The invention relates to new and useful improvements in a threading device for the stitching elements of a sewing machine and more particularly to a threading device for threading a looper.

An object of the invention is to provide a threading device which is provided with a loop for the thread which is to be inserted in the eye of the stitching element, which loop is located intermediate the ends of the threading device and is constructed so that it is very free to contract in passing through the eye of the element being threaded.

A further object of the invention is to provide a threading device of the above character which may be made from strands of wire twisted together at each end portion and shaped so as to form a series of loops intermediate the end portions, the wire portions forming the loops being crossed so as to give greater resiliency to the wires forming the loop for the thread.

In the drawings:

Fig. 1 is a side view of a threading device embodying the improvements.

Fig. 2 is a view showing a looper and the threading wire being inserted in the eyes of the looper.

Fig. 3 is a view similar to Fig. 2, but showing the threading wire passed all the way through the eyes of the loopers and the looper thread as laid in the loop of the threading device so as to be drawn through the eyes of the looper.

Fig. 4 is a view showing the looper with the thread passed through one eye of the looper and being passed through the other eye of the looper by the threading device.

Fig. 5 is an enlarged side view of the threading device.

The invention is directed to a threading device for the stitching elements of a sewing machine, and more particularly to a threading device which may be used for threading loopers. The threading device is formed from two strands of wire which are twisted together at their end portions and in the center of the threading device these wires are bent so as to form a main thread loop and two auxiliary thread loops adjacent the same.

The wires forming the loops cross so that the wire forming one side of the main loop forms the opposite sides of the auxiliary loops.

Referring more in detail to the drawings, the threading device consists of two substantially straight portions 1 and 2 and a central portion which includes a loop 3 and two auxiliary loops 4, 4. This threading implement is preferably made of two strands of wire 5 and 6. These strands are very tightly twisted together to form the end portions 1 and 2. The wire 5 is bent into segmental curves 5a forming one side of the loops 4, 4 and into an oppositely curved segmental portion 5b forming the opposite side of the loop 3. The wire 6 is bent into segmental curves 6a forming the opposite sides of the loops 4, 4 from the curved wire segments 5a, 5a and also into an oppositely curved segmental portion 6b which forms the opposite side of the loop 3 from the curved wire 5b.

It will readily be seen that if pressure is applied against the curved portions 5b, 6b they will move toward each other and as they move toward each other the curved portions 5a, 5a and 6a, 6a will move away from each other. This is brought about by a crossing of the wires forming the loops. When the threading device is passed through an eye more or less pressure is brought to bear on these curved portions 5b, 6b of the large central thread loop 3. The wires will readily yield to this pressure as the pressure does not result in any deformation of the wire, but rather in a springing of the parts throughout a considerable extended region. Likewise pressure on the wires 5a, 6a will tend to open the loop to aid in the threading of the same.

In the operation of my improved threading device there is a doubled end and either end may be inserted through the eye of the implement which is to be threaded, a thread laid in the loop in the center of the threading device and the other end used as a handle for manipulating the device.

As shown in Fig. 2, the end 2 of the threading implement is inserted through both eyes of a looper 7, the forward eye 8 near the point of the looper and the rear eye 9 at the heel.
of the looper. Between the two eyes there is the usual channel in the looper indicated at 10. The threading wire passes along this channel. If the loopers are very close together, then the portion 1 may be readily grasped by the operator and pulled to the position shown in Fig. 3. The looper thread, indicated at 11 in the drawings, is inserted in the loop 3 and the threading wire may then be drawn to the left as indicated by the arrow in Fig. 3 and thus the thread drawn through both eyes. The threading device may be inserted through the eye 9 only at the heel of the looper and the looper thread drawn through the eye 9 as indicated in Fig. 4, after which the portion 1 is inserted in the eye 8 and the thread carried through this eye. This can be done without removing the looper thread from the loop in the threading device.

It is well understood that the eyes of the looper are relatively small and not nearly so accessible for threading as the eye of a needle. Even when the looper is moved to a position where the eyes are accessible for threading, still it is difficult to accomplish the threading of the eyes due to their position and in part to the channel connecting the eyes. With my improved threading device either end may be inserted through the eyes of the looper referred to above. The small loop adjacent the thread loop may be compressed, if necessary, in order to pass through the eye and as it emerges from the eye, the larger loop may be contracted by pressure against the sides thereof which causes an expanding of the auxiliary or small loops and thus it is that the portion of the threading device which carries the thread is very resilient and flexible and may be passed through comparatively small thread eyes and without any undue clamping or pinching of the thread.

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

A threading device for the stitching elements of a sewing machine comprising strands of wire intertwisted to form extended end portions adapted to be inserted through the eye of the stitching element, and a central thread loop through which the thread to be inserted in the eye of the stitching element may be passed, said wires adjacent each side of said central thread loop being curved and crossed in opposite directions to form auxiliary yielding loops.

In testimony whereof, I affix my signature.

KARL MADER.