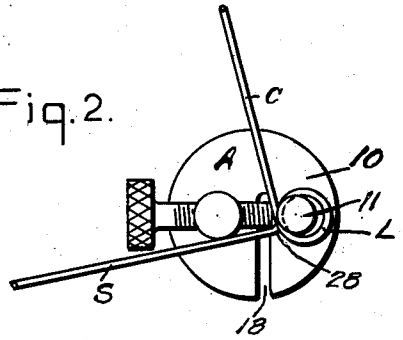
July 2, 1935. J. K. HOWELL 2,006,355

METHOD AND APPARATUS FOR FORMING WIRE LOOPS

Filed Aug. 22, 1934

Fig. 2.



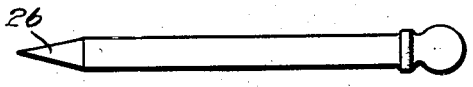


Fig. 5

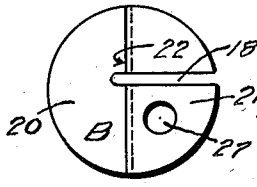


Fig. 4.

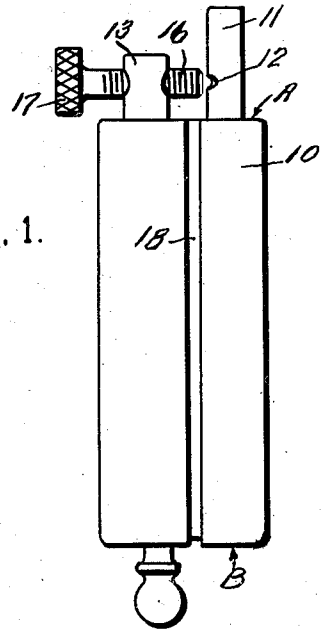


Fig. 1.

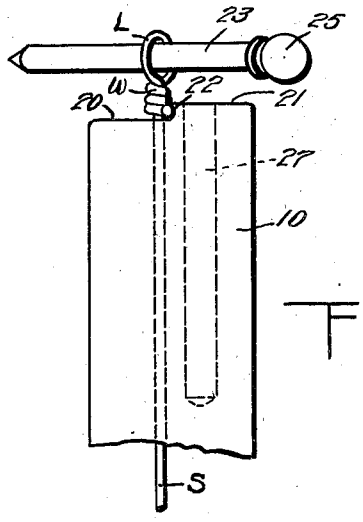


Fig. 3.

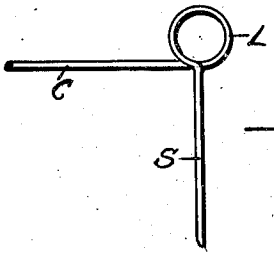


Fig. 6.

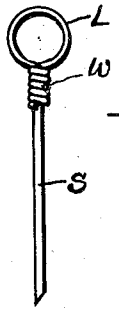


Fig. 7.

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METHOD AND APPARATUS FOR FORMING WIRE LOOPS

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2 Claims. (Cl. 140—104)

This invention relates to improvements in method and apparatus for forming loops or eyes in the ends of wire leaders commonly employed in fishing and for other purposes.

It is customary practice among fishermen, and especially in fishing for relatively heavy gamefish, to employ leaders formed of piano or other suitable wire and difficulty has been experienced in providing the wire with suitable and secure loops at their extremities, especially when upon the fishing grounds or where the usual commercial equipment for forming such loops is not available. Heretofore the main dependence of the fisherman in forming such loops has been a pair of pliers and often the resulting product has been disappointing in effecting unsightly and insecure loops through which fish and tackle have been frequently lost.

It is the object of my invention to provide a series of readily followed and easily performed operations for forming a loop in the extremity of a wire and securing the same permanently and compactly, together with apparatus of simple and convenient construction through which my improved method may be carried out.

With the above and other objects and advantages in view, the invention herein set forth consists in the method and mechanical aids for accomplishing the same, as fully set forth in the detailed description to follow.

The accompanying drawing illustrates the various steps employed in carrying out my improved method, and by way of example show an embodiment of the apparatus adapted to be utilized therein, in which:

Figure 1 is a view in side elevation of apparatus embodying my invention.

Fig. 2 is a top plan view of the same shown with a wire engaged therein illustrative of an early stage in the process of forming a loop therein.

Fig. 3 is a fragmentary view in side elevation of the device shown in Fig. 1 in reversed condition, the device being shown with the wire engaged therein and in the final stages of forming a loop.

Fig. 4 is an underside plan view of said device.

Fig. 5 is a detached view in side elevation of a metal pin utilized as an accessory to said device.

Fig. 6 is a detached view of the wire in which the loop is made showing the same partially completed as a result of the operations depicted in connection with Fig. 1.

Fig. 7 is a similar view of the wire with the loop completed as the result of the operations exemplified in Fig. 3.

Precedent to describing the improved method forming the colateral subject matter of my invention I will for the sake of clarity first describe certain preferred apparatus particularly adapted to carry out such method, reference being made to said drawing.

The reference numeral 10 indicates the body of my improved loop forming device preferably molded suitable plastic material in cylindrical form. From one end A of said body extends a cylindrical metal post 11 rigidly positioned upon one side of a diametrical line therethrough. Said post is formed with a shallow notch 12 on its side facing said diametrical line. Another post 13 is similarly embedded in the body at end A upon the side of said line opposite to the post 11 and preferably in a diametrical line at right angles to the first named line. The post 13 is formed with a screw-threaded horizontal bore to receive a binding-screw 16 having a knurled head 17 at its outer end and having its inner end directed to engage the post 11 at the notch 12 to secure a wire therein.

The body 10 is formed with a longitudinal radially directed groove 18 extending its entire length and to a depth to a short distance beyond the axis of the body. Upon the opposite end B the body is formed in two elevational planes 20 and 21, the ledge 22 therebetween being slightly undercut and extending in a diametrical line at right angles to the groove 18 so that the groove will substantially bisect the lower semi-circular plane 20 and extend slightly into the upper plane 21. As a convenience a metal pin 23, see Fig. 5, is carried with the device and is provided with a knob 25 at one end and a pick-point 26 at its opposite end. A tubular recess-sheath 27 is formed in the body extending therein from the end B to receive the pin when not in use.

My improved method of forming looped ends in wire may be described as follows: with particular reference to the device already described as conveniently affording the means for accomplishing the same. The piano or other wire W is placed horizontally in the notch 12 and the binding-screw 16 is firmly screwed thereon at approximately the point on the wire where the loop is to be made. The wire upon one side of the posts, usually the longer end, will be termed the standing-part S and that upon the opposite side, being of sufficient length to form the loop and connecting parts, will be termed the coiling-part C. When thus secured the standing-part

is given a horizontal bend at 28 against the end of the screw 16, the standing-part being brought up as close to the post 13 as it conveniently may. The coiling-part is then coiled horizontally about the post 11 to form the loop L in the size or dimensions desired, the extremity of said coiling-part extending at substantially right angles to the standing-part when these first operations are completed. The wire is then released from the binding-screw and will appear substantially as illustrated in Fig. 6 with the standing-part S directed radially with respect to the circular loop L.

The apparatus may then be reversed and the standing-part S inserted within the groove 18 and with the coiling-part C extending laterally over the lower plane portion 20. A suitable instrument, such as the pin 23, is then thrust through the loop as a turning lever, see Fig. 3, and turned in the direction to engage the laterally extending portion of the coiling-part against the undercut ledge 22 and to cause the edge of said ledge adjacent the groove 18 to serve as a die to act upon the wire of the coiling-part and effect a coil about the standing-part, as indicated at W in said view. When a sufficient number of coils are wrapped about the standing-part the end is cut off closely as a final operation, whereupon on removal the finished loop will appear as in Fig. 7. While any convenient and suitable instrument may be used in place of the pin 23 for effecting the turning of the loop, the pin is provided with a sharpened point 26 which makes it variously useful in a fisherman's kit, particularly in loosening knots and the like.

While I have described my invention with considerable detail it will be seen that it is essentially simple and readily performed by any person however unskilled. Also it should be noted that various steps in the method and certain details of construction of the apparatus are illustrative only and may be modified or equivalents employed, such as the particular form of clamp or binding-screw shown, and all such departures and modifications as may be found to lie within the scope of the granted claims are included within the protection sought thereby.

Having described my invention, what I claim, is:—

1. Apparatus for forming loops in wires, consisting of a body having a clamp at one end adapted to secure a wire therein, a fixed part of said clamp being a cylindrical rod rigidly secured in said body, said body having a longitudinal radially directed groove therein extending to slightly beyond the axis of the body, one end of said body having two plane faces at different elevations having an undercut diametrical ledge therebetween extending at right angles to said groove.

2. The method of forming looped ends in wires, consisting of clamping the wire intermediate its ends to provide a standing-part and a coiling-part upon opposite sides of the clamp, bending the standing-part adjacent the clamping point laterally to assume a position approximately ninety degrees relative to its original position, forming a loop with said coiling-part having its center substantially in line with said standing-part whereby the extremity of said coiling-part extends at approximately right angles to said standing-part, removing the clamp from said wire, engaging said standing-part in a groove whereby said coiling-part extends laterally over a plane surface, and turning said loop to cause said coiling-part to engage upon a shoulder adjacent said groove to coil the coiling-part about the standing-part and thus secure said loop.

JAMES K. HOWELL.