May 9, 1950 A. E. EDWARDS 2,507,370

NEEDLE THREADER

Filed March 9, 1948

Fig. 6.

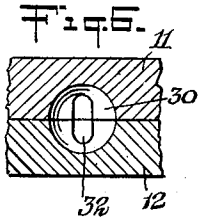


Fig. 1.

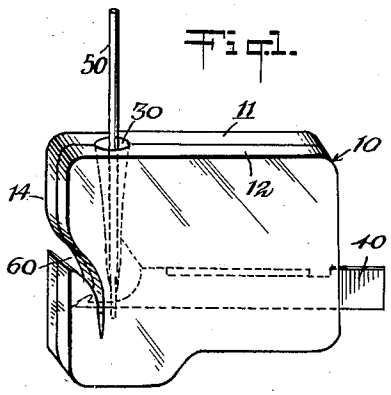


Fig. 5.

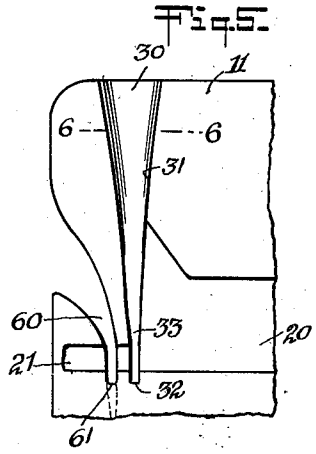


Fig. 7.

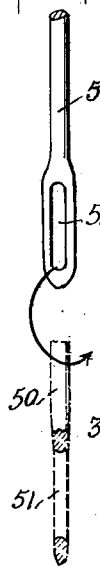


Fig. 2.

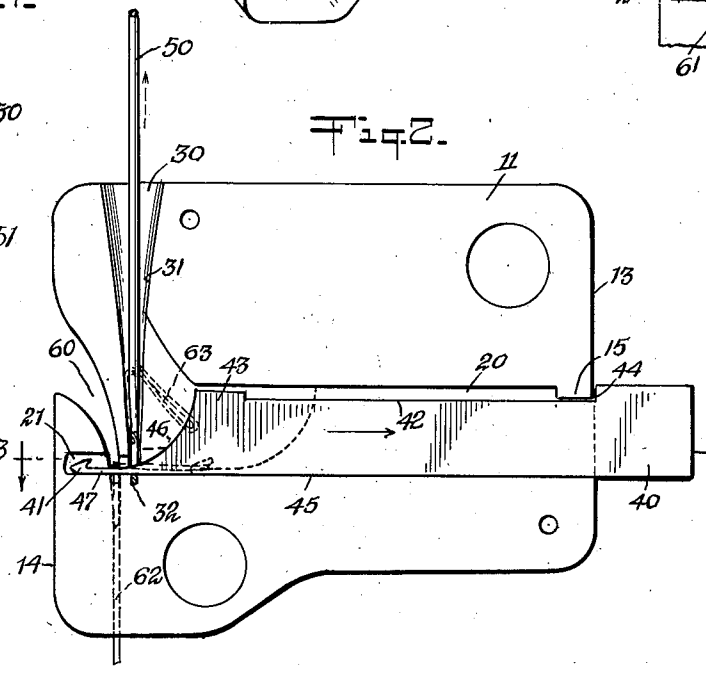


Fig. 4.

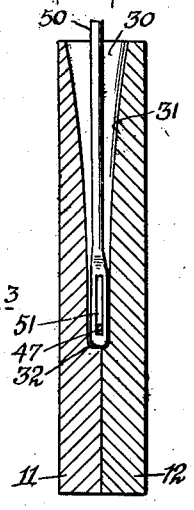
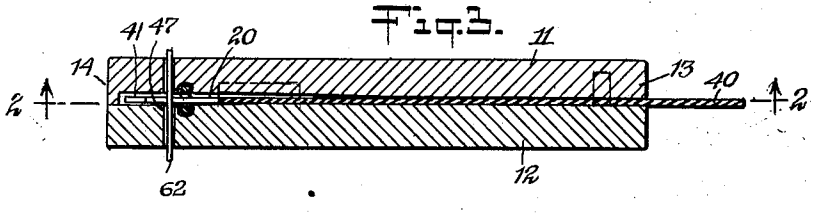


Fig. 3.



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NEEDLE THREADER

Albert E. Edwards, New York, N. Y.

Application March 9, 1948, Serial No. 13,779

6 Claims. (Cl. 223—99)

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My invention relates to needle threaders and more specifically to a needle threader that provides a simple, sure and accurate method of threading a conventional sewing needle.

A feature of my invention is that through its unique structure, it entails a minimum of moving parts enabling anyone to quickly and efficiently thread a needle with a minimum of effort.

A further feature of my invention is the provision of a needle well or guide which always aligns the eye of the needle for the threading operation by the mere act of dropping the needle in the well.

Another advantage of my device is that it will accommodate a large range of needle and thread sizes.

A further advantage of my device is that it presents a neat and compact appearance and is inexpensive and economical to manufacture.

Further advantages and unique features of my device will be apparent as I proceed with the description.

With reference to the drawing—

Fig. 1 shows a perspective view of my needle threading device;

Fig. 2 shows a sectional view on line 2—2 of Fig. 3;

Fig. 3 shows a sectional view on line 3—3 of Fig. 2;

Fig. 4 shows a front sectional view through the needle well;

Fig. 5 shows a partial side elevation similar to Fig. 2 with the needle threading member removed;

Fig. 6 shows a sectional view on line 6—6 of Fig. 5;

Fig. 7 shows a view of the eye of a needle illustrating its turning movement when dropped into the needle well.

As shown in the drawing, my needle threading device consists of a housing 10 which in its preferred form is made from two complimentary sections 11 and 12 secured together. Section 11 is provided with a cavity or slot 20 and approximately one-half of the needle well or guide 30. The cavity 20 is substantially rectangular in shape, widening out where it merges with the needle well or guide way 30. Furthermore, the front portion 21 of the cavity is reduced in size to accommodate the hook 41 on the slidable threading member 40. The cavity 20 is horizontally positioned in the housing 10 and extends the length of the device from the rear wall 13 to a point just short of the front wall 14. The width of the cavity is considerably less than the

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width of the needle well 30, and the width of the cavity decreases in size from front to rear as illustrated in Fig. 3. The height of the cavity 20 is slightly greater than the height of the threading member in order that the hook end of the threading member may have sufficient room for vertical movement when needles of larger size are used, as the hook will be slightly raised as it passes through the eye of these larger needles. Although my invention will accommodate a large range of needles, it is specifically designed to handle the average small sewing needle.

The needle well or guideway 30 is vertical and formed by the two sections 11 and 12 being joined. The wall 31 of the well 30, as indicated in Figs. 2 and 4, tapers inwardly from the top to the bottom of the well with the bottom 32 of the well terminating in a flat surface below the lower edge of the cavity 20. As illustrated by the drawings, the lower third 33 of the well is substantially rectangular in shape with this portion of the well being greater in width than depth it being wider from left to right than it is from front to rear. As a result of this designing and dimensioning, regardless of the position of the eye 51 of the needle 50 when the needle is dropped into the well, the tapering side wall 31 will cause the needle 50 to turn, resulting in the eye 51 always aligning itself at right angles to the cavity 20. Due to the dimensions of the well at the lower portion 33, it is impossible for the eye 51 of the needle to be at any other position than at right angles to the cavity 20.

Positioned in the cavity 20 is a slidably operating threading member 40 which in its preferred form will be made from thin resilient material. As the depth of the well at this portion is always less than the width of a needle at its broadest or eye portion, the threading member 40 is substantially rectangular in shape having a cut-out portion on its upper edge 42 resulting in the formation of front and rear shoulder members 43 and 44. The lower edge 45 of the threading member is extended and shaped in the form of a hook 41 at its extreme front end. The hook 41 is joined to the front shoulder through a concave shaped edge 46. As indicated in the drawings, the extreme front portion of the hook 41 terminates in a point which facilitates the movement of the threading member through the eyes of the larger needles where it is necessary for the hook to rise slightly in order to pass through the eye.

The threading member 40 is adapted to slidably operate in the cavity 20, its movements for-

ward and to the rear being limited by the contact between the front and rear shoulders 43 and 44 and the stop 15 that is integral with section 11. The hook 41 is of such a dimension that it may readily pass through the eye 51 of a large range of needles. Located in the front wall 14 of the housing 10 is a downwardly curved recess 60 whose lower portion 61 intersects and extends below the lower edge of the cavity 20. This recess 60 serves the purpose of guiding the thread 62 on to the hook 41 of the threading member.

To thread the needle 50, the threading member 40 is drawn to the rear until the front shoulder 43 contacts the stop 15. The needle 50 is then suspended above the well 30 so that the eye 51 of the needle extends a short distance down into the well. The needle is then released and due to the shape and configuration of the well or guideway 30 regardless of the position of the eye of the needle at the time it is released, the eye of the needle will always align itself at right angles to the cavity 20 as indicated in Fig. 2. Next the threading member 40 is pushed forward so that the hook 41 passes through the eye 51 of the needle and into the front portion 21 of the cavity. The thread 62 is then brought down into the recess 60 and looped over the reduced portion 47 of the threading member. The threading member 40 is then pulled to the rear, and as indicated by the dotted lines in Fig. 2 the hook 41 will engage the loop 63 of the thread 62 and pull it through the eye 51 of the needle 50.

As shown in Fig. 3, the cavity 20 narrows down from front to rear and the distance the threading member 40 will be pulled backward will depend upon the gauge of the thread. In other words, if you are using a heavy thread, it will not be possible to pull the threading member 40 as far back as it would be if you were using a lighter thread. In any event, the threading member 40 is pulled backward until the thread binds on the walls of the cavity 20. The needle 50 is then lifted out of the well and whereas during this operation the looped end 63 of the thread will be securely held on the hook 41, the free ends of the thread will move upward with the needle. When the eye 51 of the needle has reached the top of the housing 10, the threading member 40 will be pushed forward. This will release the loop 63 of thread from the hook 41 and the needle may be pulled outward with the thread in threaded position in the eye of the needle.

This threading operation results in the thread being doubled through the eye of the needle, and if it is not desired to use the thread doubled, it is merely necessary to pull the short free end of the thread through the eye and the needle will remain threaded with a single strand of thread through the eye of the needle. The needle may also be threaded quadruplicately.

While the invention has been described in detail with respect to a present preferred form which it may assume, it is not to be limited to such details and form since many changes and modifications may be made in the invention without departing from the spirit and scope of the invention in its broadest aspects. Hence, it is desired

to cover any and all forms and modifications of the invention which may come within the language or scope of any one or more of the appended claims.

I claim:

1. A needle threading device of the type described including a housing, a needle well and a cavity formed in said housing and intersecting each other at right angles, said cavity extending the length of the housing and decreasing in width from front to rear, a threading member slidably mounted in said cavity, a hook on said member adapted to pass through the eye of a needle when positioned in said well, and means for posititoning thread so as to be engaged by said hook and drawn through the eye of the needle when said threading member is retracted.

2. A device as set forth in claim 1 in which the width of the lower portion of said well exceeds the distance from front to rear.

3. A needle threading device of the type described including a housing, a needle well and cavity formed in said housing, and intersecting each other at right angles, said cavity extending the length of the housing and decreasing in width from front to rear, a threading member slidably mounted in said cavity, a hook on said member adapted to pass through the eye of a needle when said needle is positioned in said well, means for positioning a thread so as to be engaged by said hook and drawn through the eye of a needle when the threading member is retracted, the width of said cavity being such as to frictionally engage said thread between its walls and the threading member to lock said thread in place until the threading member is moved forwardly to a wider portion of said cavity.

4. A device as set forth in claim 1 in which the height of the cavity is sufficient to allow the threading member and the hook therein to move upwardly to pass through the needles having different sized eyes.

5. A device as set forth in claim 1 in which the height of the cavity is sufficient to allow the threading member and the hook therein to move upwardly to pass through the needles having different sized eyes, said hook having a bottom portion rounded at its outer end to enable it to ride up into the eye of a needle.

6. A device as set forth in claim 3 in which the height of the cavity is sufficient to allow the threading member and the hook therein to move upwardly to pass through the needles having different sized eyes.

ALBERT E. EDWARDS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
853,766	Buerger	May 14, 1907
2,195,571	Jauch	Apr. 2, 1940
2,281,180	Christ	Apr. 28, 1942
2,311,665	Kahn	Feb. 23, 1943
2,338,159	Appleton	Jan. 4, 1944