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ELECTRIC HEATER FOR SHOE MACHINERY

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Fig. 1.

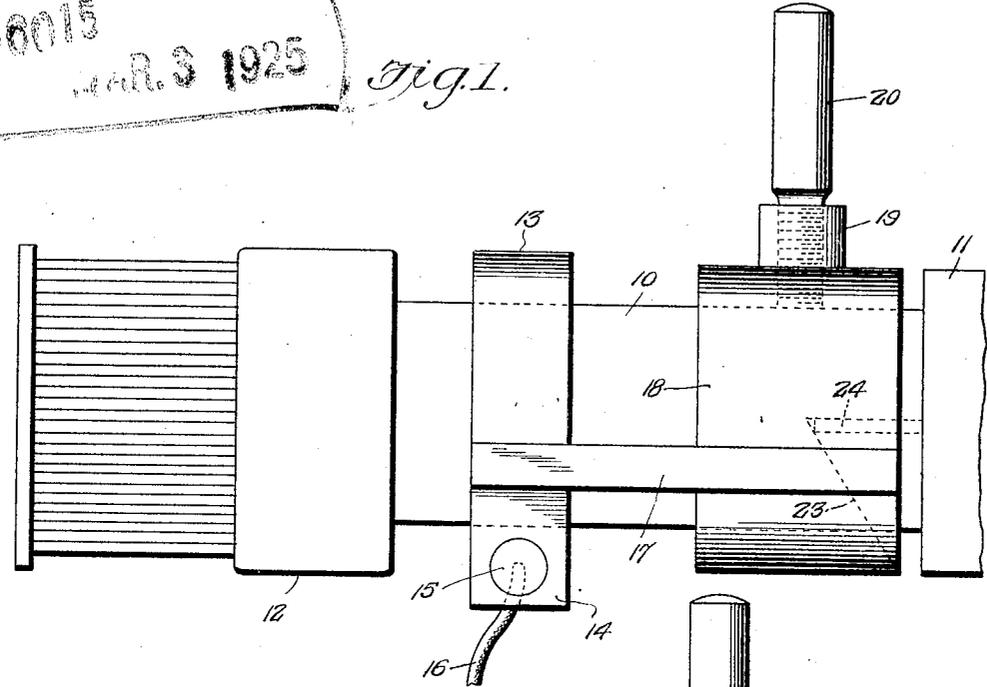


Fig. 3.

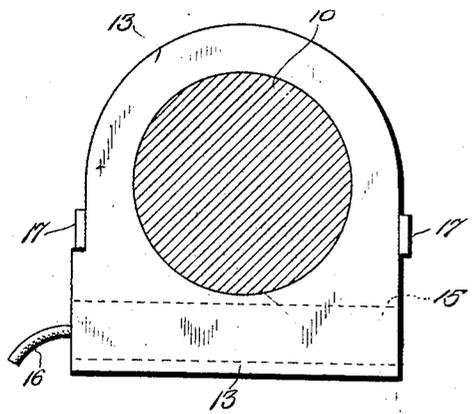
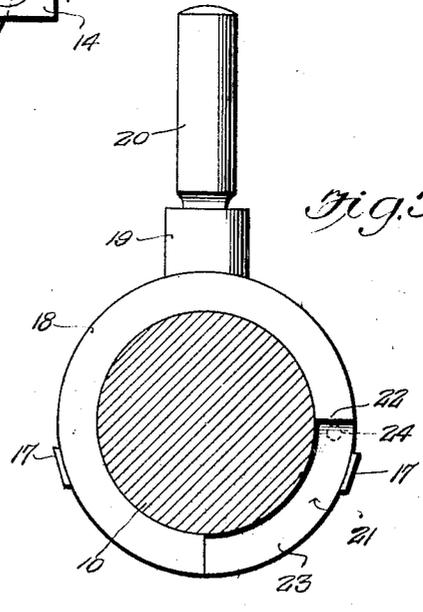


Fig. 2.

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364
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UNITED STATES PATENT OFFICE.

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ELECTRIC HEATER FOR SHOE MACHINERY.

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To all whom it may concern:

Be it known that I, CHARLES L. WHITE, a citizen of the United States, and a resident of Medina, in the county of Orleans and State of New York, have invented certain new and useful Improvements in an Electric Heater for Shoe Machinery, of which the following is a specification.

The invention relates to improvements in heating devices for use in connection with certain of the working elements of shoe machinery, and more particularly to an electrically heated element adapted to be associated with the edge setting element of such machinery.

In shoe machinery repair outfits and the like, it is common practice to associate with certain of the working elements thereof, a heating means generally of the gas burner type, and, in the use of which, often results in serious injury to the operators thereof by their hands being burned by reason of having to manipulate the shoe on such working element in the immediate proximity to the heating means.

The primary object of the invention is, therefore, to provide a heating means of the character mentioned, and one so associated with the working element of a machine as to be positioned at one side of the latter removed from the working position of the operator, and, consequently, at a point different from that now occupied by known heating devices.

Another object of the invention is to provide for a heating means which may or may not be permanently associated with certain working elements of a machine of the type mentioned, and which may, when permanently associated therewith, be moved away from the working element so as to vary the degree of temperature of the latter if desired, and also may be readily and quickly rendered active or inactive as necessary during the operation of the particular working element with which it is associated.

With the foregoing and other objects in view, the invention resides in the certain new and useful arrangement and construction of parts as will be hereinafter more fully described, set forth in the appended claims, and illustrated in the accompanying drawing, in which:—

Figure 1 is an end portion of a driven

shaft of a shoe machine showing the preferred embodiment of the invention associated with an edge setter tool thereon.

Fig. 2 is a transverse section through the driven shaft showing one end of the heating device in elevation, and,

Fig. 3 is a view similar to Fig. 2 wherein is shown the opposite end of the device in elevation.

Referring to the drawing, in Fig. 1 thereof is shown the outer end portion of a driven shaft 10 which projects outwardly of a bearing 11 and carries at its free end an edge setting tool 12, all of conventional form and arrangement.

Slidably mounted on the shaft 10 and free from rotation therewith is a heating collar 13, which is circular throughout a greater portion of its facial edge and formed to provide a squared end portion 14 at one side of the circular edge, which portion 14 has a longitudinally extending bore into which is fitted an electrical heating coil 15, the latter being preferably removably held in the bore so as to be readily withdrawn for repair or replacement as desired or necessary, and the same is connected to a suitable source of current supply (not shown) by the compound lead 16, extending rearwardly therefrom.

The heating collar 13 is connected by means of oppositely disposed metal strips or bars 17 to a slidable bearing 18, the strips or bars 17 being suitably soldered or welded at or cast with the opposite sides of the collars 13 and 18 in a plane parallel to each other and to the shaft 10, and are of a length to hold the collars spaced apart one from the other, whereby the collar 18 is not subjected to any appreciable heating effect from the collar 13. The collar 18 is provided with a radially extending interiorly threaded nipple 19 in which is threaded an actuating handle 20.

The total length of the device is substantially less than the distance between the opposed faces of the bearing 11 and the tool 12, so that the heating collar 13 may be moved away from the tool a sufficient distance to allow sufficient room for the operator to take the latter off of the end of the shaft for the substitution thereon of another, or similar tool of the same size, or of a different size, without burning his hand in the operation.

For holding the device in its normal position, as shown in Fig. 1, to prevent the rotation of the same with the shaft 10, the outer face of the bearing collar 18 is formed with an angular recess 21, one wall of which, as at 22, is disposed in the plane of the horizontal axis of the same, while the wall 23 is disposed at an angle thereto and is adapted to function as a cam surface, if desired, and into this recess is projected a pin 24, which is carried in the adjacent face of the bearing 11 and lies in a plane parallel to the shaft. This pin 24 is of a length to remain engaged in the recess 21 at all times, and if the collar 18 is given a quarter turn in its movement to bring the heating collar 13 in abutting relation with the opposite face of the tool 12, the wall 23 of the recess 21 is engaged by the head of the pin 24 and the device is forced outward from the bearing 11 and the heating collar 13 is held as firmly as desired against the tool 12. However, the device may be slid away from the bearing 11 without the quarter turn movement aforesaid, but in any case the same will be permanently held against complete rotation with the shaft.

It is to be understood that various changes in the detail construction and arrangement of the parts of the device may be resorted to without departing from the spirit and scope of the invention.

Having thus fully described the invention, what is claimed, is:—

1. In a machine of the class described, a driven shaft, a tool carried on said shaft, and a heating means mounted for movement to and from effective heating proximity to said tool.

2. In a machine of the class described, a driven shaft, a tool carried at the free end of said shaft, a heating means carried on said shaft for heating said tool, and means for moving said heating means to and from effective heating proximity to said tool.

3. In a machine of the class described, a driven shaft, a tool carried at the free end of said shaft, and a heating means movable on said shaft to and from effective heating proximity to said tool.

4. In a machine of the class described, a driven shaft, a tool carried at the free end of said shaft, and a non-rotatable electrically heated means movable on said shaft to and from effective heating proximity with respect to said tool.

5. In a machine of the class described, a driven shaft, a tool carried on said shaft, a non-rotatable electrically heated means carried on said shaft, and means for moving said heated means to and from effective heating proximity to said tool.

6. In a machine of the class described, a driven shaft, a tool carried at the free

end of said shaft, and an electrically heated means movable on said shaft and associated with said tool.

7. In a machine of the class described, a driven shaft, a tool carried at the free end of said shaft, an electrically heated means movable on said shaft for heating said tool, and means for moving said heating means into and out of the contact with said tool.

8. In a machine of the class described, a driven shaft, a tool carried at the free end of said shaft, an electrically heated means movable on said shaft, and manually operated means for moving said heating means into and out of contact with said tool.

9. In a machine of the class described, a driven shaft, a tool carried at the free end of said shaft, a member movable on said shaft, an electrically heated means carried by said member, and means for moving said member into and out of contact with said tool.

10. In a machine of the class described, a driven shaft, a tool carried at the free end of said shaft, a collar encircling said shaft, an electrically heated coil carried by said collar, and means for moving said collar into and out of contact with said tool.

11. In a machine of the class described, a driven shaft, a tool carried at the free end of said shaft, a collar encircling said shaft, an electrically heated coil carried by said collar, a bearing collar spaced from and connecting the first named collar, and an operating handle carried by said bearing collar for moving the first named collar into and out of contact with said tool.

12. In a machine of the class described, a main bearing, a driven shaft journaled in said main bearing and having a free end projecting therefrom, a tool carried at the free end of said shaft, a heating collar, an electrically heated coil carried by said heating collar, a bearing collar slidably mounted on said shaft with said heating collar and connecting the latter in spaced relation between the opposed faces of said main bearing and said tool, and means for moving said collars along said shaft whereby to adjust the heating collar with respect to said tool.

13. In a machine of the class described, a main bearing, a driven shaft journaled in said main bearing and having a free end projecting therefrom, a tool carried at the free end of said shaft, a heating collar, an electrically heated coil carried by said heating collar, a bearing collar slidably mounted on said shaft with said heating collar and connecting the latter in spaced relation between the opposed faces of said main bearing and said tool, means for moving said

collars along said shaft whereby to adjust the heating collar with respect to the tool, and means carried by said main bearing and associated with said bearing sleeve whereby to prevent the rotation of both of said collars with said shaft.

14. In a machine of the class described, a driven shaft, a tool carried on said shaft, a heating means carried on said shaft for heating said tool, and means for moving said heating means into and out of contact with said tool.

15. In a machine of the class described, a driven shaft, a tool carried on said shaft, an electrically heated means carried on said shaft for heating said tool, and means for moving said heating means to and from effective heating proximity to said tool.

16. In a machine of the class described, a driven shaft, a tool carried on said shaft, non-rotatable electrically heated means movably mounted on said shaft, and manually operated means for moving said heated means to and from heating proximity to said tool.

17. In a machine of the class described, a driven shaft, a tool carried on said shaft, a member movable with respect to said tool, a heating means carried by said member, and means for moving said member to and from effective heating proximity to said tool.

18. In a machine of the class described, a driven shaft, a tool carried on said shaft, a member movable with respect to said tool, an electrically heated means carried by said member, and means for moving said member to and from effective heating proximity to said tool.

19. In a machine of the class described, a driven shaft, a tool carried on said shaft, a heating means for said tool, and a manually operated cam means for moving said heating means to and from effective heating proximity to said tool.

20. In a machine of the class described, a driven shaft, a tool carried on said shaft, an electrically heated means for said tool, and a manually operated cam means for moving said heating means to and from effective heating proximity to said tool.

21. In a machine of the class described, a driven shaft, a tool carried on said shaft, a member movable on said shaft, a heating means carried by said member, and a cam means for moving said member to and from effective heating proximity to said tool.

22. In a machine of the class described, a driven shaft, a tool carried on said shaft, a member movable on said shaft, and elec-

trically heated means carried by said member, and a cam means for moving said member to and from effective heating proximity to said tool.

23. In a machine of the class described, a driven shaft, a tool carried on said shaft, a member movable on said shaft, a removable heating means carried by said member, and a cam means for moving said member to and from effective heating proximity to said tool.

24. In a machine of the class described, a driven shaft, a tool carried on said shaft, a member movable on said shaft, a removable electrically heated means carried by said member, and a cam means for moving said member to and from effective heating proximity to said tool.

25. In a machine of the class described, a driven shaft, a tool carried on said shaft, a member movable on said shaft, a heating means carried by said member, means for preventing the rotation of said member with said shaft, and means for moving said member into and out of contact with said tool.

26. In a machine of the class described, a driven shaft, a tool carried on said shaft, a member movable on said shaft, an electrically heated means carried by said member, and means for moving said member into and out of contact with said tool, said means also acting to prevent the rotation of said member with said shaft at all times.

27. In a machine of the class described, a driven shaft, a tool carried on said shaft, a collar movable on said shaft, a heating means carried by said collar, a cam recess formed at one end of said collar, a stationary pin engaged in said recess, and means for effecting a turning movement to said collar, whereby said pin acts on the cam wall of said recess to move said collar into contact with said tool.

28. In a machine of the class described, a driven shaft, a tool carried on said shaft, a collar movable on said shaft, an electrically heated means carried by said collar, a cam recess formed at one end of said collar, a stationary pin engaged in said recess, and means for effecting the turning movement to said collar whereby said pin acts on the cam wall of said recess to move said collar into contact with said tool, said pin remaining in engagement with said recess at all times whereby to prevent the rotation of said collar with said shaft.

In testimony whereof, I affix my signature hereto.

CHARLES L. WHITE.