

June 4, 1940.

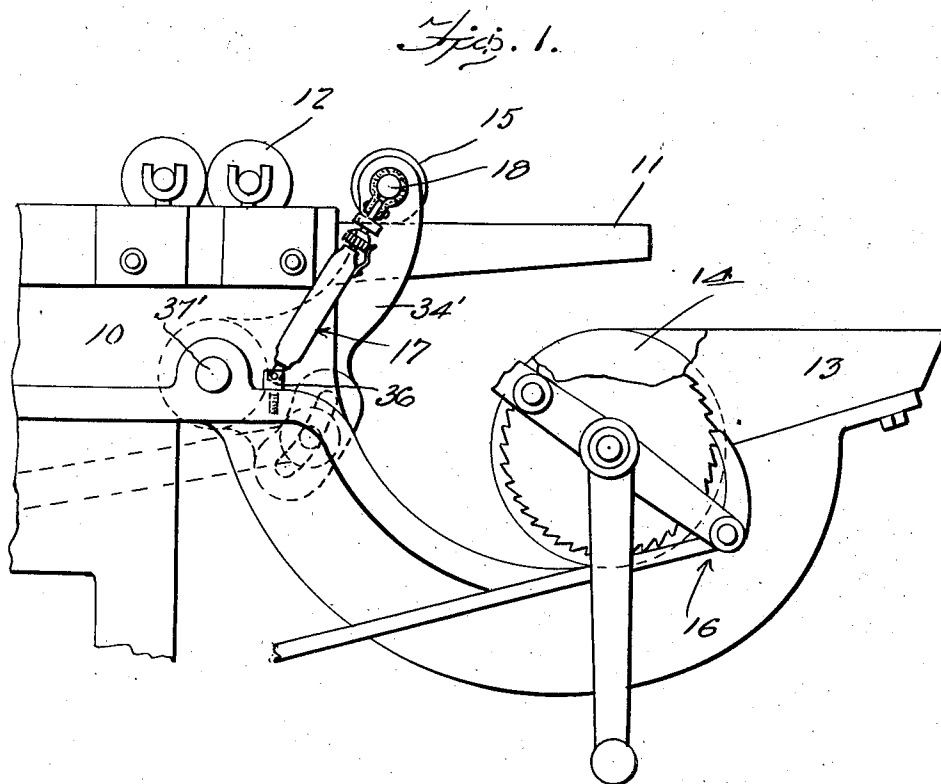
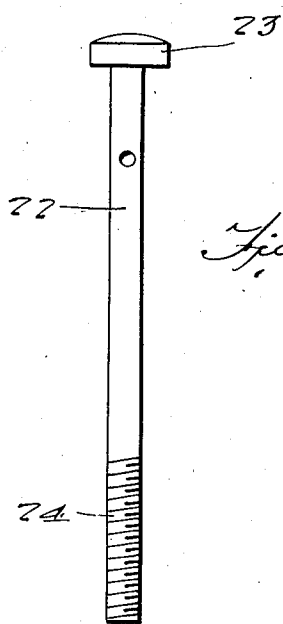
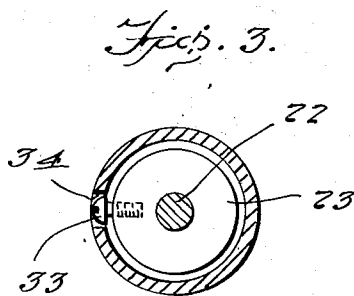
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2,203,070

DUCTOR ROLLER CONTROL FOR PRINTING PRESSES

Filed June 27, 1938

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 2.

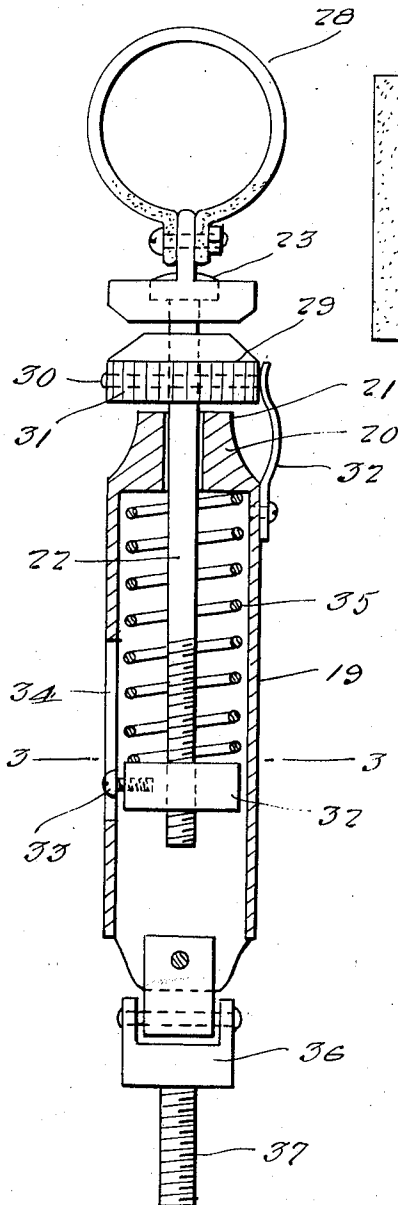


Fig. 6.

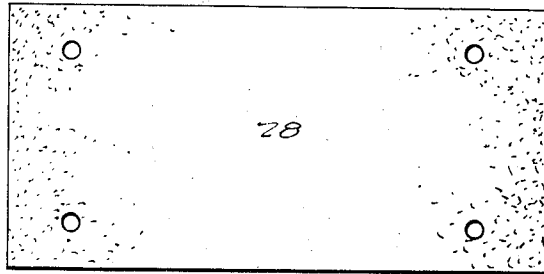
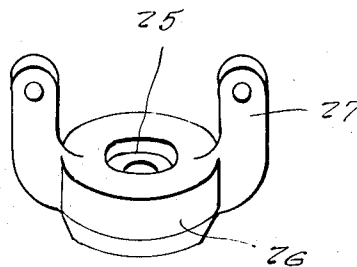


Fig. 5.



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UNITED STATES PATENT OFFICE

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DUCTOR ROLLER CONTROL FOR PRINTING PRESSES

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Application June 27, 1938, Serial No. 216,136

4 Claims. (Cl. 101—348)

This invention relates to ductor roller controls for printing presses and has for the primary object the provision of a device of this character which may be easily and quickly installed on a printing press without alterations thereto and which through a positive control of the ductor roller a more uniform color of printing may be had.

Another object of this invention is the provision of an automatic brake means to prevent rotation of the ductor roller when free of the ink roller of the press and the fountain roller to assure the presentation of a new portion of the surface of the ductor roller to the ink fountain roller and the distributor roller each time it contacts therewith to assure uniform distribution of ink on the various rollers.

With these and other objects in view, the 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 fragmentary side elevation showing a portion of a printing press with the ductor roller thereof equipped with an attachment constructed in accordance with my invention.

Figure 2 is a vertical sectional view illustrating the attachment.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a side elevation illustrating a coupling pin.

Figure 5 is a perspective view illustrating a brake shoe head.

Figure 6 is a plan view of the brake shoe before being attached to the head.

Referring in detail to the drawings, the numeral 10 indicates a fragmentary portion of a printing press wherein the reciprocal ink table is indicated by the character 11 and which is adapted to move backward and forward with respect to the press. The character 12 indicates an ink distributor roller fed by ink from an ink fountain 13 through the cooperation of a fountain roller 14 and a ductor roller 15 mounted on the press for movement from the roller 14 to the distributor roller 12. It is to be understood that the ductor roller 15 has a swinging movement between the rollers 14 and 12 when the table 11 is on one of its reciprocal strokes. The fountain roller 14 is operated in a step by step movement through a suitable ratchet mechanism 16. The foregoing gives a brief description of a part of a printing press to which the present invention is adapted.

When the ductor roller 15 moves out of contact with the distributor roller 12 and table 11 it will rotate under momentum and if rotating when contacting with the fountain roller 14 an ununiform distribution of ink will be brought about and consequently the printing in color will not be uniform. The present invention will automatically stop the rotation of the roller during its movement away from the distributor roller 12 and table 11 so that when it contacts the fountain roller 14 it will be substantially idle so that the ductor roller will always pick up ink where it left off on its previous movement or operation.

The present invention is in the form of a brake and is indicated in entirety by the character 17 and is so mounted on the bed of the press 10 that it may have a universal movement so as to readily follow the movement of the ductor roller and may be readily disconnected from the shaft of the ductor roller when desired, the shaft being indicated by the character 18. The brake 17 consists of a cylinder or casing 19 having a closed end 20 in which is formed a bore 21 acting as a guide for a rod 22 equipped at one end with a head 23 and having its other end portion provided with screw threads 24. The head 23 seats in a socket 25 formed in a brake shoe head 26. Opposed parallel arms 27 are formed on the head 26 and have bolted or otherwise secured thereto a cylindrical brake shoe 28 constructed of leather or any other material suitable for the purpose. The brake shoe fits about the shaft 18 of the ductor roller 15, as clearly shown in Figure 1.

An adjusting nut 29 is pinned to the rod 22, as shown at 30, and has a knurled face 31 engaged by a spring finger 32 carried by the casing 19 to prevent accidental rotation of the adjusting nut. A block 32' is threaded on the rod 22 and carries a set screw 33 slidable in a slot 34 formed in the casing or cylinder 19. The set screw prevents rotation of the block with the rotation of the rod 22 and forms a seat for one end of a coil spring 35. The rotation of the rod 22 in opposite directions by the adjusting nut 29 will bring about sliding movement of the block 32' in opposite directions which brings about an adjustment of the spring 35 to increase and decrease its tension. The other end of the spring 35 seats against the closed end 20 of the cylinder

or casing 19. A universal joint 36 is secured on one end of the cylinder or casing and has a threaded shank 37 adapted to be threaded into an opening provided on the bed or frame of the printing press. Care should be taken in locating this invention on the frame of the printing press, so that the universal joint 36 will be located adjacent to and to the right of the pivot 37 of the ductor roller supporting arm 34', as shown in Figure 1 of the drawings, so that the ductor roller 15 on moving into a position substantially contacting the fountain roller 14, said ductor roller 15 will be closer to the universal joint 36 than when in any position further away from the fountain roller 14 which will reduce the tension on the spring 35 and thereby bring about the removal of the braking action on the ductor roller, permitting the latter to have free rotation when in contact with the fountain roller 14.

In operation, the printing press is set to running in the usual manner and with the invention properly adjusted and adapted to the shaft 18 of the ductor roller, the latter will have applied thereto a braking action as it travels between the distributing roller 12 and the fountain roller 14. As the ductor roller moves in close proximity to the fountain roller 14 the braking action is automatically released so that the ductor roller will be free to rotate when it comes in contact with roller 14. It is to be understood, the spring 35 is under tension when the ductor roller is in engagement with the table so that the brake shoe 28 will drag on the shaft 18 and thereby apply a desired braking action on the ductor roller. However, the ductor roller may rotate by its contact with the moving table under said braking action. As soon as the ductor roller leaves the table its rotation is stopped by the braking action and thus held until it nears the fountain roller 14. As the ductor roller nears the fountain roller it moves closer to the pivot of this device which releases the tension of the spring and thereby stops the braking action on said ductor roller so that the latter is free to rotate when in contact with the fountain roller. However, the braking action is restored on the ductor roller as soon as it moves away from the fountain roller toward the distributing roller and the table. It is preferable to adjust the braking action on the ductor roller while the press is in operation which can be easily accomplished through the rotation of the adjusting nut 29 to increase and decrease the tension on the spring 35 which controls the braking action on the ductor roller or the shaft thereof.

A device of the character described and shown in the drawings is simple to install and economical to manufacture and can be readily adjusted while the press is in operation and one adjustment is sufficient for an entire printing job. Further, it is to be seen that the present invention practically occupies no room on the press and is clear of all the working parts of the press. The present invention is adaptable to early and late type models of printing presses, either of the single color press type or the two color type.

It is believed that the foregoing description, when taken in connection with the drawings will fully set forth the construction and advantages of this invention to those skilled in the art to which such a device relates, so that further detailed description will not be required.

Having thus described by invention, what I claim is:

1. A brake mechanism for a ductor roller mounted to swing about a fixed axis, said brake mechanism comprising a cylinder pivotally mounted at one end adjacent said axis, a brake rod slidable in said cylinder and operative under such sliding to impose braking action on the ductor roller, tension means in said cylinder tending to operate said rod, the pivotal mounting of said cylinder being located eccentrically of said axis whereby under swinging of said ductor roller in one direction the distance between said pivot and the ductor roller is shortened to relieve the braking action by the rod on said ductor roller and thereby release the latter for free rotation.

2. A brake mechanism for a ductor roller mounted to swing about a fixed axis, said brake mechanism comprising a member pivotally mounted adjacent said axis, a brake member for applying braking action on said ductor roller, spring means connecting said members and tending to actuate said brake member to apply braking action on the ductor roller, the pivotal mounting of said first member being located eccentrically of said axis whereby under swinging of said ductor roller in one direction the distance between said pivot and the ductor roller is shortened to relieve the tension on said spring and thereby release the braking action on the ductor roller and thereby release the latter for free rotation.

3. A brake mechanism for a ductor roller mounted to swing about a fixed axis, said brake mechanism comprising a member pivotally mounted adjacent said axis, a brake member for applying braking action on said ductor roller, spring means connecting said members and tending to actuate said brake member to apply braking action on the ductor roller, the pivotal mounting of said first member being located eccentrically of said axis whereby under swinging of said ductor roller in one direction the distance between said pivot and the ductor roller is shortened to relieve the tension on said spring and thereby release the braking action on the ductor roller and thereby release the latter for free rotation, and a manually operated means for varying the tension of said spring means.

4. A brake mechanism for a ductor roller mounted to swing about a fixed axis, said brake mechanism comprising a cylinder, a universal joint connecting one end of said cylinder adjacent said axis, a brake member slidable in said cylinder, a brake shoe carried by the brake member to engage the ductor roller, a spring on said brake member, a nut threaded on said brake member and free to slide in said cylinder and held against rotation relative thereto and forming a seat for one end of said spring and the other end of said spring seating against said cylinder, said spring tending to actuate the brake member to apply braking action on the ductor roller, said universal joint being located eccentrically of said axis whereby on swinging of said ductor roller in one direction the distance between said universal joint and the ductor roller is shortened to relieve the tension on said spring and thereby relieve the braking action on the ductor roller and thereby release the latter for free rotation.

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