April 25, 1939. G. W. WOOD 2,155,918

WAX STRIPPER AND TENSION DEVICE

Filed Dec. 2, 1937

Fig. 1.

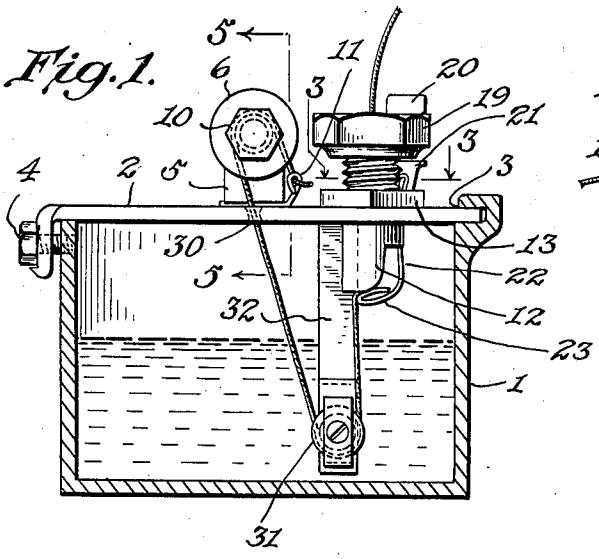


Fig. 2.

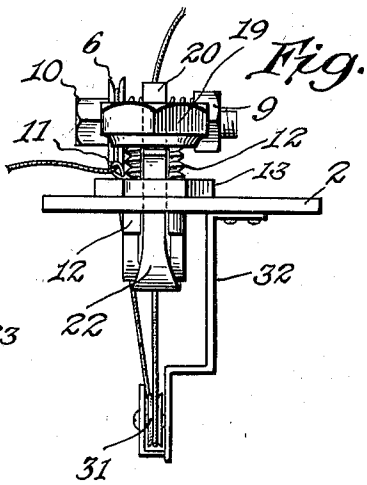


Fig. 3.

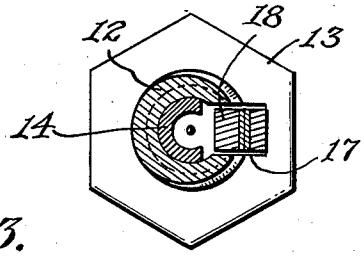


Fig. 5.

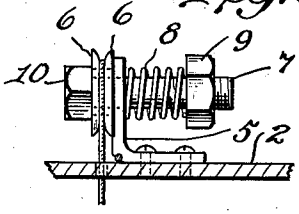


Fig. 4.

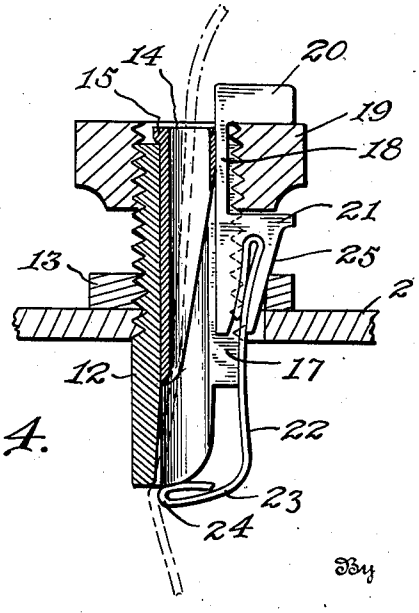
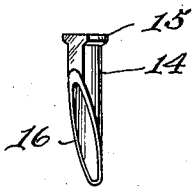


Fig. 6.



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UNITED STATES PATENT OFFICE

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WAX STRIPPER AND TENSION DEVICE

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Application December 2, 1937, Serial No. 177,833

8 Claims. (Cl. 91—32)

This invention relates generally to shoe machinery and especially to an attachment for shoe repair machines capable of using waxed thread for stitching the shoes.

An object of the invention resides in the provision of a container or pot for liquid wax, adapted to be attached to the machine, in combination with means for applying a suitable tension to the thread entering and leaving the container.

Another object of the invention consists in the provision of means for readily varying the tension on the thread as it leaves the wax container, and for stripping the thread of surplus wax.

A further object of the invention resides in providing a wax stripper which is designed for easy adjustment to vary the pressure on the thread, and which is capable of eliminating kinks in the thread and yet will present no obstruction to the passage of such knots as may be necessarily formed in the thread.

Other objects and advantages of the invention will be apparent from the following description when taken in connection with the accompanying drawing, in which,

Figure 1 is a vertical section through the wax pot, and showing the attachment in elevation.

Figure 2 is an end view of the stripper and lid, removed from the pot.

Figure 3 is an enlarged horizontal sectional view through the stripper taken on line 3—3 of Figure 1 and looking in the direction of the arrows.

Figure 4 is a vertical sectional view through the stripper.

Figure 5 is a sectional view on line 5—5 of Figure 1, viewing the initial tensioning device in elevation; and,

Figure 6 is a perspective view of a thimble through which the treated thread passes to the needle of the stitching mechanism (not shown).

Referring to the drawing in greater detail the numeral 1 indicates a wax pot constructed of any suitable material and provided with means (not shown) for supporting it in proper relation to any conventional type of shoe stitching machine. The pot 1 may be closed by a lid 2 having one end engaged in a groove 3 at one side of the receptacle and its other edge secured in position by a screw 4 or the like.

Mounted on the lid 2 as by means of bracket 5, is a thread guide pulley and tensioning device. This device, which is of more or less conventional construction, includes separate discs 6 loosely mounted on a bolt 7 which is in turn loosely mounted in the bracket 5. A coil spring 8 surrounds the bolt 7 and has its ends in engagement with the bracket 5 and an adjusting nut 9 respectively. The tensioning wheel 6 is disposed between a head 10 of the bolt 7 and the bracket 5, and it will be apparent that by adjusting the nut 9 the compression on the spring 8 may be varied, and likewise the tension applied to the thread.

The thread is guided to the roller 6 from any suitable source of supply by an eye 11 secured to the lid 2 at a point adjacent the roller.

Also mounted on the lid 2, in a threaded opening formed therein, is a tubular member 12; a lock-nut 13 being provided for securing the member in position after it is threaded into the opening. Within the tubular member 12 is a thimble 14 provided with a flange 15 at its upper edge by which it is supported in member 12. One side of the thimble is beveled off as indicated by numeral 16 for a purpose which will later appear.

The tubular member 12 is formed with a longitudinal slot 17 in which is mounted a combined tensioning device and wax stripper. The upper portion of this device consists of a plate 18 formed with a cut-out portion to provide for the reception of a portion of an adjusting nut 19 between the projections 20 and 21 of the plate. The thimble 14 holds the plate 18 against the nut 19, and the plate is therefore raised or lowered as the nut is raised or lowered by means of its threaded engagement with the upper portion of the tubular member 12. The lower portion of plate 18 is provided with a notch or the like for the reception of the upper end of an L-shaped resilient member 22, although any preferred means may be employed for securing these parts together. The horizontal part 23 of the L-shaped member is preferably bent over as indicated at 24 to provide a rounded portion adapted to engage the thread and press it against the lower edge of the tubular member as it is drawn up into the latter. The engagement of the thread between the part 24 and the lower portion of the tubular member provides for stripping off excess wax from the thread and also places a tension on the thread.

In order that the tension on the upwardly moving thread may be varied and also to vary the amount of wax removed from the thread it is necessary that the pressure of the member 24 against the thread be varied. To this end the lower portion of plate 18 is beveled off, as indicated at 25, to provide a cam adapted to cooperate with an edge of the nut 13. It will be apparent therefore that as the plate 18 is

raised or lowered through operation of nut 19 the lower portion of the plate is flexed inwardly or outwardly with respect to the tubular member. This radial movement of the lower portion of the plate together with its vertical movement combine to vary the compression of the thread between the elements 12 and 24. The bevel 16 on the thimble 14 is provided for the purpose of allowing the lower portion of the plate to be moved inwardly by its cam 25.

Reverting to the introduction of the thread into the wax pot, it passes through an opening 30 in closure 2 to a guide pulley 31 rotatably mounted on a bracket 32 fixed to the underside of the lid. The bracket 32 is of sufficient length to extend to a point near the bottom of the pot and the guide pulley is mounted closely adjacent its lower end, thereby causing the thread passing around the wheel to be immersed in the liquid wax prior to its passage up through the combined stripper and tensioning device.

The operation of the various parts of the apparatus have been described in connection with the description of the structural details and need not be repeated other than to point out that it is only necessary to rotate the nut 19 in the proper direction in order to effect the movement of the member 22 and consequently the pressure applied to the thread. Moreover the arrangement of the member 22 and tube 12 is such as not only to provide the necessary tension and stripping action but also to allow for automatic lateral movement of the member 22 thereby serving to allow the passage of any knots which may be formed in the thread. Furthermore the tensioning of the thread as it enters and leaves the pot eliminates any possibility of the formation of kinks therein.

In accordance with the patent statutes I have described what I now believe to be the preferred form of the invention but inasmuch as various minor changes may be made in the details of construction without departing from the spirit of the invention it is intended that all such changes be included within the scope of the appended claims.

Having fully described the invention, what I claim is:

1. A thread-waxing mechanism for sewing machines, including a wax pot, a tensioning device through which the thread passes into the pot, a tubular member through which the thread passes on leaving the pot, a finger for pressing the thread against the tubular member to strip the wax and tension the thread, and a camming member for varying the pressure of the finger on the thread.

2. In a waxing mechanism for sewing machines, including a wax pot, a tubular member through which the thread leaves the pot, a leaf spring for engaging the thread as it passes through the tubular member, and means for varying the pressure of the leaf spring on the thread.

3. In a waxing mechanism for sewing machines including a wax pot, a tubular member through which the thread leaves the pot, a combined wax stripper and tensioning finger associated with the tubular member, a camming member to which the finger is attached, and means for adjusting the position of the camming member to vary the pressure of the finger.

4. In a waxing mechanism for sewing machines including a wax pot, a tubular member through which the thread leaves the pot, a resilient finger having its lower end in cooperative relation to the lower end of the tubular member, a camming member to which the finger is attached, and means for operating the camming member.

5. In a waxing mechanism for sewing machines including a wax pot, a tubular member through which the thread leaves the pot, a resilient finger having its lower end in cooperative relation to the lower end of the tubular member, a nut threaded to the tubular member, a camming member operatively connected with the nut, and a connection between the camming member and finger.

6. In a waxing mechanism for sewing machines including a wax pot, a tubular member associated therewith and provided with a longitudinal slot, a nut threaded on the tubular member, a thimble in the tubular member, a camming device mounted in the slot of the tubular member and disposed between the thimble and nut, a connection between the camming device and nut, and a spring finger connected to the camming device.

7. In a waxing mechanism for sewing machines, including a wax pot, a tubular member associated therewith and provided with a longitudinal slot, a nut threaded on the tubular member, a thimble in the tubular member, a camming device mounted in the slot of the tubular member and disposed between the thimble and nut, a portion of said thimble being beveled off to permit radial movement of the camming device, a connection between the camming device and nut, and a spring finger connected to the camming device.

8. In a waxing mechanism for sewing machines including a wax pot, a tubular member through which the thread leaves the pot, and L-shaped member of resilient material associated with the pot and having one arm in engagement with the thread as it passes into the tubular member.

GROVER W. WOOD.