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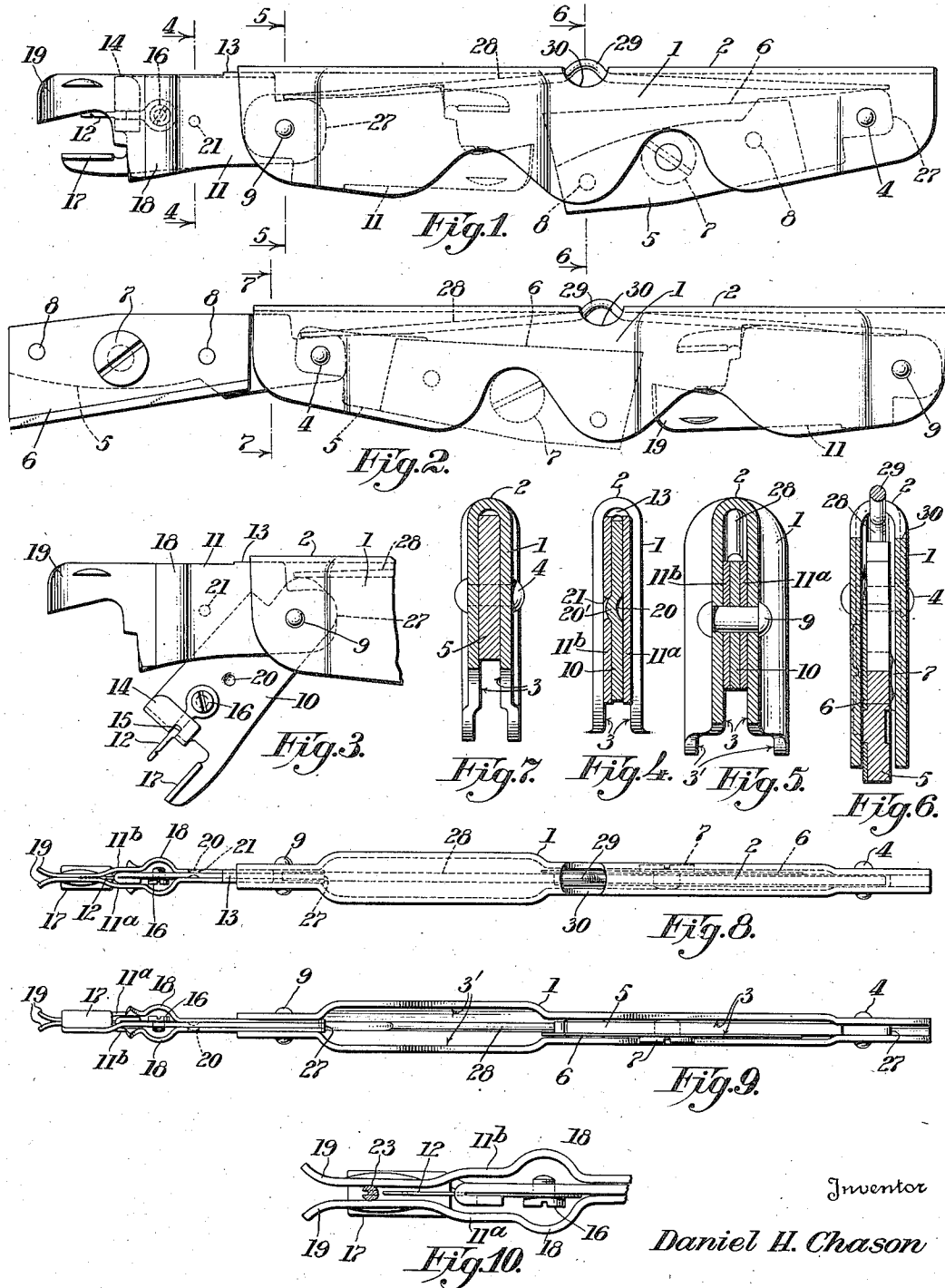
D. H. CHASON

2,033,755

NEEDLE THREADER

Filed Feb. 20, 1934

2 Sheets-Sheet 1



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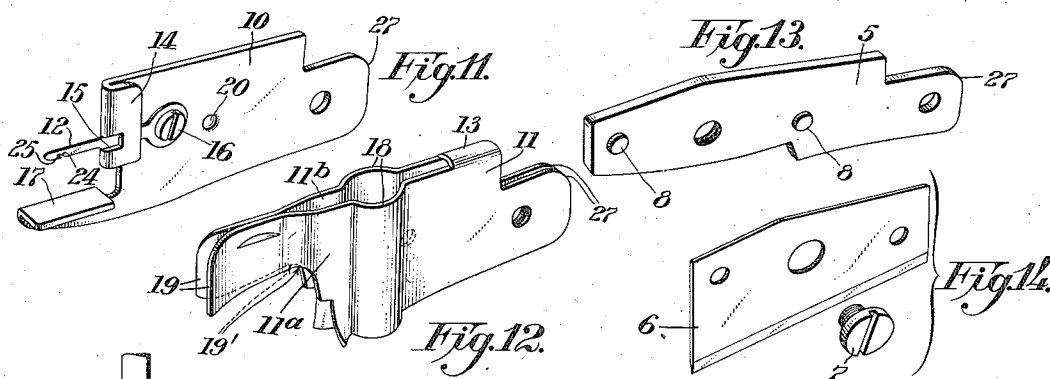
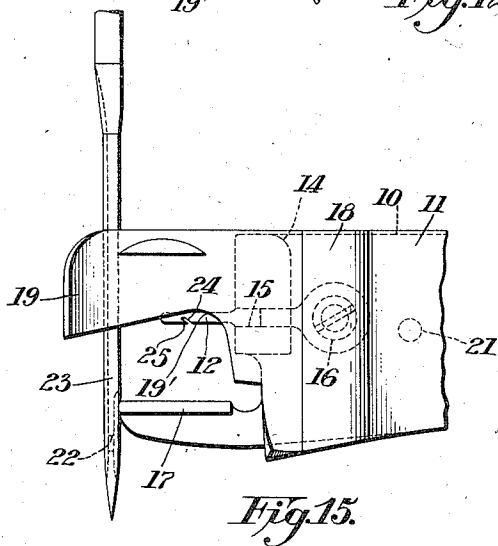
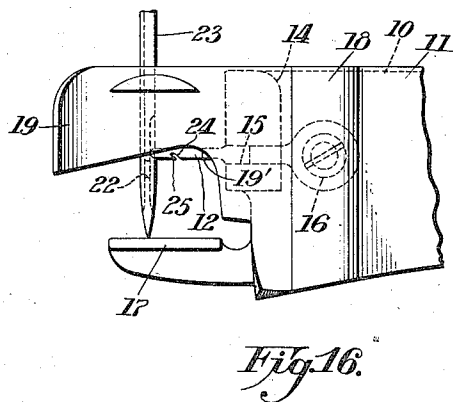
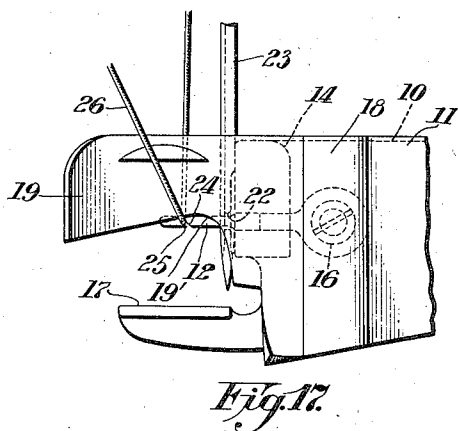
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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,033,755

## NEEDLE-THREADER

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Application February 20, 1934, Serial No. 712,123

7 Claims. (Cl. 223—99)

This invention relates to needle-threaders and has for an object to provide a device of this character which may be used with equal facility to thread needles of various sizes, and particularly sewing machine needles, from left to right or from right to left.

Another object of the invention is to provide a needle-threader which may be freely used, with a reduced element of danger of breakage of delicate parts.

A further object of the invention is to provide for the ready removal and replacement of the threading implement or hook of the device.

With the above and other objects in view, as will hereinafter appear, the invention comprises the devices, combinations and arrangements of parts hereinafter set forth and illustrated in the accompanying drawings of a preferred embodiment of the invention, from which the several features of the invention and the advantages attained thereby will be readily understood by those skilled in the art.

In the accompanying drawings, Fig. 1 is a side elevation of the device with the needle-threader and guard elements shown in full lines in operative position. Fig. 2 is a similar view with a seam-ripper, associated with the needle-threader, shown in full lines in open position. Fig. 3 is a fragmentary side elevation of the device showing the needle-threader and guard elements swung relatively to one another to expose the needle-threader. Figs. 4, 5 and 6 are respectively, sections on the lines 4—4, 5—5 and 6—6, Fig. 1. Fig. 7 is a section on the line 7—7, Fig. 2. Fig. 8 is a top edge view of the device. Fig. 9 is a bottom edge view. Fig. 10 is an enlarged top edge view of the needle-threader with the guard element embracing a needle to be threaded.

Fig. 11 is a perspective view of the needle-threader blade and its holder. Fig. 12 is a perspective view of the needle-threader-guard. Fig. 13 is a perspective view of the seam-ripper blade-holder. Fig. 14 is a disassembled perspective view of the seam-ripper blade and its attaching screw. Fig. 15 is an enlarged side elevation of the needle-threader showing the first step of approach to a needle to be threaded. Fig. 16 is a similar view showing the second step of approach, and Fig. 17 is a similar view showing the third step of approach preparatory to the final step of actually threading the needle.

According to the invention, in the preferred embodiment thereof illustrated, there is provided a sheet-metal handle 1 formed by folding a blank along its longitudinal median line at 2 to

provide spaced parallel and similarly shaped front and back sections defining therebetween a cavity 3, a portion 3' of which is enlarged widthwise, as shown in Fig. 9.

Pivotally mounted at one end of the handle 1, on the pivot-pin 4, is the knife-blade holder 5 upon which the thin steel knife-blade 6 is mounted by means of a single screw 7 and a pair of steady pins 8. The knife-blade of this seam-ripper is interchangeable with the knife-blade of the device disclosed in my copending application, Serial No. 650,073, filed Jan. 4, 1933. The knife-blade 6 and its holder 5 are swingable into and out of the cavity 3 in the handle, as indicated in Fig. 2.

Pivotally mounted on a common pivot-pin 9 at the other end of the handle 1 are the holder element 10 and guard element 11 for the needle-threader implement or hook 12. The guard element 11 is formed from a resilient sheet-metal blank having similar front and back sections, 11<sup>a</sup>, 11<sup>b</sup>, integrally connected by a relatively narrow folded tongue 13 at the juxtaposed upper edges of the guard sections. The holder element 10 is disposed between the front and back sections of the guard 11.

The holder element 10 is provided with a lip 14 which is folded back upon the body of the holder and is slotted at the fold line, at 15, for passage of the shank of the threader 12 disposed between the lip 14 and the body of the holder 10 and removably secured to the latter by the screw 16. The lip 14 and the top and bottom walls of the slot 15 engage and steady the shank of the hook 12 and assist in holding it in accurately fixed relation to its holder 10 and the guard 11. The holder 10 is also formed with a finger 17 which extends below and beyond the free end of the hook 12 and constitutes a needle stop and gauge useful in the approach and presentation of the hook to a needle to be threaded. The front and back sections 11<sup>a</sup> and 11<sup>b</sup> of the guard are bowed outwardly at 18 to give increased resiliency to the needle-engaging end-fingers 19 of the guard and to provide clearance for the screw 16.

The holder 10 is swingable relative to the guard 11 from the operative position shown in Fig. 1 to the exposed position shown in Fig. 3 giving access to the screw 16 for ready removal and replacement of the threader hook 12. The holder 10 is indented at 20, Fig. 4, to provide on one face a projection 20' engaging the aperture 21 in the yielding guard-section 11<sup>b</sup> to yieldingly and accurately hold the parts in their predetermined cooperative relationship.

The threader hook 12 is in the form of a thin steel blade which is of a size such that it will readily enter the eye 22 of a conventional sewing machine or other needle 23. It is formed in one edge with a relatively narrow and inclined slot 24 affording a hook 25, Fig. 15, the point of which cannot catch on the wall of the needle-eye when the threader blade 12 is withdrawn from the latter.

The preferred method of using the threader for threading a sewing machine needle is illustrated in Figs. 15, 16 and 17. The threader is first presented to the needle shank, well above the needle-eye, with the guard fingers 19 embracing the needle and the stop finger 17 in engagement with the needle well above the point of the latter. The stop 17 takes the shock of the initial engagement of the threader with the needle and protects the delicate hook blade 12 against being damaged by striking the needle. The device is then shifted downwardly until the stop 17 clears the needle point and then to the left, Fig. 16, until the threader blade 12 is felt to engage the needle-groove immediately above the needle-eye 22. A slight downward shift of the device brings the blade 12 into register with the needle-eye through which the hook blade is projected to the position shown in Fig. 17.

Referring particularly to Fig. 17, it will be seen that the sections 11<sup>a</sup> and 11<sup>b</sup> of the guard 11, including the guard-fingers 19, overlap the shank and free end of the threader blade 12 and are provided with lower concavely curved edge-portions 19' exposing the thread-slot 24 and hook 25 for engagement of the thread 26. The thread-end 26 is brought around under the guard-fingers 19 and hook-blade 12 and is then pulled to the left to draw the thread into the slot 24 of the hook 25 exposed by the concave edges 19' of the guard-sections. The blade 12 is finally withdrawn from the needle-eye, carrying the thread-end 26 with it. Because of the equal resilience of the guard-fingers 19, the threader-blade 12 is automatically centered relative to the needle, regardless of the thickness of the needle. This will be clear from an inspection of Fig. 10.

Both the threader-holder and guard elements 10, 11, as well as the holder 5 for the seam-ripper blade 6, are formed with the usual cam-shanks 27 for cooperation with the free ends of the spring 28 having a central positioning hump 29 which projects through the central opening 30 in the edge-fold 2 of the handle. By these means, the threader and seam-ripper blades are yieldingly held in either open or closed positions. When in their closed positions, however, the blades do not overlap within the handle-cavity 3 and danger of damage of delicate parts by collision is thus avoided.

The invention is not to be understood as limited to the details of construction and relative arrangements of parts shown and described, as the drawings and detailed description thereof are merely illustrative of one embodiment of the in-

vention. Having thus set forth the nature of the invention, what I claim herein is:—

1. A needle-threader comprising a holder having a lip which is folded back upon the body of the holder and is provided with a slot, and a needle-threading implement mounted on said holder and extending under said lip and through said slot.

2. A needle-threader comprising a holder having a lip which is folded back upon the body of the holder and is provided with a slot, and a needle-threading implement mounted on said holder and extending under said lip and through said slot, said holder having a needle stop extending below and beyond the free end of said implement.

3. A needle-threader comprising a sheet-metal holder having a lip folded back upon the body of the holder and having an opening at the fold line of the lip, and a threading implement adapted to enter the eye of a sewing needle, said implement having a shank confined between said lip and the body of the holder and a free end projecting through said opening.

4. A needle-threader comprising a sheet-metal holder having a lip folded back upon the body of the holder and having an opening at the fold line of the lip, a threading implement adapted to enter the eye of a sewing needle, said implement having a shank confined between said lip and the body of the holder and a free end projecting through said opening, and a needle-stop on said holder disposed below and extending beyond the free end of said implement.

5. A needle-threader comprising a sheet-metal guard element having resilient front and back half-sections integrally connected along a portion of their juxtaposed upper edges, a sheet-metal holder element intermediate the half-sections of said guard element, a needle threading implement mounted on said holder element, and a handle to which at least one of said elements is pivotally connected for movement relative to the other element.

6. A needle-threader comprising a handle having a cavity, a needle-threading hook member adapted to enter the eye of a conventional sewing machine needle, and a guard member at least partially covering said hook member, said members being coaxially pivoted to said handle for swinging movement into and out of said cavity and relatively to one another to expose the hook member.

7. A needle-threader comprising a handle having a cavity, a needle-threading hook member adapted to enter the eye of a conventional sewing machine needle, a guard member at least partially covering said hook member, said members being coaxially pivoted to said handle for swinging movement into and out of said cavity and relatively to one another to expose the hook member, and means for yieldingly holding said members in predetermined cooperative needle-threading relation to one another.

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