

F. P. HUSTON.
 PLIERS FOR STRIPPING INSULATION FROM ELECTRIC WIRES.
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Patented Apr. 9, 1912.

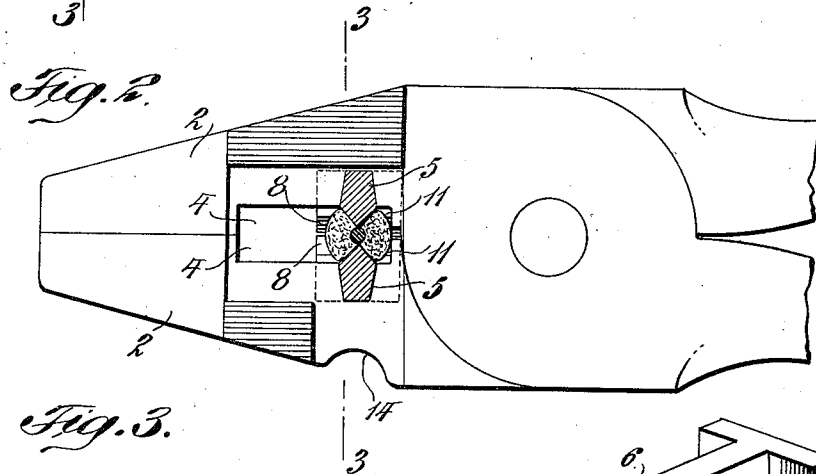
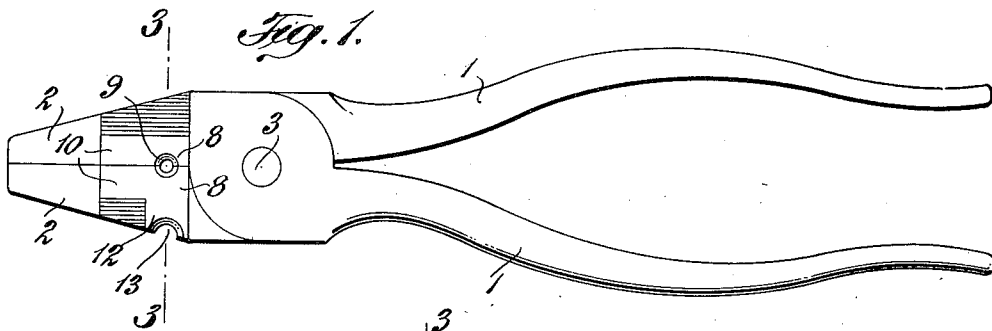
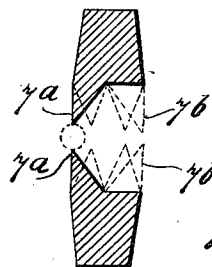
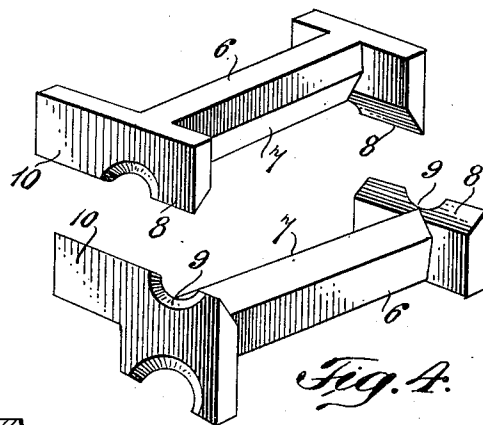
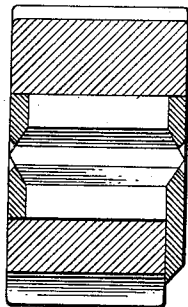


Fig. 3.



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PLIERS FOR STRIPPING INSULATION FROM ELECTRIC WIRES.

1,022,679.

Specification of Letters Patent.

Patented Apr. 9, 1912.

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To all whom it may concern:

Be it known that I, FRANK P. HUSTON, a citizen of the United States, residing at Dumont, county of Bergen, and State of New Jersey, have invented certain new and useful Improvements in Pliers for Stripping Insulation from Electric Wires, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is a side elevation showing the jaws of the pliers closed; Fig. 2 a side elevation of the plier jaws showing the transverse knives in section and the jaws closed to split the insulation on the wire; Fig. 3 a transverse vertical sectional view on the line III—III of Fig. 2. Fig. 4 a detail perspective view of the two knives detached; and Fig. 5 a detail transverse sectional view showing modifications in the form of the two knives.

The main object of this invention is to provide a tool, in the form of an ordinary pair of pliers, for quickly removing a section of insulation from an insulated wire. Heretofore it has been the ordinary and usual practice to cut the insulation transversely and to then scrape or tear it from the wire to the extent desired to bare the wire to permit other wire connections to be made thereto. This is an exceedingly tedious task and frequently results in injury to the wire and often causes the wire to break.

With my invention it is only necessary to place the insulated wire between the jaws of the pliers and to then close the jaws on the wire. By this simple operation the insulation is cut transversely at the two ends of the section to be removed and is split longitudinally between the two cuts, so that the entire section may be removed, leaving the wire stripped and bare between the two transverse cuts.

A further object of the invention is to provide the pliers with means for cutting the insulated wire, and with a scraper blade for scraping the stripped portion of the wire.

Referring to the various parts by numerals, 1 designates the handle of the pliers; 2 the jaws thereof; and 3 the pivot. At a suitable point forward of the pivot the inner faces of the jaws are formed with registering, transverse, rectangular grooves 4 which are large enough to receive the insulated wire. Each jaw, near the inner end

of its groove 4 is provided with a transverse narrow groove 5 whose side walls incline inwardly and downwardly so that the groove is slightly narrower at its bottom. Fitting in each of the narrow transverse grooves 5 is a transverse splitting blade 6 the body of said blade being tapered to correspond with the inclination of the side walls of the grooves, and the grooves are slightly smaller than the blades so that said blades may be wedged in the grooves and frictionally held therein. Each blade is provided with a cutting edge 7 formed by beveling the blade, as shown in the drawings. Each blade 6 is provided at its ends with cutting blades 8 which are perpendicular to the body 6 of the blade, and each of said blades is cut out, as at 9, at a point registering with the end of the cutting edge 7, the bottom of the said notches being coincident with the end of the cutting edge 7, as clearly shown in Figs. 3 and 4 of the drawings. The blades 8 fit snugly in recesses formed in the sides of the jaws of the pliers so that their outer surfaces are flush with the outer surfaces of said jaws, and they are so disposed that their cutting edges meet when the plier jaws are brought together, as shown in Fig. 1. The blades 8 on one side of the plier jaws are formed with forwardly projecting extensions 10, said extensions constituting wire cutting blades by means of which the insulated wire may be cut, the body of the wire between the jaws lying within the forward portions of the recesses 4.

The rear shoulders 11 formed by the slots 4 constitute a gage by means of which the wire may be centered over the transverse cutting blades 7. It is only necessary to place the wire in the slots 4 and against the shoulder 11 in order to have the wire centered between the knives. To adapt the blades for stripping insulation from wire of different diameters I provide a set of blades for each plier, the cutting edges 7 of each set of blades being arranged a different distance from the vertical centers of said blades. This is indicated clearly in Fig. 5 of the drawings. The cutting blades 7^a, as shown in Fig. 5, are for cutting the largest size of wire that may be handled in a pair of pliers. For smaller sizes of wire the cutting edges of the blades are arranged as indicated in dotted lines in said figures, the blades indicated at 7^b being adapted for cut-

ting the smallest size of wire. The cutting blades are held in place by the friction so that the loosening of screws or other clamping means is avoided. It will also be noted that to adapt the pliers for use with different sizes of wires it is only necessary to remove the undesired blades and to place the desired size in the jaws.

In operation the insulated wire is placed between the jaws and against the shoulders 11. The jaws are then brought together, the blades 7 splitting the insulation longitudinally between the blades 8, and the blades 8 cutting the insulation transversely of the wire. The wire will not be cut transversely because of the recesses 9 formed of the blades 8, said recesses being of such size that when the blades are brought together the wire will be received within said recesses. These recesses will, of course, be slightly varied in size and position on the various blades adapted for the different sizes of wire. It will therefore be seen that it is only necessary to provide one set of transverse grooves 5 in the plier jaws, and yet the pliers may be readily adapted for operating on wires of different diameters.

One of the blades 8 is formed with a lateral extension 12 which is provided with a curved cutting edge 13 which serves as a scraper for cleaning the wire after the insulation is removed. One of the jaws 2 is formed with a transverse groove 14 on its outer side which is adapted to register with the scraper blade 13, the said groove being adapted to receive the insulated wire during the scraping operation.

From the foregoing it will be readily seen that I provide a simple tool in the form of a pair of pliers for simultaneously cutting insulation around the wire at separated points and splitting the insulation along the wire between said transverse cuts. I also provide means for scraping the wire after the removal of the insulation. In addition to these features the device is provided with means for cutting the insulated wire and with the usual wire working jaws.

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

1. A pliers formed with a pair of jaws, each of said jaws being formed with a transverse groove in its inner face, the side walls of said grooves converging toward the bottom of the grooves, a correspondingly tapered splitting blade adapted to fit each of said grooves and to be wedged therein by pressure applied to the cutting edges of the blades, and cutting blades formed integral with the ends of said splitting blades and arranged perpendicular to said blades to cut the insulation transversely of the wire, each of said cutting blades being formed with a recess to receive the wire.

2. A pliers formed with a pair of jaws, each of said jaws being formed with a transverse groove in its inner face, the side walls of said grooves converging toward the bottoms of the grooves, a correspondingly tapered splitting blade adapted to fit each of said grooves, said blade being slightly larger than the grooves and adapted to be wedged therein by pressure applied to the cutting edges of the blades, and cutting blades connected to the ends of the splitting blades, recesses being formed in the sides of the plier jaws to receive said cutting blades, each of said cutting blades being formed with a recess to receive the wire.

3. A pliers formed with a pair of jaws, one of said jaws being formed with a transverse groove in its inner face, the side walls of said groove converging toward the bottom of the groove, a correspondingly tapered splitting blade adapted to fit said groove, said blade adapted to be wedged therein by pressure applied to the cutting edge thereof, and cutting blades connected to the ends of the splitting blade, each of said cutting blades being formed with a recess to receive the wire after the insulation has been cut transversely by the cutting blades.

4. A pliers formed with a pair of jaws, one of said jaws being formed with a transverse groove in its inner face, the side walls of said groove converging toward the bottom of the groove, a correspondingly tapered splitting blade adapted to fit said groove, said blade adapted to be wedged therein by pressure applied to the cutting edge thereof, cutting blades connected to the ends of the splitting blade, each of said cutting blades being formed with a recess to receive the wire after the insulation has been cut transversely by the cutting blades, and a wire-centering means to center the wire in the grooves in the cutting blades.

5. A pliers formed with a pair of jaws having transverse grooves in their inner faces, a wire centering means to center the wire between said grooves, splitting blades adapted to be wedged in said grooves by pressure applied to their cutting edges, and cutting blades connected to the ends of said splitting blades and adapted to cut the insulation transversely of the wire, the jaws of the pliers being formed with recesses to receive said cutting blades.

6. A pliers formed with a pair of jaws having transverse grooves in their inner faces, and having means to serve as a centering device to center the wire, said centering device being a fixed distance from the groove, and a set of splitting knives adapted to be secured within said grooves, the cutting edges of said knives being arranged at different distances from the longitudinal centers of the grooves, whereby

said knives may be placed in said grooves and will be adapted to split insulation of wires of different diameters, and the cutting edges of said blades being different distances from the centering device.

7. A pliers formed with a pair of jaws, one of said jaws being formed with a transverse groove in its inner face, the side walls of said groove converging toward the bottom of the groove, a correspondingly tapered splitting blade adapted to fit said groove, said blade adapted to be wedged therein by pressure applied to the cutting

edge thereof, and transverse cutting blades formed integral with the ends of the splitting blade, each of said cutting blades being formed with a recess to receive the wire after the insulation has been cut transversely by the cutting blades.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 6th day of August 1909.

FRANK P. HUSTON.

Witnesses:

WM. R. DAVIS,
F. R. MILLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."