

(No Model.)

L. L. BORRADAILE.
NEEDLE THREADER.

No. 538,479.

Patented Apr. 30, 1895.

Fig. 1.

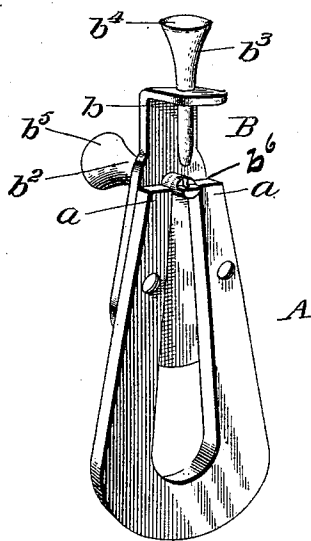


Fig. 2.

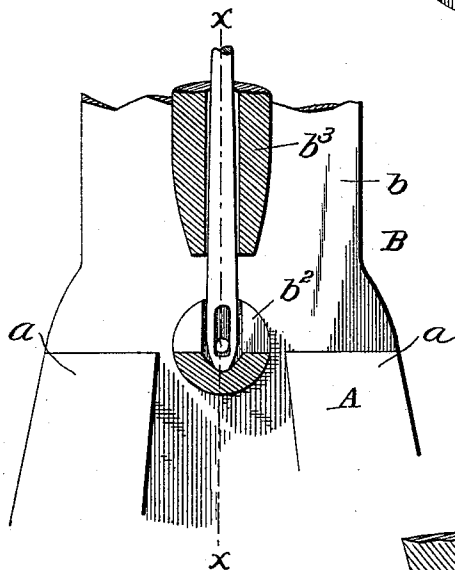


Fig. 3.

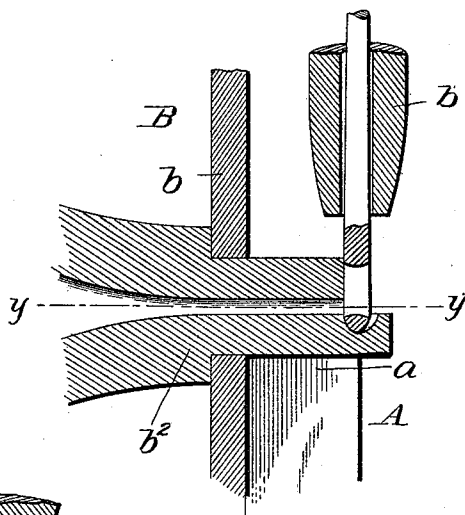
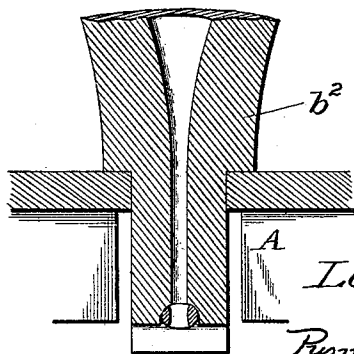


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LEWIS L. BORRADAILE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO JOSEPH C. BORRADAILE, OF SAME PLACE.

NEEDLE-THREADER.

SPECIFICATION forming part of Letters Patent No. 538,479, dated April 30, 1895.

Application filed February 5, 1895. Serial No. 537,359. (No model.)

To all whom it may concern:

Be it known that I, LEWIS L. BORRADAILE, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Needle-Threaders, of which the following is a specification.

The invention relates to needle threaders.

10 The object is to produce a device, by which a needle will be caused, through magnetic influence, to properly adjust itself, so that the eye thereof will become centered or aligned with a thread guide and so held to receive
15 the thread.

With this object in view the invention consists in certain novel combinations and arrangements of parts which will be hereinafter fully described and claimed.

20 In the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in the several views, Figure 1 is a view in perspective of one embodiment of the invention. Fig. 2 is a view in vertical section, on
25 an enlarged scale, of the same. Fig. 3 is a similar view taken on the line xx of Fig. 2; and Fig. 4 is a view in horizontal section, taken on the line yy of Fig. 3.

30 In the drawings, A, represents a magnet, which is preferably of the well known horse-shoe form or U-shaped and a, a , are the poles thereof.

B, represents the thread and needle holder,
35 which in the present embodiment of the invention, consists in a bracket b , secured upon one side of the magnet, so that an angular portion thereof projects over and beyond the poles of the magnet, and is provided with two
40 guide tubes, b^2, b^3 , each having flared or funnel shaped mouths, b^4, b^5 , to facilitate entering the needle and thread. The vertically disposed needle tube b^3 , projects through the angular portion of the bracket and extends to
45 a point above the terminal lip or projection b^6 , of the thread tube, in which a depression is formed and serves as a seat for the end of the needle, wherein the latter is adapted to be held free to rotate. The thread tube, which
50 is arranged at a right angle to the needle tube, projects through the bracket, so as to lie centrally above or between the poles of the magnet, that is to say, in a maximum field of force.

As above stated, the needle is held upright 55 and free to rotate, by the guides, and in such position will be at once acted upon or influenced by magnetic force and thereby caused to assume a position in which its eye will coincide or become centered with respect to the 60 thread opening. This self adjusting action is rendered possible by reason of the irregular cross-section of the needle at or adjacent to the eye end thereof, at which point, it is approximately elliptical and being so, its major 65 axis becomes aligned with the lines of force, in a manner similar to the ordinary compass.

In use, the needle with its eye end downward, is dropped into the tube and thereby guided to the seat formed in the terminal lip 70 of the thread tube, where it is magnetically centered and held in position to receive the thread, which upon being inserted passes through the eye, and the needle, and may then be withdrawn, ready for use.

It will be understood that I do not wish to 75 confine myself to the particular construction or exact arrangement of parts herein illustrated and described, as many changes can be made without departing from the principle 80 involved.

Having thus fully described my invention, what I claim as new is—

1. The combination with the needle and the thread guide, of magnetic means for centering 85 the eye of a needle relative to the thread guide, for the purpose described.

2. The combination with the needle guide and the thread guide arranged at an angle thereto, of a magnet by which the eye of a needle is brought into alignment with the thread 90 guide, for the purpose described.

3. A magnet having an attached bracket carrying needle and thread guide tubes arranged at a right angle to each other, the poles 95 of the magnet lying beneath and adjacent the meeting ends of the guide tubes, for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses. 100

LEWIS L. BORRADAILE.

Witnesses:

W. H. PUMPHREY,
F. M. JOHNSON.