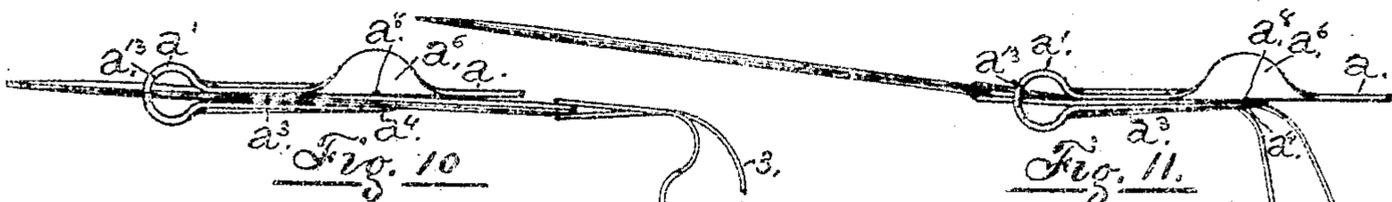
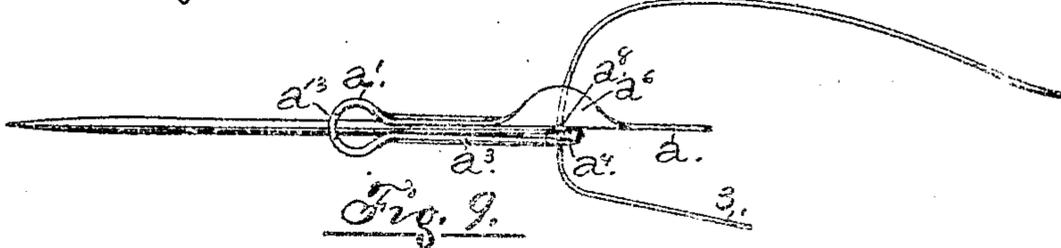
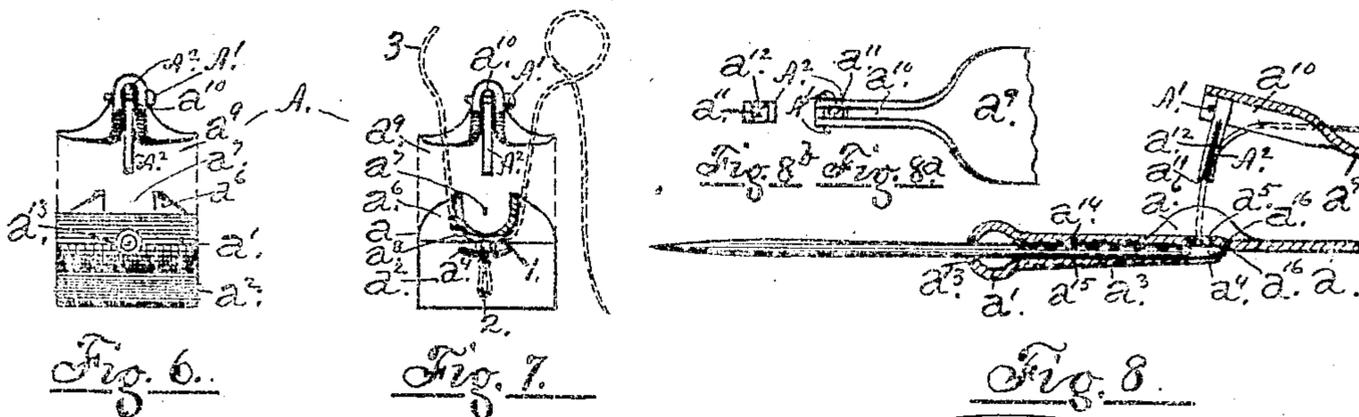
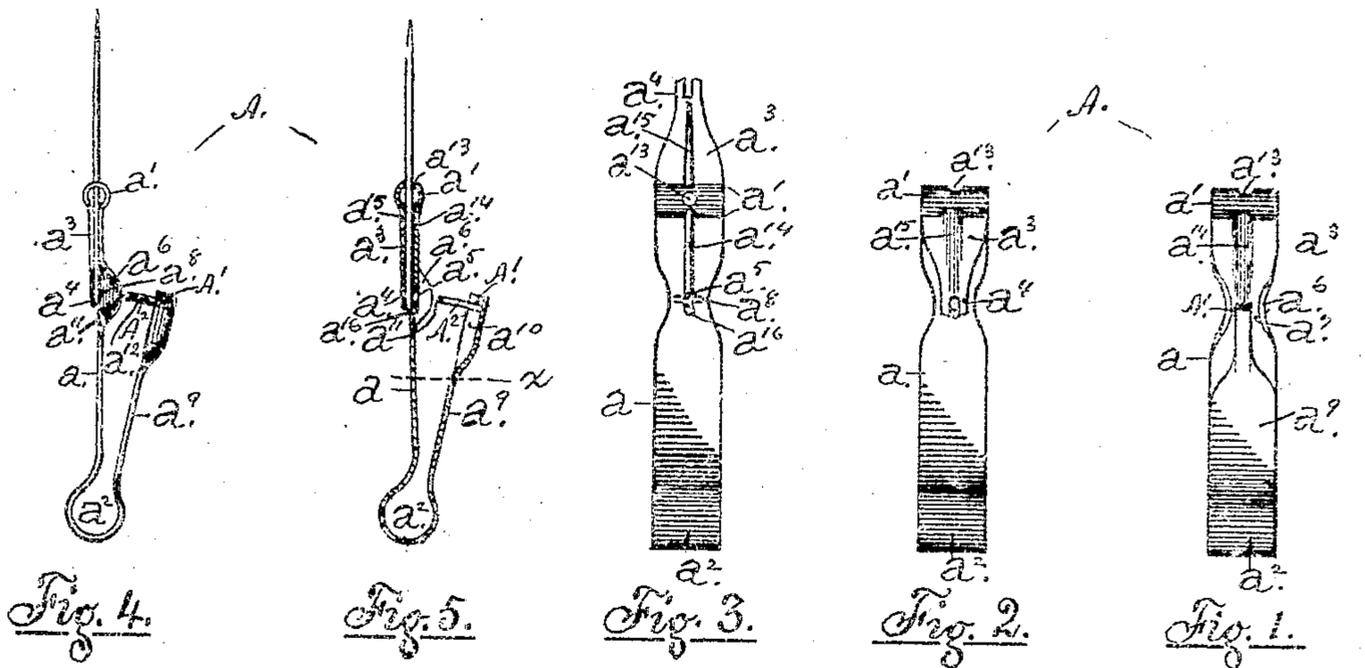


W. J. KENDIG.  
NEEDLE THREADER.

APPLICATION FILED AUG. 26, 1903.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## NEEDLE-THREADER.

SPECIFICATION forming part of Letters Patent No. 786,649, dated April 4, 1905.

Application filed August 26, 1903. Serial No. 170,836.

*To all whom it may concern:*

Be it known that I, WITMER J. KENDIG, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Needle-Threaders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in a needle-threader of that class in which the needle to be threaded is lengthwise inserted the required distance eye foremost through an orifice in one end thereof; in which provision is made preceding the stopping-point to place the eye of the needle in the proper position for threading; in which a fold of the thread is pushed through the eye of the needle at said point and then drawn therethrough till one end of said thread clears said eye, threading said needle, and in which the threaded needle in either of two directions may be drawn therefrom.

The object of the invention is the construction of a device whereby an ordinary hand sewing-needle may be expeditiously and conveniently threaded, the thread being entirely free or loose or with one end sewed fast, said device being simple in construction, easily operated, and will not readily get out of order.

The elements of the invention will severally and at large appear in the following description, and they will be separately or combinedly set forth or pointed out in the appended claim or claims.

The purposes of the invention are attained by the mechanism, devices, and means illustrated in the accompanying drawings, with similar reference characters to designate like parts throughout the several views, in which—

Figures 1 and 2, respectively, show a direct and an inverted plan of a needle-threading device embodying the elements of the invention. Fig. 3 is a plan similar to that in Fig. 2 with the upper end straightened out, showing the needle-guide grooves therein, with the needle-head stop and threading-orifice centrally located and the head-turning surface at the upper end. Figs. 4 and 5, respectively,

show a side elevation and a central vertical section of Fig. 1 with a needle in place ready for threading; Fig. 6, an enlarged end view of Fig. 1 turned over and viewed from above with the intermediate portion omitted, but dotted side lines indicating its width; Fig. 7, a similar view in section, taken through the looping-orifice, with dotted lines indicating a loop and a strand of thread in place; Fig. 8, an enlarged view of the portion above the point  $a$  in Fig. 5; Fig. 8<sup>a</sup>, an inverted plan of the portion provided with the loop-forming pin detached from Fig. 8; Fig. 8<sup>b</sup>, an enlarged plan of the loop-forming pin detached from Fig. 8; Fig. 9, a side elevation of the needle-supporting end of the device with a needle in place and threaded; Fig. 10, a similar elevation with the needle in the process of being rearwardly withdrawn by the thread through its eye; and Fig. 11, a similar elevation showing the needle in the process of being forwardly withdrawn, drawing the thread therewith.

My needle-threader consists practically of one piece, punched, pressed, or otherwise cut from approved sheet metal, steel being preferred. Constituting the base of the needle-threader there is a practically rectangular plate  $a$ , having the required dimensions, with its ends turned over into practically circular folds  $a^1$   $a^2$ , oppositely disposed and extended  $a^1$  into a tongue  $a^3$ , having the required length, with its point  $a^4$  provided with an end slot and lying close to the adjacent side of the plate  $a$ , which at this point is provided with an orifice  $a^5$ , registering with said end slot, and the side edges of the plate are roundly drawn out and turned away from the point  $a^4$  into side projecting ears  $a^6$ , forming a U-shaped recess  $a^7$  therebetween and a rounded surface underneath said point, while thereacross in the top thereof and in diametrical alinement with said orifice is formed a shallow groove  $a^8$  for the thread to lie in, so that the needle-head will pass thereover when the needle is placed in position for threading. The fold  $a^2$  extends into an arm  $a^9$ , angularly sloping with reference to the adjacent side of said plate and having the required length with the sides of its free end inwardly folded to form a U-shaped recess  $a^{10}$ , into which is perpendicularly seated

and rigidly secured, as by a headed screw  $A'$ , the base or foot of a push pin or finger  $A^2$  to pass through said orifice and end slot when said arm is depressed, said finger having in its free end a notch  $a^{11}$  and in its sides longitudinal grooves  $a^{12}$ . At the middle point of the forward side of the fold  $a'$  is formed therethrough an orifice  $a^{13}$  for the ingress of the needle in its passage to the threading-point, being the plate-orifice  $a^5$ , while in the adjacent surfaces of the plate  $a$  and the tongue  $a^3$ , respectively, are formed longitudinal grooves  $a^{14}$   $a^{15}$   $a^{14}$  in the plate extending the required distance beyond said orifice.  $a^5$  terminates abruptly, forming at that point a stop or offset  $a^{16}$ , against which the entering needle-head abuts, bringing its eye into registering position with said orifice, and the groove  $a^{15}$  in the tongue slopes gradually upward, becoming narrower and shallower from the fold-orifice  $a^{13}$  toward and to a prescribed distance from the end slot of the point  $a^1$ , where said groove vanishes or merges into the inner surface of said point, making it smooth or unbroken to engage on the adjacent flat side of the needle-head, turning said head accordingly as it attains to its position against said offset or stop  $a^{16}$ , thus assuring the registering position of its eye with reference to said plate-orifice  $a^5$ . It will here be remarked that the contact or engagement of the tongue  $a^3$  on or with the adjacent surface of the plate  $a$  is slightly yielding and through the resiliency of the curvature of the fold  $a'$ , acting as a spring, said contact or engagement will be maintained, and for a like reason through the resiliency of the fold  $a^2$  the angular or sloping position of the arm  $a^9$  will also be maintained, while the U-shaped recess  $a^7$  in receiving the end of the arm  $a^9$ , having the U-shaped recess  $a^{10}$ , with the push-pin  $A^2$  between its ears  $a^6$ , will serve to conduct or guide the free end of said pin direct into the orifice  $a^5$  when said arm is depressed, as in forming the threading-loop through the eye of the needle.

Now to place the needle in the position for threading it is inserted headforemost through the orifice  $a^{13}$  into the grooved guideway between the plate  $a$  and the tongue  $a^3$  and therealong toward the orifice  $a^5$ , with which said orifice the eye of said needle registers when its head abuts against the offset  $a^{16}$ ; but before said head attains to this position a fold of the thread (indicated by dotted lines 1 in Fig. 7) is drawn between the tongue-point  $a^4$  and the plate  $a$  and into the groove  $a^8$ , the needle-head moving thereover in its passage to said offset  $a^{16}$ , thus placing the thread across the needle-eye and in position to be pushed therethrough by the finger  $A^2$  on a depression of the arm  $a^9$ , forming the loop 2, while the end notch  $a^{11}$  of said finger engages said thread and the side grooves  $a^{12}$  receiving the thread prevent its being chafed. Grasping the loop 2, as between a thumb and forefin-

ger, and pulling thereon draws the thread through the eye, and when its shorter end (indicated by the numeral 3) clears said eye said needle will be threaded, Fig. 9. Folding the two strands of the thread together and grasping them as between thumb and forefinger when with a lengthwise and lifting pull the needle-head will be freed from the offset  $a^{16}$  and the needle withdrawn, as shown in Fig. 10, this being the process when the longer end of the thread (denoted by the numeral 4) is fast, as in sewing. When both ends of the thread are free, the needle is preferably withdrawn through the orifice  $a^{13}$ , as shown in Fig. 11.

The invention having been thus ascertained and described and the manner in which it is performed fully shown and set forth, what is considered new, and desired to be secured by Letters Patent, is—

1. A needle-threader comprising a plate formed with end folds, arms projecting from the folds on opposite sides of the plate, one of said arms and said plate being formed with alining openings, and a tongue carried by the other arm adapted to pass through said openings, the fold of the first-named arm being formed with an opening, substantially as and for the purpose specified.

2. In a needle-threader, in combination, a central plate with an orifice therethrough and oppositely-disposed folds at the ends thereof; a closely-lying but yielding tongue projecting from said fold and having a point with an end slot, said point extending beyond and overlying said orifice with which orifice said slot registers, and a shallow groove in the plate underlying the point and extending across the orifice; an orifice centrally through the forward side of said fold with grooves in the adjacent surfaces of said tongue, the groove of the strap extending from the fold to beyond the orifice of the strap, ending abruptly at said point, and the groove of the tongue inwardly sloping and extending from said fold to a point adjacent to the slotted point of said tongue into the surface of which point said groove merges; an inwardly-depressible arm projecting angularly from the other one of said folds and extending to a point beyond the orifice of said central strap; and, a flattened finger with its base securely affixed to said arm at said point and adapted to engage through said orifice, said finger having a notch in its free end and shallow grooves in the flat sides thereof; all substantially as described and for the purpose hereinbefore set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WITMER J. KENDIG.

Witnesses:

PAUL A. HERR,  
DANL. H. HERR.