H. WELLS.

NEEDLE-THREADER.

No. 175,219. Patented March 21, 1876.

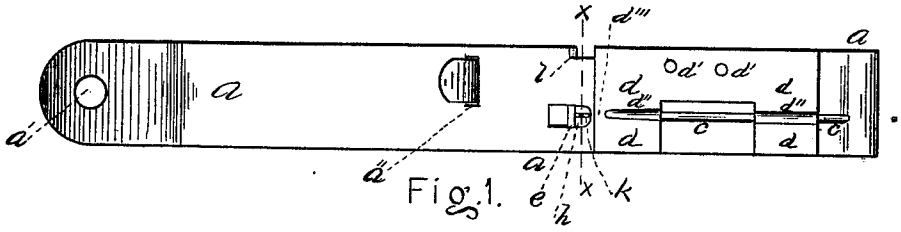

Fig. 1.

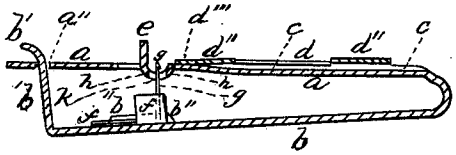

Fig. 2.

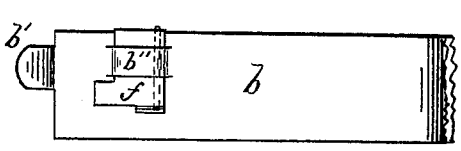

Fig. 3.

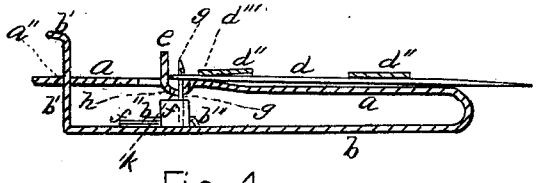

Fig. 4.

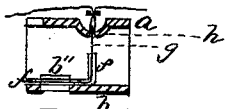

Fig. 5

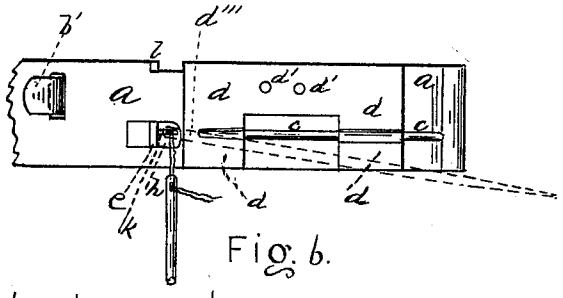

Fig. 6.

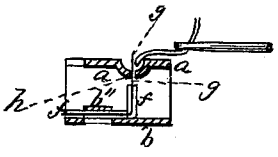

Fig. 7.

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HENRY WELLS, OF WOBURN, ASSIGNOR OF ONE-HALF HIS RIGHT TO DANIEL FOBES, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN NEEDLE-THREADERS.

Specification forming part of Letters Patent No. **175,219**, dated March 21, 1876; application filed July 3, 1875.

To all whom it may concern:

Be it known that I, HENRY WELLS, of Woburn, in the county of Middlesex and State of Massachusetts, have invented a new and valuable Improvement in Devices for Threading Needles; 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, and to the letters of reference marked thereon.

The object of this invention is to provide a device which will thread an ordinary sewing-needle, or a needle of any size from the largest to the smallest, with the least possible trouble and manipulation, and in the smallest possible time. The nature of my invention is described in detail below.

In the accompanying illustration, Figure 1 is a plan view of my needle-threading device when not in use. Fig. 2 is a longitudinal section of the same through the needle-grooves *c d''*. Fig. 3 is a plan view of the upper side of the lower plate. Fig. 4 is a longitudinal section, showing the needle pressed through the groove against the stop or shoulder, and the hook through the needle's eye, ready to draw the thread down and thread the needle. Fig. 5 is a cross-section upon the line *x x*, showing the positions of the hook, thread, and needle after the hook has drawn down the thread through the needle's eye. Fig. 6 is a plan view of a portion of the threader, showing by broken lines the direction in which the needle is turned to release it from the groove, and also exhibiting the needle in the act of drawing the thread through the eye, in order that it may be thoroughly threaded. Fig. 7 is a section upon the line *x x*, showing the thread released and the threaded needle being removed.

Similar letters of reference indicate corresponding parts.

a represents a metallic plate, slightly depressed at the left end, where a hole, *a'*, is provided to be used in hanging it up, and bent under into a spring-plate, *b*. A curved projection, *b'*, extends from the end of plate *b*, and passes up through the opening *a''* in plate *a*, thus preventing the plate *b* from springing down. In Figs. 1, 2, and 5 this plate *b* is in its normal condition—that is, sprung as far from the plate *a* as the curved portion *b'* will allow. *c* is a groove in the plate *a*. Attached to the plate *a*, upon one edge or side only, by means of rivets or other means, *d'*, is the plate *d*. This is a spring-plate, inasmuch as but one edge only is attached to the plate *a*. A considerable portion of this plate is cut out, exhibiting the groove *c*; but it can be made whole, if preferred. *d''* is a groove in the plate *d*, exactly over the groove *c*. It will be noticed that at the point *d'''* both the grooves *c* and *d''* end. *e* is a stop or shoulder struck up from the plate *a*. When the needle is to be placed in position for threading, it is placed, by the fingers, first into the grooves *c d''*, eye first. The point will then project some distance beyond the end of the threader. Then the finger or thumb nail is applied to the point, and it is forced in until it strikes against the stop *e*. Now, in whatever position the eye of the needle may be when the needle is first placed in the grooves *c d''*, whether the eye be upon one side or the other or in any other position, as soon as the needle is forced beyond the grooves under the part *d'''* of the plate *d*, the said needle will immediately turn so that one end of the eye will be exactly up and the other down. The reason is this: the portion of the needle in which the eye is located is flat, and as soon as that flat portion is forced under the part *d'''*, between the flat plates *a* and *d*, it turns and presents its flat sides to the two plates, thus facing the eye up. The thumb-nail only being applied to the projecting point, no opposition is made to the turning of the needle. In Fig. 4 the needle will be seen pressed against the stop *e*, pressing up the spring-plate *d*, and with its eye turned into a receptive position. Held by the portion *b''* of the plate *b* (which is struck up for the purpose) is the clamp *f*, which holds the hook *g*. The said clamp is bent up, as is also the hook, from the plate *b* at a right angle, so that the said hook may be in position to freely play up and down in the slot *k*. This slot *k* is a narrow slot, sawed out in a depression, *h*, made in the plate *a*. This depression is shown in Figs. 2, 4, 5, and 7, and is intended to prevent the hook *g* from ever playing so low as to get out of the

slot *k*—so as to get broken—and yet, while remaining in the slot, to be low enough to allow the needle to pass over it against the stop *e*. *l* is an upright piece, turned up at a right angle from the plate *a*, for the thread to rest against.

In order to more thoroughly explain the operation of the invention, I will here give directions for using the device, and the effect of such use, step by step, premising, however, that it is not actually necessary that the precise manner of holding the device should be followed.

To operate the threader, grasp it in the left hand, with the palm up; place the thumb upon the upper side of the plate *a*, at a point about equidistant from *a'* and *a''*; place the forefinger under the plate *b*, the second finger under the plate *a*, about beneath the thumb, and lay the back of the third finger over the hole *a'*, upon the upper side of plate *a*. The device is now in position for using: First, place the needle, eye first, with the right hand, into the groove formed by *c* and *d''*. Avoid forcing it beyond the groove. Second, apply the thumb-nail upon the right hand to the projecting point of the needle, and push it until its head reaches the stop *e*. (The threader has been in the position shown by Fig. 2.) The needle turns until the eye is up, the spring-plate *d* rising slightly as the needle passes under the part *d'''*. Third, with the forefinger of the left hand, press the spring-plate *b* up until the clamp *f* strikes the plate *a* above. This sends the hook into and through the eye of the needle. Fourth, with the right hand, pass the thread against the rest *l*, and against the barbed side of the hook *g*. The whole device is now represented in Fig. 4—a dot in front of the hook indicating the position of the thread. Fifth, release the plate *b*, allowing it to spring into its natural position. The hook at once carries the thread down with it through the eye of the needle, and the needle, thread, and hook assume the position illustrated in Fig. 5. The thread is now pressed between the hook *g* and the sides of the narrow slot *k* in the depression *h*. Sixth, grasp the needle near its point, and withdraw it from the groove by taking it out under the free edge of the plate *d*, as seen in dotted lines, Fig. 3, and pull it until a sufficient length of thread has passed through the eye, as in Fig. 6, not touching the under plate, so that a portion of the thread will remain caught in the slot *k*, as above mentioned. Last, spring up the plate *b*, thus releasing the thread from the slot *k*, by pushing the hook up out of it, and the needle is properly threaded.

Although there are so many operations, they are all so slight that, with a little practice, the needle can be threaded in a second's time, and as the hook, which is the only delicate portion of the threader, never leaves the slot in which it plays, there is little danger of its getting out of repair with ordinary usage.

I am aware that there may be some slight variations without altering the nature of the invention, such as changing the shape of the plate *d*, altering the groove in respect to length, striking up the piece *f* in two parts, instead of in a whole piece, as shown, &c.

The plate *d* may be of any suitable shape, and may be sprung against or upon the plate *a* in any ordinary manner, the particular method shown in the drawing consisting of rivets *d'* not being necessarily adhered to, as there are many ways by means of which one edge can be clamped to the plate *a*.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a needle-threading device, the combination, with the main plate or body of the threader, of a spring-plate provided with a groove extending a portion of its length, so as to admit a needle, for the purpose herein set forth.

2. The combination of the plate *a*, provided with the rest *l*, slot *k*, and depression *h*, the plate *b*, provided with the raised portion *b''*, clamp *f*, and hook *g*, substantially as and for the purpose hereinbefore described.

HENRY WELLS.

Witnesses:
HENRY W. WILLIAMS,
B. W. WILLIAMS.