INK FOUNTAIN ASSEMBLY AND BLADE ADJUSTING MEANS THEREFOR
4 Claims, 5 Drawing Figs.

ABSTRACT: An ink fountain assembly embodying a plurality of independently adjustable elements forming part of the blade assembly for controlling the supply of ink to the ink roller.
3,559,573 INK FOUNTAIN ASSEMBLY AND BLADE ADJUSTING MEANS THEREFOR

This invention relates to ink fountains for printing presses and more particularly to an ink fountain assembly embodying improved blade adjusting means to insure substantially uniform application of ink through the length of the ink roller.

Prior known devices for applying ink to a fountain roller in printing presses have presented numerous problems as it has been difficult to produce uniform pressure to the fountain blade against the fountain roller. This of course resulted in nonuniform application of ink to the fountain roller and with the result that ink was not uniformly applied to the plate or printing roller as the case may be. This invention overcomes the difficulties heretofore encountered and provides a precise arrangement for effecting uniform application of ink throughout the length of the fountain.

Another object of the invention resides in the provision of a novel and improved fountain blade assembly and mode of adjustment that greatly facilitates precise control of the application of ink throughout the length of the fountain roller and which is characterized by its simplicity of construction and ease of maintenance and repair.

Another object of the invention resides in the provision of a novel and improved ink fountain assembly for effecting uniform application of ink throughout the length of the ink fountain roller.

The above and other objects of the invention will become more apparent from the following description and accompanying drawings forming part of this application.

In the drawings:

FIG. 1 is a plan view in partial section of an improved ink fountain assembly in accordance with the invention;

FIG. 2 is a cross-sectional view of FIG. 1 taken along the line 2-2 thereof;

FIG. 3 is a fragmentary cross-sectional view of FIG. 2 taken along the line 3-3 thereof;

FIG. 4 is a fragmentary cross-sectional view taken along the line 4-4 of FIG. 1; and

FIG. 5 is a fragmentary cross-sectional view similar to FIG. 2 and illustrating a modified embodiment of the invention.

The ink fountain assembly is generally denoted by the numeral 10 and includes a fountain roller 11 and a fountain blade assembly generally denoted by the numeral 12. The roller 11 is supported by the shaft 13 and may be driven in any suitable manner. The fountain blade assembly 22 cooperates with the roller 11 and is supported by suitable attachment to the sides of the frame of the press. Ink is fed into the space defined by the fountain roller 11 and the blade assembly 12 in the usual manner and the fountain roller 11 would normally rotate in a clockwise direction as illustrated in FIG. 2.

The fountain blade assembly 12 in the instant embodiment of the invention includes a longitudinal structure for support of the blade and includes a bottom section 14, a vertical section 15 and inclined portion 16. The bottom portion 14 has an upper inclined face 17 at substantially the same angle of inclination as the section 16, and it is substantially, though not necessarily, parallel to the angle of inclination of the blade 18.

The bottom section 14 has a longitudinal recess 19 of rectangular cross-section extending longitudinally throughout its length and this recess slidably receives a plurality of rectangular keys 20 which are contiguously one with the others and independently slidable toward and away from the fountain roller 11. The bottom portion 14 further includes a second longitudinal recess 21 formed in the upper surface thereof and adapted to receive a plurality of blocks 22 each having a threaded opening 23 extending therethrough. A plurality of horizontally disposed holes 24 also extend through the bottom portion 14 and are aligned within the longitudinal recess 19. The holes 24 are spaced apart a distance corresponding to the horizontal width of each key 20 and are aligned with the horizontal center lines of the blocks 22. The keys 20 are disposed in the threaded openings 25 each having a diameter slightly smaller than the diameter of the threaded openings 23 in the blocks 22.

A plurality of bolts 26 having threaded sections 27 and 28 extend through the holes 24 and each bolt threadably engages a block 22 and a key 20. The pitch of the threaded section 27 of the bolt 26 differs from the pitch of the threaded section 28, the latter preferably being of a coarser pitch than the section 27. With this arrangement as the bolt 26 is rotated, the associated key 20 will move toward or away from the fountain roller 11 depending on the direction of rotation of the bolt. The displacement of a key 20 for a single rotation of the bolt 26 can be determined by the difference between the pitches of the threads 27 and 28. Thus if the threads 27 are a pitch just slightly coarser than the pitch provided with the threaded section 27, very closely controlled displacements of the keys 20 can be obtained. In this way the corners 20' of all of the keys 20 can be precisely positioned relative to the surface of the fountain roller 11.

In the instant embodiment of the invention, the upper inclined portion 16 of the blade assembly support is recessed at 29 to accommodate the blade 18, the outer end of which rests on the upper surfaces of the keys 20 and in close proximity to the roller 11. The blade 18 is held in place by a plate 30 secured to the inclined portion by a plurality of bolts 31 or other suitable fastening means.

The blade assembly 12 as described above is held in position relative to the roller 11 by a pair of end plates 32 secured to the end of the blade support structure by bolts or other suitable fastening means. The left-hand edge 34 of each end plate as viewed in FIG. 4 is arcually formed and has a radius corresponding to the radius of the fountain roller 11. This edge rides firmly against the fountain roller in order to retain the ink supply in the space defined by the fountain roller and the blade assembly. An arcuate slot 35 is formed in each arcuate edge 34 of the end plates 32 and a grease injection fitting 36 is provided for lubrication. The blade assembly including the end plates 32 may be fixedly supported relatively to the fountain roller 11 in any suitable manner as for instance by means of appropriate supports secured to the side frames of the press.

An alternate embodiment of the invention is illustrated in FIG. 5. This form of the invention is identical in all respects to the invention previously described and therefore only a fragmentary section has been illustrated. In this embodiment the fountain roller is denoted by the roller 11a while the keys are denoted by the numeral 20a. The blade 18a instead of resting on top of the keys 20a extends slightly beyond the keys and rides directly on the surface of the roller 11a. In this instance the keys 20a are then adjusted to effect uniform positioning of the blade 18a relative to the roller 11a.

While only certain embodiments of the invention have been illustrated and described, it is apparent that alterations, modifications and changes may be made without departing from the true scope and spirit thereof as defined by the appended claims.

1. An ink fountain assembly comprising a fountain roller and a fountain blade assembly positioned in cooperative relationship with said roller, said fountain blade assembly including a plurality of coplanar contiguous keys extending throughout the length of said roller, individual adjusting means associated with each key for movement of the keys toward and away from said roller and a blade angularly disposed relative to a horizontal plane with one edge overlying at least a portion of said keys, each of said adjusting means including an elongated rod having two threaded sections with the pitch of one threaded section differing from the pitch of the other threaded section, a threaded opening in each of said keys to receive one of said threaded sections and fixed means engaging the other of said threaded sections whereby the rate of motion of a key with rotation of the rod is determined by the ratio of the pitches of said threaded sections, and said assembly further includes an elongated structure having a horizontally disposed recess and a plurality of vertically disposed recesses spaced rod receiving openings, said fixed means comprising...
3. An ink fountain assembly according to claim 1 wherein said one edge of said blade extends between said keys and said roller and said keys bear against the under side of said blade.

4. An ink fountain assembly according to claim 1 including end plates secured to the ends of said elongated structure and wherein each end plate includes an arcuate recess slidably engaging the periphery of said roller.