TOOL FOR INSTALLING AND REMOVING RUBBER ROLLERS

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Fig. 1

Fig. 2

Fig. 3

Fig. 4

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The trigger 70 returns to rest with its stop pin 16 again in abutment with the keyboard cam stop lug 17. FIG. 2 illustrates, separately, the shaft 10 which in this instance has a driving gear 20 and a beveled stop collar 21, against which the inner end of the rubber cam roll 11 abuts when installed. This figure also shows the rubber roll installing and removing tool embodying the invention, generally indicated by the reference numeral 22, located in operating position for removal of the rubber cam roll 11.

As illustrated in FIGS. 2, 3 and 4, the roll installing and removing tool 22 comprises a cylindrical body member 23, preferably formed of metal, and closed at its rear end 24. The outer forward surface of the tool 22 is tapered to a sharp conical edge 25. A standard tire valve stem 26 is fitted to one side of the body member 22, for applying air pressure from any suitable source of supply to the interior of the tool 22.

Operation

In use, when it is desired to remove a rubber roll 11 from a shaft 10, the sharp tapered front edge 25 of the tool 22 will be pushed between the outer end of the roll 11 and the shaft 10, as illustrated in FIG. 2, this action being permitted since the internal diameter of the tool is made slightly greater than the diameter of the shaft. Air pressure will then be applied to the valve stem 26.

To facilitate the manual holding of the tool 22 firmly in place, in the position shown in FIG. 2, the outer surface of the body member 23 is preferably knurled, as indicated at 27. It will be understood that air will then be forced between the roll 11 and the shaft 10 to expand the roll about the shaft 10 throughout the entire length of said roll, whereupon it becomes a simple matter to pull or push the roll off of said shaft.

In applying a new roll 11 to a shaft 10, the outer end of the roll 11 will be fitted over the tapered end 25 of the tool 22, and the inner end of the roll will be forcibly pushed for a short distance along said shaft 10, after which, upon applying air pressure to the valve stem 26, the roll will be expanded sufficiently throughout its length to allow easy placement of the roll on the shaft. The handle has an interior chamber substantially larger than said shaft to enclose an air space therebetween of considerable volume when mounted upon said shaft, whereby the air pressure in said chamber will be allowed to build up and be retained by said check valve after removal of said source of air supply.

While I have herein described my roll installing and removal tool in connection with the installation and removal of a keyboard cam roll in a Linotype machine, it is to be understood that this illustration of use is given by way of example only, and that the invention is not limited to the specific disclosure, but may be modified and embodied in various other equivalent forms without departing from its spirit. In short, the invention includes all the modifications and embodiments coming within the scope of the following claim.

Having thus fully described the invention, what is claimed as new and for which it is desired to secure Letters Patent is:

In a tool for installing or removing a soft elastic expansible tubular roll with respect to a cylindrical carrying shaft on which said roll is adapted to be tightly fitted, the combination of a short hollow cylindrical handle member closed at its outer end and terminating at its inner end in a reduced short frusto-conical tapered section, the end diameter of which is slightly greater than the diameter of said shaft, said handle member being knurled and provided on one side with a pneumatic check valve for introducing air under pressure from a source of sup-
ply into the interior of said handle member, whereby when said sharp conical tapered section is inserted between the end of said roll and said shaft, air may be introduced into said handle member to expand said roll throughout its entire length and permit said roll to be easily installed upon or removed from said shaft, said handle having an interior chamber substantially larger than said shaft to enclose an air space therebetween of considerable volume when mounted on said shaft, to allow the air pressure in the chamber to be built up and to be retained by said check valve after the removal of said source of air supply.

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