

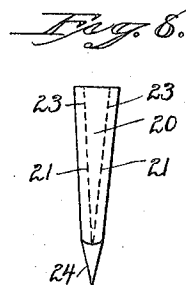
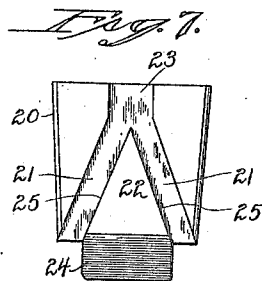
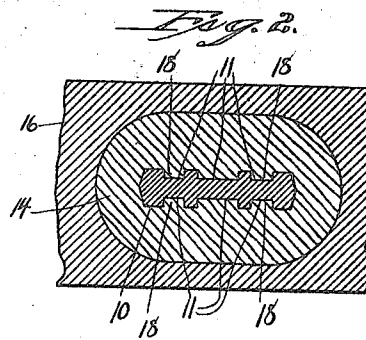
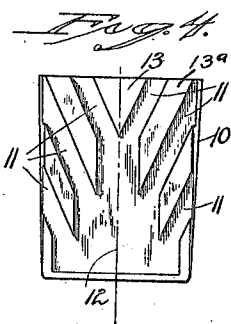
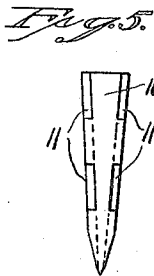
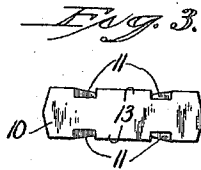
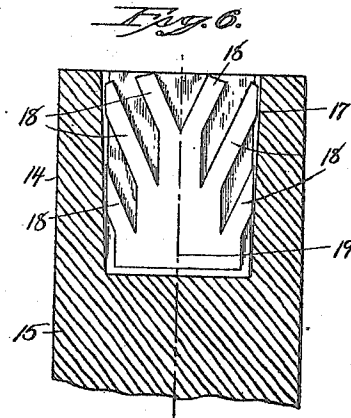
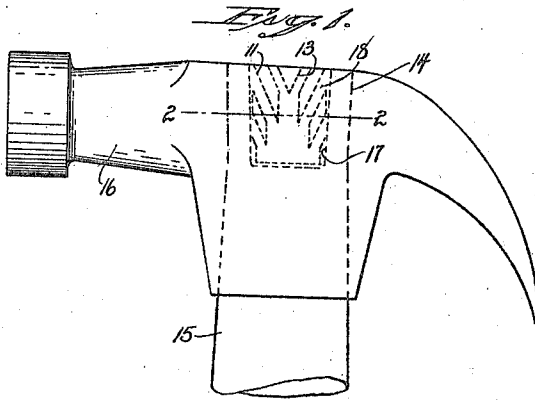
Feb. 20, 1923.

E. W. BULLARD

1,445,822

WEDGE

Filed Apr. 20, 1922



Inventor
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att'y

UNITED STATES PATENT OFFICE.

EDWIN W. BULLARD, OF WHITNEYVILLE, CONNECTICUT.

WEDGE.

Application filed April 20, 1922. Serial No. 555,785.

To all whom it may concern:

Be it known that I, EDWIN W. BULLARD, a citizen of the United States, residing at Whitneyville, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Wedges; and I do hereby declare the following, when taken in connection with the accompanying drawings and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this application, and represent, in—

Fig. 1 a view in side elevation of an ordinary claw-hammer, the head of which is secured to the tenon of its wood handle by one form of my improved imperforate self-locking wedge shown by broken lines.

Fig. 2 a view thereof in broken horizontal section on the line 2—2 of Fig. 1, the parts being shown on an enlarged scale.

Fig. 3 a detached plan view of the self-locking wedge.

Fig. 4 a face view thereof.

Fig. 5 an edge view thereof.

Fig. 6 a broken view in vertical central section of the tenon of the hammer handle, showing the impression made therein by one face of my improved imperforate wedge.

Fig. 7 a detached view in side elevation of one of the modified forms which my improved imperforate wedge may assume.

Fig. 8 an edge view thereof.

My invention relates to an improvement in self-locking metal wedges for securing hammer-heads, hatchets, and the metal parts of kindred tools to the wood handles thereof, notwithstanding the shrinkage of the same, the object of my invention being to produce a superior wedge of the character described, in so far as it avoids the cutting of the fibers of the wood and deflecting or lacing them through transverse openings in the wedge.

With these ends in view, my invention consists in an imperforate self-locking metal wedge having one or both of its faces configured for the insulation and deflection of fibers of the wood in the planes of the said face or faces and at an angle to the longitudinal axis of the handle of the tool.

My invention further consists in certain details of construction as will be hereinafter described and particularly pointed out in the claims.

In carrying out my invention, as herein

shown, I employ an imperforate metal wedge 10, the flat opposite faces of which are formed with a symmetrical arrangement of two sets of downwardly-opening grooves 11 respectively diverging in opposite directions from the longitudinal axis 12 of the wedge, the uppermost pair of grooves being separated by a triangular spreading-point 13 and the other grooves producing inclined ribs 13^a having pointed lower ribs. When such a wedge is driven into the tenon 14 of the wood handle 15 mounting the claw-hammer 16, the fibers of the wood forming the opposite walls of the mortise or cleft 17 in the said tenon will be entered by the apex of the spreading point 13 and by the pointed lower ends of the ribs 13^a and isolated in groups or bundles 18 and deflected in opposite directions from the longitudinal axis 19 (Fig. 6) of the cleft or mortise 17 and hence of the handle 15, as shown in Fig. 6, in planes which are substantially parallel with the faces of the wedge. But the fibers, as I wish to particularly point out, are not transversely cut, as in the use of those wedges in which they are deflected or laced through holes or openings in the wedges. On the contrary, the fibers of the bundles or cables of fibers are compressed and condensed by the described swaging action of the point 13 and the ribs 13^a. Since the groups or bundles 18 of fibers thus deflected lie in the grooves 11 of the wedge at an angle to the longitudinal axis 12 thereof, they will lock and hold the same in place, even though the wood shrinks, and thus prevent the hammer-head 16 from flying off in the use of the hammer. In case the wedge, owing to the shrinkage of the wood, gets loose, it will not come out, but may readily be tightened by a blow driving it still further inward into the wood.

A self-locking wedge constructed in accordance with my invention may assume a considerable variety of forms without departing from its principle. One of such modified or alternative forms is illustrated in Figs. 7 and 8, in which the opposite faces of the wedge 20 are formed with complementary, inwardly-diverging downwardly-opening grooves 21 separated by a triangular spreading-point 22 and merging at their upper ends into a wider common groove 23. In this construction, the point of the wedge consists of an integral leaf-

like extension 24 lying between the open lower ends of the grooves 21. In the use of this wedge, certain groups or sets of fibers in the opposite walls of the mortise or cleft in the tool-handle will be deflected toward each other, into the grooves 21 in planes substantially co-incidental with the opposite faces of the wedge and produce, as it were, bundles of fibers standing at an angle to the longitudinal axis of the wedge, and hence of the handle, in which any tendency of the wedge to work outward will be effectively resisted by the engagement of the inner shoulders 25 of the grooves 21 with the inner edges of the bundles of fibers lying in such grooves.

I would, therefore, have it understood that I do not limit myself to the constructions shown and described, my invention broadly comprehending wedges having their opposite faces formed with downwardly-opening grooves or otherwise configured for the deflection of bundles or sets of the fibers of a wood tool-handle in the planes of the opposite faces of the wedge, so as to stand at an angle to the longitudinal axis thereof and to constitute locking means for holding the same in place.

I claim:

1. An imperforate, self-locking wedge for securing tools to wood handles, having one of its faces formed with one or more downwardly-opening, obliquely-disposed grooves for the oblique deflection of fibers of the wood in the plane of the said face, at an oblique angle to the longitudinal axis of the wedge, the said fibers being received by the said groove or grooves.

2. An imperforate self-locking wedge for securing metal tools to wood handles, the said wedge having its opposite faces formed with grooves and ribs extending at an angle to its longitudinal axis for the deflection and reception of sets or bundles of fibers of the wood in the planes of such faces and at an angle to its longitudinal axis, the lower ends of the ribs being shaped to enter the fibers of the wood for the sidewise displacement thereof.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

EDWIN W. BULLARD.

Witnesses:

FREDERIC C. EARLE,
MALCOLM P. NICHOLS.