June 4, 1929. A. F. FILSINGER 1,715,649

METHOD OF DYEING AND LUBRICATING THREAD FOR SEWING MACHINES

Filed March 8, 1923

FIG. I

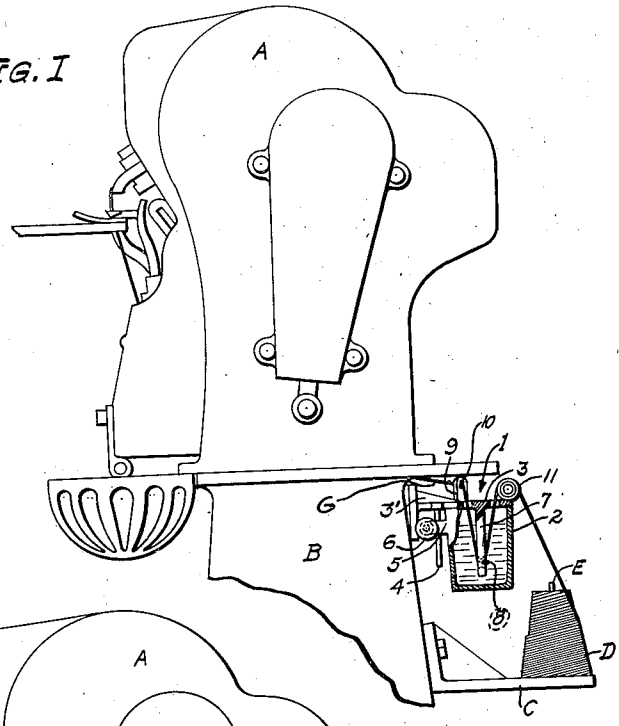


FIG. II

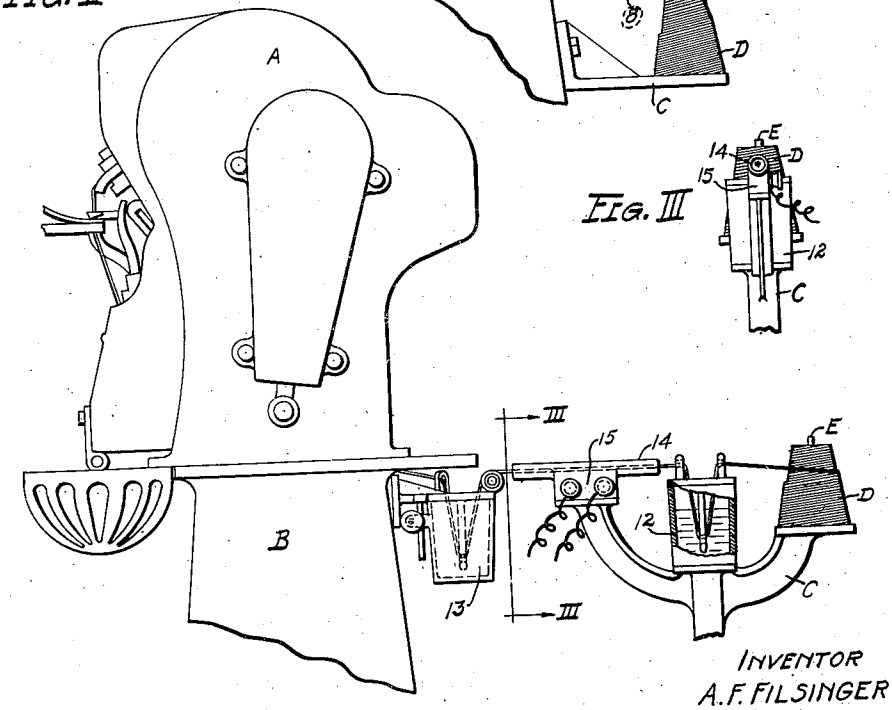


FIG. III

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METHOD OF DYEING AND LUBRICATING THREAD FOR SEWING MACHINES.

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This invention relates to improvements in attachments for sewing machines, and particularly to a device which may be attached to a shoe-sewing machine whereby the thread used by said shoe-sewing machine may be dyed as it is used.

Prior to this invention, it has been the practice for shoe manufacturers to keep a supply of colored threads on hand for use in making dyed shoes. These colored threads when originally produced were white, said white thread being unwound from the reel upon which it was wound as it was formed, and being dyed by a suitable process and then rewound on the same or a similar reel. The dye used to color the thread contains certain acids which after a lapse of time eat into the fibers of said thread, whereby said thread is weakened and its ability to withstand strains impaired; hence, when a reel of this weakened thread is used in a shoe-sewing machine, the periodical breaking of said thread is the source of much annoyance and inconvenience. It has been noticed in the operation of shoe-sewing machines that breakage of white thread is of quite infrequent occurrence while thread of the same grade which has been dyed a color is very easily and frequently broken during the sewing operation, the reason for this being, as stated above, that the presence of acid in the dye has eaten into the fibers of the thread and thereby impaired its durability.

In the use of a shoe-sewing machine provided with the attachment disclosed herein, the stock of threads will consist entirely of white thread, said thread, when it is desired to use a colored thread, being dyed any desired color as it passes from the reel on which it is wound to the needle of the shoe-sewing machine whereby the annoyance occasioned by the periodical breaking of the thread is eliminated. The dye used in carrying out my invention contains practically the same elements as the dye heretofore used, but as the thread is dyed immediately before it is passed through the leather and as said thread is subjected to the strain of the sewing operation long before the acid in the dye has had any deteriorating effect on the fibers of said thread, all of the original strength of said thread is present at the time when it is subjected to the greatest strain.

With the foregoing and other objects in view, the invention comprises the novel method specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment of the invention. However, it is to be understood that the invention comprehends changes, variations and modifications which come within the scope of the claims hereunto appended.

Fig. I is a fragmentary side elevation of a shoe-sewing machine having my improved thread-dyeing device associated therewith.

Fig. II is another form of my invention.

Fig. III is a section on line III—III of Fig. II.

In the drawing, A designates a shoe-sewing machine of any suitable type which is mounted on a base B. Supported by a suitable member C is a reel of thread D, said reel of thread being preferably arranged to rotate about a stationary spindle E and the thread being unwound from said reel and drawn into the shoe-sewing machine during the operation of said sewing machine.

Interposed between the reel of thread D and the shoe-sewing machine A is a receptacle 1 wherein is contained a body of dye, said receptacle comprising a cup portion 2 and a cover portion 3 which closes the upper portion of said cup portion 2, and said cover portion is provided with a bracket portion 3′ whereby said cover portion is secured to the base B of the shoe-sewing machine. Extending downwardly from the bracket portion 3′ is a rod 4, said rod being adapted to pass through an opening in an integral lug 5 formed on the cup portion 2 of the receptacle 1. The lug 5 is split so that it may be clamped about the rod 4, said lug being provided with a clamping screw 6 which passes through a horizontal opening in said lug. From the foregoing it is plain that when the cup portion 2 of the receptacle 1 is in the position in which it is shown in the drawing and the split lug 5 is contracted by the clamping screw 6 so that said lug grips the rod 4, the cup portion 2 of the receptacle will be retained in a suspended position immediately below the cover portion 3. When it is desired to remove the cup portion 2 it is only necessary to unscrew the clamping screw 6 whereby said cup portion may be moved downwardly.

Extending downwardly from the cover portion 3 of the receptacle 1 at a point within the cup portion 2 is a post 7 having an eye 8 at its lower end, and extending

upwardly from the cover portion 3 is a similar post 9 provided with an eye 10. 11 designates a thread tensioning device which is mounted on the cover portion 3 whereby the thread passing through the cup portion 3 is maintained in a taut condition.

In the operation of my device the thread passes from the reel through the dye within the cup portion 3 of the receptacle 1 in the manner illustrated in the drawings and is thereby colored, after which it passes to the sewing machine and is used in the sewing operation.

It will be noted by referring to Fig. I of the drawing that the receptacle 1 and the shoe-sewing machine A are so arranged relative to one another that a gap G is provided. This gap is traversed by the thread immediately after it has been dyed and as said thread is crossing this gap it will be dried by the air thereabout.

As is well known, shoe-sewing machines are provided with some sort of lubricant through which the thread passes, said lubricant sometimes being wax and sometimes being other substances which will cause said thread to pass freely through the leather. The dye used in connection with my improved dyeing attachment is so constituted that it will not only act as a coloring agent but will act as a lubricator as well, hence the necessity for a separate lubricant is eliminated.

In the event that it is desirable to wax the thread after it has been dyed by my attachment, the form of my invention which is illustrated in Fig. II will be used. In this form the thread passes from the spool through a body of dye in the receptacle 12 where said thread is colored, said thread then passing through a body of liquid wax in a receptacle 13 and then to the shoe-sewing machine as already described. In the operation of the form of my invention which has just been described, it may be desirable to employ a heating means to insure the complete drying of the dye on the thread before said thread passes through the body of wax, and in this event I provide a tube 14 through which the thread passes, said tube being provided with an electric heating unit 15 of ordinary design whereby the tube 14 is heated to dry the thread as it passes therethrough.

I claim:

The herein described method of supplying colored thread to a sewing machine which comprises unwinding the thread from a source of supply at the machine, transmitting the thread from said source of supply to the sewing elements, and dyeing, drying and lubricating the portions of the thread in transit between said source of supply and the sewing elements.

In testimony that I claim the foregoing I hereunto affix my signature.

ADOLPH F. FILSINGER.