

June 12, 1928.

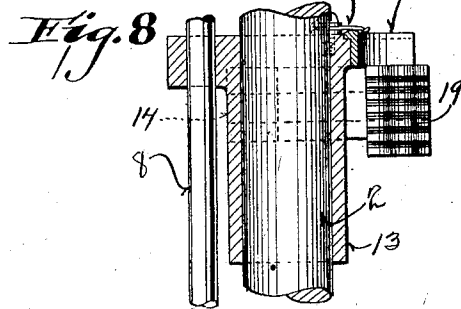
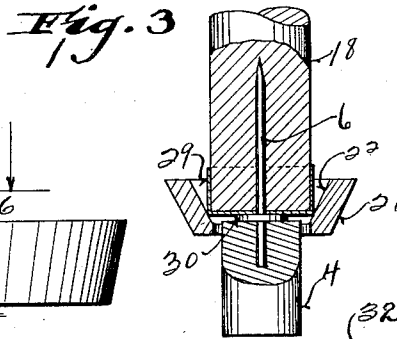
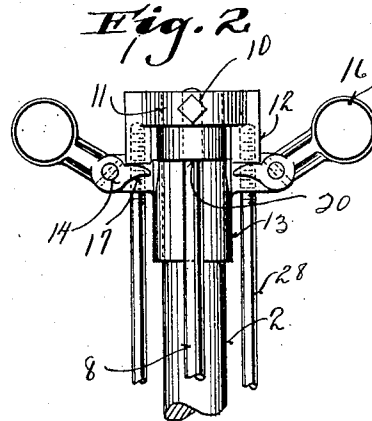
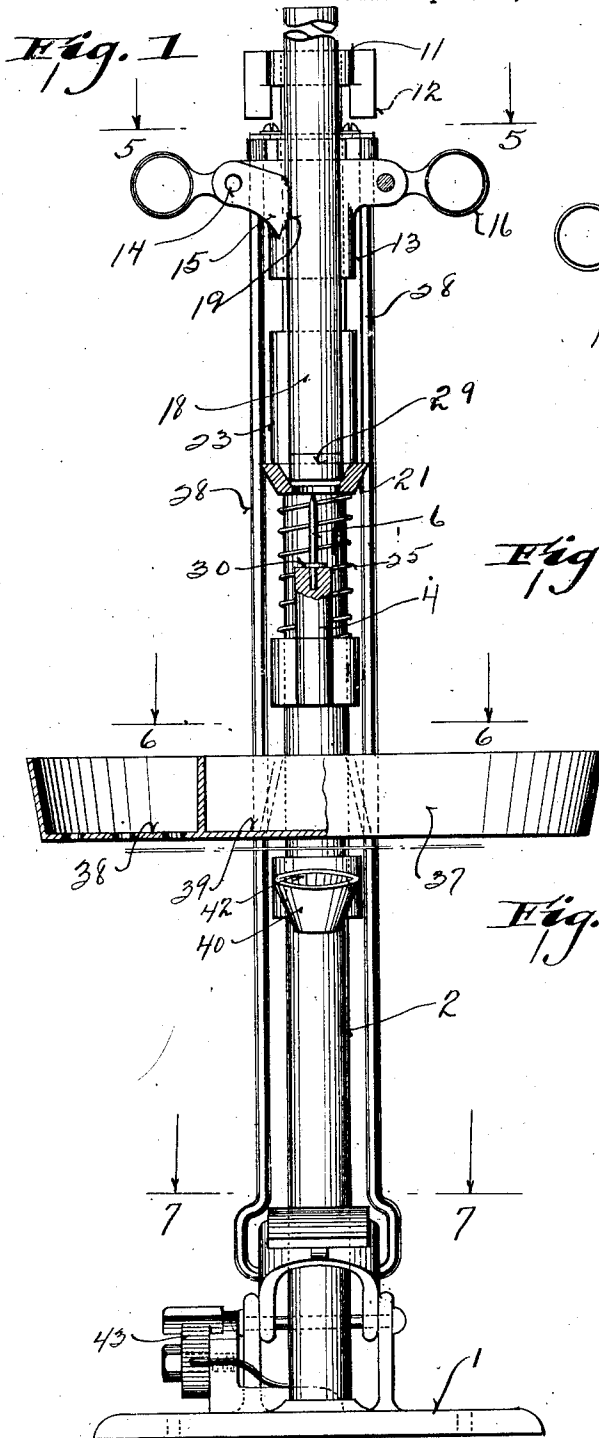
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A. N. MILLER

ASSEMBLING MACHINE FOR SHADE ROLLER FITTINGS

Filed April 14, 1927

2 Sheets-Sheet 1



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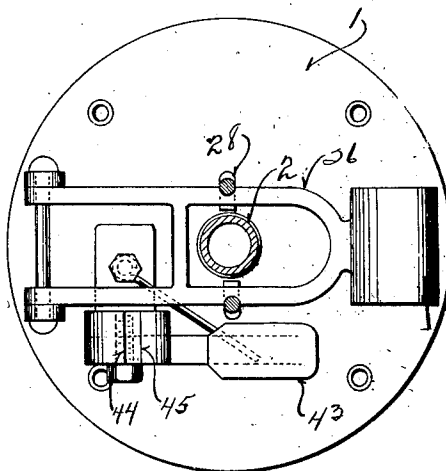
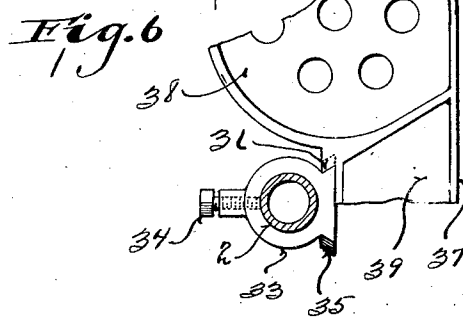
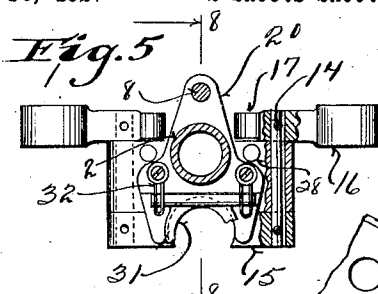
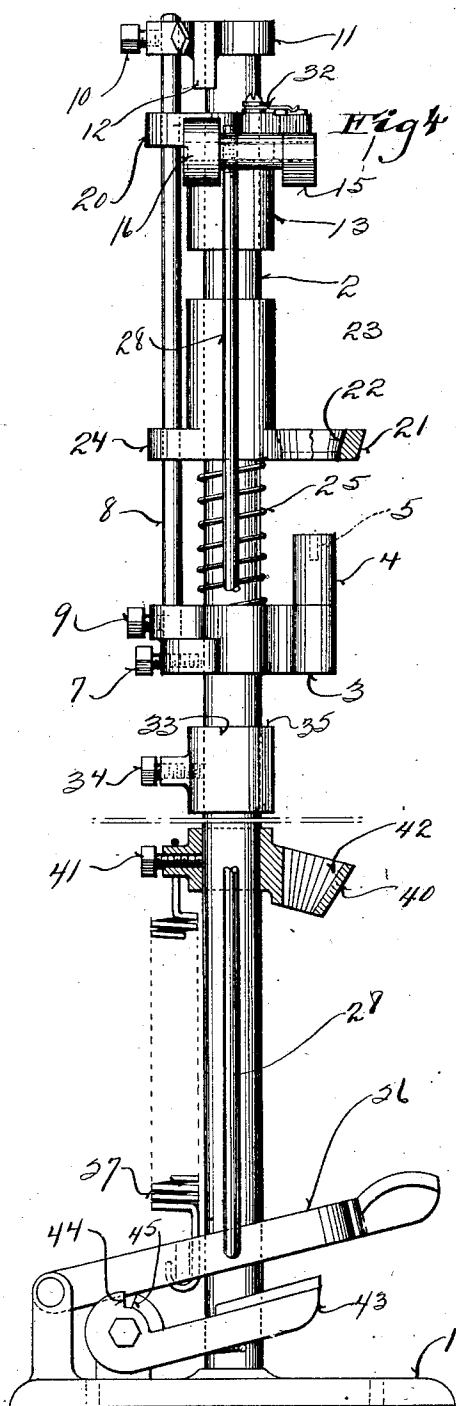
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ASSEMBLING MACHINE FOR SHADE ROLLER FITTINGS

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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ASSEMBLING MACHINE FOR SHADE-ROLLER FITTINGS.

Application filed April 14, 1927. Serial No. 183,696.

This invention relates to assembling machines for shade roller fittings.

Objects of this invention are to provide an assembling machine for shade rollers which is so constructed that the machine will readily drive the end pin centrally into the shade roller and will correctly position the roller with reference to the pin prior to the driving operation so that the pin is absolutely centered at the instant that it enters the roller.

Further objects are to provide a machine which automatically grips the roller when the cross head or moving portion thereof is depressed and which automatically releases the roller when the cross head rises to its next position.

Further objects are to provide a machine which is so constructed that an operator may place the ferrules and end pins correctly with reference to the roller with the utmost speed and facility and in which means are provided which furnishes a holder for the pins and ferrules and which is detachably mounted upon the machine, so that it may be quickly removed and carried to the stock room and refilled.

Further objects are to provide a novel form of assembling machine for shade roller fittings in which means are provided for gripping the pins of old rollers so that they may be readily removed in the event that repair jobs are done, and in which an end tapering instrumentally is carried in a readily accessible position upon the machine, so that in the event that the ends of the rollers are roughened or irregular they may be readily tapered in a simple manner at the same machine that is used for positioning the end pins.

An embodiment of the invention is shown in the accompanying drawings in which:

Figure 1 is a front elevation of the machine with parts broken away and in section;

Figure 2 is a view from the upper rear portion of the machine;

Figure 3 is an enlarged sectional view of the foot or holder which centers the lower end of the roller and of the anvil and adjacent portion of the roller;

Figure 4 is a side view of the machine with

parts broken away and with the ferrule and pin holding tray removed;

Figure 5 is a sectional view on the line 5—5 of Figure 1;

Figure 6 is a fragmentary sectional view on the line 6—6 of Figure 1;

Figure 7 is a sectional view on the line 7—7 of Figure 1;

Figure 8 is a sectional view on the line 8—8 of Figure 5.

Referring to the drawings, it will be seen that the machine comprises a base 1 which is adapted to be securely attached to the floor and from which a main supporting standard 2 rises. This standard rigidly carries an adjustably mounted anvil support 3 which is provided with an upwardly projecting anvil 4 provided with a recess 5 for the reception of the end of the trunnion pin or end pin 6, as shown in Figures 1 and 4. The member 3 is adjustably locked in place by means of the set screw 7 (see Figure 4) and carries a guide rod 8 which is locked by means of a set screw 9. The guide rod extends upwardly and its upper end is locked by means of a set screw 10 to a top member or trip member 11. This top member is provided with a pair of downwardly projecting arms 12 for tripping the gripping dogs in a manner hereinafter to appear.

A cross head 13 is slidably mounted upon the standard 2, as shown in Figures 1, 2, 4, and 5. This cross head 13 is provided with a pair of rock shafts 14, as shown most clearly in Figure 5, which at their forward ends carry the gripping dogs 15, and at their rear ends carry the weighted levers 16. These weighted levers are provided with inwardly projecting extensions or ears 17 which are adapted to contact with the lugs 12 when the cross head is in its uppermost position, as shown in Figure 2, to thus rock the shafts 14 and release the gripping dogs from engagement with the roller 18. From Figures 1 and 5, it is clear that the gripping dogs 15 are provided with concave faces contacting with the roller, and that these faces are rounded, as shown most clearly in Figure 1. The faces are serrated, as indicated by the reference character 19 in Figure 1, and also eccentric with reference to the shafts 14, so that they will bind when the cross

head is pulled downwardly. This cross head 13, as may be seen from Figures 4 and 5, is provided with a rearwardly projecting ear or lug 20 which slidably fits the guide rod 8 and thus is prevented from turning.

Immediately below the cross head and between such cross head and the anvil 4, a supporting foot 21 is provided for the lower end of the roller. This supporting foot 10 is provided with a tapered inner surface 22 of conical contour and is rigid with a tubular portion 23 slidably mounted upon the standard 2. It is also provided with a rearwardly projecting ear 24 slidably guided by the rod 8. A coiled spring 25 is positioned 15 between the member 3 and the slidably carried shoe and normally holds the shoe above the anvil, as shown in Figures 1 and 4.

It is to be noted that the cross head is 20 moved, preferably by means of a foot lever 26 pivoted to lugs carried by the base, as shown in Figure 4, and spring urged upwardly by means of the spring 27. This foot lever is connected by means of rods 28 25 with the cross head 13, the rods being located on opposite sides of the central standard 2, as shown in Figure 1.

From the mechanism thus far described, it is apparent that a roller 18 with the end 30 ferrule 29 in place may be readily slipped downwardly between the dogs 15 and centered by means of the tapered inner surface 22 of the shoe 21. An end pin 6 is positioned within the aperture 5 of the anvil 4 35 and its integral flange 30 rests upon the upper surface of the anvil, as shown in Figures 1 and 3. The operator now steps upon the foot lever or treadle 26 and the cross head descends, causing the dogs 15 to grip the 40 roller. The roller is thus carried down by the cross head with its end bearing against the spring pressed shoe 21 and correctly held with reference to the end pin 6. The end pin is thus forced into the descending 45 roller, the shoe 21 yielding or moving downwardly into the position shown in Figure 3. Thereafter, the operator removes his foot from the treadle and the cross head and shoe spring upwardly carrying the roller 50 with them. At the extreme upper motion of the cross head, the ears 17 of the weighted levers 16 strike the projections 12 and thus rock the dogs 15 into disengaging position permitting free removal of the roller.

55 In order to provide for the accurate guiding of the upper portion of rollers of different sizes, a removable bushing or member 31 (see Figure 5) is carried by the cross head 13. This member or bushing fits with 60 in the curved arms of the cross head 13 and is held in place by spring clips 32, as shown most clearly in Figures 5 and 8. These bushings are adapted to be interchanged to fit rollers of different sizes.

65 It is to be noted also from Figures 1, 4,

and 6, that an adjustably mounted sleeve 33 is locked by means of a set screw 34 to the standard at a point below the member 3, and is provided with a dovetailed portion 35 which detachably engages the correspondingly dovetailed portion 36 of a holder 70 37. The holder 37 is provided with end compartments 38 which are adapted to carry a supply of ferrules, and with a central compartment 39 which is adapted to carry pins 75 or end trunnions for the shade rollers. This holder may be most easily detached from the member 33 and carried to the stock room where it may be refilled. It is equally 80 easy to reposition the holder 37 by slipping its dovetailed slotted portion 36 over the dovetailed projecting part 35 of the member 33, as shown most clearly in Figure 6.

Below the member 33, a bevelling device 40 is adjustably positioned and locked by 85 means of its set screw 41, as shown in Figure 4. This bevelling device is provided with a fluted conical portion 42 with the flutes relatively sharp or knife-like, so that they will trim the lower end of a roller and 90 will slightly bevel such lower end to remove any ragged portions and to facilitate the entrance of the end of the roller into the ferrules.

It sometimes happens that repair work 95 is done upon this machine and means must be therefore provided for extracting the end pins of the old rollers. This is readily accomplished by means of the auxiliary foot lever 43 which is provided with a gripping 100 jaw 44 cooperating with the stationary gripping jaw 45 carried by the base 1, as shown in Figure 4. The foot lever 43 is urged into jaw open position by means of a spring. In 105 using this device the end pin of the old shade roller is positioned between the jaws 44 and 45 and the operator then steps upon the auxiliary foot lever 43, thus gripping the end pin. He may thereafter pull upwardly upon the shade roller with an easy 110 and natural motion and may thus very readily extract the end pin from the old roller.

It will be seen that a novel machine has 115 been provided which may be very rapidly and easily operated to assemble shade rollers and which may be used for repair work with the utmost facility.

It will be seen further that the device is 120 semi-automatic in its operation and that the minimum of effort and thought is required on the part of the operator, so that an unskilled operator may produce work of standard quality with the greatest ease.

Although the invention has been described 125 in considerable detail, such description is intended as illustrative rather than limiting as the invention may be variously embodied and as the scope of such invention is to be determined as claimed.

I claim:

1. An assembling machine for shade rollers comprising an upright, a cross head guided by said upright, means for reciprocating said cross head, gripping members carried by said cross head for engaging a shade roller, and a relatively stationary pin receiving anvil against which said shade roller is forced.
2. An assembling machine for shade rollers comprising a standard, a cross head guided thereby, a foot treadle operatively coupled to said cross head, said cross head having means for gripping a shade roller, a member yieldingly held in position adjacent the lower end of said shade roller for centering such lower end, and a stationary anvil provided with an aperture for the reception of the end pin for the shade roller.
3. An assembling machine for shade rollers comprising a standard, a cross head guided thereby, a foot treadle operatively coupled to said cross head, said cross head having means for gripping a shade roller, a member yieldingly held in position adjacent the lower end of said shade roller for centering such lower end, and a stationary anvil provided with an aperture for the reception of the end pin for the shade roller, and means for tripping said gripping means when said cross head is at its point of greatest retraction.
4. An assembling machine for shade rollers comprising a base, a vertical standard projecting therefrom, an anvil rigidly carried by said standard and having an aperture for the reception of the end pin of a shade roller, a centering member having a conical surface yieldingly held above said anvil, a cross head slidably carried by said standard, gripping members carried by said cross head for gripping a shade roller, and a foot treadle operatively coupled to said cross head.
5. An assembling machine for shade rollers comprising a base, a vertical standard projecting therefrom, an anvil rigidly carried by said standard and having an aperture for the reception of the end pin of a shade roller, a centering member having a conical inner surface yieldingly held above said anvil, a cross head slidably carried by said standard, gripping members carried by said cross head for gripping a shade roller, and a foot treadle operatively coupled to said cross head, and means for tripping said gripping members when said cross head is in raised position.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee, in the county of Milwaukee and State of Wisconsin.

ADOLPH N. MILLER.