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MOUNTING FOR FOUNTAIN ROLL

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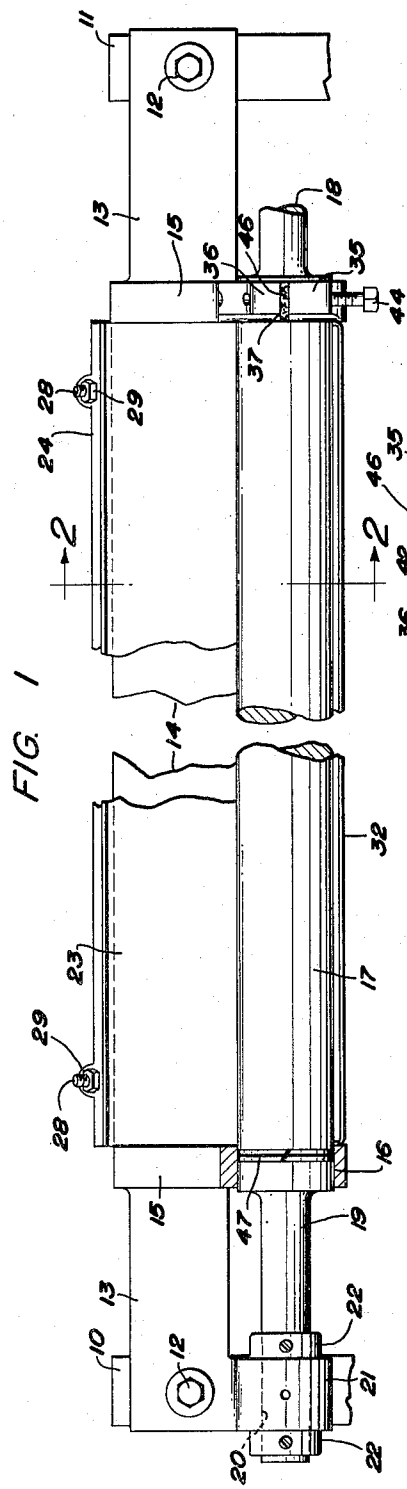


FIG. 1

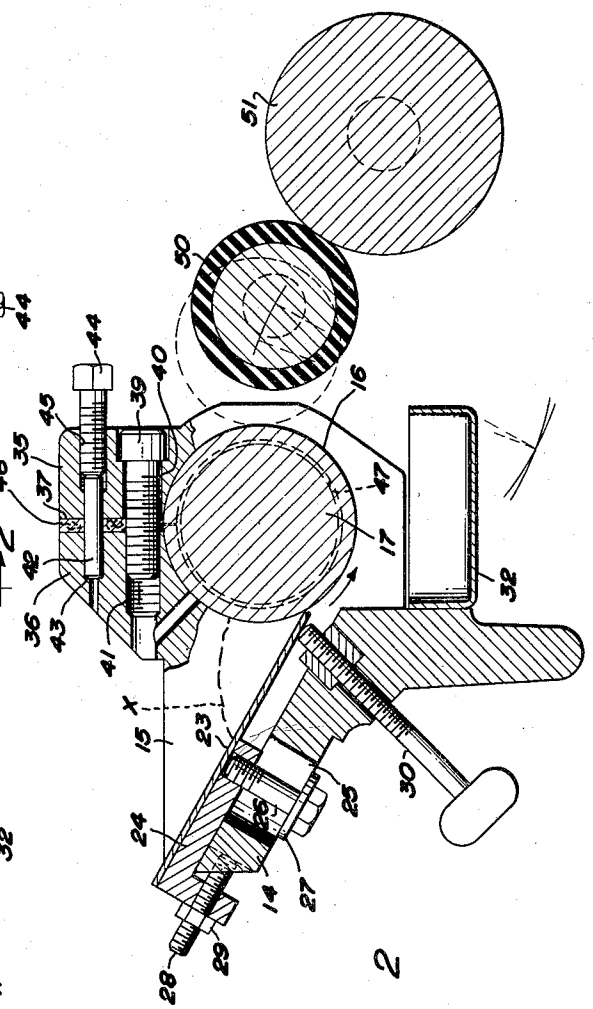


FIG. 2

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MOUNTING FOR FOUNTAIN ROLL

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1 Claim. (Cl. 101—364)

This invention relates to improvements in mounting for fountain roller, more particularly a mounting embodying added valuable features not present in my previous Patent 2,328,990 issued September 7, 1943.

One of the objects of the present invention is the provision of a roller mounting which shall eliminate the necessity for extreme accuracy in machining the bearing surfaces.

Another object is the provision of a mounting which shall facilitate inserting the roller endwise through one bearing and into the other.

Still another object is the provision of a mounting of the character stated in which the roller bearings shall be readily adjustable to effect a snug running fit.

Other objects and features of novelty will appear as I proceed with the description of that embodiment of the invention which, for the purposes of the present application, I have illustrated in the accompanying drawing, in which

Fig. 1 is a plan view, partly in horizontal section of a fountain and fountain roller embodying the invention, and

Fig. 2 is a transverse section on a larger scale, the view being taken substantially on the line 2—2 of Fig. 1 and showing the ductor roller of an inkling mechanism cooperating with the fountain roller and one of the remaining rollers of the inker.

In the drawing, 10 and 11 represent side members of a printing press inker frame. Two aligned arms 13 are attached to these frame members by means of machine screws 12 or the like. These arms constitute supporting means for an ink fountain body member 14 with which they are preferably formed integral.

At opposite ends of the body member 14 there are fountain side walls 15. These walls have aligned bores 16 constituting plain bearings in which is mounted the fountain roller 17, each of the bearings having an internal diameter such as to rotatably support the roller. In the present embodiment the parts 13, 14, 15 may be built of aluminum or aluminum alloy for the sake of light weight. Preferably, these parts are formed as a single casting. The roller 17 is of steel. Consequently the fit of the roller within its bearings may vary somewhat with changes of temperature due to the different coefficients of expansion of the materials.

Roller 17 has shaft extensions 18 and 19. To the extension 18 there may be connected suitable means for revolving the roller a small increment at a time in a conventional manner. The opposite extension 19 projects loosely through a bore 20 in a laterally extending part 21 of the adjacent arm 13. Collars 22 are secured to the shaft extension 19 on either side of the projecting part 21, their function being to prevent axial movement of the roller 17. As indicated in Fig. 2, a ductor roller 50 may contact fountain roller 17 and a vibrating roller 51 alternately in a conventional manner.

The ink in the fountain indicated at X, is carried upon

a flexible blade 23 which may be secured by any suitable means to a slide 24 which forms a rigid backing for the blade throughout a portion of its width. The body member 14 is provided at intervals with slots 25 through which project screws 26 that are threaded into tapped holes in the slide 24. Washers 27 beneath the headed ends of the screws 26 bear against the body member 14 on opposite sides of the slots. Adjusting screws 28 threaded in a downturned portion of the slide 24 bear against the upper end of body member 14 and may be used to adjust the position of the slide and its blade 23 with respect to the roller 17, a nut 29 being provided to lock the parts in adjusted position. Screws 26 must of course be loosened before the screws 28 may be adjusted.

The forward unbacked part of the blade 23 is preferably quite flexible and at intervals along its length may be deflected somewhat by screws 30 mounted in the body member 14 so that adjustment of the various screws 30 may be used to vary the quantity of ink taken by the fountain roller in different portions of its length. A pan 32 is attached to the body member beneath the fountain roller 17 to catch any drip from the roller.

As previously indicated the diameter of the roller 17 is approximately the same as the internal diameter of the bores 16 in the sidewalls 15, which bores constitute bearings for the roller. Previously it has been the practice to finish the bearing portions of the roller and the plain bearings in which they are journaled to an accuracy such that there is a clearance no greater than a thousandth of an inch. Extreme accuracy is not necessary in the case of the present invention because the internal diameter of the bearing may be regulated to provide the necessary snug running fit.

Each of the side walls 15 of the casting 13, 14, 15 has upwardly extending projections 35, 36 on opposite sides of a slot 37 which extends down to and into the bore 16. Means are provided for drawing these projections together to contract the journal bearing and also for spreading the projections somewhat to enlarge the bearing. Enlargement of the two bearings is desirable and useful when the fountain roller is to be mounted in the casting because it is inserted endwise. As soon as it is in the desired position lengthwise, the collars 22 are secured to the shaft extension 19, thereby preventing unintentional endwise movement of the roller. Then the spreading movement may be relieved and the bearings contracted to the proper running fit.

The means which I have disclosed herein for spreading and contracting the bearings is as follows. A stud 39 is mounted loosely in a bore 40 extending through the projection 35 and is threaded into a tapped hole 41 in the projection 36. The head of the stud 39 bears against a shoulder in projection 35, and hence when the stud is threaded home the two projections are drawn toward each other to contract the bearing. Above the stud 39 a pin 42 is mounted in aligned holes in the projections 35 and 36. At its left end this pin bears against a shoulder 43 in projection 36. A stud 44 is threaded in a tapped hole 45 aligned with the pin 42, and when threaded home bears against the right end of pin 42 and exerts pressure to separate the projections 35 and 36 to enlarge the diameter of the bearing for the roller. Of course the stud 39 must be loosened before the stud 44 may be threaded inwardly for spreading the projections, and when it is desired to adjust the bearing to a snug fit the stud 44 must be loosened sufficiently to permit that action. Preferably the slot 37 is filled with a leather washer 46 provided with holes to take the stud 39 and the pin 42.

The roller at its opposite ends may be provided with piston rings 47 set into annular grooves to seal the bearings and prevent loss of ink. While it is preferred that

the bearings at the opposite ends of the roller be of the same diameter, it will be appreciated that a smaller bearing may be used at one end than at the other, while still permitting the insertion of the roller endwise. The taking up of the bearings to compensate for wear or to compensate for unequal expansion and contraction of different materials, as previously mentioned, constitute advantages of the invention. Additionally, it has the advantage that the finishing of the relatively rotating parts to close tolerances is rendered unnecessary and the advantage that the endwise insertion of the roller is facilitated.

Having thus described my invention, I claim:

In an inking mechanism, a rotatable fountain roller having a fountain portion of a given diameter, a rigid fountain body comprising integral side walls having coaxial bores for journalling said fountain roller, said side walls being spaced apart a distance less than the length of said fountain portion, an ink metering fountain blade mounted on the body and having an edge adapted to closely engage the roller, said blade extending the full distance between the inner sides of said side walls and being inclined with respect to the roller to form an ink trough together with said roller and said side walls, said bores being of such size relation with respect to said fountain roller as to provide for adequate sealing to prevent entrance of ink into said bores, at least one of said bores being slotted to permit a small degree of flexing of a portion of the fountain body surrounding the bore remote from the main portion of the rigid fountain body, first screw means for exerting pressure to move the remote portion away from the main portion to permit ready insertion of the roller endwise through said bearing during assembly, second screw means for drawing the remote portion to the main portion, said first and second screw means being complementary to each other to enable locking of said remote and main portions in ink sealing association relative to the roller without restricting rotation of said roller, and compressible sealing means in said slot, said sealing means closely engaging the roller to prevent ink carried around said roller from entering the bore at the slot.

References Cited in the file of this patent

UNITED STATES PATENTS

894,532	Reeves	July 28, 1908
2,328,990	Meyer	Sept. 7, 1943

FOREIGN PATENTS

9,058	Great Britain	May 31, 1889