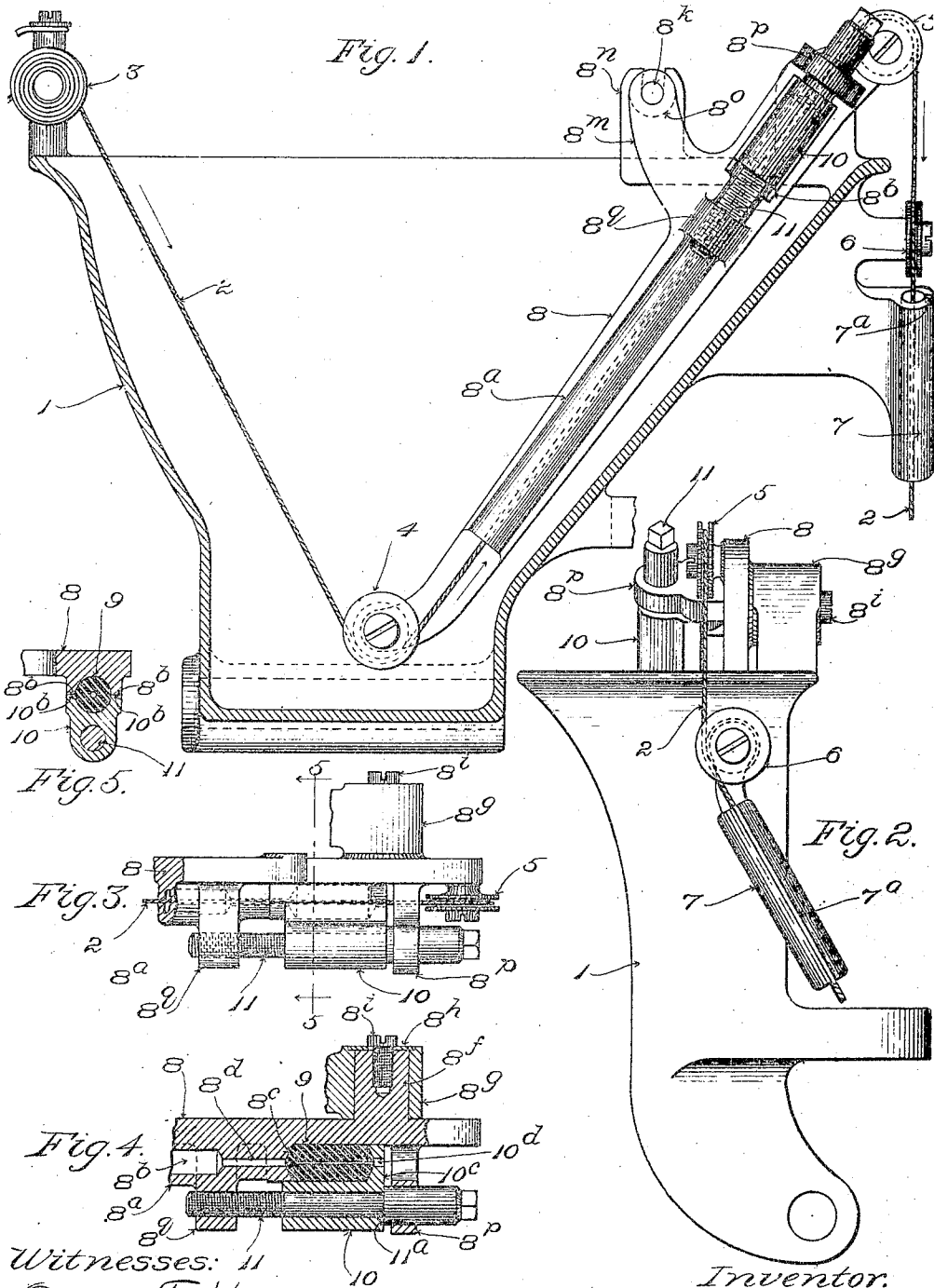


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 THREAD WAXING DEVICE FOR SEWING MACHINES.
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Patented Oct. 19, 1909.



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UNITED STATES PATENT OFFICE.

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THREAD-WAXING DEVICE FOR SEWING-MACHINES.

937,708.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK W. MERRICK, a citizen of the United States, residing at Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and useful Improvement in Thread-Waxing Devices for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

The main object of the invention is to provide a wax-stripper which shall be so constructed as to enable the socket containing the rubber (caoutchouc) or other packing material to be opened up in such manner as to enable such material to be conveniently, quickly, and entirely removed and fresh material introduced, whenever it becomes necessary to make the change.

The invention consists in a wax-stripper comprising a socket within which the packing material is confined both radially and longitudinally, the said socket being longitudinally divided to form segmental sections, and means for effecting relative adjustment of the socket-sections longitudinally of the socket to thereby vary the degree of the compression of the said packing material. The said socket is preferably, though not necessarily in all embodiments of the broad principles of the invention, separable laterally to open up the chamber of the socket.

The invention consists, also, in a swinging arm in connection with the wax-pot, carrying a guide for the thread and movable to depress the said guide and thread into the depth of the wax-pot, or elevate them therefrom, the said arm having a tubular heat-conducting and radiating shell inclosing the path of the thread intermediate the said thread-guide and the wax-stripper, the said shell serving to radiate heat upon the portion of waxed thread extending from the thread-guide to the stripper to keep the wax thereon from cooling. With the said movable arm I combine means for locking it in the desired position. Usually, although not necessarily in all forms of the invention, I mount the wax-stripper upon the said arm so that it shall occupy the same position with relation to the passage through the tubular shell in all positions of the arm. This enables threading-up to be effected conveniently and quickly when the arm has

been swung so as to raise the guide out of the contents of the wax-pot, by means of a wire passed through the wax-stripper and the said passage.

An embodiment of the invention is shown in the drawings, in which latter,—

Figure 1 is a view in vertical longitudinal section of a wax-pot having one form of my improvements applied thereto. Fig. 2 is an end elevation of the said wax-pot. Fig. 3 is a detail view showing a portion of the swinging arm, the stripper applied thereto, and a portion of the support for the said arm. Fig. 4 is a view showing the parts of Fig. 3 in longitudinal transverse section. Fig. 5 is a view in cross-section on line 5, 5, of Fig. 3.

Having reference to the drawings,—at 1 is a wax-pot, it being suitably constructed for application and attachment to the supporting-frame on which it is mounted for use. At 2 is the thread to be operated upon, 3 being a thread-guide and tension-device at the entering side of the wax-pot, 4 the thread-guide by which the thread is depressed in the lower portion of the interior of the wax-pot so as to pass into and through the contents of the latter, 5 a thread-guide at the delivery-side of the wax-pot, 6 an additional thread-guide by which the thread is conducted toward the place of use, and 7 a metal tube, connected with the body of the wax-pot, and inclosing a portion of the path of the thread on the way from the wax-pot. The tube 7 is slitted lengthwise at 7^a, to permit the thread to be passed by a lateral movement into the tube, or to be withdrawn from the latter. It becomes warmed from its connection with the metal body of the wax-pot, and not only protects the thread from cooling influences, but by radiation of heat keeps the thread warm. The thread-guides 4, 5, and 6 are shown as grooved disks or rolls.

The thread-guide 4 is mounted upon the lower end of the arm 8, which latter is shown extending down into the interior of the wax-pot in Figs. 1 and 2. The arm 8 is provided with a laterally-projecting journal 8^a which fits a bearing in a lug 8^b on the upper edge of the wax-pot, the said journal being retained in the said bearing by means of a cap-washer 8^b, Fig. 4, that is secured by a screw 8^c to the end of the journal, the said cap-washer bearing against the outer side of

the said lug. This mode of mounting the arm enables it to be swung up so as to raise its lower end and the thread-guide 4 out of the wax-pot for convenience in threading-up. For the purpose of locking the arm in the depressed working position shown in Fig. 1, a clamping-screw 8^a is provided, the said clamping-screw having its threaded stem fitted to a threaded hole that is tapped through a lug 8^m of the arm 8. In the depressed position of the arm, the stem of the screw occupies an open-topped slot in the ear 8ⁿ rising from the top of the wax-pot. By turning the screw this ear may be clamped between the lug 8^m and the collar 8^o of the screw, (shown by dotted lines in Fig. 1) which will hold the arm from rising. When the screw is loosened, the arm may be raised.

In conformity with one feature of the invention, the arm 8 is provided with the tubular shell 8^a, extending in the direction of the path of the thread from the thread-guide 4 to the stripper. The said shell incloses the said path, from near the thread-guide 4 to near the stripper, and serves to protect the thread between the said thread-guide and the stripper from cooling influences. In addition, the arm being formed of metal, and being at its upper end in contact with the wax-pot, the arm and its shell become warmed by conduction and radiate heat upon the inclosed portion of thread. In this form of the invention, the stripper is provided upon the arm 8, and one of the sections of the socket for the packing or stripping material 9, Fig. 2, is integral with the arm itself, the other being constituted by a separate block 10. The two sections are formed to inclose between them the chamber which receives the packing or stripping material. See Fig. 5. The line of division between the sections extends longitudinally of the socket, and the sections have longitudinally-extending meeting-faces 8^b, 10^b, at opposite sides of the chamber. End-walls are provided for the chamber. In this form of the invention, also, one of the said end-walls, it being designated 8^c, is formed upon the section which is integral with the arm, and the other, 10^c, upon the movable section 10. The packing or stripping material 9 (usually rubber) is confined radially by the side-walls of the chamber, and longitudinally by the end-walls 8^c, 10^c. Thread-passages 8^d, 10^d, are provided in the end-walls 8^c, 10^c, in line with the passage within the shell 8^a, and a central thread-passage is provided through the packing or stripping material, as usual. It will be obvious that when relative movement of the sections longitudinally of the stripper-socket takes place, so as to vary the distance between the end-walls, the degree of the compression of the packing or stripping material within the chamber, and thereby the

action upon the thread passing through the stripper, will be correspondingly varied.

The section, 10 is held in place by means of a bolt 11. The stem of this bolt occupies a hole that is bored longitudinally through the body of the said section, as shown best in Figs. 4 and 5. A shoulder at 11^a upon the bolt bears against one end of section 10. Adjacent to the said shoulder, the bolt is fitted to a bearing that is provided therefor in a lug 8^p projecting from arm 8. The screw-threaded portion of the stem of the bolt projecting beyond the opposite end of the section 10 is in screw-threaded engagement with the other section, namely by being fitted to a screw-threaded hole which is tapped in a second lug, 8^q, projecting from the arm. Bolt 11 extends parallel with the meeting-faces 8^b, 10^b, of the sections, and serves as a means of retaining the sections closed together in working relations, as a means of producing relative movement of the sections longitudinally of the socket in effecting adjustments for regulating the action of the stripper, and as a guide for the section 10 in being adjusted. When the bolt 11 is removed, it constituting a movable retainer by which the parts are held in their normal working relations, the section 10 may be separated bodily by a lateral movement from the companion section, thereby opening up the chamber completely so as to expose the packing or stripping material for ready removal.

I claim as my invention:—

1. In combination, a stripper-socket longitudinally-divided into segmental sections permitting the same to be opened apart laterally, packing material within the said socket, and means for effecting adjustment of the socket-sections relative to each other longitudinally of the socket to thereby vary the degree of compression of the said packing material.
2. In combination, a socket longitudinally-divided into segmental sections permitting the same to be opened apart laterally, and having opposite end-walls upon different sections thereof, the said end-walls having thread-passages, packing material confined within the said socket, and means for effecting adjustment of the sections relative to each other longitudinally of the socket to vary the degree of compression of the said packing material.
3. In combination, a stripper-socket longitudinally-divided into segmental sections permitting the same to be opened apart laterally, and within which socket the packing material is confined, the packing material itself, and pressure adjusting means acting longitudinally of the socket whereby the degree of compression of the said material may be varied.
4. In combination, a stripper-socket longi-

5 tudinally-divided into segmental sections
 permitting the same to be opened apart
 laterally, and one section of which is longi-
 tudinally adjustable relative to the other to
 vary the degree of compression of the pack-
 ing-material within such socket, and a re-
 movable retainer by which the sections are
 held in their normal working relations.

10 5. In combination, a stripper-socket longi-
 tudinally-divided into segmental sections
 permitting the same to be opened apart
 laterally, and having end-walls which are
 adjustable relative to each other to vary the
 compression of packing-material within the
 15 socket, and said packing-material itself.

6. In combination, a stripper-socket longi-
 tudinally-divided into segmental sections
 comprising a fixed section and a longitu-
 dinally-movable section, and an adjusting
 20 guide-bolt by which the movable section is
 removably held in place.

7. In combination, a stripper-socket longi-
 tudinally-divided into segmental sections,
 packing within the said socket, and a retain-
 ing and adjusting bolt engaging the sections
 25 and securing them together in working re-
 lations, the said bolt being in screw-threaded
 engagement with one of said sections, where-
 by, by turning the bolt the sections are rel-
 atively adjusted longitudinally and the de-
 30 gree of compression of the packing is regu-
 lated, and by disengagement of the bolt the
 sections are free to be separated.

8. In combination, a stripper-socket longi-
 35 tudinally-divided into segmental sections
 comprising a fixed section and a trans-
 versely-removable section which is relatively
 movable upon said fixed section longitu-
 dinally of the socket, and a retaining and
 40 adjusting bolt, turning in bearings in the
 two sections, shouldered for engagement
 with one thereof, and in screw-threaded en-
 gagement with the other thereof.

9. In combination, a wax-pot, a wax-
 45 stripper, and a swinging arm carrying a
 thread-guide and movable to depress such
 thread-guide into the depth of the wax-pot
 or elevate it therefrom, the said arm having

in connection therewith a heat-conducting
 and radiating shell inclosing the path of the
 50 thread intermediate the said thread-guide
 and the wax-stripper, whereby heat is radi-
 ated upon the portion of thread extending
 from the former to the latter.

10. In combination, a wax-pot, and a
 55 swinging arm carrying a thread-guide and a
 wax-stripper and provided with a heat-con-
 ducting and radiating shell inclosing the
 path of the thread intermediate the said
 thread-guide and the wax-stripper, the
 60 swinging movement of the arm serving to
 depress the thread-guide into the wax-pot or
 elevate it therefrom.

11. In combination, a wax-pot, a wax-
 stripper, a swinging arm carrying a thread-
 65 guide and movable to depress such thread-
 guide into the depth of the wax-pot or ele-
 vate it therefrom, the said arm having in
 connection therewith a heat-conducting and
 radiating shell inclosing the path of the
 70 thread intermediate the said thread-guide
 and the wax-stripper, whereby heat is radi-
 ated upon the portion of thread extending
 from the former to the latter, and means for
 locking the said arm in its working position.

12. In combination, a wax-pot, a swinging
 arm carrying a thread-guide and a wax-
 stripper and provided with a heat-conduct-
 ing and radiating shell inclosing the path of
 the thread intermediate the said thread-
 80 guide and the wax-stripper, the swinging
 movement of the arm serving to depress the
 thread-guide into the wax-pot or elevate it
 therefrom, and means for locking the said
 arm in its working position.

13. In combination, a wax-pot, and an
 arm hinged thereto carrying a thread-guide
 and a wax-stripper and adapted to swing to
 depress the thread-guide into the wax-pot or
 90 elevate it therefrom.

In testimony whereof I affix my signature
 in presence of two witnesses.

FRANK W. MERRICK.

Witnesses:

CHAS. F. RANDALL,
 EDITH J. ANDERSON.