No. 786,454. PATENTED APR. 4, 1905.

# W. R. MONTGOMERY & B. F. MEGENITY.

## WIRE WORKING TOOL.

APPLICATION FILED SEPT. 20, 1904.

FIG. 1.

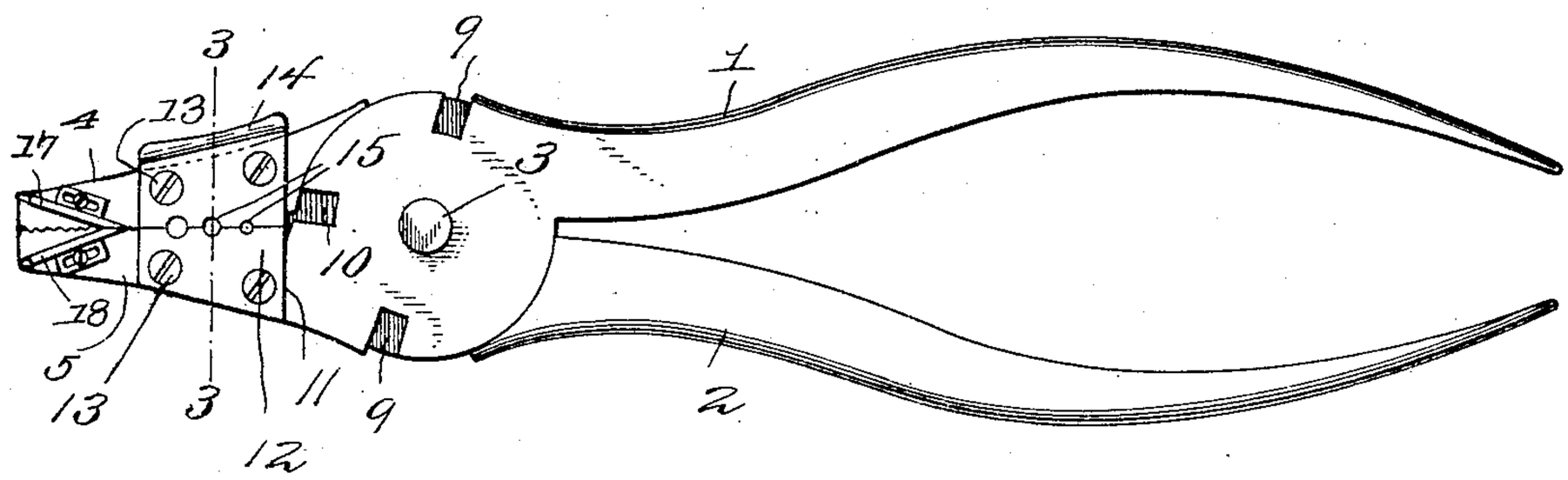



FIG. 2.

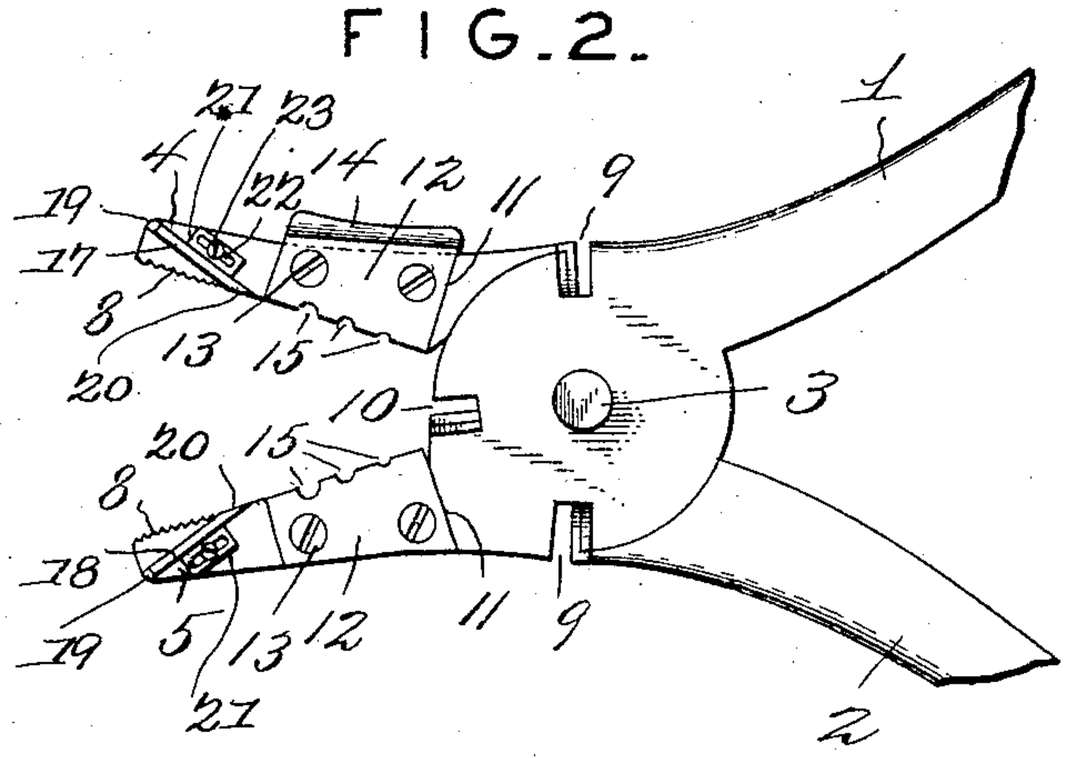



FIG. 3.

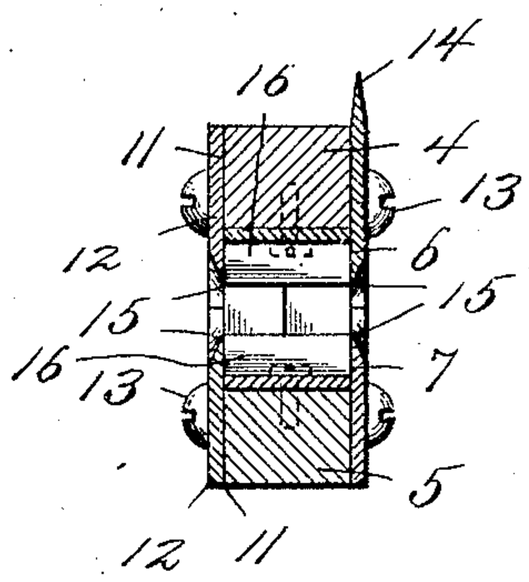



FIG. 5.

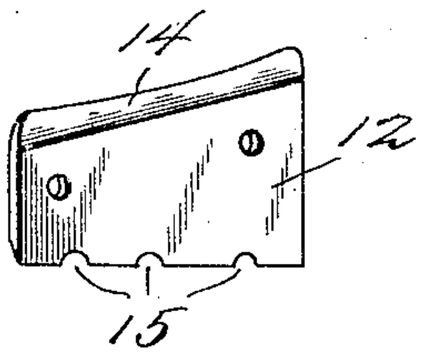



FIG. 8.

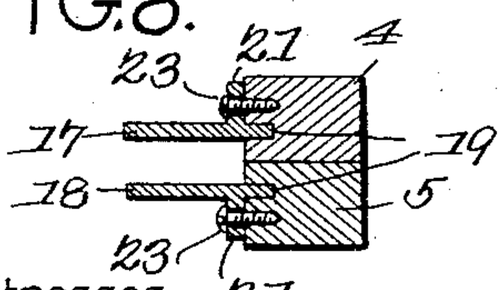



FIG. 4.

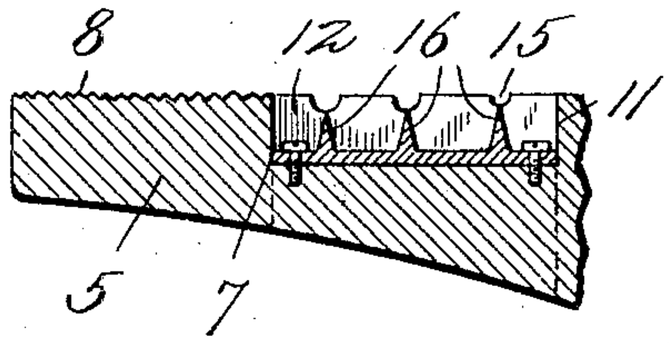
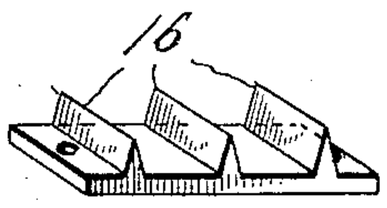



FIG. 6.



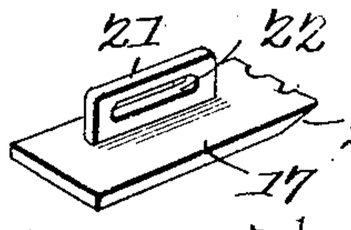




FIG. 7.

Witnesses
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No. 786,454. Patented April 4, 1905.

# UNITED STATES PATENT OFFICE.

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## WIRE-WORKING TOOL.

SPECIFICATION forming part of Letters Patent No. 786,454, dated April 4, 1905.

Application filed September 20, 1904. Serial No. 225,276.

*To all whom it may concern:*

Be it known that we, WALTER R. MONTGOMERY and BENJAMIN F. MEGENITY, citizens of the United States, residing at Shreveport, in the parish of Caddo and State of Louisiana, have invented a new and useful Wire-Working Tool, of which the following is a specification.

This invention relates to wire-working tools, and has for its object to provide an improved tool for cutting loose and removing the insulating coverings of electric conductors.

It is furthermore designed to embody the invention in the form of a pair of pliers, and to arrange the same for convenience in manipulation, so as to facilitate the application and removal of the tool with respect to a wire, and to insure the prompt and effective loosening and removal of the insulation by a simple manipulation of the tool.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of a wire-working tool embodying the features of the present invention. Fig. 2 is a similar enlarged view showing the jaws of the implement separated. Fig. 3 is an enlarged cross-sectional view on the line 3 3 of Fig. 1. Fig. 4 is an enlarged longitudinal sectional view of one of the jaws. Fig. 5 is a detail perspective view of one of the side cutter-plates. Fig. 6 is a detail perspective view of a series of splitting-knives. Fig. 7 is a detail perspective view of one of the stripping-blades at the extremity of one of the jaws of the tool. Fig. 8 is an enlarged detail sectional view taken through the jaws of the implement and the laterally-projected stripper-blades.

Like characters of reference designate corresponding parts in each and every figure of the drawings.

Referring to the drawings, 1 and 2 designate crossed plier-handles, which are pivotally connected at their point of crossing, as indicated at 3, and have their forward ends formed into jaws 4 and 5, which have their inner faces provided with recesses 6 and 7, located at the inner ends of the jaws, with their outer end portions roughened or serrated, as indicated at 8, in the manner of ordinary pliers. Wire-cutting notches 9 are formed in the handle members in rear of the jaws, and other wire-cutting notches 10 are formed in the handle members and located between the jaws. In addition to the recesses in the inner faces of the jaws the opposite sides thereof are also provided with recesses 11, which extend for the entire lengths of the respective recesses 6 and 7.

Within each recess 11 is a cutter-plate 12, the outer face of which is flush with the outer face of the adjacent jaw and is rigidly held in place by means of suitable fastenings 13, which pierce the plate and enter the jaw. All but one of these plates terminate flush with the outer edges of the respective jaws, while the other plate is projected beyond the adjacent jaw and beveled to form a cutting edge 14, which is slightly concaved from end to end and is designed for scraping paraffin and the like from a bare wire after the insulation has been removed therefrom. The inner edges of the cutter-plates are flush with the inner faces of the jaws and are provided with a graduated series of corresponding semicircular notches 15, which increase in diameter from the inner end to the outer end of the series and are designed to receive wires of different gages and to cut through the insulation thereof circumferentially.

Within each of the recesses 6 and 7 is a series of cutter-blades 16, disposed transversely of the recess and alined with corresponding notches in the plates 12, said blades corresponding in number to the number of notches in one of the plates and graduated in depth according to the depths of the notches, whereby

each blade is designed to cut longitudinally through the insulation. By having each blade correspond in depth to the depths of the recesses at the opposite ends thereof an effective severing of the insulation is insured without cutting into or otherwise damaging the wire.

In using the present implement an insulated wire is received within one set of notches and the jaws brought together thereon, so as to split the insulation longitudinally at diametrically-opposite sides of the wire by the blades 16 and also to sever the insulation circumferentially at the opposite ends of the split portion through the medium of the wire-cutting plates 12, after which the implement may be turned about the wire or the wire turned within the jaws of the implement, so as to scrape the loosened insulation from the wire and leave the latter bare for a distance equal to the length of one of the blades 16. To remove a considerable portion of insulation, the latter should be cut at different points and then drawn transversely between the jaws of the pliers or the latter slid longitudinally upon the wire. It will here be noted that the plates 12 close the sides of the recesses 6 and 7, and thereby form pockets to receive the insulation which is removed from the wire. After the insulation has been removed from a portion of the wire the bare or exposed portion may be scraped by the scraper 14 to remove paraffin or other matter therefrom, so as to clean the wire and insure an effective electrical contact thereof with a binding-post or other electrical conductor.

A very important feature of the present tool resides in the provision of the wire-cutting notches 10 in the forward portions of the handle members and between the inner ends of the jaws, whereby the tool may be slipped along a wire without removal therefrom to a point remote from the portion which has been denuded of insulation and then manipulated to sever the wire by means of the wire-cutter 10.

While the plates 12 are effective for stripping a considerable length of insulation from wire, they frequently bite into the wire and damage the same, and therefore the blades 17 and 18 are mounted upon the sides of the jaws 4 and 5 in front of the plates 12. To accommodate the blades 17 and 18, each jaw is provided with an oblique groove 19 intersecting the outer and inner faces of the jaw, with the two grooves converged and registered at their inner ends when the jaws are closed. The back edge of each blade is received within its respective groove 19 and is capable of being shifted endwise therein to take up wear upon the forward end of the blade, which is beveled, as at 20, so as to have its beveled edge adjacent the wire. A longitudinal flange 21 is provided upon each blade and arranged to lie against the adjacent jaw, there being a longitudinal slot 22 formed in the flange and a screw 23 passing through the slot and set into the jaw, so as to adjustably connect the blade with the jaw and hold the former rigid. By this arrangement each blade may be shifted forwardly to take up wear occasioned by sharpening the beveled edge thereof.

Preparatory to using the blades 17 and 18 the insulated wire is received transversely between the plates 12 and the jaws brought together so as to sever the insulation circumferentially, after which the tool is removed from the wire and then applied longitudinally thereof, with the beveled or sharpened edges of the blades 17 and 18 engaging one of the circumferential incisions formed in the insulation by the plates 12, and then the tool is drawn longitudinally along the wire or the wire is drawn through the tool and the insulation thereby stripped from the wire. It will here be noted that the forward coöperating edges of the blades 17 and 18 are beveled upon their adjacent sides so as to slide evenly upon the bare wire, and thus prevent injury thereto by biting into the wire.

Having thus described the construction and operation of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A tool of the class described comprising a pair of pliers having coöperating wire-cutting notches in the front ends of the handle members and between the jaws, the inner faces of the jaws having corresponding recesses and the opposite edges of said jaws also being provided with recesses intersecting the open ends of the inner recesses, cutter-plates secured in the side recesses with their inner edges closing the inner recesses of the jaws and provided with corresponding wire-receiving notches arranged in a series which increase in size from the inner notch to the outer notch, one of the plates only being projected at the back of the adjacent jaw to form a scraper, and plates secured within the inner recesses and provided with corresponding transverse splitting-blades registered with the notches and varying in depth according to the sizes of the notches.

2. A tool of the class described consisting of a pair of pliers, cutting-blades carried longitudinally by the jaws of the pliers and provided with registered substantially semicircular notches, and stripper-blades projected transversely from the jaws and converged rearwardly with their adjacent active edges beveled to travel smoothly upon the wire.

3. A tool of the class described comprising a pair of pliers having coöperating wire-cutting notches in the front ends of the handle members and between the jaws, longitudinal cutting-blades carried by the jaws in front of the wire-cutting notches and provided with registered wire-receiving notches, and stripper-blades projected transversely from the

jaws in front of the cutter-blades and converged rearwardly with their active adjacent edges beveled to travel smoothly upon the wire.

4. A tool of the class described comprising a pair of pliers having rearwardly-converged stripper-blades carried by the jaws with the active edges of the blades beveled to travel smoothly upon the wire.

5. A tool of the class described comprising a pair of pliers and rearwardly-converged stripper-blades carried by the jaws, and means to adjust the blades endwise.

6. A tool of the class described comprising a pair of pliers having rearwardly-converged grooves in corresponding sides, and stripper-blades carried within the grooves and projected at one side of the tool.

7. A tool of the class described comprising a pair of pliers having rearwardly-converged grooves in corresponding faces of the jaws, stripper-blades fitted in the grooves and capable of endwise adjustment therein, each blade having a flange lying against the adjacent jaw and provided with a longitudinal slot, and an adjusting-screw passed through each slot and engaging the adjacent jaw.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

WALTER R. MONTGOMERY.
BENJAMIN F. MEGENITY.

Witnesses:
W. M. LEVY,
J. H. LEVY.