H. HOOD.

SCREWDRIVER.

APPLICATION FILED JULY 27, 1918.

1,345,443. **Patented July 6, 1920.**

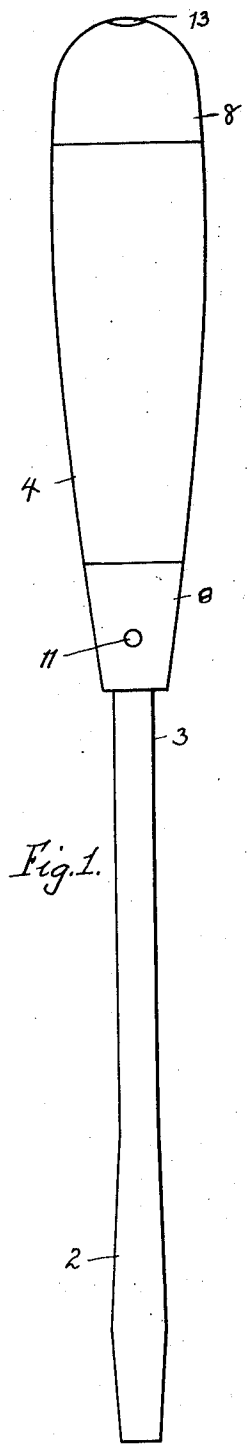


Fig. 1.

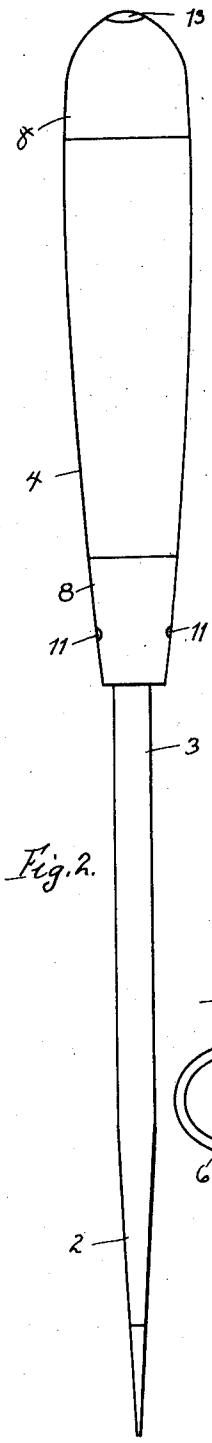


Fig. 2.

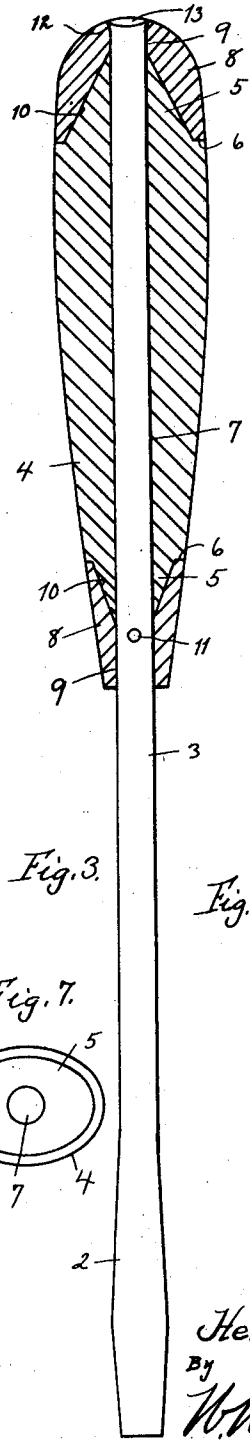


Fig. 3.

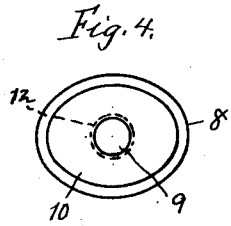


Fig. 4.

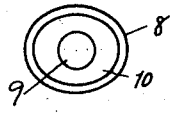


Fig. 5.

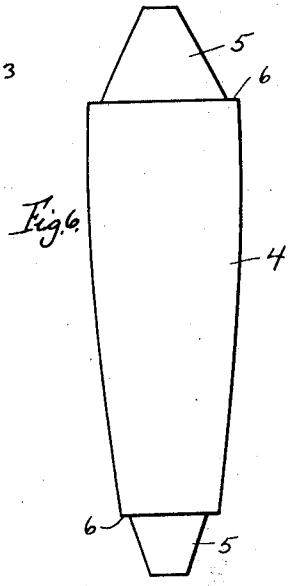


Fig. 6.

Fig. 7.

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SCREWDRIVER.

1,345,443. Specification of Letters Patent. Patented July 6, 1920.

Application filed July 27, 1918. Serial No. 246,983.

To all whom it may concern:

Be it known that I, HENRY HOOD, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Screwdrivers, of which the following is a specification.

My invention relates to new and useful improvements in screw drivers, and has for its object to provide a new improved method of securing the handle upon the tool shank which latter passes entirely through the handle, thereby making a more rigid tool as well as preventing said handle from becoming loose on the tool shank.

A further object of the invention is to provide means for fastening a wooden handle on a metal tool wherein none of the attaching means pass through the wooden handle and wherein a considerable portion of the wooden handle at each end is inclosed by holding means which fasten the wooden handle in fixed relation to the tool shank, but being removed therefrom even though said wooden handle should be split longitudinally from any cause whatsoever.

Another object of the invention is to provide hard malleable ferrules so that the tool may be struck exceedingly hard blows without injury to the parts or without impairing the usefulness of the tool.

A further object of the invention is to provide a wooden handle with a projection at each end of irregular cross sections or of some cross sectional shape other than round, as for instance, an elliptical conical frustum which are housed in ferrules having chambers corresponding to the shape of the projections, so that when the parts are in position, the wooden handle will be held against rotation.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claim.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail referring by numerals to the accompanying drawings forming a part of this application, in which:—

Figure 1, is a side elevation of a screw driver constructed in accordance with my improvements.

Fig. 2, is a similar view at right angles thereto.

Fig. 3, is a longitudinal sectional view thereof, the tool blade and shank being left in elevation.

Fig. 4, is an inner end view of the outer ferrule.

Fig. 5, is a similar view of the inner ferrule.

Fig. 6, is a side elevation of the handle which is preferably constructed of wood, and

Fig. 7, is an end view thereof.

In carrying out my invention as here embodied, 2 represents a tool blade here shown as a screw driver provided with a shank 3 on which is mounted the handle 4 produced from any suitable material, but preferably constructed of wood and when said handle is in position upon the tool shank, the latter passes entirely through the former as will be readily ascertained from Fig. 3.

The handle 4 may be of any desirable shape and in this particular case, it is preferably elliptical in cross section and is provided at each end with a projection 5 of considerable length, each being approximately one-sixth of the entire length of the handle.

The inner ends of these projections are smaller than the main body or central portion of the handle at the points where said projections meet the main body portion thereby forming at each end a shoulder 6 and the walls of said projections converge toward their outer ends while they are of irregular shape in cross section. In other words, the cross sectional shape of said projections is other than round, as for instance, they may be elliptical, as here shown, so that said projections form elliptical conical frustums.

The handle 4 is provided with a central longitudinal bore 7 running the entire length thereof including the projections 5, so that when mounted upon the shank 3, the latter passes entirely therethrough with the upper or outer end projecting beyond the handle, as plainly shown in Fig. 3.

On the shank 3 at each end of the handle is mounted a ferrule 8 and these ferrules are produced from some suitable hard mal-

leable metal such as steel or malleable iron, so that the tool may be struck with another tool such as a hammer without injuring the same or without impairing the usefulness of the screw driver.

The exterior contour of these ferrules resemble or is the same as the exterior contour of the handle for instance where said handle is elliptical in cross section, the ferrules are also elliptical. Each of the ferrules is provided with a bore 9 which communicates with a gradually increasing elliptical chamber 10 corresponding to the contour of the projections 5 on the handle with which they register and inclose and because of the shapes of the projections and the chambers in the ferrules, said handle is prevented from rotating independently of the ferrule.

The inner ferrule is rigidly secured or fixed to the shank intermediate its ends by a rivet 11 or its equivalent which passes through said ferrule and shank beyond the chamber 10 so that said rivet does not contact or pass through the handle. The upper ferrule is provided at its outer end at the end of the bore 9 with a countersink 12 and when said ferrule is properly positioned upon the projecting outer end of the shank, the said outer end is headed as at 13 thereby securely fastening the said outer ferrule in place. When the ferrules are placed upon the handle, the inner edges thereof engage the shoulder 6 on the handle and properly position the ferrules relative to the handle.

As before stated, the handle 4 is in no way directly attached to the tool shank nor has it any fastening means of any character passing through the same, but because of the shapes of the projections 5 and the chamber 10 of the ferrules registering therewith and said ferrules being fixed to the shank, the handle will be rigidly secured in place upon the shank, thus preventing said handle from being turned independently of the tool blade.

By constructing a tool in the manner above described, it is very unlikely that the handle will split, but if it should split, the parts cannot be displaced because of the ends being housed into strong solid metallic ferrules and as said handle cannot turn independently of the blade, a better purchase can be obtained upon the work.

As the tool shank passes entirely through the handle and as the ferrules are of hard malleable metal, the tool may be struck exceedingly hard blows with another tool such as a hammer, so that a workman may use the device for splitting pieces of wood for making holes or for prying two objects apart which is often found necessary or convenient and although I am aware that ferrules have been used on tool handles before, yet these are generally made of light metal such as tin or thin brass which are not of sufficient strength to prevent the handle from turning should the same become loose upon the tool shank nor stiff enough to prevent a piece of the handle from separating from the main part of the handle should the latter split, then again they are not hard enough to prevent their destruction if hammered upon, but with the construction here illustrated and described, all these objections are entirely overcome.

Of course I do not wish to be limited to the exact details of construction as herein shown, as these may be varied within the limits of the appended claim without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and patentable is:—

A tool comprising a handle elliptical in cross section, a projection at each end having the shape of an elliptical conical frustum, ferrules each having a bore and an elliptical chamber gradually increasing in size to correspond to the shape of the projections, one of said ferrules being mounted on each end of the handle and inclosing the projections and a blade having a shank passing entirely through the handle and ferrules, said ferrules being fixed to the shank for attaching the handle thereto.

In testimony whereof, I have hereunto affixed my signature.

HENRY HOOD.