H. W. STONE.

WIRE LOOPER.

APPLICATION FILED JULY 29, 1907.

907,095. Patented Dec. 15, 1908.

Fig. 1.

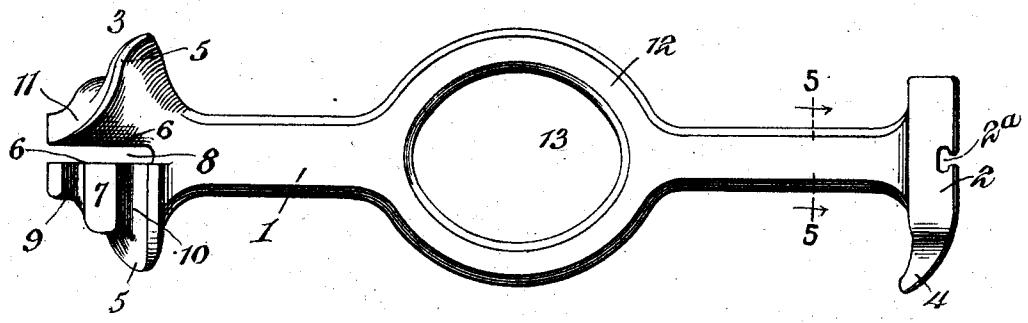


Fig. 2.

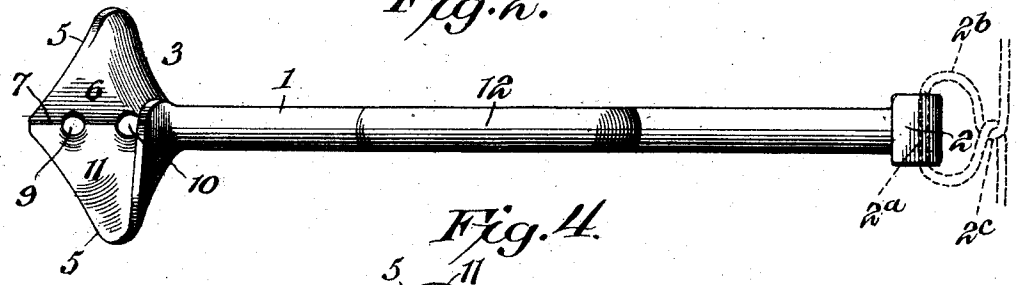


Fig. 4.

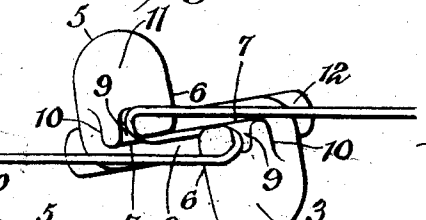


Fig. 3.

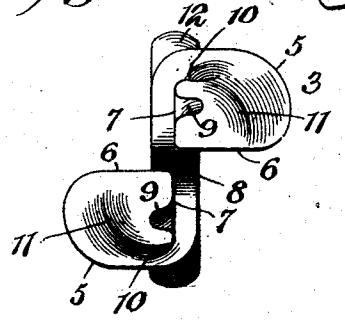
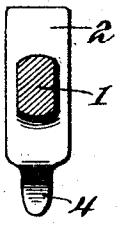


Fig. 5.



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WIRE-LOOPER.

No. 907,095. Specification of Letters Patent. Patented Dec. 15, 1908.

Application filed July 29, 1907. Serial No. 386,021.

To all whom it may concern:

Be it known that I, HEMAN WARD STONE, a citizen of the United States, residing at Morris, in the county of Stevens and State of Minnesota, have invented a new and useful Wire-Looper, of which the following is a specification.

The invention relates to a wire looper for tightening fence wires by making a loop in them.

The object of the present invention is to improve the construction of wire loopers, and to provide a simple, inexpensive and compactly arranged tool of this character, of a size adapted to be conveniently carried in the pocket, and capable of being operated by the handle of a hammer, or other lever.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:—Figure 1 is a side elevation of a wire looper, constructed in accordance with this invention. Fig. 2 is an elevation, the head of the tool being arranged in another position and the shank or bar being shown edgewise. Fig. 3 is an end view. Fig. 4 is a similar view, showing the tool in another position and illustrating the manner of forming a loop. Fig. 5 is a sectional view on the line 5—5 of Fig. 1.

Like numerals of reference designate corresponding parts in all the figures of the drawing.

The wire looper, which consists of a single piece of metal, is designed to be constructed of steel, or other suitable material and it is made of a size to be conveniently carried in the pocket. The wire looper consists of a shank or bar 1, provided at one end with a hammer head 2 and having a looper head 3 at the other end. The hammer head is provided at one end with a hammer face and it has a projecting lug or portion 4, adapted to be advantageously employed for extracting staples.

The looper head is provided with a pair of spaced substantially cross sectionally quadrant shaped jaws 5, formed integral with the shank or bar 1, and arranged diagonally opposite each other and spaced apart to form a wire-receiving fork. The jaws are provided with straight faces 6 and 7, forming inner corners or angles at the wire-receiving space or opening 8. The corresponding faces 6 of the jaws are smooth and are arranged in parallel planes and are adapted to permit the device to be readily withdrawn from a loop after the same has been excluded, as hereinafter fully explained. The other faces 7 of the jaws are arranged in substantially coincident planes, and the device is provided with one or more pairs of grooves 9 and 10, forming shoulders for preventing the wire from slipping while the device is being twisted or rotated to form a loop. The outer faces 11 of the jaws are inclined and are formed by the taper of the jaws. The taper enables loops of different sizes to be made, and when it is desired to make a small loop, the wire is engaged with the outer grooves 9 of the jaws. When the wire is engaged with the inner grooves 10, a much larger loop will be formed, as will be readily understood. A loop is formed in a fence wire by introducing the wire into the space between the jaws and engaging the said wire with one pair or set of grooves. The looper is then twisted or rotated one and one half revolutions, which forms the loop. It is then turned backward slightly to bring the wire to the smooth faces 6, which permit the loop to slide readily off the tool. Owing to the taper the pull or tension of the tightening wire causes those portions of the wire, which engage the faces 11, to slide on said faces, so that the wire at opposite sides of the tool will be forced to a meeting and crossing point at the ends of the jaws. Then further rotary movement of the tool forms a twisted neck to the loop to prevent the pull or tension of the wire from stretching out the loop after the tool is removed. One complete revolution of the tool from the position where the wire is inserted brings the opposite portions of the loop to the meeting and crossing point and the additional half revolution forms the said neck. The final twisting of the wire to form the neck increases the tension of the wire, which is liable to break old wire, and in order to enable the same to be stretched without liability of breaking the wire, means are provided for forming the neck by twisting the loop without further stretching the fence wire.

The hammer head 2 is provided between its ends with a groove 2^a, extending across the head at a point in line with the longitudinal axis of the shank or bar and having an enlarged inner portion, forming opposite wire-engaging walls, which have outer shoulders to prevent the wire from slipping out of the groove when the loop is twisted. The loop 2^b is first formed by twisting the wire with the looper head 3 to form a loop, which will hold until the tool can be reversed to arrange the loop in the groove of the hammer head. The tool is then rotated on its longitudinal axis to form the twisted neck 2^c. The neck 2^c is formed of the side portions of the loop 2^a, which is not under tension and as the tension of the wire is not increased by the formation of the neck 2^c, there is no liability of the wire breaking during such operation.

The shank or bar is provided between its ends with an intermediate circular or ring-shaped portion 12, having an opening 13, which is adapted to receive the handle of a claw hammer, or other object to provide a lever for enabling the device to be conveniently rotated to twist the wire. The enlargement projects equal distances at opposite sides of the shank, and its outer curved edges merge with the sides of the shank. The ring-shaped enlargement positions the hammer handle centrally with relation to the wire twisting device. The opening is designed particularly for the handle of a claw hammer, as the latter is almost universally carried when either mending or erecting wire fences. Any other suitable device, however, may be introduced into the opening 13 for rotating the tool.

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

1. A reversible wire looper comprising a shank having an integral wire twisting device at each end and provided with an integral ring-shaped enlargement forming an opening to receive the handle of a hammer or other tool and located at an intermediate point between the wire twisting device, whereby the handle may be used for operating either wire twisting device, said looper being reversible on the handle to present either device to the wire and the said enlargement projecting at equal distances from opposite sides of the shank to center the handle with relation to the wire twisting device.

2. A wire looper rotatable on a longitudinal axis and consisting of a shank, and substantially cross-sectionally quadrant-shaped jaws formed integral with the shank and arranged diagonally and spaced apart to form a fork, said jaws being tapered outwardly and provided along the tapered portions with wire engaging means, whereby the wire may be twisted around the tapered portions at different points on the same to form loops of different sizes.

3. A wire looper provided with rigid integral cross-sectionally quadrant-shaped jaws tapered outwardly and having their adjacent faces arranged in longitudinal planes, each jaw being provided with a series of wire receiving grooves located at different points on the tapered portions of the jaws, whereby wire may be twisted around the tapered portions at different points on the same to form loops of different sizes.

4. A wire looper provided with a pair of rigid integral jaws spaced apart to receive a wire between them, said jaws being tapered and provided along the tapered portions with a plurality of wire receiving grooves, whereby the wire may be twisted around the said tapered portions at different points thereon to form loops of different sizes.

5. A wire looper provided with a pair of rigid integral jaws arranged at diagonally opposite points and having inner side faces forming corners at the spaces between them, two of the said faces being smooth and arranged in parallel planes to permit the loops to slide freely off the jaws, said jaws being also provided at points along their tapered portions with wire engaging means, whereby the wire may be twisted around the tapered portions at different points along the same to form loops of different sizes.

6. A wire looper provided with a pair of rigid integral tapered jaws arranged diagonally opposite each other and spaced apart to receive a fence wire between them, said jaws having wire engaging faces arranged in coincident planes and provided with a series of wire receiving grooves located at different points along the tapered portions of the jaws for enabling the wire to be twisted around the said tapered portions at different points to form loops of different sizes.

7. A wire looper comprising a shank or bar, and rigid tapered jaws arranged at one end of the shank or bar and spaced apart to receive a fence wire, said jaws being substantially quadrant shaped and arranged diagonally opposite each other and having wire-engaging faces arranged in coincident planes and provided with shoulders, said jaws being also provided with smooth straight faces arranged in parallel planes to permit a loop to slide freely off the looper.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HEMAN WARD STONE.

Witnesses:
ALFRED F. STONE,
HAROLD W. STONE.