I. BANISTER.

THREAD WAXING DEVICE FOR SEWING MACHINES.

No. 41,050. Patented Jan. 5, 1864.

Fig. 1.

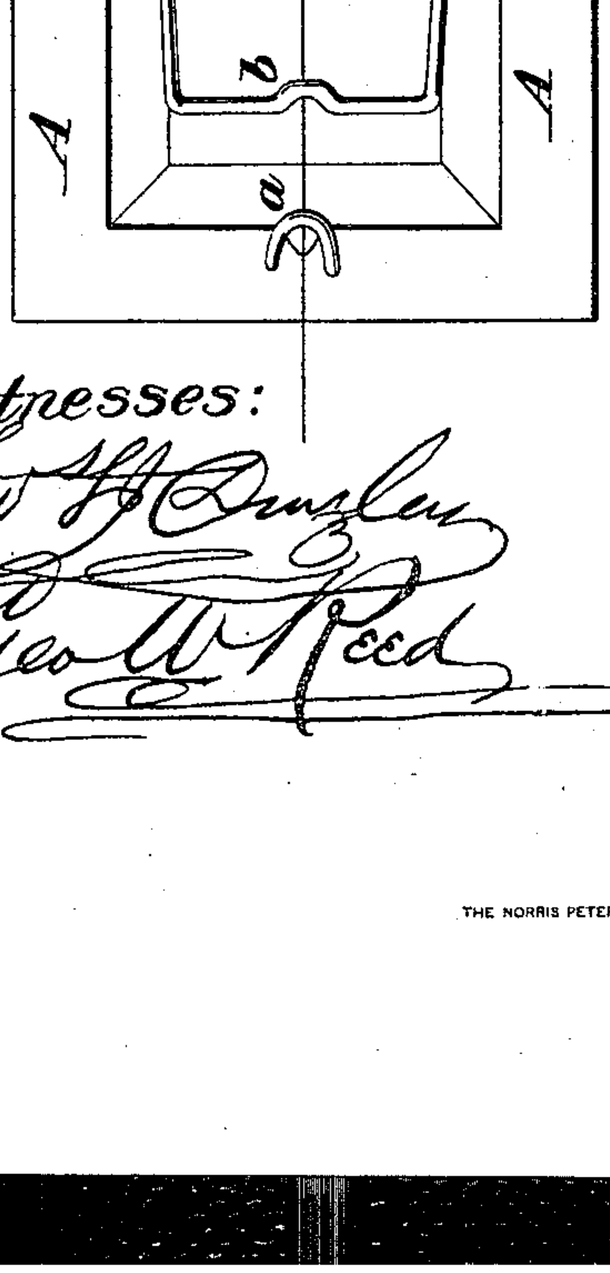


Fig. 2.

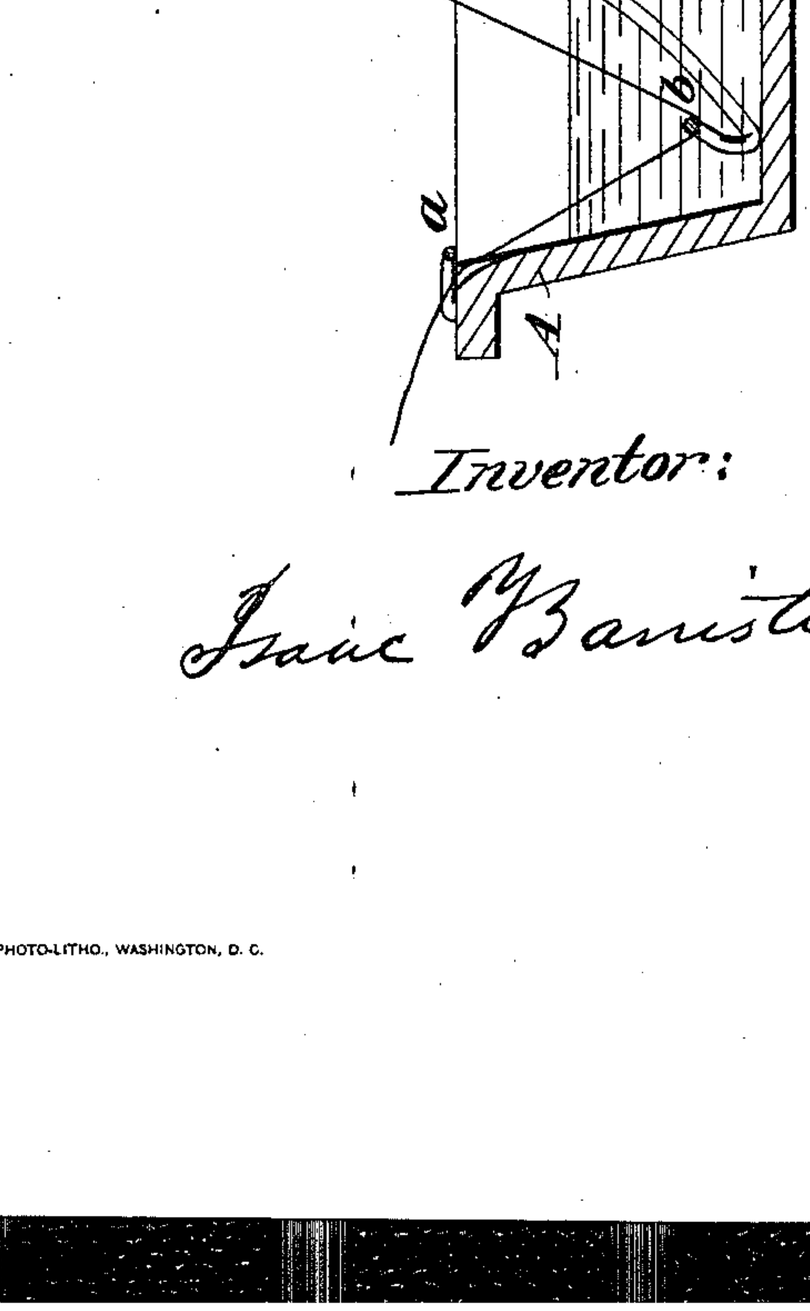


Fig. 3.

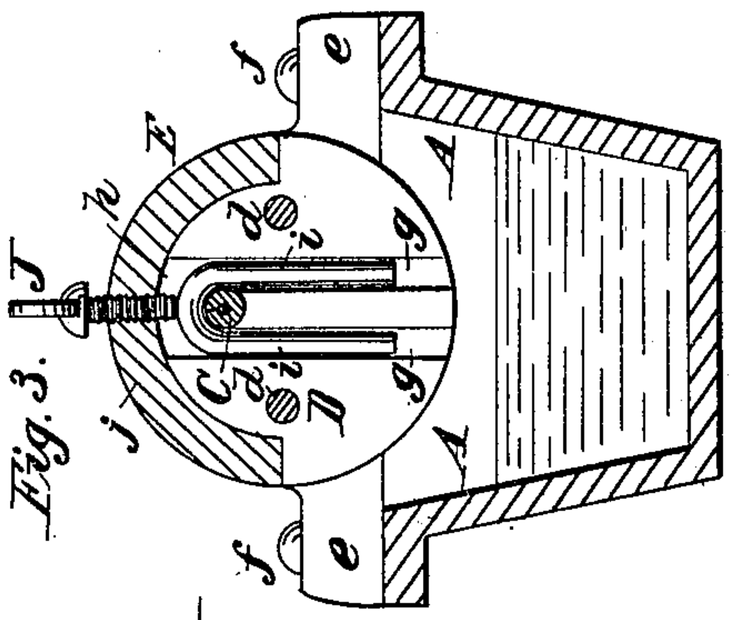


Fig. 4.

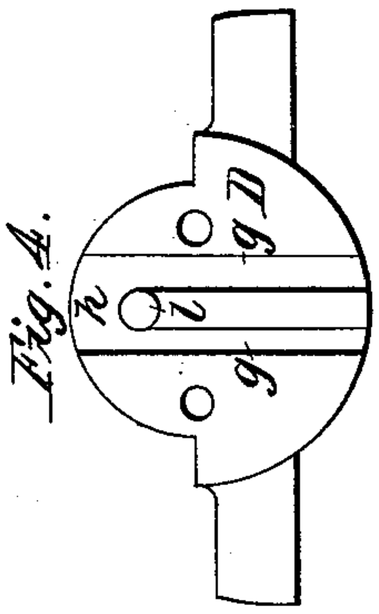
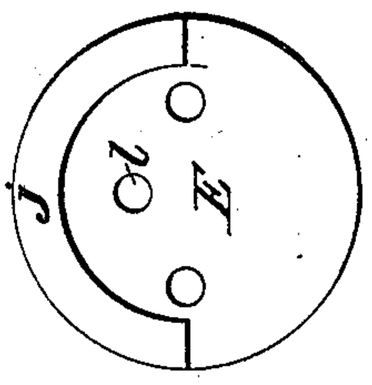


Fig. 5.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

ISAAC BANISTER, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN THREAD-WAXING DEVICES FOR SEWING-MACHINES.

Specification forming part of Letters Patent No. **41,050**, dated January 5, 1864.

To all whom it may concern:

Be it known that I, ISAAC BANISTER, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Thread-Waxing Apparatus for Sewing-Machines and other Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan of a waxing apparatus. Fig. 2 is a central longitudinal vertical section of the same. Fig. 3 is a transverse vertical section of the same. Figs. 4 and 5 are inside face views of the two pieces of which the stock which holds the finishing-tube is composed.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to apparatus for waxing the thread with liquid wax, more especially to the employment for removing the superfluous wax from the thread, after it has passed through the wax-trough, of a tube or eye of india-rubber or other elastic or flexible material which can be more or less contracted or expanded to suit thread of different sizes and according to the quantity of wax desired to be retained in or on the thread.

It consists in a certain construction of the stock which holds the aforesaid tube, whereby provision is made for the contraction and expansion of the said tube.

To enable others to make and use my invention, I will proceed to describe its construction and operation.

A is the trough for containing the liquid wax, intended to be secured to the table of a sewing-machine or to any other suitable base.

a is a guide secured to one end of the trough, and through which the thread (represented in red color) passes from the spool to be conducted into the wax.

b is a guide which is attached to a bridge, B, erected across the top of the trough, and dips into the wax for the purpose of conducting the thread below the surface thereof. The thread passes from the guide *a* through the guide *b*, and through the wax, thence upward through a groove, *c*, in the bridge B, and afterward through the tube C, of india-rubber or other elastic or flexible material.

The tube C may be composed of a piece of tubing, or of a solid piece of india-rubber having a hole through it of a size for the largest thread to pass easily through it; but I prefer to make it, as represented, of a small piece of vulcanized sheet india-rubber, which, when rolled up so that its edges meet, forms a tube the interior of which is just large enough to admit the largest thread. This tube is inserted into the stock D E with its seam upward, and, being longer than the thickness of the stock, and left protruding from the front of the stock or toward the arch B, opens in funnel shape, as shown in Figs. 1 and 2, to provide for the easy entrance of thread.

The stock is composed of two plates, D and E, placed face to face and secured together by screws *d d*, and the plate D is furnished with lugs *e e*, which rest upon and are secured by screws *f f* to the edges of the trough A. These plates have drilled through them a hole, *l*, of the size of the closed-up portion of the tube C, and this hole is countersunk from each side of the stock in taper form to permit the expansion or partial opening of the ends of the tubes, as shown in Figs. 1 and 2. The plate D has two vertical grooves, *g g*, in its inner face, and a recess, *h*, Figs. 3 and 4, connecting the upper parts of the said grooves to receive an arched wire, *i*, having two straight and parallel legs, (best shown in Fig. 3,) the width of the arch being equal to the diameter of the smallest or closed portion of the tube when the latter is in its normal condition.

In the upper portion of the plate E, which is formed with a projecting arch, *j*, to fit over the top of the plate D, there is a tapped hole for the reception of a set-screw, J, which is screwed down onto the top of the arched wire *i*. By screwing down the screw J more or less the arch of the wire is pressed upon the tube C and made to compress and contract its opening more or less, according as the size of the thread to be waxed is smaller or larger, and according as a less or greater quantity of wax is to be retained in or on the thread. K is a roller arranged at that end of the trough opposite to the guide *a* to conduct the waxed thread from the tube C to the sewing-machine or to where it is to be taken for use.

The operation is as follows: The thread having been passed through the guides *a*, *b*, and *c*, the tube C is adjusted by means of the set-

screw J and arched piece *i*, and the thread is drawn through the wax and through the tube by the operation of the sewing-machine or by other means. In passing through the wax the thread becomes saturated and coated, and in passing over the guide *c* some of the superfluous wax is removed from its exterior. In passing through the tube C the wax is pressed into the thread, and all the superfluous quantity remaining on its surface is removed. To allow more wax to remain in the thread the screw J is screwed up to permit the expansion of the tube, and to reduce the quantity of wax the screw is screwed down to cause the arched piece *i i* to contract the tube.

I am aware that a clamp composed of two flat surfaces of india-rubber has been used to remove the superfluous wax from thread and to regulate the quantity which is allowed to remain in it; but as this presses the thread most on two opposite sides the waxing of the thread is not so uniform as when the thread passes through a tube or eye. In view of this use of india-rubber, I do not claim broadly the employment of that or any other flexible material for the purpose; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the two plates D E, the arched piece *i i*, and the set-screw J, the whole constructed and operating substantially as and for the purpose herein described.

ISAAC BANISTER.

Witnesses:

THOS. S. J. DOUGLAS,

GEO. W. REED.