

H. W. FISHER.  
TOOL FOR SPLICING WIRES.

Patented Sept. 2, 1890.



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# UNITED STATES PATENT OFFICE.

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## TOOL FOR SPLICING WIRES.

SPECIFICATION forming part of Letters Patent No. 435,415, dated September 2, 1890.

Application filed February 20, 1890. Serial No. 341,146. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY W. FISHER, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Splicing-Tools, of which improvements the following is a specification.

The invention described herein relates to certain improvements in tools for connecting or splicing the ends of wires generally, but more especially the wires of electric cables, and has for its object a construction of tool wherein a strip of metal is pressed tightly around the wires to be connected, thereby bringing interlocking projections and recesses on the edges of said strips into line vertically with each other, and said interlocking projections and recesses are then by the further operation of the tool forced into engagement with each other.

In general terms the invention consists in the construction and combination of mechanical devices or elements, all as more fully hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a view in side elevation of my improved tool. Fig. 2 is an edge elevation of the same. Fig. 3 is a detail view of the jaw for effecting the engagement of the interlocking parts of the sleeve. Fig. 4 is a sectional view, the plane of section being indicated by the line *xx*, Fig. 2. Fig. 5 is a sectional view on the line *yy*, Fig. 1. Fig. 6 is a detail view showing a modification of the sliding head. Fig. 7 is a sectional view showing the position of the parts at the beginning of the splicing operation. Fig. 8 is a similar view showing the position of the parts after the operation of the sliding head. Fig. 9 shows the position of the parts at the end of the splicing operation. Fig. 10 is a plan view of the binding-strip. Fig. 11 is a view of the completed joint; and Fig. 12 is a front view of one of the dies, showing the indenting-ribs.

In order to render the construction and operation of the tool more clear, I will first describe the joint which the tool is designed to form, the construction and manner of forming the joint being clearly shown in Figs. 7 to

11, inclusive. The inclosing-sleeve is formed by a strip of metal *a* of a length sufficient to extend around two wires arranged side by side and to permit of the formation of the interlocking projection *b* and recess *c* at the ends, as shown in Fig. 10. The length of the strip will vary, of course, with the diameter of the wires to be spliced and may be of any suitable width. This strip is bent into a ring shape, as shown in Fig. 7, and the wires are arranged therein preferably side by side, the ends overlapping. The sleeve is then pressed tightly around the wires until the interlocking parts overlap one another, and then said interlocking parts are pressed into engagement with each other, as shown in Figs. 9 and 11. The tool employed in the formation of this joint consists of two jaws A and B, pivoted together and provided with suitable closing-handles *e* and *d*. The jaw A is slotted, as shown in Figs. 2 and 4, and through this slot is passed the handle of the jaw B. The pivot-pin 1 is secured as against rotation in the handle *d* by the key 2 and has bearings in the cheek-pieces on each side of the slot in the jaw A, as clearly shown in Fig. 5. This construction permits of the movement of the jaws A and B toward each other, and also insures a rotation of the pivot-pin with reference to the jaw A. The sides of the jaw A are grooved longitudinally from the front end thereof back to a point in the rear of the pivot-pins, as shown in Figs. 1, 4, and 5, for the reception of the side straps 3 of the movable head 4. In these side straps are formed eyes for the reception of disks 5, secured eccentrically on the outer ends of the pivot-pin 1. These disks or eccentrics are so arranged on the pivot-pin that by the rotation imparted to the pin in closing the jaws the head 4 will be moved inwardly and forced outwardly when the jaws are opened.

On the head 4 is attached a die-block 6, having a groove 7 formed in its operative face for the reception of the one side of the sleeve *a*. As the head 4 is drawn inwardly by closing the jaws A and B, the die 6 forces the sleeve and inclosed wires against a correspondingly-grooved die 8, secured to the jaw A, as shown in Figs. 4, 7, and 8, and by the complete inward movement of the die 6 the sleeve is closed up tightly, binding the two wires to-



gether, and the two edges of the sleeve having the interlocking parts are forced into line, but one on top of the other, as shown in Fig. 8. The parts of the tool are so proportioned  
 5 that the head 4 and die 6 have completed their inward movement before the jaws A and B are entirely closed. As soon as the dies have closed the sleeve around the wires the jaw B comes into operation and forces the  
 10 interlocking projections into engagement. It is preferred to attach to the jaw B a die-block 9, having a rib 10 or series of small projections or points thereon adapted when the jaws are entirely closed to bear upon the up-  
 15 permost edge of the sleeve and force it down into line with the other edge, thereby causing the interlocking parts of the sleeve to engage.

In lieu of attaching the block 6 by means  
 20 of screws to the head 4, it may be formed integral therewith, as shown in Fig. 6, and the groove 7 is formed in the plate 11, arranged in a recess in the block, as shown.

In order to obviate any liability of the with-  
 25 drawal of the wires from the sleeve, small ribs 12 may be formed on the operative faces of the dies, as shown in Fig. 12, said ribs serving to indent the sleeve and wires, as indicated in dotted curved lines in Fig. 11.

30 I claim herein as my invention—

1. In a tool for splicing wires, the combination of a pair of jaws movable toward and

away from each other and a pair of dies mounted on one of said jaws and movable with reference to each other, substantially as set forth. 35

2. In a tool for splicing wires, the combination of a pair of jaws movable toward and away from each other and a pair of dies mounted on one of said jaws, one of the dies being operated toward and from the other by the  
 40 other of the said jaws in the closing and opening movements, substantially as set forth.

3. In a tool for splicing wire, the combination of a pair of jaws movable toward and away from each other, a pair of grooved dies  
 45 mounted on one of said jaws and movable with reference to each other, and a rib or projection on the opposite jaw, substantially as set forth.

4. In a tool for splicing wires, the combination of a pair of jaws, a pivot-pin connecting  
 50 said jaws and rotated by the movement of one of the jaws, a head provided with a grooved die mounted in the other of the said jaws, eccentrics secured to the pivot-pin for operating  
 55 the head, and a grooved stationary die on the latter-named jaw, substantially as set forth.

In testimony whereof I have hereunto set my hand.

HENRY W. FISHER.

Witnesses:

DARWIN S. WOLCOTT,  
 R. H. WHITTLESEY.