

July 25, 1939.

W. S. MASON  
NEEDLE THREADER

2,167,080

Filed May 26, 1936

*Fig. 1.*

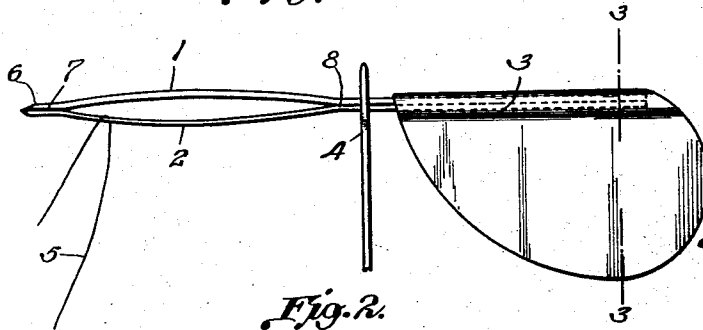


*Fig. 2.*

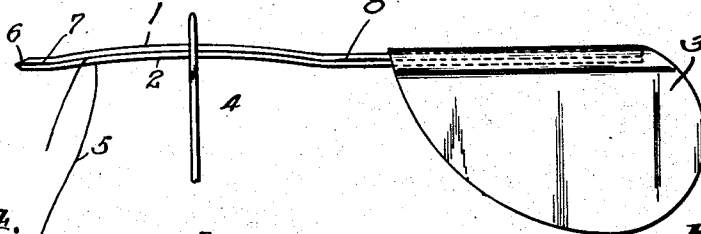


*Fig. 4.*

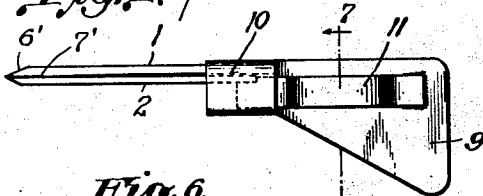


*Fig. 6.*

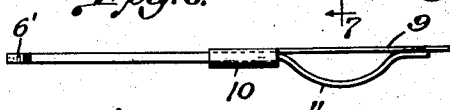


*Fig. 9.*

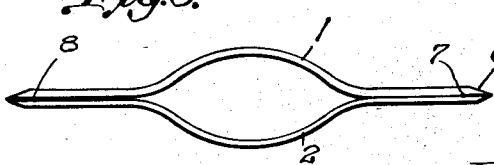


*Fig. 10.*

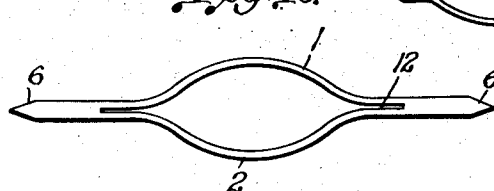


*Fig. 12.*

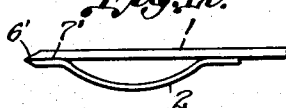


*Fig. 11.*

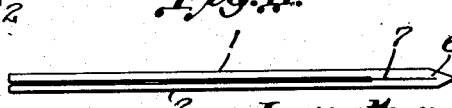


*Fig. 3.*



*Fig. 5.*

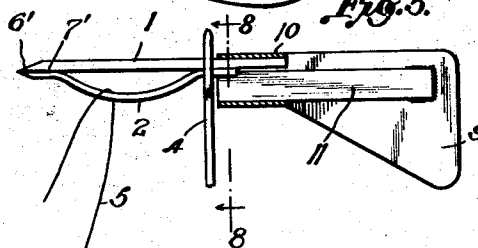


*Fig. 7.*

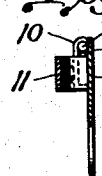
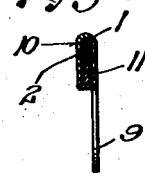


*Fig. 8.*



Inventor:  
William S. Mason.  
Chas. M. Funkhouser  
Attorney.

## UNITED STATES PATENT OFFICE

2,167,080

## NEEDLE THREADER

William S. Mason, Washington, D. C.

Application May 26, 1936, Serial No. 81,950

8 Claims. (Cl. 223-99)

This invention relates to improvements in needle threaders and more particularly to threading devices in which the thread is passed through the eye of a needle by means of a resilient body provided with a loop or slot.

I am aware of needle threaders including a wire loop having a reduced end portion so that the loop may be inserted in the eye of a needle, and these devices have proved satisfactory when used to thread large size needles but when the entering end of the loop is bent sharply so that it may be passed through the eye of a small needle it breaks easily.

Another disadvantage of this type of threader as heretofore constructed is that the resilient arms of the loop hinge or bend at the entering end or point of the loop, and when the device is passed through the eye of a small needle this constant bending strain frequently causes the entering end to break and render the device useless.

To minimize breakage due to a sharp point the devices now in present day use are generally constructed with a relatively blunt entering end. The use of the blunt end, and due to the fact that it is necessary to provide clearance for the thread, wire of extremely small diameter is required and this makes the device flimsy so that when it is forced into the eye of a small needle the loop is frequently distorted or disfigured. An effort has been made to overcome this fault by use of guards and guides and these are not satisfactory because they only serve to complicate the device and increase the cost of manufacture without overcoming the difficulties heretofore experienced.

A primary object of the present invention is to provide a needle threading device in which the entering end or point shall not be subjected to bending strain when passed through the eye of a needle.

Another object is to provide a threading device which shall thread any ordinary needle from the smallest to largest sizes commonly used.

Another object is to provide a needle threading device of the character described which shall be provided with a relatively stiff entering end so that it shall readily enter the eye of any needle and not be distorted by the threading operation.

Another object is to provide a needle threading device of the character designated in which one of the loop arms provides clearance for the thread and may be flexed independently of the adjoining arm.

A further object is to provide a handle for a threading device provided with means for flexing

one of a pair of resilient wires to form a thread receiving loop or slot.

A still further object of the invention is to provide a threading device of the class described which shall be rugged in construction and more efficient in operation than similar devices heretofore proposed.

Referring to the drawing, which is made a part of this application and in which similar reference characters indicate similar parts:

Figure 1 is a side elevation of my invention showing the needle in one position;

Figure 2 is a similar view showing the needle in a different position;

Figure 3 is a section on the line 3-3 of Figure 1;

Figures 4, 5 and 6 are views of one modification;

Figure 7 is a section on the line 7-7 of Figure 4;

Figure 8 is a section on the line 8-8 of Figure 5, and

Figures 9, 10, 11 and 12 are views of further modifications.

Referring to Figures 1 and 2 of the drawing, there is shown in enlarged proportions a preferred embodiment of a needle threading device constructed and arranged in accordance with the present invention in which a resilient body comprising a pair of joined wires 1 and 2 form a thread receiving loop or slot. The numeral 1 indicates, for example, an upper wire which is of larger diameter and relatively stiffer than the lower wire 2.

The wires are joined inwardly of the entering end or point 6 of the junction, the wires at this point being indicated by the numeral 7.

The junction of the wires at the butt end of the device is indicated by the numeral 8 and the wires are attached to the flat upper edge of a flat metal handle 3 which may also serve as a sight guide in threading a needle. This arrangement also insures that the small thread supporting wire will be in the downward position. In Figure 1 the threading device has been passed through the eye of a needle 4 and thread 5 has been passed through the loop preparatory to being drawn through the eye of the needle as shown in Figure 2.

The showing in Figure 2 also illustrates the position the lower wire assumes when the device passes through the eye of a needle to complete the threading operation and pull the thread with it through the eye of the needle. The primary advantage of the device shown in Figures 1 and 2

is that the wires forming the loop are joined and flex inwardly of the entering end of the device so that the entering end 8 is not subjected to any bending strain when it is passed through the eye of a needle.

An important feature of this novel combination is that the entering end is relatively stiff and serves as a guide for the device. This end or point is preferably made solid for a substantial distance inwardly of the entering end by soldering, fusion or otherwise uniting the wires. This construction places little or no strain on the eye of a needle when it passes through the eye during the threading operation because the loop is readily closed due to the use of a small wire which requires slight pressure to swing it against the adjoining wire.

Another advantage due to the use of a small lower wire in combination with a large upper wire is that the upper wire stiffens the device and the lower wire provides the necessary clearance for the passage of the thread through the eye of the needle.

Another important advantage of a device constructed in the manner heretofore described is that the wires are joined outside of the handle as indicated by the numeral 3, so that the strength of the device is increased at the point of connection to the handle and the loop materially strengthened so as to minimize any danger of accidentally bending the wires and distorting the loop.

Figure 3 is a section on the line 3-3 of Figure 1 and shows how the butt end of the device is held in the overlapping sides of the handle and also more clearly indicates the difference in size of the two wires.

The device may be used without a handle as illustrated in Figure 9 and when so used the device may be preferably made of larger size wires so that it shall provide stiffer construction. When constructed of larger wires, the use of the device is necessarily limited to needles having large eyes such as sewing machine needles. This large size has also a further advantage in that it may be used without a handle and the threading operation simplified as the thread is inserted in the loop and the device and thread are passed entirely through the eye of the needle.

The device illustrated in Fig. 10 is made by slotting a resilient metal bar as indicated by the numeral 12. The side members of the slot are spread to form a thread receiving loop either end of which may be passed through the eye of a needle. If a handle is desired, it may be readily attached to the end of the bar.

In Figure 11 there is illustrated a threading device which has been made by doubling a wire upon itself and joining the sides of the wires inwardly of the point 6 as indicated by numeral 7.

By joining the wires inwardly of the end the wires hinge or bend at the junction instead of at the entering end, and it will be apparent that one end of any of the devices may be made in this manner; however, unless some special form of tapered wire is used the advantages due to the use of wires of different diameter would be sacrificed.

In Figures 4 and 5 there is illustrated a modified form of the needle threading devices shown in Figures 1 and 2. The showing in these figures illustrates either the construction wherein the member 2 is normally straight, or the construction wherein the member 2 is normally arcuate in shape. In this showing the entering end of

the device is made in the same manner as heretofore described, the butt end of the upper wire 1 which is relatively stiff is joined to the handle and the butt end of the lower wire 2 is joined to the slidable end of a bow shaped spring 11. The opposite end of the spring is secured to the handle 9 so that when the spring is pressed against the handle the slidable end moves and advances the wire attached thereto to form the thread slot. In Figure 5 the device is shown as having been passed through the eye of a needle and the bow shaped spring has been pressed against the handle, the slidable end of the bow shaped spring retained in a guide 10 has advanced the wire attached thereto so as to form a thread receiving loop. To complete the threading operation it is merely necessary to release the pressure on the spring and allow it to resume its bow shape and in so doing straighten the wire after which the threader is withdrawn and draws the thread through the eye of the needle.

The essential difference between this device and the one shown in Figure 1 is that the loop is formed and closed without pressure being exerted on the eye of the needle. In Figure 12 there is illustrated a view of the preferred type of threading device to be used with the handle 9 as shown in Figures 4 and 5. In this construction, wire 2 is normally arcuate in shape so that the function of the bow shaped spring is to hold the wire straight and when the spring is compressed it merely allows the wire to resume its arcuate shape, thereby insuring the thread slot forming directly under the upper wire so that it will be easier to insert the thread in the slot, whereas if both wires were parallel as in Figure 11, pressure of the bow shaped spring would cause the wire 2 to buckle to form a thread slot and a slot so formed would not necessarily be under the upper wire.

Although I have described the devices in their preferred form it will be apparent that various changes may be made therein without departing from the scope of the invention therefore I do not limit myself to what is shown in the drawing or described in the specification but only as indicated in the appended claims.

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

1. In combination, a needle threading device comprising a resilient metal body provided with an entering end and a butt end, said body being divided inwardly of said entering end to form adjoining spaced arms, one of said arms being stiff and of larger diameter than the adjoining arm, and a handle joined to the butt end of the device.

2. In combination with a handle, a needle threading device comprising a resilient metal body having one solid end adapted to be passed through the eye of a needle, said device being provided with a longitudinally arranged slot extending through its entire thickness, the sides of said slot being substantially arcuate in shape, one of said sides being of larger diameter and relatively stiff to form a guide for the adjoining side of said slot, both of said sides being joined inwardly of said end, and the butt end of the device being joined to said handle.

3. A device for threading needles comprising a resilient body provided with an entering end and a butt end, said body being provided with a longitudinally arranged slot extending entirely through the width of the body inwardly of said ends, the adjoining sides of said slot being sub-

stantially arcate in shape, one of said sides having a larger diameter than the other and being relatively stiff the adjoining side being elastic and yieldable to lateral compression forces for the purpose indicated.

4. The combination comprising a metal handle having a guide formed at one end, a bow shaped spring mounted on said handle, said spring having one end slidably mounted in said guide and on said handle and a needle threading device comprising a resilient body having an entering end and a butt end and being divided inwardly of its entering end to form spaced arms, said arms being joined inwardly of said entering end, the butt end of one of said arms being joined to said handle and the butt end of the adjoining arm being joined to the slidable end of the bow shaped spring.

5. The combination, a handle, one end of said handle having a guide formed thereon, a bow shaped spring, one end of said spring being joined to said handle, the opposite end of said spring being slidably disposed in said guide and on said handle, and a needle threading device comprising a resilient body, said body being provided with a stiff entering end and being divided inwardly of said end to form adjoining spaced arms, said arms being joined inwardly of said entering end, one of said arms being relatively stiff and being joined to said handle, the adjoining

arm being substantially arcate in shape and of smaller diameter than the other arm and being joined to the slidable end of said bow shaped spring substantially as and for the purpose set forth.

6. A needle threading device having a handle, a resilient body comprising a pair of slot forming members, one of said members being joined to said handle, the adjoining member having a free end slidable relative to said handle, and means on said handle for moving said free end to regulate the size of said slot.

7. A device for threading needles comprising a resilient body provided with an entering end and a butt end, said body being provided with a longitudinally arranged slot extending entirely through the width of the body inwardly of said ends, one of said slot sides having a larger diameter than the other and being relatively stiff, the adjoining side being elastic and yieldable to lateral compression forces for the purpose indicated.

8. A needle threading device comprising a pair of wires forming an elongated loop, said wires being joined at the loop ends for a distance substantially greater than the thickness of the wire to form a solid end, whereby bending strain at the junction of the loop forming wires is reduced to a minimum.

WILLIAM S. MASON. 30