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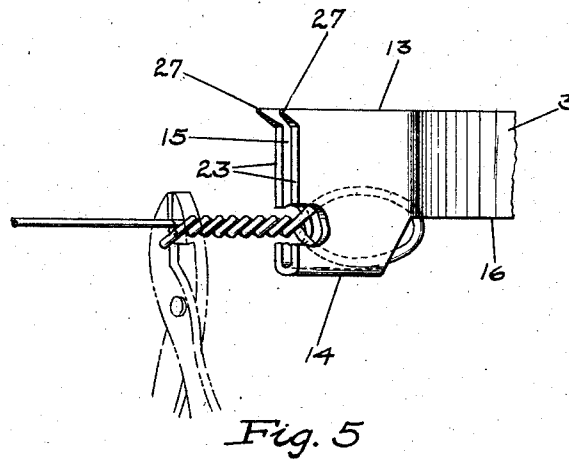
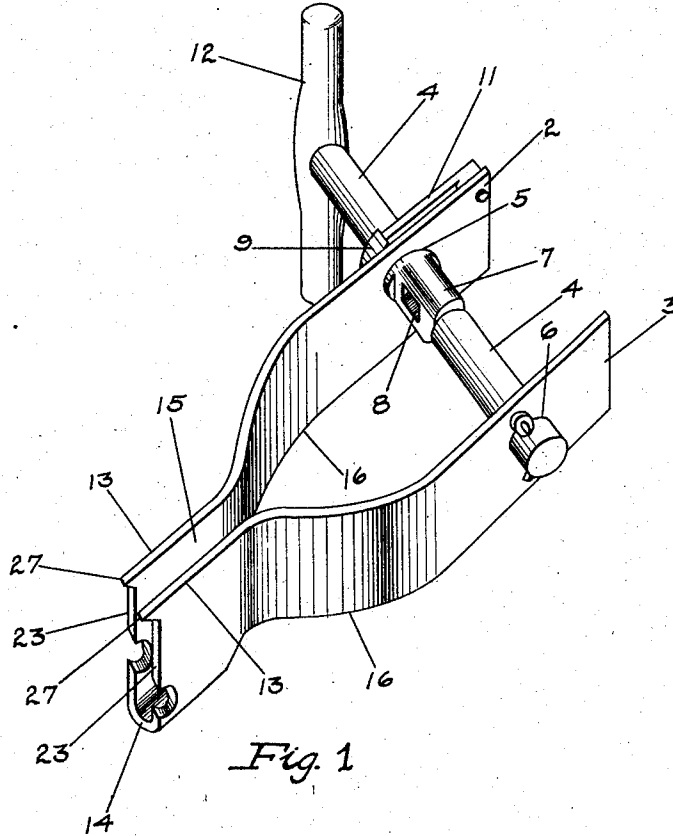
E. W. NELSON

1,777,762

WIRE STRETCHER AND SPLICER

Filed June 8, 1928

2 Sheets-Sheet 1



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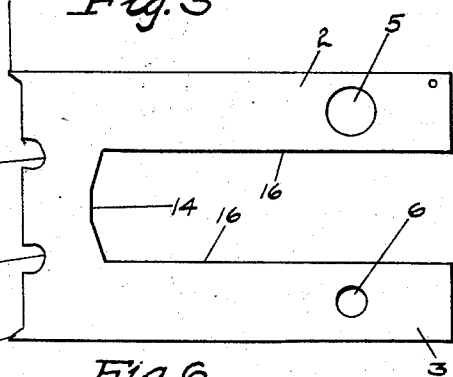
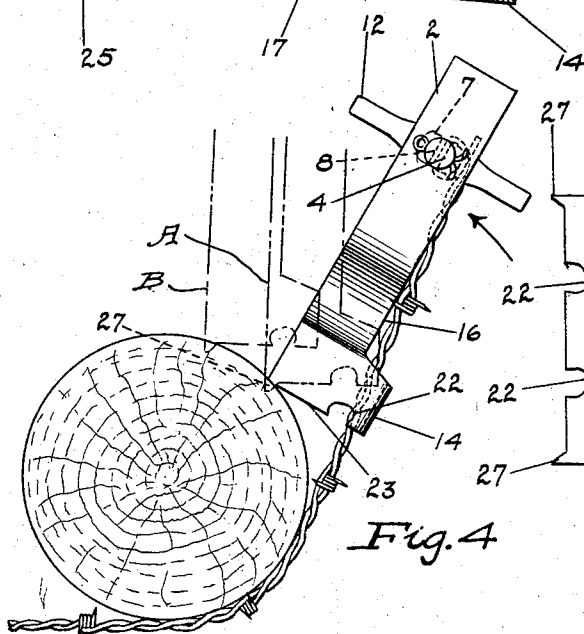
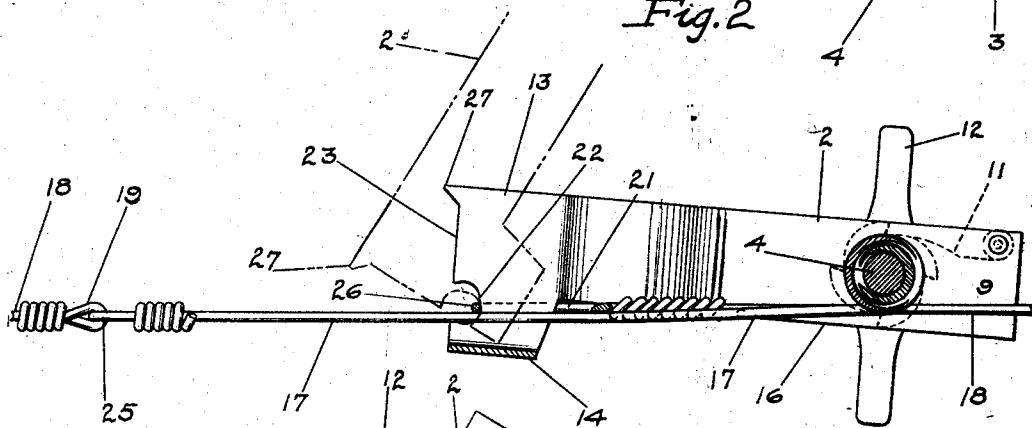
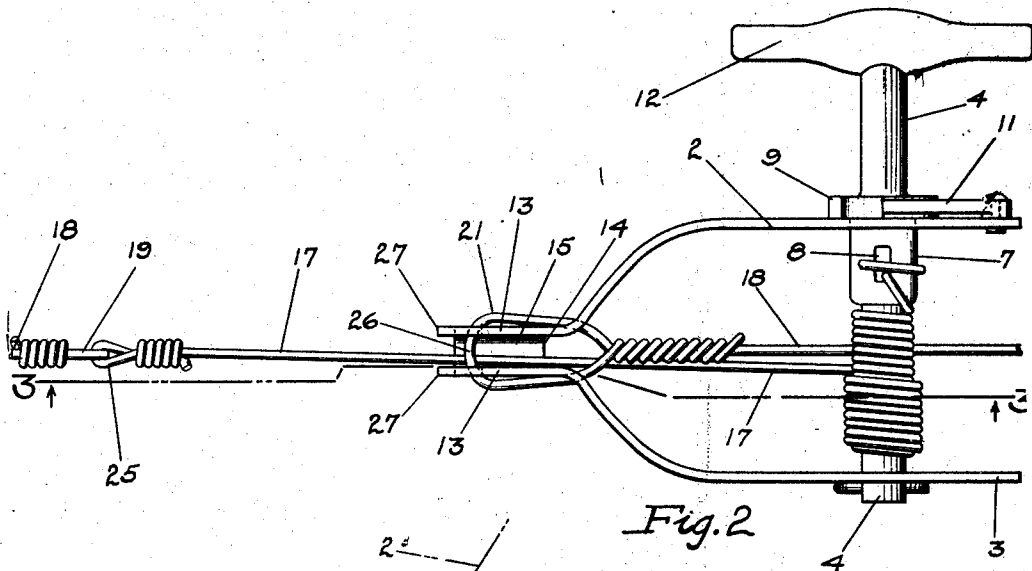
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WIRE STRETCHER AND SPLICER

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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

EMIL W. NELSON, OF MINNEAPOLIS, MINNESOTA

WIRE STRETCHER AND SPLICER

Application filed June 8, 1928. Serial No. 283,899.

This invention relates to an improved wire stretcher and splicer adapted for use to repair wire fences and for splicing broken wires, the device having a shaft adapted to contain a supply of wire adapted for use to connect together the ends of a broken wire.

5 An object of the invention is to provide a wire stretcher and splicer comprising a frame having a shaft mounted at one end thereof and provided with a ratchet adapted to retain the shaft in adjusted positions, and a wire guide being provided at the opposite end of the frame and off-set to one side thereof, and a notch also being provided in the frame adjacent to said guide adapted to receive a wire loop, formed at one end of a broken wire, and the shaft being adapted to hold a supply of wire and having one end adapted for connection with the other end of the broken wire, whereupon rotation of the shaft will pull the broken wire taut, after which the tool may be rotated about the wire to splice a new piece of wire between the broken ends of the old wire, while the wire is held taut by the tool.

A further object of the invention is to provide a wire stretcher and splicing tool having a shaft mounted at one end thereof about which the wire may be wound, to take up slack in the wire, and the opposite end of the frame having a guide for the wire and also a pair of prongs adapted to engage a fence post to prevent the tool from slipping thereon, when tightening a wire.

The particular object of the invention therefore is to provide an improved wire stretcher and splicing tool.

Other objects of the invention will appear from the following description and accompanying drawings and will be pointed out in the annexed claims.

In the accompanying drawings, there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown as various changes may be made within the scope of the claims which follow.

In the accompanying drawings forming part of this specification:

Figure 1 is a perspective view of the improved tool;

Figure 2 is a plan view of the tool, showing it positioned for splicing the broken ends of a wire;

Figure 3 is a longitudinal sectional view on the line 3—3 of Figure 2;

Figure 4 is a side elevation of the tool, showing it adapted for use to secure a barbed wire to a fence post;

Figure 5 is a detail perspective view, showing the tool used for forming a loop at one end of a wire; and

Figure 6 is a view, showing the first step in forming the tool frame.

The novel wire stretching and splicing tool featured in this invention comprises a frame provided with spaced legs 2 and 3, having a shaft 4 rotatably mounted in suitable apertures 5 and 6, provided adjacent the ends of the legs, as shown in Figures 1 and 6. The shaft 4 has an enlarged flattened portion 7 provided with an elongated opening 8 adapted to receive one end of the wire, as shown in Figure 2. A ratchet 9 is provided upon the shaft 4 exteriorly of the leg 2 and has a pawl 11 engaged therewith and adapted to retain the shaft 4 in adjusted positions. A hand grip 12 is formed on the shaft for the convenience of the operator in rotating the latter.

The opposite ends of the legs 2 and 3 are bent inwardly to provide spaced parallel portions 13, united by a connection 14, as shown in the drawings. The legs 2 and 3, spaced portions 13 and the connection 14 are integrally formed of sheet metal, as shown in Figures 1, 5, and 6. The gap 15 provided between the portions 13 form a guide for the wire, as shown in Figures 2 and 3. The connection 14 is off-set from the lower edges 16 of the legs 2 and 3, as best shown in Figure 3, so that the wire strand 17, passing through the gap 15 adjacent to the connection 14, is out of alinement with the medial plane of the frame legs 2 and 3, thereby causing the tool to normally retain the position

shown in Figure 3, while the shaft 4 is being rotated to tighten the wire.

In Figures 2 and 3, the tool is positioned as when used for splicing a new piece of wire into a broken wire. As here shown, the broken wire 18 has loops 19 and 21 provided at the broken ends thereof, the latter being engaged with notches 22 provided in the edges 23 of the frame, as shown in Figures 1 and 3. The bottoms of these notches are preferably inclined as shown in Figure 6 to cause the wire loop engaged therewith to move outwardly away from the medial plane of the frame. The wire 17, used for splicing together the ends of the wire 18, may have one end wound upon the shaft 4, as shown in Figure 2. One end of this wire is then secured to the loop 19 of the broken wire 18, as shown at 25, in Figures 2 and 3, and passes through the guide provided between the frame portions 13, connection 14 and the portion 26 of the wire loop 21, as shown in Figure 3. The hand grip 12 is then operated to rotate the shaft 4, whereupon the wire 17 will be wound upon the shaft, resulting in the wire 18 being pulled taut because of the wire 17 being connected with the loop 19 and the frame of the tool being secured to the loop 21 of the broken wire. When the wire 18 has been pulled sufficiently taut, the tool frame is manually moved from the full to the dotted line position shown in Figure 3, after which it may be rotated about that portion of the splicing wire 17, connecting together the loops 19 and 21 of the broken wire, thereby splicing a piece of new wire into the broken wire while holding the latter taut.

In Figure 3, it will be noted that the notches 22 at the end of the tool frame are located substantially in alinement with the edges 16 of the legs 2 and 3, so that the splicing wire 17 passes beneath the portion 26 of the loop 21 adjacent to the connection 14, which is sufficiently out of alinement with the medial plane of the tool frame to cause the tool to be normally retained in the position shown in Figure 3 without any danger of the right hand end thereof, when viewed as shown in Figure 3, accidentally swinging upwardly to the dotted line position shown in this figure. Thus, it will be seen that the tool will retain its normal operating position while the shaft 4 is being rotated to pull the wire taut, the ratchet 9 and dog 11 functioning to hold the shaft in adjusted positions while splicing the new wire 17 between the broken ends of the wire 18.

Means are also provided upon this novel wire stretching and splicing tool for anchoring the tool frame to a fence post, when it is desired to tighten a wire and secure one end thereof to the post by coiling it thereabout. Figure 4 illustrates the operation of the tool when used to thus secure a wire to a fence

post. To prevent the tool from slipping upon the post, it is provided with prongs 27, formed at the upper corners of the edges 23 of the frame. These prongs are adapted to dig into the post as shown in Figure 4, when the tool is swung in the direction indicated by the arrow in this figure. To tighten the wire between posts, the end of the wire may be pulled around a post in the following manner: the prongs 27 of the tool are engaged with the periphery of the post as shown in Figure 4, and the tool frame to which the end of the wire is secured by means of the ratchet-locked shaft 4, is oscillated or moved in the direction indicated by the arrow, using the prongs as a pivot point, until it reaches the dotted line position indicated by the letter A. The operator then tilts the tool frame backwardly and at the same time exerts an outward pull thereon until the prongs 27 and tool frame are moved out of engagement with the post. When the prongs are thus disengaged from the post, the operator, while pulling outwardly on the frame, will shove the prong end thereof forwardly and at the same time tilt the outer end of the frame backwardly and allow the edges 23 to engage the periphery of the post. The tool frame is then tilted forwardly, thereby causing the prongs 27 to again engage the post. Because of the frictional engagement of the wire with the periphery of the post, the operator can easily hold the wire against slippage on the post while shifting the tool frame as above described. As the tool frame is moved forwardly to the dotted line position indicated by the letter B, the wire will move relative to the post and become tightened between posts. This operation is repeated until the wire has been sufficiently tightened.

Figure 5 illustrates the tool as used when forming a loop upon one end of a wire. When thus forming a loop, the wire is bent upon itself and the end of the wire and also the wire proper are then held by a pair of pliers or some similar tool, after which the tool frame is rotated to twist the two strands of wire, as clearly shown in Figure 5, thereby providing a loop at the end of the wire, as shown.

The tool is very simple and inexpensive in construction and may be manufactured at a minimum cost. The frame is constructed of sheet metal by suitable blanking and forming dies. Figure 6 shows the frame when blanked from a piece of sheet metal, the apertures 5 and 6, notches 22 and prongs 27 being formed in one operation, after which the metal is bent by suitable forming dies to the form shown in Figure 1. The integral structure of the frame therefore is an important feature of the invention because it greatly simplifies the construction of

the tool and also results in the production of a tool which may be manufactured at a very small cost, no machine work being required in the manufacture of the tool.

5 In Figures 2 and 3 of the drawings, the tool is shown as used for tightening and splicing a smooth wire. Obviously, it may be used for tightening and splicing other kinds of wire as, for example, the barbed
10 wire shown in Figure 4. The guide provided between the parallel portions 27 is sufficiently wide to permit the barbs to pass therethrough, as shown in Figure 4.

I claim as my invention:

15 1. A combination wire stretcher and splicer comprising a frame integrally formed of sheet metal and including spaced-apart side members disconnected at one end, wire winding means supported in the disconnected
20 end portions of said side frame members, and the opposite end portions of said frame members being bent inwardly and provided with an integral connection therebetween, said connection being offset from the medial
25 plane of the frame and cooperating with the connected end portions of said side frame members to provide a guide for the wire.

2. A combination wire stretcher and splicer comprising a frame integrally formed of
30 sheet metal and including spaced-apart side members disconnected at one end, wire winding means supported in the disconnected end portions of said side frame members, the opposite end portions of said frame members
35 being bent inwardly and provided with an integral connection therebetween, said connection being offset from the medial plane of the frame and cooperating with the connected end portions of said side frame members to
40 provide a guide for the wire, and means adapted to prevent slippage of the frame, when engaged with a fence post.

3. A combination wire stretcher and splicer comprising a frame integrally formed of
45 sheet metal and including spaced-apart side members disconnected at one end, wire winding means supported in the disconnected end portions of said side frame members, the opposite end portions of said frame members
50 being bent inwardly and provided with an integral connection therebetween, said connection being offset from the medial plane of the frame and cooperating with the connected end portions of said side frame members to
55 provide a guide for the wire, and the connected end portions of said side frame members having notches in their end edges adapted to receive a loop terminally formed on a broken wire whereby said broken wire end
60 may be held while splicing another piece of wire thereto.

4. A wire stretcher comprising an integral frame including spaced-apart side members disconnected at one end, wire-winding means
65 supported between the disconnected end por-

tions of said side frame members, and the opposite end portions of said frame members being bent inwardly and provided with an integral connection, said connection being offset from the medial plane of the frame and
70 cooperating with the connected end portions of said frame members to provide a guide for the wire.

In witness whereof, I have hereunto set my hand this 5th day of June 1928.

EMIL W. NELSON.

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