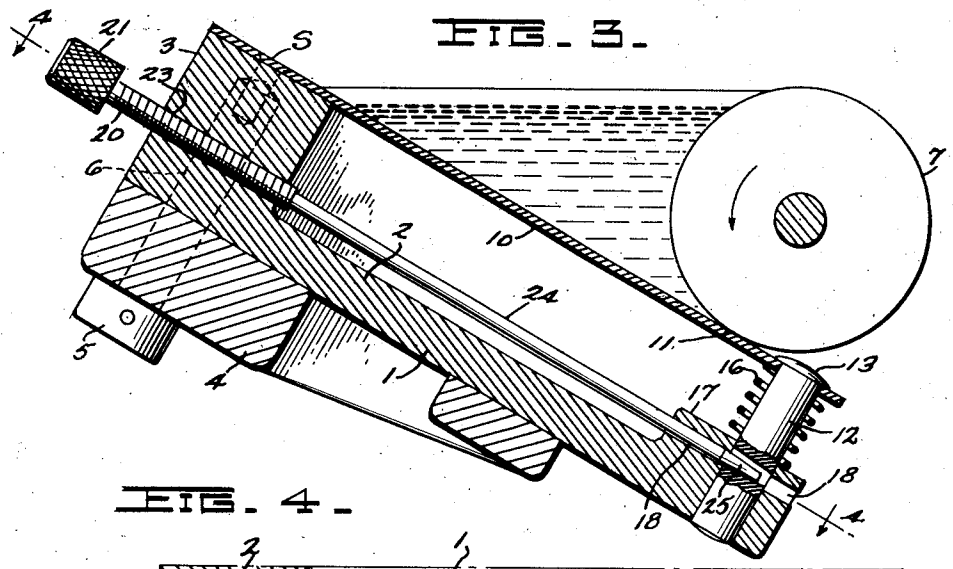


FIG. 4.

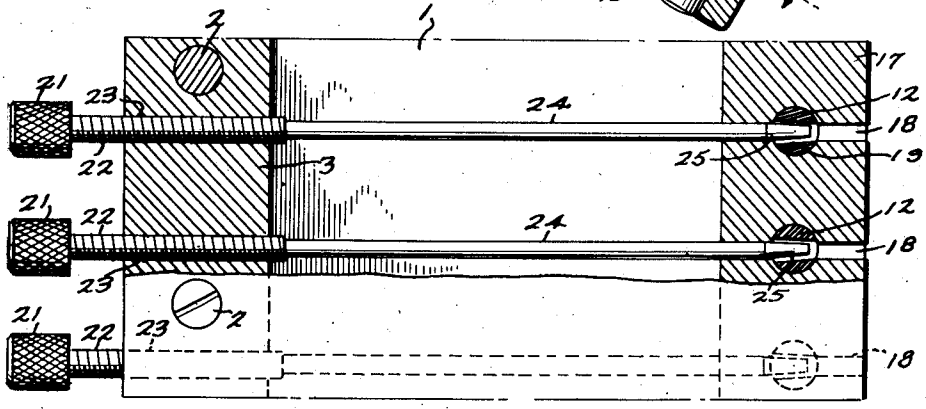
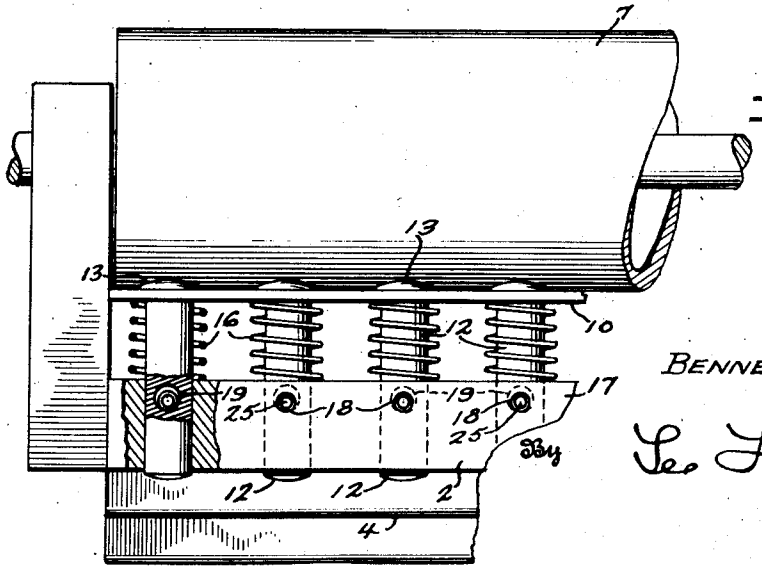


FIG. 5.



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INK FOUNTAIN FOR PRINTING PRESSES

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3 Claims. (Cl. 101—365)

1

This invention relates to an improvement in an ink fountain for printing presses and relates primarily to the so called undershot type. Ordinarily the flexible controlling blade of such fountains has an edge or knife contact with the feed roll and is pushed into such contact by a series of adjusting screws spaced back from the point of contact.

The primary object of this invention is to eliminate the edge or knife contact of the controlling blade with the feed roll and to make this contact point back from the front edge of the blade and along the upper flat surface of the blade. The adjusting means employed to control the flow of ink are spaced forward adjacent the front edge of the blade and between said edge and the point of upper surface contact.

A most advantageous object of the invention is to prevent caking and drying of excess ink being carried from the fountain reservoir at the controlling point of contact and also to prevent buckling or jumping along the length of the blade.

A further object of the invention is to provide the fountain and blade adjusting mechanism as a removable unit that can be removed or replaced on a press without disturbing the fountain setting.

A further advantage of this invention is that a fine setting of the blade for a very small amount of ink can be attained in a fraction of the time it takes by the old style fountain because by releasing the screws it automatically closes the opening evenly across the fountain, but in the old style the screws have to be turned individually in and out to attain the same results, which takes much more time.

Still another object of the invention is to provide an adjusting mechanism for controlling the flow of ink that is always visible and easily accessible so the danger to the pressman caused by reaching under and below the fountain for adjustment while the press is in operation is eliminated.

A still further object of the invention is to provide in an ink fountain flow adjusting mechanism that pulls the blade away from feed roll contact rather than pushes the same in contact therewith and also to provide a micrometer adjustment for the blade.

These and other objects of the present invention will appear as the following description thereof proceeds, and in order to more clearly understand the invention, reference may be had to the accompanying drawings in which:

2

Figure 1 is a vertical cross section through the ink fountain showing the main and drive feed rolls in partial elevation.

Figure 2 is a partial longitudinal section on the line 2—2 of Figure 1.

Figure 3 is a vertical cross section through the ink fountain showing a modified form of blade adjustment.

Figure 4 is a horizontal section on the line 4—4 of Figure 3.

Figure 5 is a partial front elevation of this form of fountain with certain parts in section, and

Figure 6 is a perspective view of one of the adjusting screws used.

The usual ink fountain of this type includes a reservoir having an inclined flexible flow control blade secured at its rear edge and having a free front edge contact with the feed roll. The edge contact is along the inner periphery of the roll adjacent the bottom. Usual sides retain the ink in the fountain. The blade is flexible but normally out of contact with the feed roll. The front edge of the blade is pushed into contact with the roll periphery or spaced therefrom to control the flow of ink by a series of spaced screws underneath the fountain that bear against the underside of the blade at spaced points. This form of fountain has the disadvantage of the ink caking and drying at the contact point, a tendency of the edge of the blade to buckle or warp due to uneven screw control, and the adjusting screws are not very accessible.

The ink fountain that is the subject matter of this invention follows the same general form of the conventional type and includes a fountain feed formed as a unit 1 comprising a sub base 2 along the rear edge of which is formed a raised portion 3. This unit rests at an angle on the base 4 of the press and is removably secured thereto by a suitable number of screws 5 extending through the base 4 and entering threaded sockets 6 in the bottom of the portion 3. At the front of the unit is a feed roll 7 suitably mounted in side trunnions 8. This roll forms the front of the fountain reservoir and a supplemental drive feed roll 9 is adapted for peripheral contact therewith in the usual manner.

Secured to the upper flat part of the raised portion 3, of the sub base 2 of the unit and extending forwardly and downwardly therefrom is the usual flexible spring metal control blade 10. This blade is secured in position by screws S along its rear edge. However instead of the front edge of the blade 10 being adapted for edge contact with the roll 7 it extends beyond said roll

but has a spring contact therewith at a point 11 about ½ inch back from the front edge of the blade. The contact is on the upper flat surface of the blade and along the length of the same.

To adjust the flat blade contact away from the roll 7 there is provided along the front edge of the blade 10 and in front of the contact point 11, a series of bolts 12 having their heads 13 resting on the upper surface of the blade in secured or unsecured position. The bolts pass through suitable openings in the blade and also through alined openings in the front edge of the sub base 2. This sub base is spaced from the bottom of the blade as clearly shown in Figure 1. The ends of the bolts 12 are screw threaded at 14 and on such end of each bolt is mounted a knurled adjusting nut 15 beneath the sub base 2. A coiled compression spring 16 surrounds the shank of each bolt in the space between the blade and sub base 2 and has end contact with said blade and sub base.

From the foregoing it is obvious that the ink fountain is formed as a unit 1 comprising the sub base 2, blade 10, feed roll 7 and adjusting means described. As such it may readily be removed from or replaced on the base 4 of the press without disturbing its adjustment. This allows frequent clean ups without loss of time.

In operation the spacing of the blade 10 from the flat upper surface contact point 11 with the feed roll 7, controls the flow of ink from the fountain. Due to this arrangement there is normally a closed or substantially closed spring contact between the blade and roll but this is on a flat surface of the blade tangentially with the roll and not an edge contact as usual. This contact is due to the arrangement noted and the coiled expansion springs 16 on the bolts 12 as normally the flexible blade 10 is out of contact with the roll 7. To adjust the opening at the point 11 along the length of the blade 10 the knurled nuts are individually rotated to draw the blade away from the roll under spring tension to the desired degree.

It has been found that the flat upper surface contact between the blade and the roll eliminates caking and drying of the ink at this point and removes one of the troublesome disadvantages of the old type of blade edge contact. Also by shifting the adjusting means for the blade from a point rearward of the blade contact to a point in front of the same and adjacent the edge of the blade and holding the blade in spring contact with the roll for pulling away from instead of pushing against the roll gives a much surer and positively controlled adjustment that eliminated buckling and warping along the point of contact that destroys the desired spacing and consequent flow of the ink. By the arrangement and adjusting means shown and described a constant and controlled flow of ink is maintained. Also the arrangement of the adjusting means along the front edge of the unit permits ready visible access thereto by the pressman without danger while the press is in operation.

In Figures 3 to 6 inclusive there is illustrated a modified form of adjustment for the blade 10. The unit 1 is substantially the same except the front edge of the sub base 2 is raised at 17 and there is provided a series of apertures 18 running transversely therethrough that bisect the openings 13 through which the bolts 12 pass. The bolts 12 in this form are not threaded and in line with the apertures 18 are provided with tapered openings 19 larger at the inner entrances facing the portion 3 of the sub base than the opposite end.

For each bolt there is provided an adjusting screw 20. These screws are of a greater length than the width of the unit 1 and have a knurled head 21 with an adjacent threaded portion 22 that is threadedly engaged in correspondingly threaded cross openings 23 in the raised rear portion 3 of the sub base 2. The stems 24 of the screws 20 are reduced and smooth and each terminates in a tapered end 25 that extends through the transverse aperture 18 in the front raised portion 17 of the sub base 2 and is loosely positioned in the correspondingly shaped opening 19 of the bolt 12.

The operation of this form of adjusting mechanism is that upon suitable rotating of a screw 20 by the knurled head 21 the tapered end 25 guided by the aperture 18 of the portion 17 moves in or out of the tapered opening 19 of the bolt 12 on its lower side and upon contact with the wall of the tapered opening raise or lower the bolt thereby causing the blade 10 to be adjusted toward or from the roll 7 at the point 11. As the blade is biased in one direction by spring action this arrangement gives a very fine micrometer adjustment for the blade at each point adjusted.

Although the improved ink fountain for printing presses has been illustrated and described herein to a detailed extent, it will be understood, of course, that the invention is not to be regarded as limited correspondingly in scope, but includes all variations coming within the terms of the appended claims.

I claim:

1. An ink fountain comprising a unitary reservoir formed of a sub base adapted to be secured to a printing press base and including a rear wall formed by an extension on said sub base, side walls, a driven feed roll forming the front face thereof and a bottom forming blade secured to the rear wall only and having a flat upper surface contact with a lower peripheral portion of the feed roll at a point spaced inwardly from the free edge of said blade, a plurality of individual bolts spaced along the free edge of the blade in front of the point of contact and extending downwardly through the sub base, a compression spring on each bolt between the sub base and blade to normally urge the blade toward the roll, and an adjustable lock nut on each bolt beneath the sub base to hold each bolt and the controlled portion of the blade in any adjusted position with respect to the roll against the tension of the spring.

2. An ink fountain comprising a unitary reservoir formed of a sub base adapted to be secured to a printing press base and including a rear wall formed by an extension on said sub base, side walls, a driven feed roll forming the front face thereof and a bottom forming blade secured to the rear wall only and having a flat upper surface contact with a lower peripheral portion of the feed roll at a point spaced inwardly from the free edge of said blade, a plurality of individual bolts spaced along the free edge of the blade in front of the point of contact and extending downwardly through the sub base, compression springs on each bolt between the sub base and blade to normally urge the blade toward the roll, and a series of screws extending forwardly through the sub base and each adapted for engagement with a bolt at right angles thereto, tapered ends on said screws, and

each bolt having a corresponding opening therethrough for engagement with the tapered bolt end whereby each bolt and controlled portion of the blade may be adjusted with respect to the roll against the tension of the spring.

3. In combination with a printing press, an ink fountain comprising a unitary reservoir formed of a sub base adapted to be removably secured to the printing press base, said fountain including a driven feed roll and a blade normally out of pressure contact with the roll but adapted for a flat upper surface contact with a lower peripheral portion of the roll at a point spaced inwardly from the free edge of the blade, a plurality of individual bolts spaced along the free edge of the blade in front of the point of contact and extending downwardly through the sub base, a compression spring on each bolt between the sub base and blade to normally urge the blade toward the roll, and individual retracting means cooperating with the lower portion of each bolt to withdraw the blade against the tension of the compression springs at individually spaced points.

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