C. A. HAMMOND-KNOWLTON.

METHOD OF WAXING SILK THREAD.

APPLICATION FILED JULY 24, 1915.

1,171,195. Patented Feb. 8, 1916.

Fig. 1.

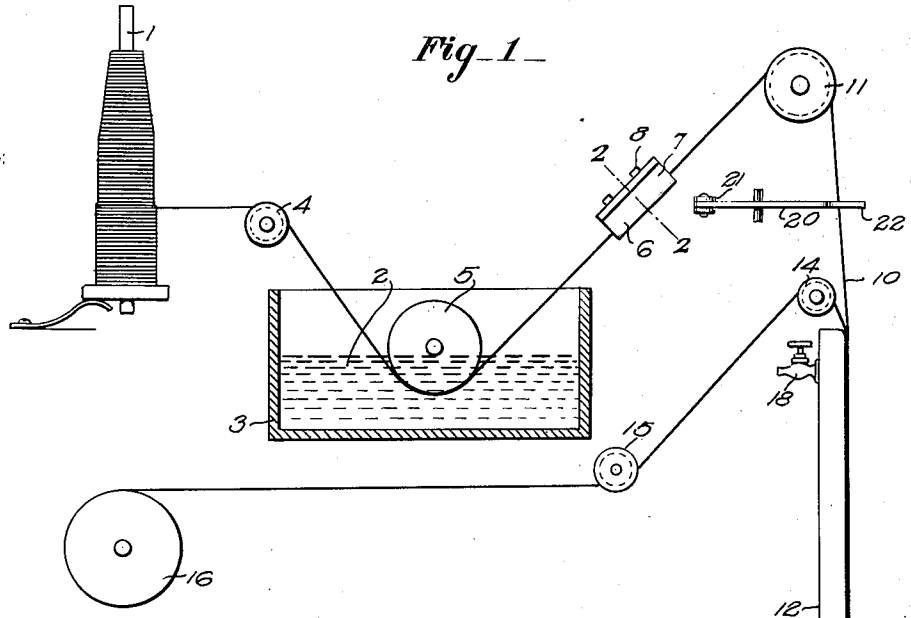


Fig. 3.

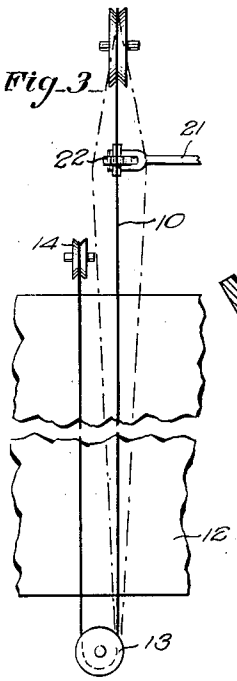
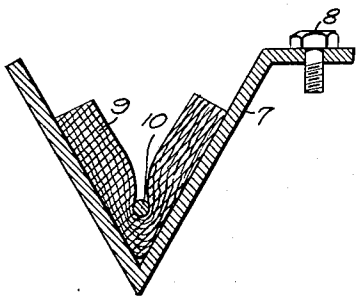


Fig. 2.



WITNESSES

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METHOD OF WAXING SILK THREAD.

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To all whom it may concern:

Be it known that I, CLARENCE A. HAMMOND-KNOWLTON, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Method of Waxing Silk Thread, of which the following is a full, clear, and exact description.

This invention relates to an improved method of waxing silk thread and has for an object the provision of the steps or method whereby wax may be forced into the body of the thread.

Another object in view is to provide a method for not only forcing the wax into the body of silk thread, but for removing the excess wax so that the finished product will be a silk thread completely impregnated with wax.

In carrying out the objects of the invention certain means must be provided for properly applying the wax. This means must include some form of waxing tank or supply, a wiping structure and means for pressing or forcing the wax into the body of the thread.

In the accompanying drawings:—Figure 1 is a diagram showing a device for waxing a silk thread; Fig. 2 is a section through Fig. 1 approximately on line 2—2, the same being on an enlarged scale; Fig. 3 is a fragmentary front view of the structure shown in Fig. 1, disclosing how the thread is rolled as it is passed over the heating iron.

Referring to the accompanying drawings by numerals, 1 indicates a suitable spindle on which the silk thread is wound and from which it is passed to the wax 2 arranged in receptacle 3, the thread being guided by a pulley 4. A pulley 5 is arranged in position so that the thread will be properly submerged in the wax solution 2 before it can pass to the wiper 6, which wiper is arranged with a substantially V-shaped body 7 rigidly clamped in place by any suitable means, as for instance the bolt 8. A strip of fabric 9 is arranged in body 7 through which the thread 10 is passed. The fabric 9 may be any suitable material, as for instance, a piece of woolen or cotton fabric, the same preferably being of such nature as to absorb more or less quickly the excess wax adhering to the surface of the thread 10.

The thread 10 extends from the wiper 6 over pulley 11 and from thence passes over a heating and ironing member 12. It will be observed that the pulley 11 is not directly over the ironing member 12 so that when a tension is on the thread and the thread is pulled over ironing member 12, the same will be rubbed or pressed while being heated so that the wax is ironed into the body of the thread. In order that the wax may be properly forced into the thread and the thread maintained round, a pivotally mounted arm 20 is arranged between pulleys 11 and 14, as shown in Fig. 1, said arm being operated by a suitable reciprocating member 21 actuated from any suitable source, not shown. The arm 20 is bifurcated at 22 and straddles the thread as the same passes between pulleys 11 and 14. As this arm is swung back and forth it causes the thread to roll over and over by reason of the fact that it is in contact with the iron 12. In Fig. 3 will be seen in dotted lines the respective position of the thread as the same moves downwardly to pulley 13.

In operation usually a small quantity of the wax adheres to the upper part of the ironing member 12 which will thus allow the thread to have a proper friction surface and will cause the thread to roll over as the same is moved. It will be noted that the thread rolls over and moves downwardly simultaneously. The thread passes downwardly over ironing member 12 and around pulley 13, the center of which is set back a short distance from the ironing face of member 12 so as to maintain the return thread against the ironing face of member 12. The return thread passes over pulleys 14 and 15 and is then wound on a suitable support or other member 16. The ironing member 12 is preferably a flat hollow metallic member which receives steam from a suitable inlet pipe 17 for maintaining the same heated. If desired a relief cock 18 may be arranged at the upper end.

It will be noted that the thread is passed downwardly over ironing member 12 and again upwardly over the same, so that the wax is not only heated but is rubbed under appreciable pressure and thereby caused to penetrate into the body of the thread. The loose particles or ravelings of the thread are also pressed down against the body of the thread and held in place by the wax so that the finished waxed thread is in perfect condition for use in working buttonholes or for any other purpose desired.

It will be noted that the steps necessary during the waxing operation are successive and that the thread continually moves from one position to the other so that the length of the thread provided on support 16 may be long or short, according to the requirements of the purchaser.

In order that the desired pressure may be exerted on the thread as the same passes over the ironing member 12, a proper tension is provided for the thread, which may be provided in any suitable manner, as for instance by using the usual tensioning device in connection with spindle 1, the spool 16 being rotated by any suitable means for pulling the thread.

What I claim is:—

1. The method of waxing thread, comprising subjecting the thread to a wax solution and then ironing the thread by rotating the same while in contact with a heated member.

2. In a device for waxing silk thread, a thread supplying member, a container supplied with wax, means for guiding thread from said supplying means through the wax in said container, a heated ironing member, and means for guiding said thread a plurality of times over said ironing member.

3. The method of waxing thread, comprising subjecting the thread to a wax solution, passing the waxed thread over a heated member while under tension, and causing the thread to rotate as the same passes over said heated member.

4. The method of waxing continually a silk thread, comprising the passing of the same through a bath of wax solution, passing said thread over and in contact with a heated member, rotating the thread as the same passes over said heated member, and then returning the thread over said heated member and causing the same to press against the heated member.

5. The method of waxing silk thread, comprising the passing of said thread through a wax bath while under tension, wiping the excess wax from the thread, passing the thread a plurality of times over and in rubbing contact with a heated member, and rotating the thread while passing over said heated member.

6. The method of waxing silk thread, comprising the passage of silk thread from one holder to another under tension, applying a waxing solution to the thread during its passage from one holder to another, removing the loose excess wax, causing the thread in its passage to rub a plurality of times against a heated surface for an appreciable time, and rotating said thread during one of the times that it passes over said heated surface.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLARENCE A. HAMMOND-KNOWLTON.

Witnesses:

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A. E. LATHROP.