Dec. 9, 1924. 1,518,159

G. H. LUND

INK ROLLER ATTACHMENT

Original Filed June 11, 1923

Fig. 1

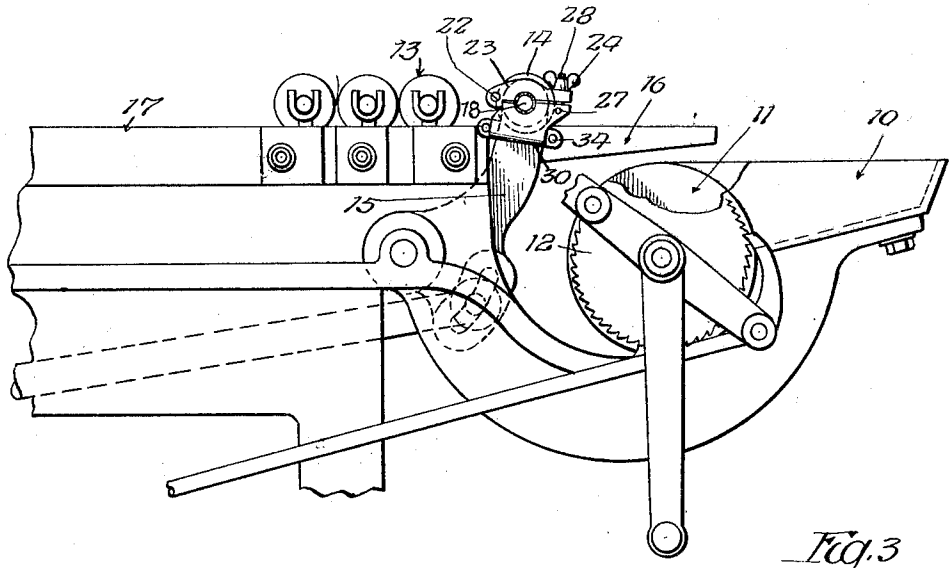


Fig. 2

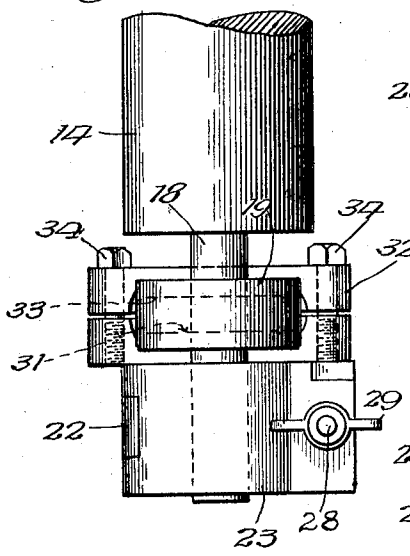


Fig. 3

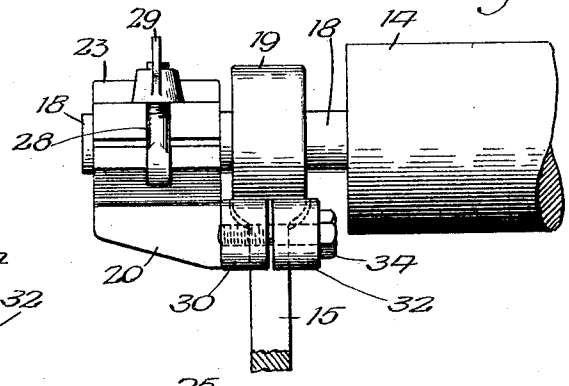
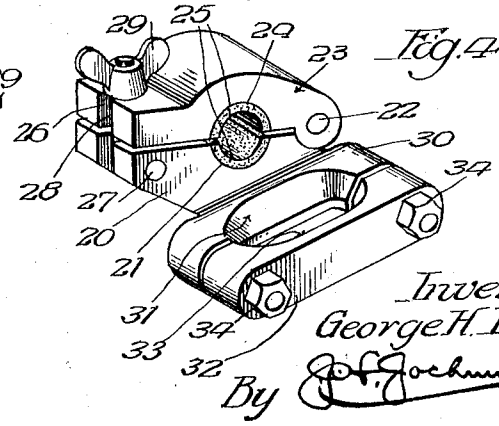


Fig. 4



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UNITED STATES PATENT OFFICE.

GEORGE H. LUND, OF CHICAGO, ILLINOIS.

INK-ROLLER ATTACHMENT.

Application filed June 11, 1923, Serial No. 644,636. Renewed October 27, 1924.

To all whom it may concern:

Be it known that I, GEORGE H. LUND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ink-Roller Attachments, of which the following is a specification.

This invention relates to improvements in attachments for the inking or ductor roller of presses whereby the rotation of the roller may be controlled and is particularly adapted, though not necessarily limited for use, with printing presses.

Heretofore in printing presses and particularly in multi-color presses, the ink is delivered from the ink fountain roller to the distributor roller by means of a ductor roller, the latter being mounted upon swinging arms or brackets so as to be moved alternately into and out of contact with the fountain and distributor rollers, between which the ductor roller operates.

The ductor roller is rotated by contact with the ink fountain roller and the distributor roller, which latter are positively driven. In moving from one roller to the other it is necessary that the ductor roller be rotated so that a new portion of its surface will contact with these rollers to distribute the ink uniformly and to prevent the ink from caking, and for other reasons, with the result that the ductor roller is revolving freely when it is out of contact with the other rollers.

It has been attempted heretofore to control this free rotation of the ductor roller by the use of various devices, such as brakes, cam surfaces and the like, but the result has not been entirely satisfactory, owing to the fact that the attachments have been more or less cumbersome and have utilized space, besides requiring the services of an expert to apply them.

It is one of the objects of the present invention to overcome these difficulties and objections and to provide an improved attachment to the ductor roller, whereby the free rotation of this roller may be controlled and which attachment will insure the presentation of a new portion of the surface of the ductor roller to the ink fountain roller and the distributor roller each time the ductor roller contacts therewith, thereby also insuring an equal and uniform distribution of the ink to the various rollers.

A further object is to provide an improved attachment of this character which will be simple, durable, compact and cheap in construction and effective and efficient in operation, readily applied, and which operates frictionally upon the shaft of the ductor roller, the degree of friction being controllable at will, whereby the free rotation or racing of the ductor roller will be controlled.

To the attainment of these ends and the accomplishment of other new and useful objects as will appear, the invention consists in the features of novelty in substantially the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawing illustrating this invention and in which—

Figure 1 is a view partly in side elevation and partly broken away with parts omitted of an ordinary printing press, showing this improved attachment applied to the ductor roller.

Figure 2 is a detail top plan view of one end of the ductor roller with the attachment in position.

Figure 3 is an end elevation of Figure 2.

Figure 4 is a detail perspective view of the attachment removed from the roller.

Referring more particularly to the drawing the numeral 10 designates generally an ink fountain, 11 the ink fountain roller, 12 the ratchet wheel connected with the ink fountain roller by means of which the latter is operated, 13 a distributor roller on the press, 14 the ductor roller, 15 one of the ductor roller swinging supports, and 16 the plate on the bed 17 of the machine and which plate reciprocates forwardly and backwardly during the operation of the machine. All of the above referred to parts are of the ordinary and well-known construction.

The ductor roller 14 is provided with a shaft 18, which is mounted in a bearing 19 carried by the support 15, it being of course understood that one of these supports 15 and bearings 19 are arranged on the opposite end of the roller. The shaft 18 of the roller 14 projects beyond the outer face of the bearing 19 and in which bearing the roller freely rotates and is adapted to race, during its movement from the roller 11 to the roller 13.

In order therefore, to control the free ro-

tation of the roller 14, a braking attachment is applied to the end of the shaft 18. This attachment consists of a member 20 having a bearing 21 opening through the upper face thereof. Pivotally connected with the member 20 as at 22 is another member 23, which is provided with a semi-circular bearing 24 opening through the lower face thereof, the bearings 21 and 24 being arranged so that they may be positioned with respect to each other to cooperate and clamp the shaft 18 of the roller 14.

If desired suitable packing material 25, such as fiber or the like may be provided in the bearings 21—24 so as to prevent wear on the members 20—23 and also on the shaft 18.

The member 23 is preferably provided with a bifurcation or recess 26 opening through the free end thereof and pivotally connected with the member 20 as at 27 is a bolt 28, which is adapted to enter the bifurcation 26 of the member 23 and the member 23 is clamped with respect to the member 20 by means of a suitable thumb nut 29, which is adjustably mounted on the threaded end of the bolt 28.

The clamp or brake thus formed is adapted to be removably secured to the arm or support 15 in any desired or suitable manner and to that end the member 20 may be provided with a portion 30 recessed as at 31 to receive a portion of the support 15. A co-operating member 32 recessed as at 33 is adapted to engage the opposite face of the support 15 and fastening devices such as bolts 34 are adapted to pass through the member 32 and have threaded engagement with the member 30 so as to clamp the support 15. The axis of the bearing in the members 20—23 is preferably arranged transverse to the axis of the opening in the members 30—32 so that when the device is placed in position the bearing in the members 20—23 will co-incide with the bearing 19 so that the shaft 18 of the roller 14 will pass through the bearing 19 and into the bearing in the members 20—23.

When the attachment is in position it will be noted that it will occupy a comparatively small space and will be oscillated backwardly and forwardly with the roller 14. By adjusting the thumb nut 29 the clamping action of the members 20—23 upon the end of the shaft 18 may be controlled and likewise the friction between the members 20 and 23 with respect to the shaft 18 may be varied.

By adjusting this thumb nut the degree and speed of rotation of the roller 14 may be varied so that the motion of the ductor roller will be arrested during its travel from one roller to the other and by the time the ductor roller contacts with either the ink fountain roller 11 or the distributor roller 13 on each operation of the swinging supports 15, a new surface of the ductor roller will be presented to the inking and distributing rollers. This will insure an equal distribution of the ink upon the rollers and will prevent the formation of cakes or clearly defined lines of ink within the area of the particular color being supplied to the roller 11 from the fountain 10.

It will be manifest that this improved device may be readily attached to any machine of this character now on the market and may be as readily removed without dismantling any of the parts of the machine and without necessitating the services of an expert to apply the same. Furthermore it is of a compact construction and will not interefere with free access to any of the parts of the mechanism.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of this invention.

What is claimed as new is:—

1. A shaft, a bearing in which the shaft is freely rotatable, pivotally connected members between which the shaft extends, fastening means for the members, said fastening means operating to clamp the said members upon the shaft and adapted to vary the stress of the said members upon the shaft, and anchoring means for maintaining the said members against rotation with the said shaft, the last recited means including anchoring means carried by one of the said members for securing the said members to the bearing.

2. A shaft, a bearing in which the shaft is freely rotatable, pivotally connected members, said members having cooperating recesses in adjacent faces for receiving the shaft, fiber bushings in the said recesses, the free extremity of one of the members being bifurcated, a bolt pivotally connected to the other member and adapted to enter the said bifurcation, a thumb nut on the bolt and adapted to co-operate with the bolt for clamping the said members upon the shaft, and means for maintaining the said members against rotation with the shaft.

3. A shaft, a bearing in which the shaft is freely rotatable, pivotally connected members, said members having co-operating recesses in adjacent faces for receiving the shaft, bushings in the said recesses, the free extremity of one of the members being bifurcated, a bolt pivotally connected to the other member and adapted to enter the said bifurcation, a thumb nut on the bolt and adapted to co-operate with the bolt for clamping the said members upon the shaft, and clamping members for securing the first

recited members to a fixed support for maintaining the first said members against rotation with the shaft.

4. A shaft, means mounting the shaft for rotation and for bodily movement, a friction creating device clamped upon the shaft for bodily movement with the shaft, means carried by the said device for removably anchoring the device against rotation with the shaft whereby friction will be created between the said device and the shaft to control the rotation of the latter, and means whereby the degree of friction of the said device upon the said shaft may be varied at will.

5. A shaft, a bearing in which the shaft freely rotates, said bearing being mounted for bodily movement with the shaft, a device clamped upon the shaft for bodily movement with the shaft and for free removal therefrom, and means securing the said device to the bearing for free removal therefrom and for maintaining the former against rotation with the shaft whereby friction will be created between the said device and shaft to control the extent of rotation of the latter.

6. A shaft, a bearing in which the shaft freely rotates, said bearing being mounted for bodily movement with the shaft, a device clamped upon the shaft for bodily movement with the shaft and for free removal therefrom, and means securing the said device to the bearing for free removal therefrom and for maintaining the former against rotation with the shaft whereby friction will be created between the said device and shaft to control the extent of rotation of the latter, the clamping means for the said device upon the shaft embodying mechanism whereby the extent of pressure of the said device upon the shaft may be varied at will.

In testimony whereof I have signed my name to this specification, on this 7th day of June, A. D. 1923.

GEO. H. LUND.