(No Model.)

E. L. WILLIAMS.

WIRE CRIMPING AND FASTENING PLIERS.

No. 526,766. Patented Oct. 2, 1894.

Fig. 1.

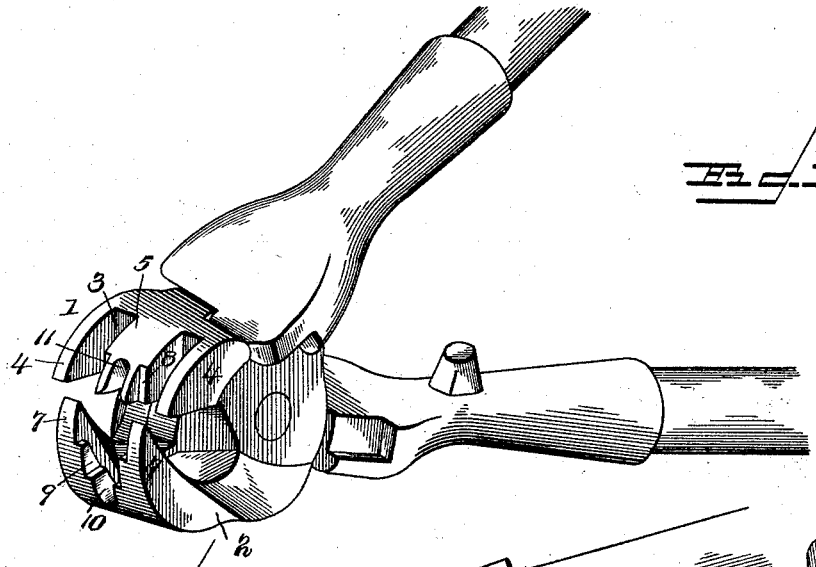


Fig. 3.

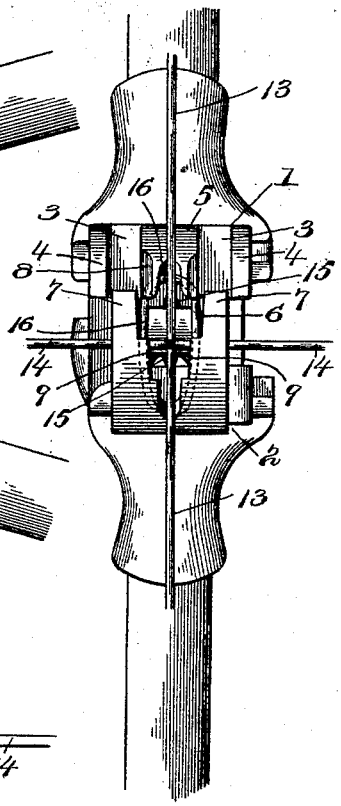


Fig. 2.

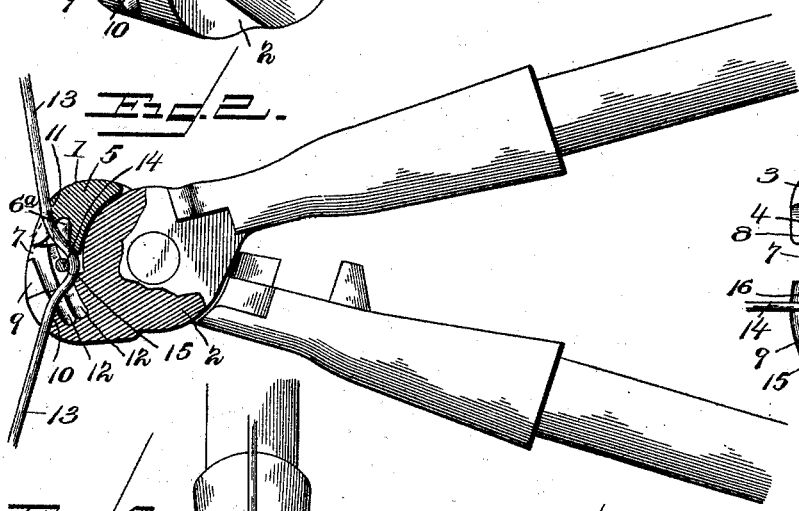


Fig. 4.

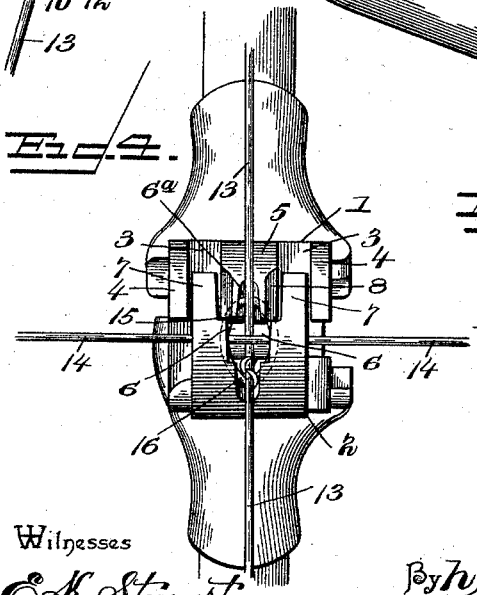
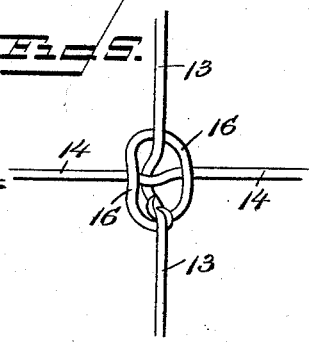


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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WIRE CRIMPING AND FASTENING PLIERS.

SPECIFICATION forming part of Letters Patent No. 526,766, dated October 2, 1894.

Application filed April 27, 1894. Serial No. 509,265. (No model.)

To all whom it may concern:

Be it known that I, EUGENE L. WILLIAMS, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented new and useful Wire-Crimping Pliers, of which the following is a specification.

My invention relates to an improvement in wire bending or crimping pliers for use in forming ties for the connection of intersecting wires of fences and other structures, the objects in view being to provide a simple and efficient tool capable of crimping the intersecting wires and bending a staple or staple-shaped wire around the intersection in such a manner as to prevent independent relative movements in any direction of the connected wires.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a perspective view of a pair of pliers embodying my invention, the jaws being shown open. Fig. 2 is a side view, partly in section, showing the jaws closed in the act of crimping the intersecting wires, said wires being shown extending through the implement. Fig. 3 is a front view of the pliers, showing the jaws open, the intersecting wires extending therethrough, and the staple adjusted for crimping. Fig. 4 is a similar view with the jaws closed and showing the position and shape of the crimped tie. Fig. 5 is a detail view in perspective of the crimped tie in connection with the intersecting wires.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The pliers are formed of two intersecting pivotally-connected levers, provided beyond their intersection, respectively, with the jaws 1 and 2. The upper jaw 1 is provided upon opposite sides of its vertical center with the parallel twin recesses 3, which are bounded at their outer sides by the parallel ears 4, and are separated by the interposed die 5, provided in its lower face with the arc-shaped seat 6^a, adapted to receive the looped end of a staple. The lower jaw 2 is bifurcated by means of a V-shaped notch 6, thus forming the parallel arms 7, which are adapted, when the pliers are closed, to fit into the recesses 3, of the opposite jaw, whereby said jaws are caused to interlock, the die 5 fitting into the V-shaped notch 6. The die 5 is provided upon opposite sides with the shoulders 8, which extend under the overhanging lips 9, which are flush with the front faces of the arms 7.

The apex of the V-shaped notch 6 forms a guide 10, which is disposed at an angle to a corresponding guide 11, formed in the center of the die 5. The relative disposition of these guides is such that when the jaws are open they are in alignment, and when the jaws are closed they are disposed at an obtuse angle. The arms 7 of the jaw 2 are tapered toward their extremities to provide a transverse opening between the jaws when closed for the accommodation of the horizontal wire of the structure operated upon, or the wire which is located perpendicularly to the wire lying in the guides 10 and 11. The arms 7 are under cut adjacent to their bases to form the channel dies 12, which are arranged in different planes and are designed for the reception of the terminals of the staple, which is employed in forming the tie. These channel dies are curved in order to turn the terminals of the staple and curve them inwardly to overlap when the jaws are closed.

This being the construction of my improved pliers, the operation thereof is as follows: The jaws are placed in operative relation with the intersection of two wires, whereby the vertical wire, which is shown at 13, extends through the registering guides 10 and 11, and the horizontal wire 14 intersects the wire 13 between said guides and between the jaws. The jaws are now closed, thereby bending the vertical wire backwardly or into the depressions 15, which are formed at the intersection of the jaws, and at the same time bending the horizontal wire forwardly at the point of intersection, whereby they are crimped equally and upon both sides of the

point of intersection. The jaws are now opened and preserving the same relative position of the wires 13 and 14, the staple 16 is arranged at its looped end in the seat 6^a, and in rear of the vertical wire above the point of intersection with the horizontal wire. The sides of the staple are then carried in front of the horizontal wire upon opposite sides of the intersection and are arranged, respectively, in the channel dies of the jaw 2, as clearly shown in Fig. 3.

When the jaws are closed the terminals of the staple are bent inwardly, or toward each other, in different planes, thus forming a ring which passes in rear of the vertical wire above and below the intersection and in front of the horizontal wire upon both sides of the intersection.

Fig. 5 shows the completed tie in its operative position, and when the parts are united as described independent relative movement of the wires is prevented.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. The combination of interlocking pivotally connected jaws provided at their extremities with aligned guides, and one of the jaws being cut away to form a transverse opening for the reception of a wire arranged at right angles to a wire lying in said guides, said transverse opening being out of line with the guides, whereby when the jaws are closed the wires engaged respectively in the guides and the transverse openings are thrown out of the same plane and are thereby crimped, said jaws being further provided, respectively, with a seat and channel dies, substantially as described.

2. The combination of co-operating jaws provided respectively with recesses and arms to fit in said recesses, said arms being tapered toward their terminals to provide a transverse space for the reception of a wire, and the jaws being provided with central registering guides for the reception of a wire which is located perpendicularly to the transverse wire, substantially as specified.

3. The combination of a jaw 1 provided with a central die having an arc-shaped seat for the reception of the looped end of a staple and having twin recesses arranged upon opposite sides of said die, and a co-operating jaw 2 bifurcated to form arms to fit in said recesses, the bases of said arms being undercut to provide channel dies in different planes for the reception of the terminals of said staple, substantially as specified.

4. The combination of pivotally connected jaws 1 and 2, the jaw 1 being provided with a central die having lateral shoulders 8 and a terminal guide 11 and parallel side ears 4, and jaw 2 being provided with parallel arms 7 which are spaced apart to form an intermediate notch for the reception of the die of the other jaw, said arms being provided with overhanging lips adapted to bear against the shoulders 8 on said die, and being further provided with a guide 10 in alignment with the guide 11, substantially as described.

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

EUGENE L. WILLIAMS.

Witnesses:
JOHN S. WILLIAMS,
COSMOS KELLER.