

June 1, 1943.

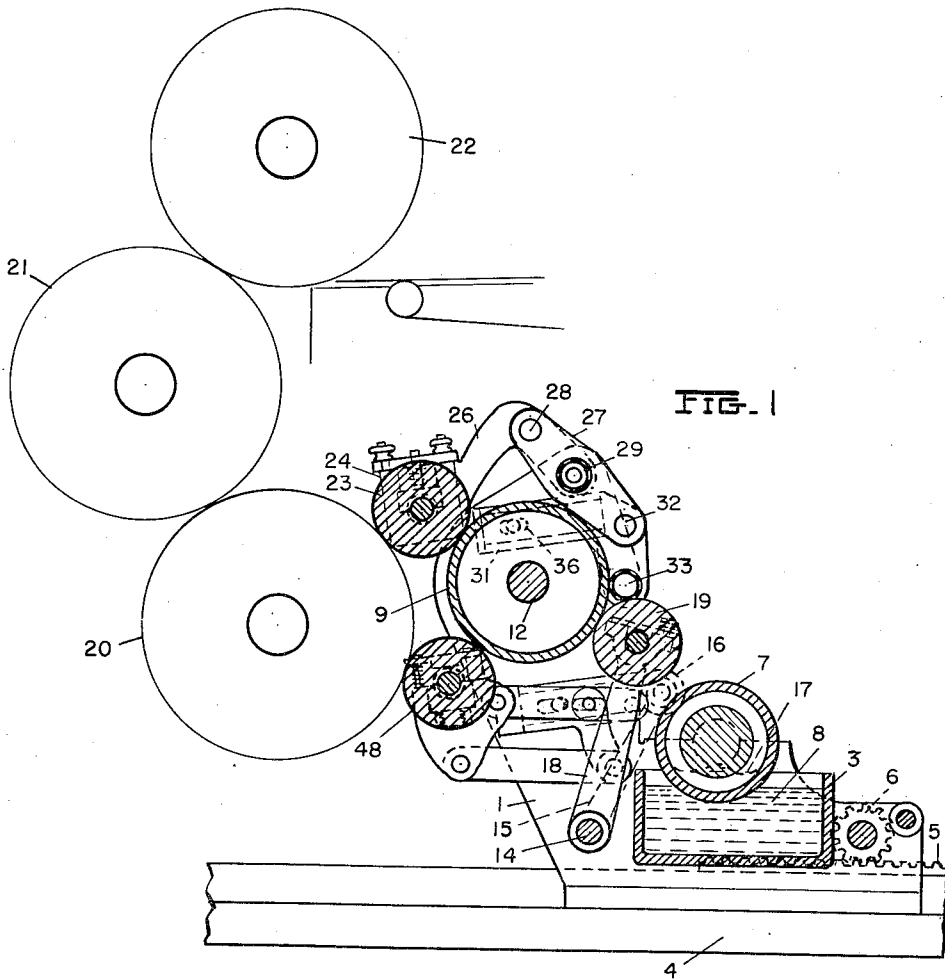
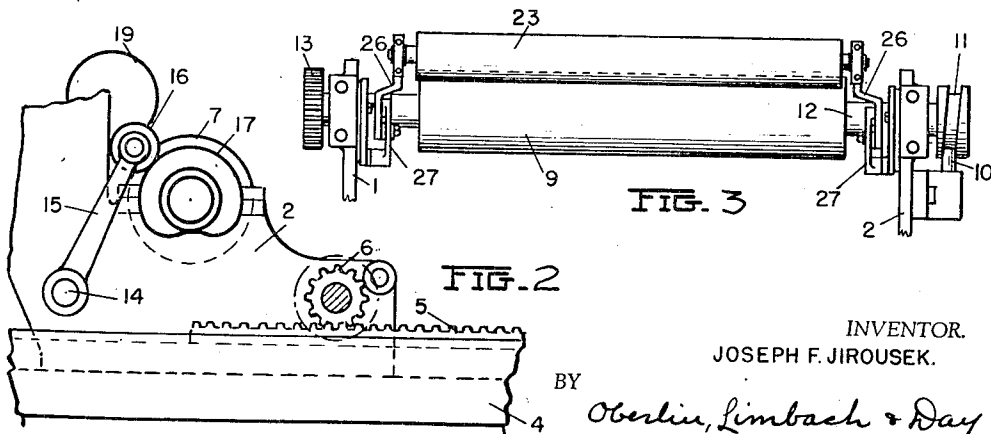
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2,320,523

DAMPENING ROLL FOR PRINTING PRESSES

Filed Sept. 13, 1940

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

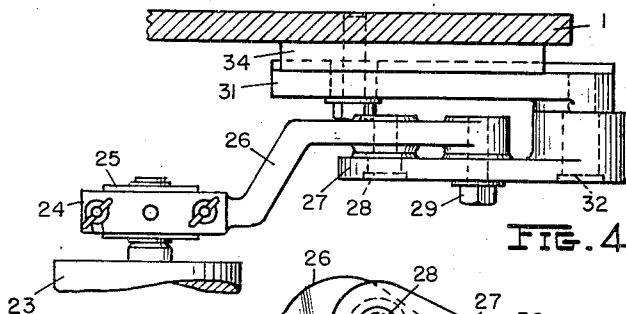


FIG. 4

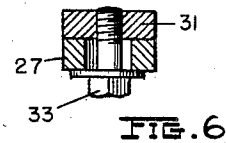


FIG. 6

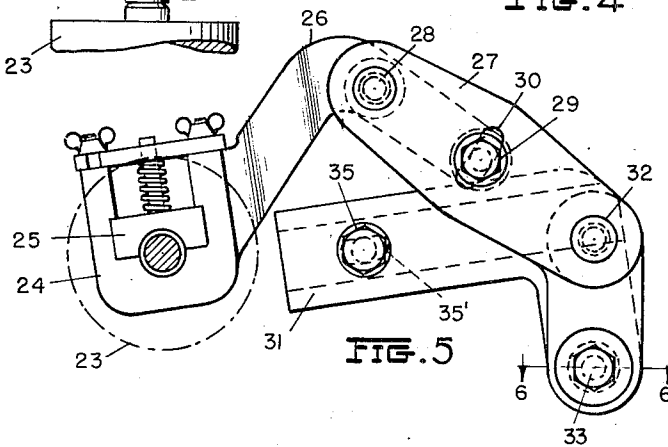


FIG. 5

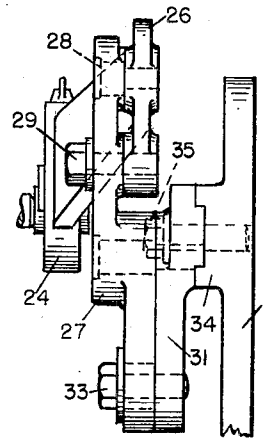


FIG. 7

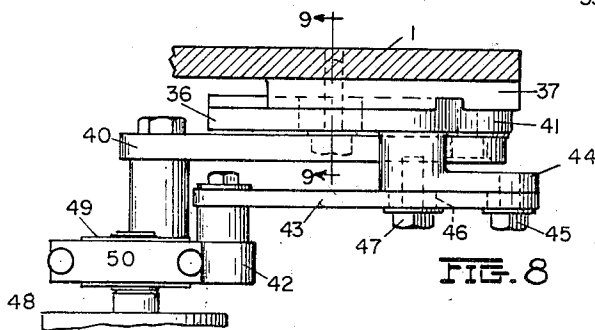


FIG. 8

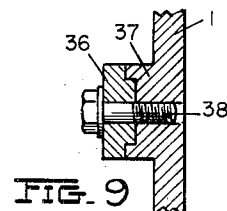


FIG. 9

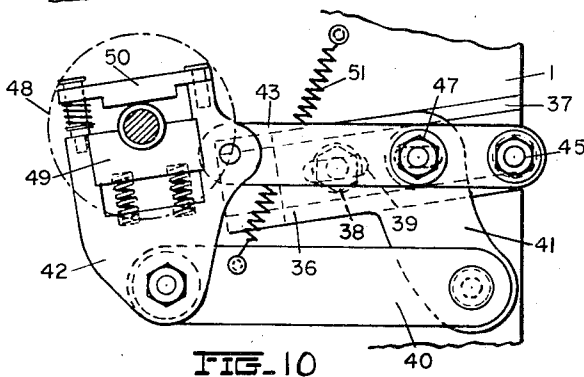


FIG. 10

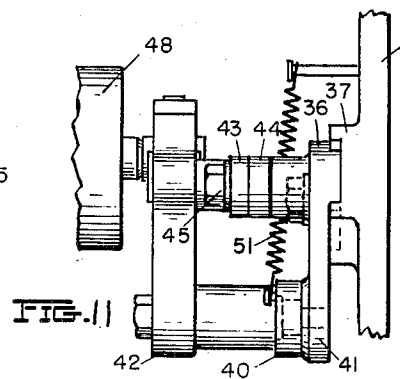


FIG. 11

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UNITED STATES PATENT OFFICE

2,320,523

DAMPENING ROLL FOR PRINTING PRESSES

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Application September 13, 1940, Serial No. 356,675

8 Claims. (Cl. 101—147)

This invention relates, as indicated, to dampening rolls for printing presses, and more particularly to means for mounting such rolls in order that they may be substantially self-adjusting. Such means are particularly adapted for use in conjunction with an offset lithographic press of the type illustrated and described in Jirousek Patent No. 2,109,486.

In a lithographic press it is of course necessary to wet the lithographic cylinder in order that the ink may not adhere to the unetched surfaces of such cylinder. Various dampening or water transfer means have been employed in the past for this purpose and have generally embodied relatively complex movements requiring the most delicate adjustment by the operator. Such adjustment has tended to consume a disproportionate amount of the operator's time and the results obtained have not always been satisfactory due to the difficulty of obtaining the precise adjustment required to afford an absolutely uniform contact of the dampening rolls with the lithographic cylinder and also the roller from which the film of water is transferred.

It is therefore, as above indicated, a primary object of this invention to provide dampening rolls for use with lithographic presses and the like, which rolls will be substantially self-adjusting and which may then be simply locked in place by the operator.

It is a further object of this invention to provide such dampening rolls and mounting means therefor which will be relatively simple in construction and will require a minimum of attention from the operator.

Other objects of this invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings:

Fig. 1 is a vertical sectional view taken through the entire water supply mechanism and showing the same in operative relation to the lithographic cylinder;

Fig. 2 is a fragmentary side elevational view of a portion of the carriage supporting such water supply means;

Fig. 3 is a top view of the upper dampening roll and the intermediate water supply roller;

Fig. 4 is a top view of the mounting means for one end of said upper dampening roll;

Fig. 5 is a side elevational view of such mounting means;

Fig. 6 is a sectional view taken along the line 6—6 on Fig. 5;

Fig. 7 is a view of such mounting means normal to that of Fig. 5;

Fig. 8 is a top view of the mounting means for the lower dampening roll;

Fig. 9 is a sectional view taken along the line 9—9 on Fig. 8;

Fig. 10 is a side elevational view of such lower mounting means; and

Fig. 11 is a view of such mounting means taken normal to that of Fig. 10.

Referring now more particularly to such drawings and especially Figs. 1, 2 and 3, the water supply means of this invention comprises carriage means having side frame members 1 and 2 between which is carried the water fountain 3. Such carriage may be moved forward and backward relatively to the frame 4 of the press by means of rack 5 and pinion 6. Mounted in said carriage frame above fountain 3 is a pick-up roller 7 adapted to dip into the water 8 of such fountain. An intermediate roller 9 is also supported in said carriage somewhat above such pick-up roller and means are provided for reciprocating the same comprising a pin 10 in a cam guide 11 positioned on the end of the shaft 12 on which such intermediate roller is mounted. The other end of the shaft carries a gear 13 whereby the same may be driven. Keyed to shaft 14 is a lever arm 15 carrying at its end a cam roller 16 adapted to ride on cam 17 carried by the shaft on which pick-up roller 7 is mounted. Also keyed to shaft 14 is a pair of longer lever arms such as 18 carrying a roller 19. As pick-up roller 7 and cam 17 rotate, lever arm 15 and thus lever arm 18 will be intermittently oscillated so that roller 19 alternately contacts the surface of the pick-up roller 7 and intermediate roller 9, being effective to transfer a thin film of water to such latter roller.

Means are then provided, with which the present invention is more particularly concerned, for transferring the water from such intermediate roller to the lithographic cylinder 20 of the press, such cylinder, when inked, being operative in conjunction with offset cylinder 21 and impression cylinder 22 to transfer the desired design to the sheets carried by such impression cylinder.

Referring now in addition to Figs. 4 to 7, one

element of the dampening means comprises an upper dampening roll 23 carried in split bearing mounts comprising a substantially U-shaped member 24 and a spring backed block 25 adapted to permit resilient upward movement of such roll should such ever be necessary to permit the roll to adapt itself to the surfaces with which it is engaged. Bearing mount 24 is supported by an angular link 26 pivotally mounted on a second link 27 by bolting means 28. An oversize hole is provided in said first-named link member in order to permit some play thereto, pivotal movement about bolt 28 being limited in its extent by means of bolt 29 which enters slot 30 in link 27. Said link 27 is in turn pivotally mounted on a bracket 31 by means of bolt 32, its pivotal movement about such bolt being limited by the second bolt 33 connecting angular extensions of such bracket and link and fitting in an oversize hole in such link. Bracket 31 is slidably mounted in a grooved boss 34 of carriage side frame member 1, the degree of slidable movement permitted thereto being limited by a bolt 35 passing through a slot 35' in such bracket. There is of course corresponding supporting means provided for the other end of the dampening roll. Thus when the water fountain carriage has been moved into advanced position, dampening roll 23 will automatically be jostled into proper operative position by contact with cylinder 20 since, as such roll is forced upwardly with resultant pivotal movement about bolts 28 and 32, bracket 31 will slide back proportionately to insure continued engagement of such roll with the surfaces of both cylinder 20 and intermediate roller 9. When the operator has noted that satisfactory positioning has been obtained he need only tighten down bolts 28, 32 and 35 and the mechanism is ready for operation.

Somewhat similar means is provided for obtaining proper contact of the lower dampening roll, although of course gravity cannot be relied upon to bring such roll into proper engagement. Again, the mounting means for only one end of such roll will be described, it being of course understood that duplicate means support the other end. As in the case of the upper roll, a bracket 36 is slidably mounted in a groove in a boss 37 on side frame 1 of the fountain carriage; and a bolt 38 in slot 39 in such bracket likewise limits the extent of slidable movement permitted. A link 40 pivotally connects an extension 41 of such bracket with the lower end of bearing mount 42. A second link 43 above said first-named link also pivotally connects said bearing mount with another extension 44 of such bracket. An oversize hole in such link provides for play for bolt 45 and a slot 46 permits sliding movement of such link relatively to bolt 47. The end of lower dampening roll 48 is supported in a bearing carried by a lower block 49 resiliently mounted in said member 42 and an adjustable upper block 50 engages the upper surface of such bearing to hold the same in place. A coil spring 51 between lower link 40 and frame member 1 is effective to draw the lower dampening roll upwardly into engagement with intermediate roller 9 and the lithographic cylinder 20. Thus when the fountain carriage is moved forward into operative position such lower dampening roll will, upon engagement with cylinder 20, automatically adjust itself so as to maintain proper contact with such cylinder and intermediate roller 9 and the operator need merely tighten bolts 38 and 45 to lock the mechanism in the desired operative position.

It will, therefore, be seen that mechanism has been provided whereby the ends of this invention are accomplished with a minimum of attention by the operator and without the employment of unusually complex or elaborate means.

While the mounting mechanism has been described for use with rollers for dampening lithographic cylinders in cylinder presses, it will, of course, be readily understood that such mechanism may likewise be employed in conjunction with inking rollers and the like wherever it may be desired, including other types of presses.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I, therefore, particularly point out and distinctly claim as my invention:

1. In combination, a dampening or like roll for printing presses and mounting means for an end thereof comprising a bracket rectilinearly slidable in a plane normal to the axis of said roll, an extension of said bracket pivotally mounted thereon and adapted to support an end of said roll, and means for locking said bracket and extension thereof against further movement when proper adjustment of said roll has been obtained.

2. In combination, a dampening roll for printing presses and mounting means at each end thereof comprising a supporting frame, a bracket mounted thereon for rectilinear sliding movement in a plane normal to the axis of said roll, link means pivotally mounted on said bracket for movement about an axis parallel to said roll, a second link means pivotally mounted on said first link means for like movement, and means for locking said bracket and said link means against further movement when the desired position of said roll has been obtained.

3. In combination, a dampening roll for printing presses and mounting means at each end thereof comprising a supporting frame, a bracket mounted thereon for rectilinear sliding movement in a plane normal to the axis of said roll, link means pivotally mounted on said bracket for movement about an axis parallel to said roll, a second link means pivotally mounted on said first link means for like movement, means for limiting the degree of pivotal movement of each of said links, and means for locking said bracket and links against further movement when proper adjustment of said roll has been obtained.

4. Water supply means for use in conjunction with a lithographic cylinder press comprising a carriage movable toward and away from such lithographic cylinder, a water fount carried thereby, a pick-up roller rotatable in said fount, an intermediate roller, intermittently actuated means for transferring water from said pick-up roller to said intermediate roller, a dampening roll adapted to contact both said intermediate roller and said cylinder and operating to transfer water from said intermediate roller to said cylinder; and mounting means for each end of said dampening roller comprising a bracket mounted on said carriage for rectilinear sliding movement in a plane normal to the axis of said roll, link means pivotally mounted on said bracket for movement about an axis parallel to said roll, a second link means pivotally mounted on said first link means for like movement, means for limiting the degree of pivotal movement of each of said links, and means for locking said bracket

and links against further movement when proper adjustment of said roll has been obtained.

5. Water supply means for use in conjunction with a lithographic cylinder press comprising a carriage movable toward and away from such lithographic cylinder, a water fount carried thereby, a pick-up roller rotatable in said fount, an intermediate roller, intermittently actuated means for transferring water from said pick-up roller to said intermediate roller, a dampening roll adapted to contact both said intermediate roller and said cylinder and operative to transfer water from said intermediate roller to said cylinder; and mounting means for each end of said dampening roll comprising a bracket mounted on said carriage for rectilinear sliding movement in a plane normal to the axis of said roll, link means pivotally mounted on said bracket for movement about an axis parallel to said roll, a second link means pivotally mounted on said first link means, a split bearing carried by said second link means adapted to resiliently support an end of said dampening roll, means for limiting pivotal movement of each of said link means, and means for locking said bracket and link means against further movement when proper adjustment of said dampening roll has been obtained.

6. In combination, a dampening roll for printing presses and mounting means at each end thereof comprising a supporting frame, a bracket mounted thereon for rectilinear sliding movement in a plane normal to the axis of said roll, link means pivotally mounted on said bracket for movement about an axis parallel to said roll, a bearing mount carried by said link and adapted to support an end of said roll, a second link parallel to said first named link pivotally and ad-

justably connecting said bracket and bearing mount, and means for locking said bracket and second link against further movement when proper adjustment of said roll has been obtained.

7. In combination, a dampening roll for printing presses and mounting means for each end thereof comprising a supporting frame, a bracket mounted thereon for rectilinear movement in a plane normal to the axis of said roll, a link pivotally mounted on said bracket for movement about an axis parallel to said roll, a bearing mount pivotally connected to said link and adapted to support an end of said roll, a second link pivotally and slidably attached to said bracket and pivotally attached to said bearing mount, means for limiting pivotal and sliding movement of said second link, and means for locking said bracket and second link against further movement when proper adjustment of said roll has been obtained.

8. In combination, a dampening roll for printing presses and mounting means for each end thereof comprising a supporting frame, a bracket mounted thereon for rectilinear movement in a plane normal to the axis of said roll, a link pivotally mounted on said bracket for movement about an axis parallel to said roll, a bearing mount pivotally connected to said link and adapted to support an end of said roll, a second link pivotally and slidably attached to said bracket and pivotally attached to said bearing mount, means for limiting pivotal and sliding movement of said second link, spring means operative to draw said bearing mount upwardly, and means for locking said bracket and second link against further movement when proper adjustment has been obtained.

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