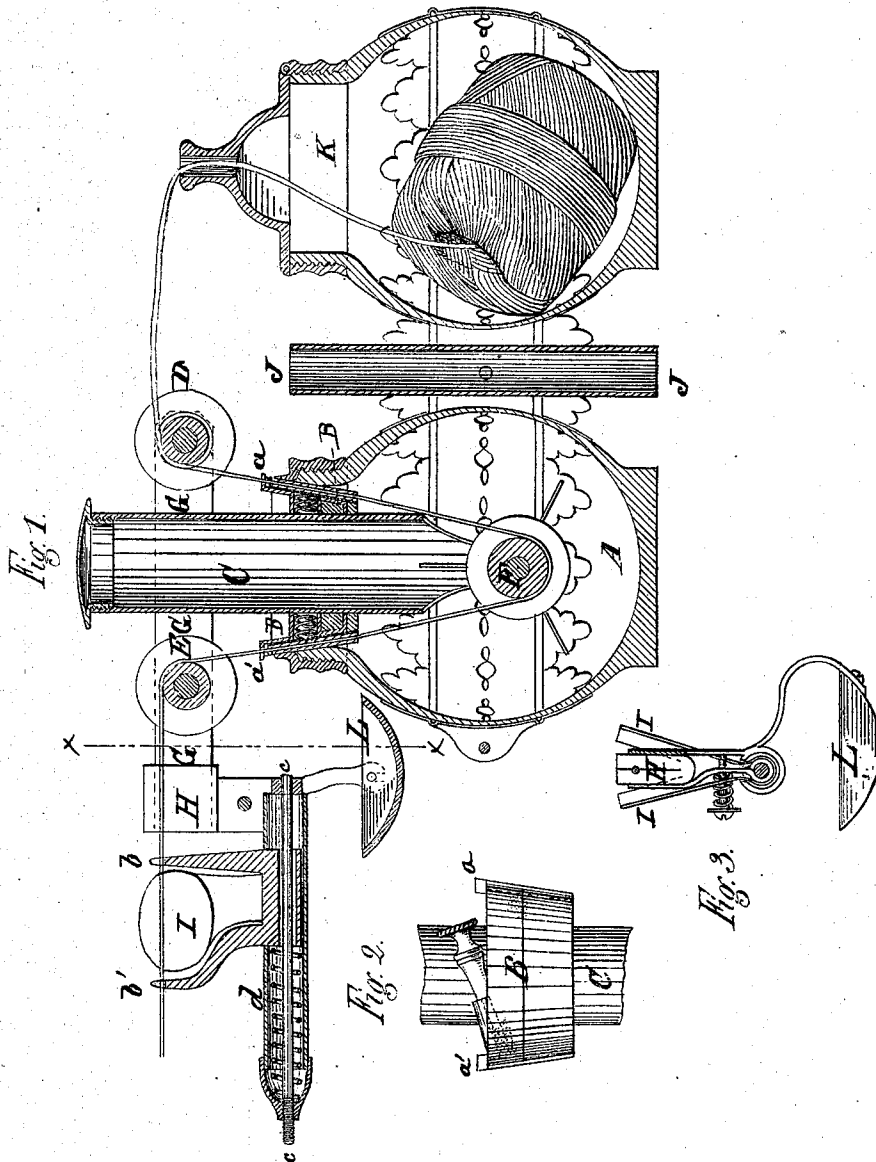


Z. SARGENT & M. CHASE.

Thread-Waxer for Sewing-Machines.

No. 131,786.

Patented Oct. 1, 1872:



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN THREAD-WAXERS FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. 131,786, dated October 1, 1872.

To all whom it may concern:

Be it known that we, ZEBADIAH SARGENT, of Rochester, in the county of Strafford and State of New Hampshire, and MILTON CHASE, of Haverhill, in the county of Essex and State of Massachusetts, have invented a certain Apparatus for Waxing Thread in Sewing-Machines, of which the following is a specification:

The main feature of our apparatus is a covered vessel to hold the liquid wax used, the thread passing through openings suitably packed down, and into the wax and up and from it. The other parts of our invention relate to minor features of our apparatus.

In the drawing, Figure 1 is a vertical section through an apparatus embodying all the features of our invention, and the other figures are detailed views.

The wax-reservoir is a vessel, A, closed or covered by a stopple or cover, B, which fits into its mouth, or is otherwise suitably secured to it. For convenience in filling the reservoir with the liquid wax a tube, C, is inserted in the stopple. This tube also serves as a support for the thread-guides D, E, and F, the first two being attached to the cross-piece G, fast to the upper part of the tube C, and the latter attached to the lower end of the tube C. This cross-piece G has also attached to it the smoother H, and the clamp I and its appliances. Fig. 3 is a section through *x x*, and is intended to show the details of construction of this smoother and clamp. The closed vessel A has two apertures at *a a'* in it, through one of which the thread enters, and through the other leaves the vessel. These apertures are made large enough in practice to receive each a thin sheet of felt folded at its middle to form two cushions, and secured to a thin metal plate, against which a spring bears, and thus compresses the thread between the folds of the felt. In practice we usually apply a set-screw to that cushion, at *a'*, through which the thread leaves the vessel, in order to regulate the degree of pressure of the spiral spring upon the thin metal plate, and thus regulate the pressure of the folds of felt upon the thread, thus insuring the proper waxing of the thread. In most cases it is desirable that the liquid wax used be kept well stirred, and for this purpose we make the thread-guide F

in the form of a pulley, with blades or beaters projecting from its periphery, and so mount it on an axis that it will be revolved by the passage of the thread. The apparatus represented in Fig. 1 is especially designed for the McKay sewing-machine, the sleeve J fitting upon the spindle in that machine, and thereby allowing the necessary motion of the wax-reservoir A and thread-holder K, and at the same time allowing the thread to be used from the ball, both vessels A and K being suitably secured to the spindle. The ball may be placed directly within the vessel A.

The operation is as follows: The thread is passed over the guide D, which in practice is also a tension device, down through the folds of felt in the aperture at *a*, into the wax and under the guide F, and up and out of the closed vessel through the folds of felt in the aperture *a'*, over the guide E and through the smoother H; thence to the stitch-making point. The springs which act against the folds of felt at *a* and *a'* allow a knob or other inequality in the thread to pass through. The guide E receives the thread as it comes from the wax-reservoir, and in time takes up some of the wax from the thread, and also roughens the thread because of its fibers sticking more or less to the guide, so that the thread requires to be smoothed after it leaves this guide, to press down these fibers and remove what wax it may carry with it from the guide E, and for this purpose the smoother H is used. This smoother consists of a piece of felt folded and between two jaws of metal, one of which is the end of the cross-piece G, and the other is a jaw hinged to the former and held to it by a set-screw and spring, as more fully shown in Fig. 3. The wax taken from the thread of this smoother drops into the pan L. The thread passes from this smoother through a guide, *b*, and between the jaws I I of the spring-clamp, and through a second guide, *b'*. These guides and this spring-clamp are mounted upon a spindle, *c*, within the sleeve *d*, and can be moved together longitudinally on this spindle. The sleeve *d* is fast to the end of the cross-piece G. When the operator desires to handle the thread he grips it between the jaws I I of the clamp, and thus does not get the wax on his fingers. When he releases the clamp its jaws

separate, and the thread, although quite sticky, is prevented from sticking to the jaws of the clamp by the guides *b b'*. This apparatus is more especially designed for the wax known in the market as the American liquid wax, but can be used for any other liquid wax.

The main novelty of our apparatus consists in the use of the covered vessel A with its stopple or cover B provided with the openings for the thread suitably packed. By the use of this vessel the wax is kept from evaporating and becoming too viscid, the thread is properly guided into and out of the wax, and the amount of wax left upon the thread easily regulated. It is often desirable to keep the liquid wax stirred, and the means for accomplishing this constitute the second part of our invention—namely, the agitator combined with the wax-reservoir, and actuated by the thread as it is drawn through the liquid wax.

It is necessary to carry the waxed thread over a pulley or some other thread-guide very soon after it leaves the wax, and inasmuch as the wax is still sticky the fibers of the thread are very apt to be roughened by reason of their sticking to the pulley and thus mar the thread, which should be as near like that waxed by hand as possible. When waxed by hand the thread is drawn through his fingers by the operator to smooth it; and the third part of our invention is designed to remedy this marring of the thread by a process similar to that which it undergoes when smoothed by the operator,

and consists in using a smoother, H, through which the thread passes after it leaves the pulley, and which removes any surplus wax taken up by the thread from the pulley, and leaves the thread as smooth, substantially, as if smoothed by hand. On nice work it is important that the hands of the operator be kept free from wax, which is impossible if the thread be handled by him after it leaves the wax, as is often necessary; and the fourth part of our invention consists in means for enabling him to grip the waxed thread without soiling his fingers—namely, the spring-clamp so combined with the wax-reservoir that it can be moved from it and returned to its usual place.

What we claim as our invention is—

1. The wax-reservoir A B C, when provided with a thread-passage, *a a'*, and constructed as described.
2. An agitator, F, actuated by the thread to be waxed, in combination with the wax-reservoir, all substantially as specified.
3. The spring-clamp I I, when combined with the wax-reservoir, substantially as described.
4. The thread-guides D E F, mounted upon the stopple or cover B, substantially as shown.

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