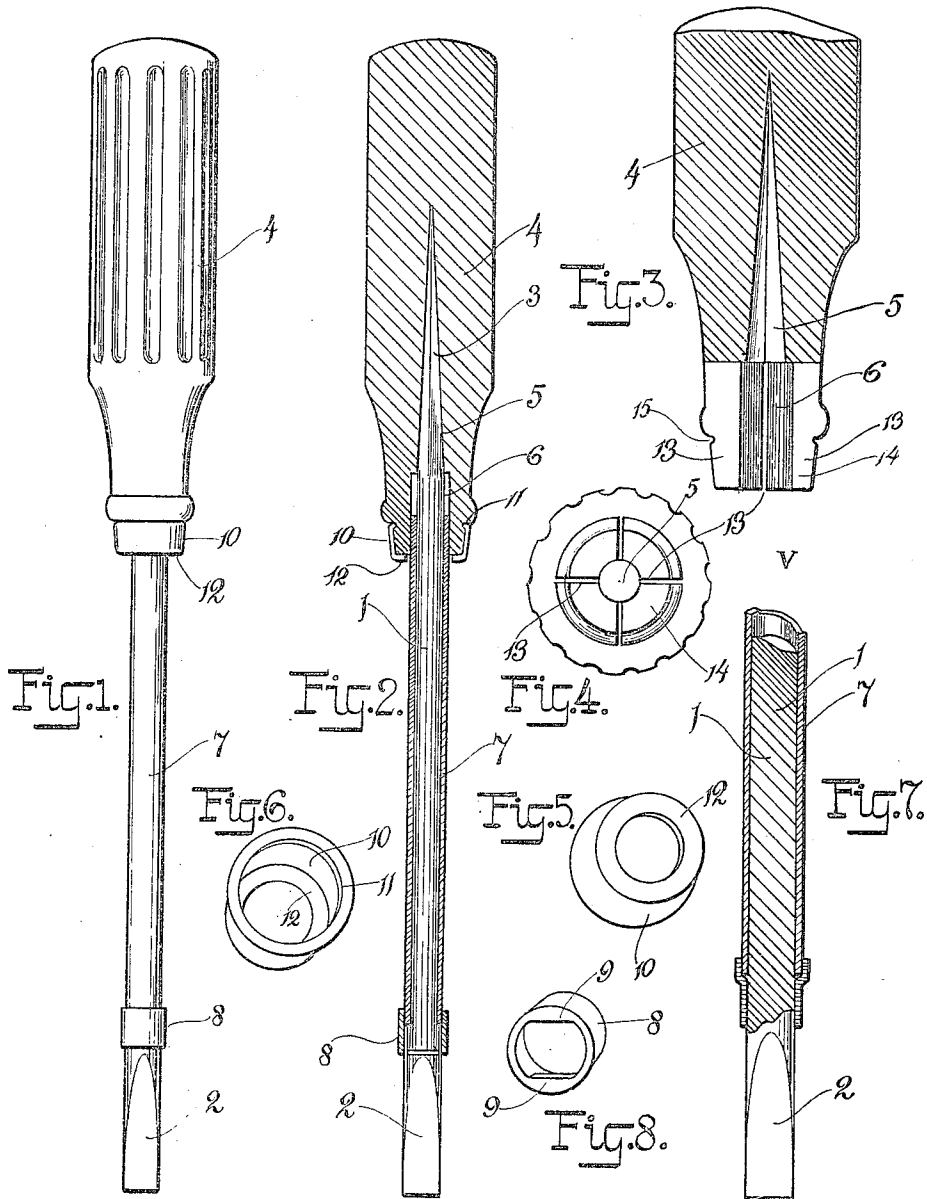


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INSULATED SCREW DRIVER.  
APPLICATION FILED JAN. 29, 1917.

1,225,249.

Patented May 8, 1917.



Witnesses

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# UNITED STATES PATENT OFFICE.

LEO G. G. HOLTSCHNEIDER, OF ST. LOUIS, MISSOURI.

## INSULATED SCREW-DRIVER.

1,225,249.

Specification of Letters Patent.

Patented May 8, 1917.

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*To all whom it may concern:*

Be it known that I, LEO G. G. HOLT-SCHNEIDER, a citizen of the United States, residing in the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Insulated Screw-Drivers, of which the following is a specification.

My invention relates to improvements in tools which are insulated to render the tool safe for use in high tension electrical work, and more particularly to screw drivers and similar tools of this character.

The objects of the invention are to produce a simple and efficient tool of this class in which the exposed metallic shank of the tool is covered and protected nearly throughout its length by a removable shell or tube of suitable insulation, to so form the tool that the parts thereof may be easily and quickly assembled or dismounted, and to arrange the extremities of the insulating shell or tube so that they will be inclosed, covered, and protected within rings or ferrules to prevent chipping or cracking of the insulating material.

To carry out the above and other objects, I provide a shell or tube of suitable insulating material, which is of uniform diameter throughout, and fits snugly but slidably around the metal shank of the tool, with its outer extremity protected in proximity to the outer end of the tool and within an inclosing and protecting ferrule fitted around the shank, and its inner extremity extending within a longitudinal recess in the handle, and frictionally locked and gripped therein by another and upper ferrule, which is fitted and secured upon the inner end of the handle. The merits and advantages of my improvement will be clearly pointed out in the following description, reference being had to the accompanying drawings, in which an embodiment or adaptation of my invention is illustrated. The particular type of my invention shown in said drawings pertains to a screw driver of the ordinary hand operated class.

In the drawings:

Figure 1, represents a side elevation of screw driver constructed in accordance with my invention.

Fig. 2, is a central longitudinal section through the screw driver in Fig. 1.

Fig. 3, is an enlarged fragmentary central

longitudinal section through the handle of my improved screw driver.

Fig. 4, is an enlarged detail end view of the handle of the screw driver, detached from the remainder.

Fig. 5, is an enlarged perspective view of the upper or handle ferrule viewed from its upper extremity.

Fig. 6, is an enlarged perspective view of the upper or handle ferrule looking oppositely to Fig. 5, and viewed from its lower extremity.

Fig. 7, represents an enlarged fragmentary longitudinal section through the lower portion of my improved screw driver.

Fig. 8, is a detached detail perspective view of the lower or shank ferrule.

In referring to the embodiment or adaptation of my improved tool in detail in the accompanying drawings, like numerals indicate corresponding parts.

My improved tool is of that class known as an insulated tool; that is, the metallic portions of the tool are so covered and protected that it is impossible to shock or in any way injure an operator while using the tool in electrical work.

Although I have shown my improvement as embodied in a screw driver, it is equally adapted to, and may be utilized in various other tools and like articles.

As shown, I prefer to construct my improved screw driver with a metal shank, 1, having a bit, 2, at its outer extremity, which is tapered to form a narrow end that is adapted to fit in the groove of a screw or the like. The upper or inner extremity of the shank is also tapered, as shown at 3, and a handle, 4, of wood or other suitable material, is provided with a central longitudinal recess, 5, to receive the upper extremity of the shank, as shown in Fig. 2. The recess, 5, is made quite deep, and is tapered to correspond to the taper of the outer end of the shank. At its outer portion, it is enlarged to form a circular recess, 6, of uniform diameter throughout, as shown in Fig. 2, for a purpose to be hereinafter explained. I prefer to make the shank, 1, in circular form, and to fit around the same a long shell or tube, 7, of suitable insulating material. The material which I prefer to use for this purpose is generally known in the trade as "brakelite delicto." However, any other suitable insulating material or

fiber may be employed. The shell or tube is held in place upon the shank of the tool between two ferrules or rings. One of these ferrules or rings is fitted upon the outer extremity of the shank and extends over, covers, and protects the outer extremity of the shell or tube. This ferrule I shall hereinafter indicate by the numeral 8, and I prefer to form it approximately as shown in Fig. 8. It is of a cylindrical form, and is provided at one end with two oppositely disposed inwardly extending wedging shoulders, 9. The other, or upper, ferrule, which is fitted upon the handle and is thus generally known as the handle ferrule, is of a hollow, tapering, conical form, having a body, 10, an inwardly extending locking top bead, 11, and an inwardly extending lower flange, 12, of annular form. The lower extremity at the handle is also provided with a series of radial slits, 13, and the outer surrounding or peripheral portion of said end is tapered, as indicated at 14, in Figs. 3 and 4. The slits, 13, are made sufficiently deep to extend through the tapered portion, 14, and a slit groove, 15, is formed at the near end of the tapered portion, 14, as shown in Fig. 3, into which the top locking bead of the upper, or handle, ferrule, is adapted to be forced. In assembling my improved screw driver, the long shell or tube, 7, is fitted in place around the cylindrical shank, 1. The lower ferrule, 8, is then forced over the bit with its oppositely disposed shoulders, 9, sliding upon and wedging on the upper tapered surfaces of the said bit as shown in Fig. 7. The handle, 4, is then driven upon the upper end of the shank, with its tapered portion, 14, fitting over and surrounding the upper extremity of the tube or shell, 8. Finally, the upper or handle ferrule is forced in place, contracting the slitted lower end of the handle around the upper extremity of the tube or shell, and firmly gripping and locking the same in the cylindrical portion, 6, of the recess. From this, it will be noted that all of the parts are firmly and rigidly secured in their assembled position, and that the two ends of the shell or tube, 7, are inclosed and protected within metal ferrules to prevent chipping or cracking of the same while the tool is being used. My improved device is of a simple and inexpensive construction, is easily and quickly assembled, and when in finished condition, constitutes a reliable, efficient, and perfectly insulated article, which may be employed in high tension electrical work without any danger. Should the insulation tube or shell become injured, cracked, or broken, it may be easily removed and replaced by taking off the ferrules, pulling the shank from the handle, and then removing the tube or shell from the shank.

While I have described in the foregoing specification adaptations or embodiments of my invention, it should be understood that the structural parts thereof may be varied, changed, modified or altered or one or more may be omitted or dispensed with without departing from the spirit of my invention as fairly defined in the following claims, or as may be imparted thereto by invoking the doctrine of equivalents.

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

1. In a device of the class described, a screw driver proper having a shank and a bit, an insulating tube surrounding said shank, and a handle fitted on the shank on the end opposite the bit and over the inner extremity of the insulating tube.

2. In a device of the class described, a screw driver proper having a shank and a bit, an insulating tube surrounding said shank, a ferrule fitted over the outer extremity of the insulating tube, and a handle fitted on the shank on the end opposite the bit and over the inner extremity of the insulating tube.

3. In a device of the class described, a screw driver proper having a shank and a bit, an insulating tube, snugly but slidably fitted around the shank with its outer end extending in proximity to the bit, a handle fitted on the inner end of the shank opposite the bit and over the inner extremity of the insulating tube, and a locking ferrule fitted on the inner end of the handle.

4. In a device of the class described, a screw driver proper having a shank and a bit, an insulating tube, snugly but slidably fitted around the shank with its outer end extending in proximity to the bit, a handle fitted on the inner end of the shank opposite the bit and over the inner extremity of the insulating tube, said handle having a longitudinal recess to receive the end of the shank and insulating tube and a series of radial slits extending from said recess through the wall of the handle, and a compressing and locking ferrule fitted on the inner end of the handle.

5. In a device of the class described, a screw driver proper having a shank and a bit, an insulating tube, snugly but slidably fitted around the shank with its outer end extending in proximity to the bit, a handle fitted on the inner end of the shank opposite the bit and over the inner extremity of the insulating tube, said handle having a longitudinal recess to receive the end of the shank and insulating tube and a series of radial slits extending from said recess through the wall of the handle, and a compressing and locking ferrule fitted on the inner end of the handle, the peripheral sur-

face of the slitted portion of the handle being tapered and the ferrule being correspondingly tapered.

6. In a device of the class described, a  
5 screw driver proper having a shank and a bit, an insulating tube, snugly but slidably fitted around the shank with its outer end extending in proximity to the bit, a handle  
10 fitted on the inner end of the shank opposite the bit and over the inner extremity of the insulating tube, said handle having a longitudinal recess to receive the end of the shank and insulating tube and a series  
15 of radial slits extending from said recess through the wall of the handle, and a compressing and locking ferrule fitted on the inner end of the handle, the peripheral surface of the slitted portion of the handle  
20 being tapered and a groove being formed at the inner termination of the taper, and

the ferrule being tapered to correspond to the taper of the handle and having a bead adapted to be forced into said groove.

7. A tool of the class described having a wooden handle, a metallic shank, and an  
25 insulating tube surrounding the shank with one of its extremities fitted within and protected by the handle.

8. A tool of the class described having a wooden handle, a metallic shank, and an  
30 insulating tube surrounding the shank with one of its extremities fitted within and protected by the handle, and two oppositely located ferrules, each fitted around and inclosing one end of the insulating tube.

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Witnesses:

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