June 9, 1953 W. A. COTTER 2,641,394

NEEDLE THREADER

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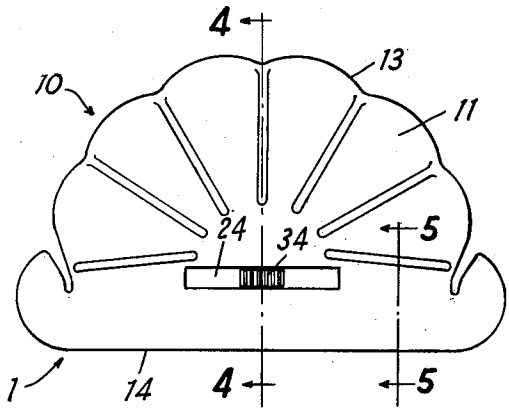



FIG. 1

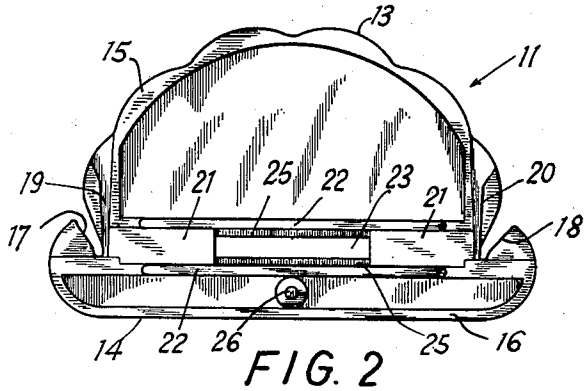



FIG. 2

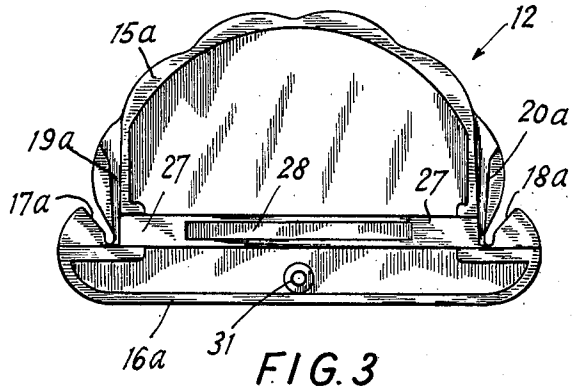



FIG. 3

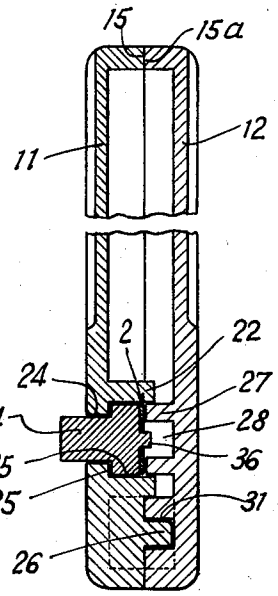



FIG. 4

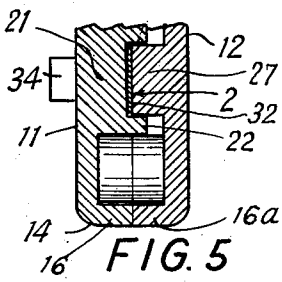



FIG. 5

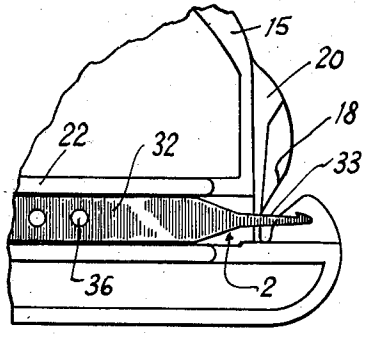



FIG. 6

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## NEEDLE THREADER

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3 Claims. (Cl. 223—99)

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This invention relates to needle threaders.

An object of this invention is to provide a needle threader of the type which includes at least one upstanding needle positioning socket, a thread notch adjacent the lower end of the socket and a passage adapted to receive a slidable hook for movement into and across the lower end of the socket, wherein the hook passage and hook are formed in an improved manner to insure proper movement of the hook relative to the needle socket.

A further object of this invention is to provide a needle threader of the character described which comprises a casing formed with a needle socket and a thread notch adjacent the socket, together with a hook passage extending transversely of the socket, the hook passage being defined by a pair of closely and uniformly spaced apart walls, and a hook member of uniform thickness slidably mounted in the hook passage, the thickness of the hook member being no greater than the transverse dimension of the needle socket at the lower end thereof.

Another object of this invention is to provide a needle threader of the character described which comprises a casing including a pair of walled members of similar profile secured together in face to face relation, the walled members providing therebetween a needle socket and a thread notch adjacent the socket, each of the walled members being formed on the inner surface thereof with an elongated, narrow wall; the narrow walls are disposed in opposed, slightly spaced relation to each other and extend transversely of the socket, one of the narrow walls being provided with means cooperating with the opposed narrow wall to form an elongated, restricted hook passage of uniform width, together with a hook member of uniform thickness accommodated in the hook passage for longitudinal movement toward the socket, the walls of the passage being adapted to restrain the hook member against transverse movement and to properly direct the hook end of the hook member into the needle socket.

Yet a further object of this invention is to provide a needle threader which comprises a minimum number of parts, is readily assembled, is economical to manufacture and which is practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter described, and of which the scope of invention will be indicated in the following claims.

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In the accompanying drawing, in which is shown an illustrative embodiment of the invention:

Fig. 1 is a front elevational view of a needle threader embodying the invention;

Fig. 2 is a front elevational of one member of the device shown in Fig. 1 and showing the inner surface thereof;

Fig. 3 is a front elevational view of the other member of the device shown in Fig. 1 and showing the inner surface thereof;

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 1;

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 1, and

Fig. 6 is an enlarged elevational view of a corner portion of the member shown in Fig. 2, showing details of the hook, needle socket and thread notch.

Referring in detail to the drawing, 10 designates a needle threader embodying the invention. The same comprises essentially a casing 1 in which is slidably mounted a hook member 2.

The casing 1 comprises a pair of flat, walled members 11, 12, of similar profile. The members 11, 12 may be molded of plastic or made of other suitable materials. As shown in Fig. 2, member 11 comprises a substantially semi-circular upper edge 13 and a linear bottom edge 14. The member 11 is formed on its inner surface with a flange 15 extending along the edge 13 and a flange 16 extending along edge 14. The upper surfaces of flanges 15, 16 lie in a common plane. The opposite end portions of flange 15 are provided with notches 17, 18 which extend downwardly and inwardly toward flange 16. The flange 15 is formed at its opposite end portions with a pair of vertical grooves 19, 20, disposed adjacent and inwardly of notches 17, 18, respectively. The grooves 19, 20 taper toward the lower ends thereof. The lower ends of grooves 19, 20 terminate substantially at the lower ends of the adjacent notches.

The member 11 is formed on its inner surface with a longitudinally extending narrow wall or rib 21 which interconnects the opposite end portions of flange 15. The wall 21 is spaced above flange 16 and is parallel thereto. The outer surface of the wall 21 is slightly depressed below the plane of flanges 15, 16, for the reason hereinafter appearing. Projecting from the upper and lower

edges of wall 21 are a pair of parallel ribs 22. The ribs 22 terminate at their opposite ends short of the grooves 19, 20. The wall 21 is formed on a central portion thereof with a rectangular, through slot 23, the longitudinal edges of which are defined by the ribs 22. The slot 23 includes a portion 24 of reduced width, extending to the outer surface of member 11 and thus forming shoulders 25 for the purpose hereinafter appearing. It is apparent that the wall 21 together with ribs 22, form in effect a channel, for the purpose hereinafter appearing. The member 11 is also formed with a centrally located projection 26 disposed above flange 16.

As shown in Fig. 3, the member 12 includes peripheral flanges 15a, 16a; notches 17a, 18a and grooves 19a, 20a which complement the corresponding elements on member 11. When the members 11, 12 are secured together with the flanges 15, 15a, 16, 16a in contacting relation, the complementary grooves 19, 19a and 20, 20a, form tapered sockets adapted to receive needles to be threaded, the needles being inserted into the sockets with their eye portions lowermost. The notches 17, 17a and 18, 18a, form means for positioning thread which is to be threaded into the eyes of needles mounted in the needle sockets.

The member 12 is further formed on its inner surface with a longitudinally extending, narrow wall or rib 27. The wall 27 is spaced above flange 16a and is parallel thereto. The outer surface of wall 27 is slightly depressed below the plane of flanges 15a, 16a. The depression of wall 27 is substantially equal to the depression of wall 21. The wall 27 is formed with a centrally disposed, elongated recess 28.

The wall 27 on member 12 is complementary to the channel formed on member 11 by wall 21 and ribs 22 and is adapted to project into said channel when the members are assembled, as shown in Fig. 4. The slightly spaced surfaces of opposed walls 21, 27, form in effect a restricted passage of uniform width extending from the opposite ends of slot 23 to the thread notches 17, 17a; 18, 18a, for the purpose hereinafter appearing.

The member 12 is further formed with a centrally disposed recess 31 above flange 16a which is complementary to projection 26 on member 11 and is adapted to receive the same, thus permitting the members 11, 12 to be properly registered upon assembly thereof.

The hook member 2 is slidably mounted for longitudinal movement in the restricted passage between walls 21, 27. The ribs 22 on wall 21 prevent vertical movement of the hook member. The hook member 2 comprises a very thin, flat, intermediate shank portion 32 having a uniform thickness and a width substantially equal to the spacing between ribs 22. Extending from opposite ends of the intermediate portion 32 and integral therewith, are hook portions 33. The hook portions 33 are of uniform thickness and equal to the thickness of the shank portion 32. The hook member 2 may be stamped out of thin strip steel or other suitable material.

Means is provided for manually moving the hook member within the hook passage formed by opposed walls 21, 27, to bring the hook portions thereof past the lower ends of the needle sockets and thread notches adjacent thereto, as shown in Fig. 6. To this end there is provided a knob or handle 34 of plastic or other suitable material, which is secured to one side of the hook member 2 and projects through slot portion 24. The knob 34 is of T-shaped cross section providing parallel flanges 35 which are slidably received by shoulders 25, thus restraining the knob against movement out of slot 24. The hook member 2 is secured to knob 34 by means of integral tits 36 extending from the inner surface of the knob and force fitted into appropriate openings formed in the shank portion 32 of hook member 2. The inner surface of knob 34 substantially lies in the plane of wall 21, thus properly supporting the central portion of hook member 2, the opposite end portions of which contact the wall 21, on one side thereof. The other side of hook member 2 is disposed in contacting relation with wall 27. The movement of hook member 2 is limited in either direction by abuttment of the knob 34 with the ends of slot 23.

It will be apparent that the hook member 2 is restrained against transverse movement as it is moved toward the needle sockets, in either direction, by the opposed walls 21, 27. Since the surfaces of the walls 21, 27 are slightly depressed relative to the opposed flange surfaces at the needle sockets and thread notches, the hook portions 33 of the hook member 2 will be properly directed to the center of the needle sockets.

The needle sockets are formed at their lower end to receive the flattened eye portion of a needle, thus providing self aligning means for a needle inserted into the socket, in a manner known in the art. With the needle eye properly oriented relative to the hook passage, the hook portion 33 of the hook member will readily pass through the eye of a needle mounted in the needle socket and will project across the thread notch adjacent thereto. Upon laying thread across the notch and reversing the direction of movement of the hook member by means of knob 34, the hook portion 33 will be effective to draw the thread into the eye of the needle. It is understood that the thickness of hook portions 33 is no greater than the transverse dimension of the needle socket at the lower end thereof and similarly, the transverse dimension of the hook passage is substantially equal to the size of the largest needle to be threaded.

The size of the needle sockets at the opposite ends of casing 1 may be of different size to accommodate different ranges of needle sizes.

The members 11, 12 are suitably secured together by means of cement or the like applied to the contacting flanges.

The tits 36 on knob 34 are accommodated in the recess 28 in wall 27, as the hook member 2 is operated.

It will thus be seen that there is provided a needle threader in which the several objects of this invention are achieved and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above described invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing, is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a needle threader comprising a casing formed with a needle socket and a thread notch adjacent thereto, said casing comprising a pair of adjacent walls, one of said walls being formed with a channel of uniform height throughout the longitudinal extent thereof disposed transversely of and extending to the lower end of said socket, the other of said walls being formed with

a longitudinal projection extending into the channel on said one wall and an elongated member including shank and hook portions of uniform thickness slidably mounted in said channel for movement toward said socket and thread notch, the projection on said other wall contacting said shank and hook portions for restraining the hook portion of said elongated member against transverse movement during longitudinal movement thereof.

2. A needle threader comprising a casing formed with a needle socket and a thread notch adjacent thereto, said casing including a pair of adjacent wall members, one of said wall members being formed with a channel disposed transversely of said socket, said channel including a side wall and a pair of spaced, longitudinally extending ribs projecting from the side wall, a thin, flat elongated member having shank and hook portions of uniform thickness slidably mounted in said channel with one side thereof in contacting relation with the side wall of said channel said shank portion having a width equal to the spacing of said ribs and means on the other wall member disposed in contacting relation with the longitudinal extent of other side of said elongated member for restraining said elongated member against transverse movement upon longitudinal movement thereof in said channel towards said socket and thread notch.

3. A needle threader comprising a casing including a pair of adjacent members of similar profile, said members including peripheral flanges



on the inner surfaces thereof and in contacting relation with each other, opposed flange portions of said members being formed with a needle socket and a thread notch adjacent thereto, said members being formed on the inner surfaces thereof with opposed longitudinal walls disposed transversely of said socket, each of said walls comprising an outer surface slightly depressed below the plane of the flange of said member, said walls defining an elongated passage of uniform transverse spacing and height, a thin, flat elongated member of uniform thickness and terminating in a hook slidably mounted in said passage for movement in a longitudinal path toward said socket and thread notch and means on said walls for retaining said elongated member in said longitudinal path and against transverse and vertical movement during longitudinal movement thereof.

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