

H. A. ADAMS.

PLIERS.

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1,107,210.

Patented Aug. 11, 1914.

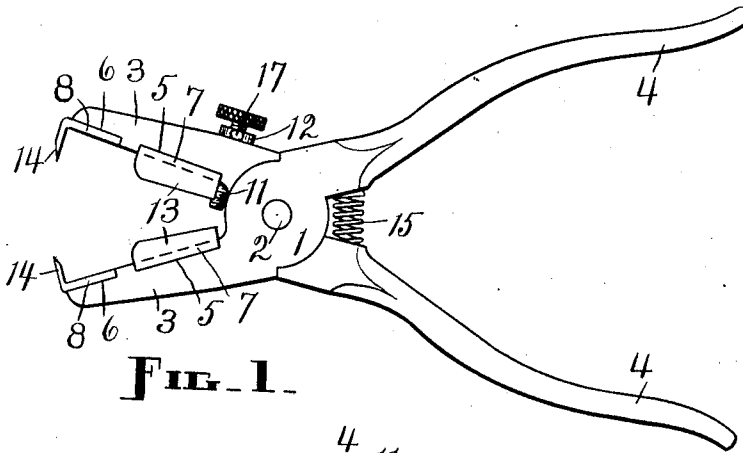


FIG. 1.

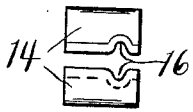


FIG. 3.

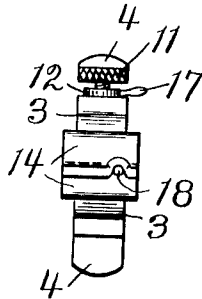


FIG. 2.

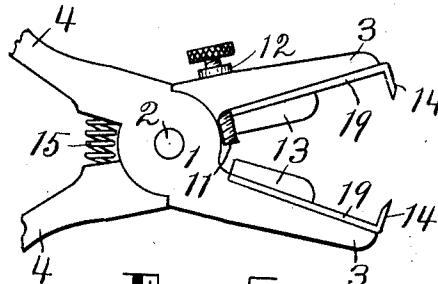


FIG. 5.

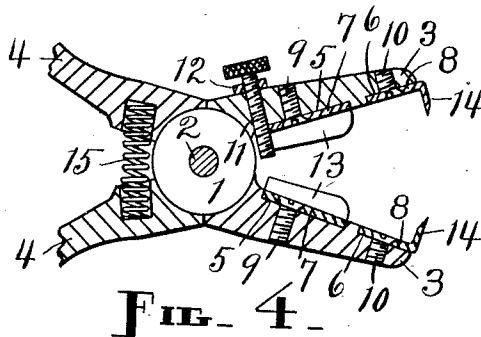


FIG. 4.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## PLIERS.

1,107,210.

Specification of Letters Patent.

Patented Aug. 11, 1914.

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*To all whom it may concern:*

Be it known that I, HARRY A. ADAMS, a citizen of the United States of America, residing at East Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Pliers, of which the following is a specification.

My invention relates to improvements in cutting and stripping pliers for wire and insulation, and resides more particularly in a certain peculiar combined end cutter and stripper, together with such other parts and members as may be needed to make the tool complete and serviceable, all as hereinafter set forth.

The objects of my invention are, first, to produce a simple, cheap, accurate and convenient tool for cutting wire or insulation or both together, either at one side of such tool or at the front end of the same; second, to provide such a tool with end means for both cutting and stripping insulation from the wire conductor without injuring the latter. and, third, to afford means for accurately adjusting the tool so as to enable it to be used with any size of conductor within the capacity of said tool.

Other objects will appear in the course of the following description.

I attain these objects by the means illustrated in the accompanying drawings, in which—

Figure 1 is a front side elevation of a pair of pliers which embodies a practical form of my invention, the jaws being open; Fig. 2, a front end elevation of said pliers, with the jaws closed; Fig. 3, a front end elevation of the front cutter blades, detached and separated; Fig. 4, a central longitudinal section, from the rear, through said pliers, the major portions of the handles being broken off; and Fig. 5, a back side elevation of the operating parts of a pair of pliers, in which is embodied a slightly modified form of the invention.

Similar figures refer to similar parts throughout the several views.

Referring to the first four views, it will be observed that the pliers therein illustrated in whole and in part comprise a pair of hubs 1 pivotally connected at 2, a pair of jaws 3, and a pair of handles 4, all of usual and well-known construction, excepting that the inner or adjacent faces of the jaws are cut

away or recessed at 5—5 and 6—6 to permit two long cutter plates 7 and two short cutter plates 8 to be seated therein where said plates are held firmly and securely by the edges of said recesses, at the front and back ends of said plates 7 and at the back ends of said plates 8, and by screws 9 and 10. In addition to these members there is an adjusting screw 11 which is tapped into and through the upper jaw 3 and against the base of which the lower jaw 3 is received, when the pliers are closed, to limit the movement of said jaws toward each other, a set-nut member or screw-lock 12 on said adjusting screw, two cutting blades 13 extending toward each other from the front edges of the plates 7, and two combined cutting and stripping blades 14 extending toward each other from the front end edges of the plates 8. A spring 15, having its terminals pocketed in the handles 4 just behind the hubs 1, may be provided to separate the jaws 3 or open the pliers.

The screws 9 and 10 are tapped into the jaws 3, and it is a very simple matter, in case any one of the cutting members breaks or otherwise becomes injured, to remove the screw which confines the plate of which the broken or injured member is a part and take out the damaged piece, and then to put a new piece in the place of the old and replace the screw. Provision is thus made for readily repairing the tool at small expense.

The blades 13 are set so that their cutting edges shear by each other when the jaws 3 are closed, and these constitute the side cutter for wire whether covered or bare. The blades 14 are also set so that their cutting edges shear by each other when the jaws 3 are closed, excepting at two points which will presently receive particular mention, and these blades constitute the end cutter which is designed to do substantially the same work as the aforesaid side cutter. This end cutter, however, is designed further to cut insulation without doing injury to the conductor and to strip the former from the latter, and to this end the blades 14 are each notched at 16 in such a way that they receive into their apexes the conductor, while cutting the insulation on said conductor, without cutting or injuring said conductor, provided the screw 11 be properly adjusted, and then the part of the in-

sulation thus severed from the rest is stripped from the conductor by being pulled off over the adjacent end of the same before the pliers are opened.

- 5 The screw-lock 12 is located on the screw 11 between the upper jaw 3 and the head of said screw, and has a handle 17 for convenience in rotating the same. In practice, the screw-lock 12 is loosened sufficiently to  
10 enable the screw 11 to be turned up or down until it checks the closing movement of the jaws 3 at just the right point to leave an opening between the apexes of the notches 16, as at 18 in Fig. 2, of approximately the  
15 same size as the wire or conductor within the insulation to be cut, and then said lock is screwed down tightly on the upper jaw to prevent accidental displacement of said adjusting screw. Now the pliers are applied  
20 to the insulation a reasonable distance from one end thereof and first closed with the notched portions of the blades 14 on and around said insulation, which results in severing the latter, and then the part of the  
25 insulation thus severed is stripped off over the adjacent end of the conductor by drawing the pliers, still closed, in that direction. For cutting and stripping insulation, these pliers are not only adaptable to a single wire  
30 conductor, but as well to a conductor made up of a plurality of fine wires, as in the case of a cord, in fact said pliers are especially useful in removing insulation from cords, and this without cutting a single wire  
35 therein.

The operation of the blades 14 as a simple cutter needs no explanation, and the same is true of the cutter comprising the blades 13.

- 40 As shown in Fig. 5, a single plate 19 may be substituted for each pair of plates 7 and 8, such plate 19 having one of the blades

13 extending from one side and one of the blades 14 extending from the front end thereof. Aside from the slight change which this substitution necessitates in the jaws 3, the construction and operation of the Fig. 5 pliers are the same as in the other case. It is conceivable that other changes and modifications, structurally as well as in matters of size and shape, may be made in my pliers without departing from the nature of my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, in a pair of pliers, of crossed and pivotally connected combined jaws and handles, said jaws having recesses in their inner faces, which recesses in each inner jaw face are spaced from each other to afford end abutments for plates set therein, plates provided with side-cutting blades and plates provided with end-cutting notched blades set in said recesses and abutting with their ends the ends of the recessed parts of said jaws, removable means to attach said plates to said jaws and with the abutting ends of said recesses to secure said blades in said recesses, a spring inserted between said handles back of the pivotal connection to open said jaws and retain them normally in their open condition, an adjusting screw tapped into and through one of said jaws and arranged to check the movement of the jaws by contacting with the other jaw when the jaws are moved toward each other, and a screw-lock on said adjusting screw above the jaw which carries said screw, such screw-lock comprising a nut and a handle.

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Witnesses:

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