Dec. 7, 1948. D. F. CHRISTOFFER 2,455,733

TOOL HANDLE WEDGE

Filed Jan. 25, 1946

Fig. 1.

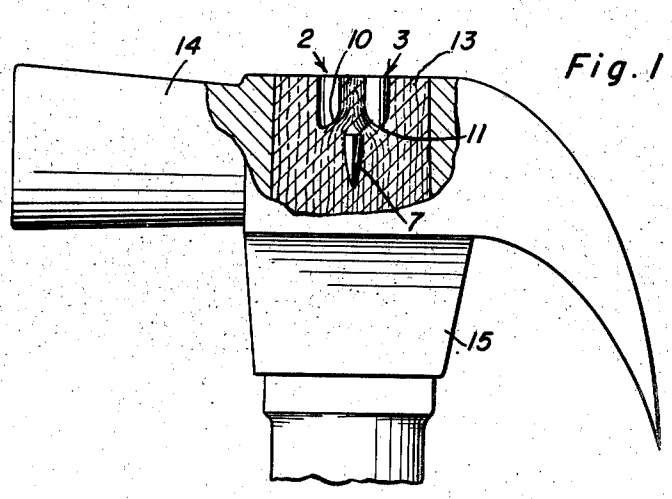


Fig. 2.

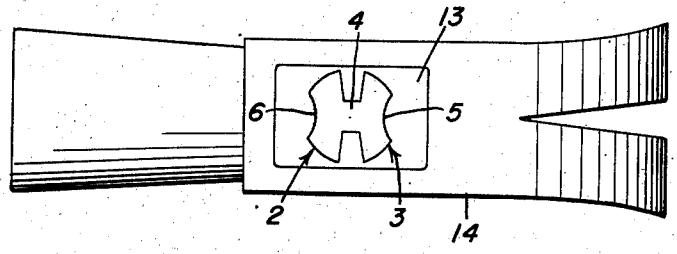


Fig. 5

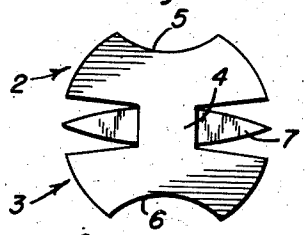


Fig. 6.

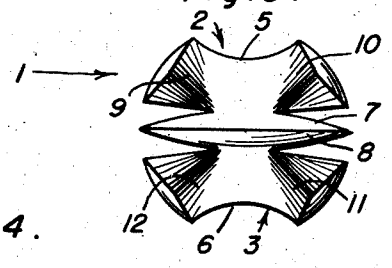


Fig. 3.

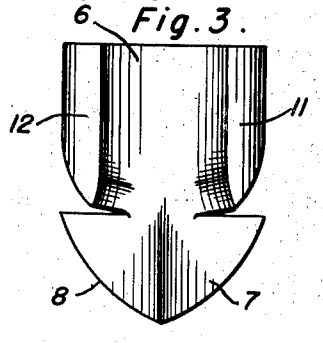
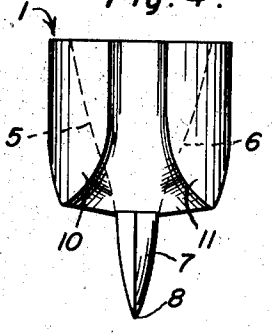


Fig. 4.



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UNITED STATES PATENT OFFICE

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TOOL HANDLE WEDGE

Donald F. Christoffer, Spirit Lake, Iowa

Application January 25, 1946, Serial No. 643,238

1 Claim. (Cl. 306—33)

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This invention relates to improvements in wedges or wedge securing devices such as are used for the purpose of retaining the heads of tools or implements upon the handles thereof.

An object of the invention is to provide an improved wedge for locking the head of a tool upon its supporting handle, whereby accidental separation of the head from the handle will be positively prevented.

Another object of the invention is to provide an improved locking and securing wedge constructed for positively holding a tool head upon its handle, said wedge being formed with a central wood spreading bit and a plurality of cooperating angularly and radially disposed bits whereby the grain of the wood in the handle will be forced at various angles to its original grain, so that accidental removal of the head will be impossible.

A further object of the invention is to provide an improved wedge for tool handles which will be highly efficient in operation, and which will be relatively inexpensive to manufacture and produce.

Other objects will appear as the description proceeds.

In the accompanying drawings which form a part of this application:

Figure 1 is a side elevation, partly broken way, of a hammer head and handle therefor showing the improved wedge in position within the upper end of the handle;

Figure 2 is a top plan view of a hammer head and handle showing the improved locking wedge in position in the upper end thereof;

Figure 3 is a side elevation of the improved locking wedge for the tool handle;

Figure 4 is an end view of the improved locking wedge for tool handles;

Figure 5 is a top plan view of the improved handle locking wedge, and

Figure 6 is a bottom plan view of the improved tool handle locking wedge.

Like characters of reference are used throughout the following specification and the accompanying drawing to designate corresponding parts.

In carrying out the invention, there is provided a locking and securing wedge 1 for tool handles, the same being preferably formed of metal and being of substantially H-shape when looking down on said wedge.

The wedge is provided with the oppositely disposed arms 2 and 3, the same being connected by the cross member 4, and each arm is formed with the inwardly directed downwardly extending side grooves 5 and 6. Each of the grooves tapers from

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a minimum depth at the top of the wedge 1 to a maximum depth adjacent the bottom of the wedge.

A centrally positioned spade-shaped bit 7 is secured to the body of the wedge 1 and extends therebelow being formed integral with the cross member 4. The bit 7 is rounded at its lower extremeties to form a common apex, said rounded sides being bevelled off to form the sharpened edge 8.

The lower ends of the H-shaped body of the wedge 1 are shaped to form the four radially extending sharpened bits 9, 10, 11 and 12, and the opposite sides of said bits are tapered upwardly from sharp edges at respective bottom portions thereof to distort the grain of the wood in the handle 13 of the tool from its natural position, and for locking the end of the handle 13 in the tool or hammer head 14.

It will be understood that the wedge forming the subject matter of the instant invention may be used in connection with various kinds of tools where the tool head is supported on the end of the handle.

In operation, the handle 13 is driven into the socket 15 of the tool head 14, and then the wedge is placed so that the bit 7 will extend transversely of the handle, and the wedge is driven into the end of the handle 13 as far as possible.

The bits 9, 10, 11 and 12 are supplied with sharp cutting edges at their bottom portions and these cutting edges are spaced from the spade-shaped bit 7. As is seen in Figure 3 the bits have their sharp cutting edges (which form the inception of the bits 9, 10, 11 and 12) adjacent the top or terminal portion of the spade-shaped bit 7, but spaced therefrom.

The action of the wedge 1 on the wood of the handle 13 as it is being driven therein is as follows: First the spade-shaped bit 7 spreads the wood of the handle in an initial cleavage. Then the four bits fracture the wood of the handle, two of the fractures being on each side of the initial cleavage. Since the bits are tapered upwardly from the sharp bottom cutting edges at the respective bottom portions thereof and since the sharp bottom cutting edges are radially disposed relative to the longitudinal axis of the wedge 1, the wood of the handle is not only fractured but also redirected torsionally between the arms 2 and 3 and in the slots 5 and 6. This forms an effective lock of the wedge in the handle, spreading the wood of the handle for assisting in maintaining the tool head 14 fixed firmly on the handle 13.

While the preferred embodiment of the instant

invention has been illustrated and described, it will be understood that it is not intended to limit the scope of the invention thereto, as many minor changes in deail of construction may be resorted to without departure from the spirit of the invention.

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

A locking wedge for tool handles comprising a substantially H-shaped body, integral bits radially disposed on the body and extending longitudinally thereof, said bits having cutting edges at the bottom portions thereof and smoothly contoured arcuate walls extending from the cutting edges, a locking bit having an arcuate cutting edge, said locking bit being integral with said body and having a flat upper surface spaced from the cutting edges of said first mentioned bits, grooves formed between certain of said bits, the said locking bit adapted to form an initial cleavage in a handle, the cleaved portions of which are adapted to be fractured by the cutting edges of the bits, and the fractured portions of the handle being distorted torsionally between the bits.

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