June 20, 1933. R. L. COCHRANE 1,914,802

TOOL HANDLE SECURING MEANS

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Fig. 1.

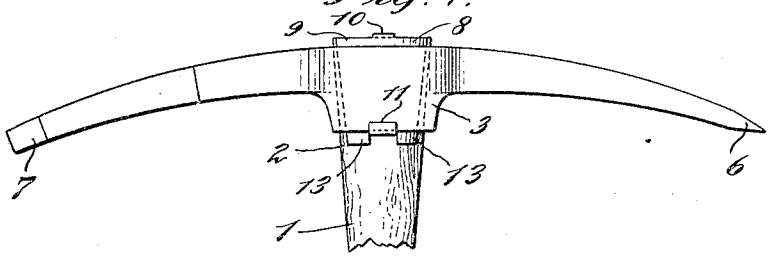


Fig. 2.

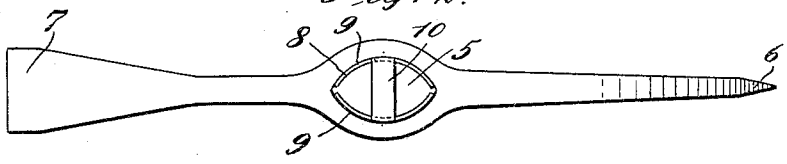


Fig. 4.

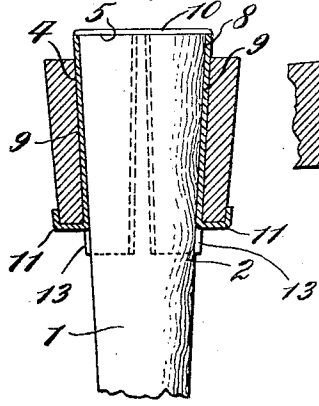


Fig. 3.

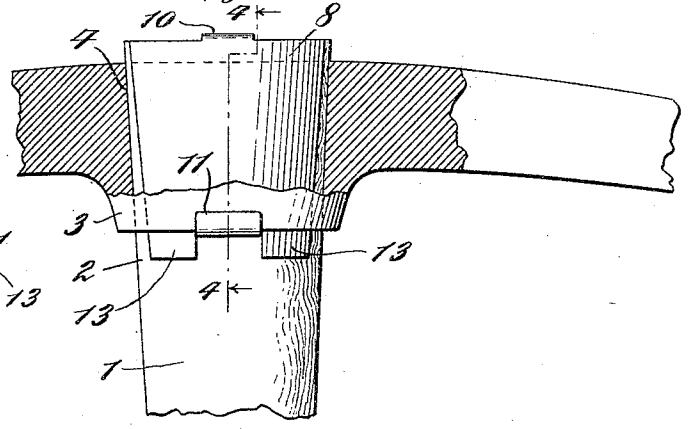
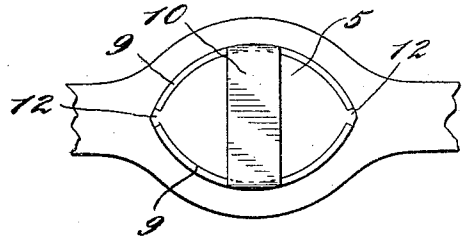


Fig. 5.



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Fig. 6.

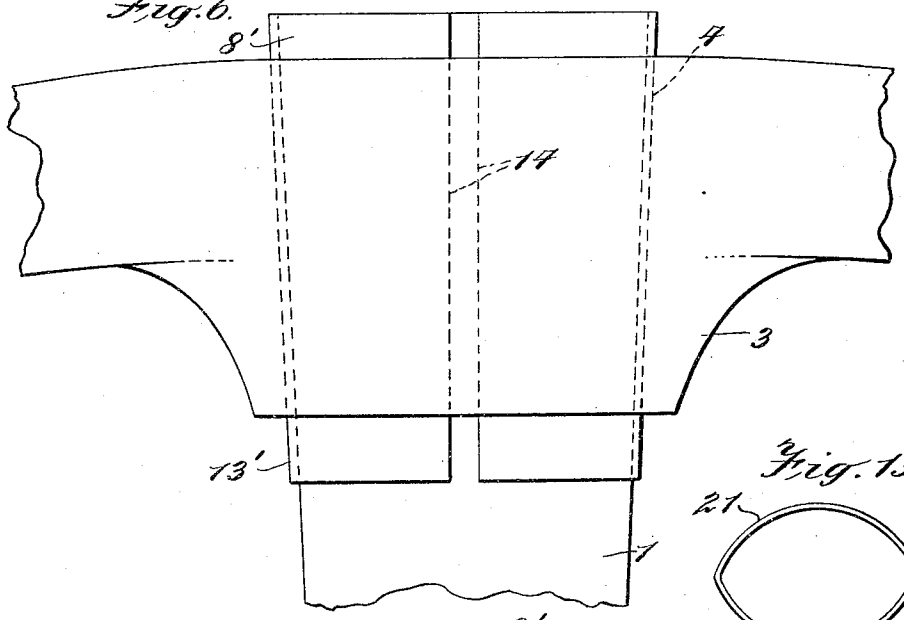


Fig. 13.

Fig. 7.

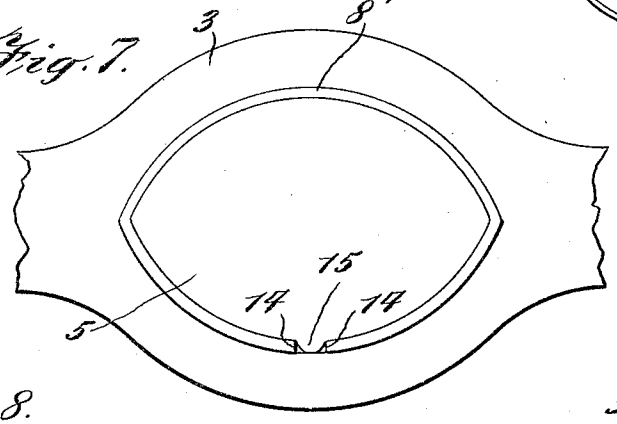
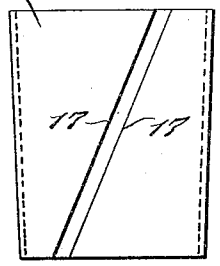


Fig. 8.



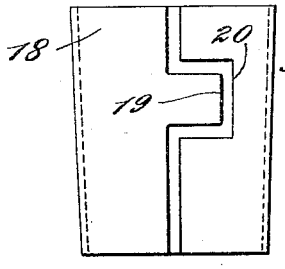
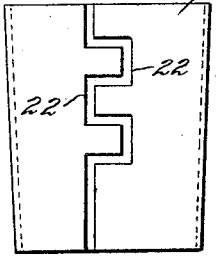


Fig. 10.

Fig. 12.



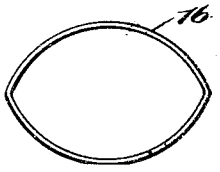


Fig. 9.

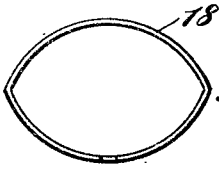


Fig. 11.

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1,914,802

UNITED STATES PATENT OFFICE

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TOOL HANDLE SECURING MEANS

Application filed December 20, 1930. Serial No. 503,734.

This invention relates to a novel and improved means for securing a handle to a tool, particularly where the handle is provided with a wedge-shaped or tapered-end portion, such as is found in a pick handle. The invention has been illustrated, and will be described, in connection with a pick, and referring to the drawings wherein I have shown selected embodiments of the invention:

Fig. 1 is an elevation of a pick having one form of my invention applied thereto;

Fig. 2 is a plan view of the pick appearing in Fig. 1;

Fig. 3 is a view, partly in elevation and partly in section, showing the pick appearing in Fig. 1;

Fig. 4 is a view on the line 4—4 of Fig. 3;

Fig. 5 is an enlarged view of the end of the handle appearing in Fig. 3;

Fig. 6 is a view similar to Fig. 3, but showing a different form of the invention;

Fig. 7 is a view similar to Fig. 5, but showing the form of the invention appearing in Fig. 6;

Fig. 8 is a view of a different form of sleeve which may be employed in place of the forms shown in the figures described above;

Fig. 9 is an end view of the sleeve appearing in Fig. 8;

Figs. 10 and 11 and Figs. 12 and 13 correspond respectively to Figs. 8 and 9, but show different forms of the invention.

Referring first to Figs. 1 to 5, inclusive, the numeral 1 designates a tool handle, here shown as a pick handle, having an enlarged tapered-end portion 2 on which the tool is received. The tool is provided with an eye 3 of usual form, this eye having a tapered wall 4 of standard construction and form. The end 5 of the handle is disposed adjacent the larger end of the eye, as is usual in picks and similar tools. The pick in this illustration is shown as having a pointed end 6 and a tamping end 7. In other words, the pick shown is a standard form of tamping pick, although it is to be understood that this form is shown merely as illustrative.

A pick is one of a few tools used, not only to strike a blow, but also to act as a lever. It is also one of the few tools where the handle is largest at the end, and where the handle is inserted in place by passing the entire handle through the eye of the tool. This arrangement is used so that the swinging operation of the tool will cause tightening of the tool on the handle.

Due to the use to which a pick is put, there is a repeated action of impact and also of prying, tending to cause not only lateral strain due to the impact, but a rubbing or frictional action due to the prying. The pick is, of course, made of steel or other metal, and the handle of wood or other non-metallic material. For the sake of convenience, we shall refer to the tool as being made of metal, and the handle of wood, although not thereby intending to limit ourselves entirely to a wooden handle if other non-metallic handles are suitable.

The usual method in tightening a pick on its handle is to drop it on its handle, thus driving home the tool, more particularly a pick, with a wedging operation. This is usually done until a time comes when the end of the handle no longer projects beyond the eye, and then recourse is had to wedges of different kinds, driven into the end of the handle. All of this is hard on the handle and results in prematurely splitting it.

According to my invention, I place between the wall 4 and the handle a metal sleeve 8. In the form shown in Figs. 1 to 5, inclusive, this sleeve preferably is formed in one piece, having two sections 9 engaging opposite sides of the handle and connected by a strip 10 extending across the end of the handle. Each section may likewise be provided with a struck-out tongue 11 which may be folded around the edge of the eye to resist movement of the eye along the handle.

The sections are spaced apart as indicated at 12, whereby, when the tool is driven home on the handle, the sleeve may yield inwardly, the sleeve preferably being made of resilient steel so that this yielding may easily take place.

As plainly shown in Fig. 5, the two sections 9 compress the wood of the handle, and

the wood fibers being thus placed under compression exert a large outward pressure, tending to bind the parts together, and this pressure is evenly distributed by means of the sleeve.

With the arrangement shown, not only is the pick or other tool securely fastened to the handle, but the handle is protected while the tool is in use. The sleeve presents a metal surface to contact with the metal surface of the wall 4 and thus reduces the wear which takes place on the present-day form of pick where the metal contacts directly with the wood. By means of the sleeve, the wood is thoroughly protected. The sleeve is also preferably extended to the end of the handle and made flush therewith, thereby protecting the handle end from being mashed or "broomed" when or if the pick is wedged onto the handle by dropping it on the handle end in the customary manner. The strip 10 also acts as somewhat of a protection.

The other edge 13 of the sleeve also extends inwardly along the handle and thus serves to protect it. A pick, particularly when used in railroad work, is often bruised at this portion, which is shown as covered by the end 13 of the sleeve. Therefore, the sleeve may be thus used to further protect the handle.

Referring now to Figs. 6 and 7, I have shown therein the eye of a pick having the handle placed therein as before. In this form, however, the sleeve 8′ is in the form of a single piece of metal, preferably resilient steel, and has its edges 14 spaced apart as shown, so as to permit the steel to expand and contract as necessary. When the sleeve is placed in position, the fibers of the wood of the handle end 5 will take some such position as indicated at 15 in Fig. 7, this being a measure of the amount of compression of the wood fibers, the compression generally being equal to the thickness of the sleeve all around. In this form, the sleeve is also extended beyond the eye in both directions, the portion 13′ in particular being better adapted to protect the handle than in the form shown in Figs. 1 to 5.

In Figs. 8 and 9, a slightly different form of sleeve is shown at 16. In this form, the edges 17 of the sleeve are so disposed as to be diagonal to the axis of the handle.

In Figs. 10 and 11, the sleeve 18 has its edges provided the one with a projection 19, and the other with a recess 20 to receive that projection.

In Figs. 12 and 13, the sleeve 21 has its edges 22 provided with a plurality of overlapping parts, but here, as also in the other forms, the edges are spaced apart so as to permit the yielding of the sleeve.

While I have shown the invention as embodied in a specific form, it is to be understood that various changes in details may be made without departing from the scope of the invention, and I therefore do not intend to limit myself except by the appended claim.

I claim:

In combination, a metal tool having a tapering eye, a wooden handle having a tapered portion disposed in said eye and wedged therein, with the large end of said tapered portion adjacent the large end of the eye, and a metal sleeve disposed between said tapered portion of the handle and the wall of said eye, said sleeve compressing the wood of the handle as the tool is wedged thereon, said sleeve being split lengthwise of the handle and having the edges on opposite sides of the split spaced apart to permit movement towards each other during said wedging, and said sleeve being disconnected from said handle except by said wedging, whereby during said wedging the sleeve may freely move longitudinally and circumferentially of the handle to seat itself in firm engagement with both the handle and the wall of the eye, a portion of said sleeve extending partially over the end of the handle to protect the wood of the handle.

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