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NAIL HOLDER AND PUNCH

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NAIL HOLDER AND PUNCH

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1 Claim. (Cl. 1—47)

This invention relates to a nail holder and punch for use with nails, screws and other driven members, and is particularly useful for the driving of nails and the like in recesses which are difficultly accessible.

Heretofore, instruments have been provided for the setting of a screw or nail within the recess so that the same will remain in position and can be driven home by a separate punch or screw driver. Such structures have been employed in the setting of extremely small nails or screws and have not been satisfactory or employed for the driving of the nail, etc., deeply within the timber, etc. For the latter purpose, a second tool has always been used.

An object of the present invention is to provide a punch tool which may be employed for driving the nail, etc., deeply into the timber and accurately at the spot selected. Another object is to provide a tool which permits the nail or other driven member to be carried securely in the end of the tool and located at the precise spot desired, the tool then serving as a punch for the driving of the nail deeply into the wood.

Yet another object is to provide a punch having a shank of relatively small diameter and a head of relatively large diameter whereby the tool can be accurately placed within a recess while at the same time the enlarged head serves as a sturdy member for retaining the nail and then permitting driving thereof. A further object is to provide a punch structure in which the relatively narrow shank merges into a relatively large head, the forward portion of the head being cut away to provide a nail-holding extension and the rear portion of the head being provided with a recess receiving the nail head against a portion of the head which is concentric with the solid shank. Yet another object is to provide a punch tool having an enlarged head with the upper forward portion cut away to provide a grooved extension and the head also being provided with a concave recess closed at its sides to provide a sturdy structure permitting driving of the nail deeply into the timber. Other objects and advantages will appear as the specification proceeds.

The invention is illustrated, in a preferred embodiment, by the accompanying drawings, in which—

Figure 1 is a perspective view of a punch structure embodying my invention; Fig. 2, a transverse sectional view, the section being taken as indicated at line 2 of Fig. 4; Fig. 3, a front view in elevation; Fig. 4, a broken transverse sectional view of the forward portion of the punch; and Fig. 5, a broken top plan view of the forward portion of the punch.

In the illustration given, 10 designates the shank of the tool, which may be formed of steel or any other suitable metal, the rear end of the tool may be flattened to enable it to be driven as a punch and just forward of the flattened end knurling 11 may be formed to facilitate the gripping of the handle or shank 18.

The forward end of the tool is provided with an integral enlarged head 12 preferably of the shape shown more clearly in Figs. 3, 4 and 5. The enlarged head is preferably cut away at 13 to provide a nail-holding extension 14 equipped with a groove 15. The bottom portion of the extension 14 is preferably upwardly inclined as indicated at 16, to produce a relatively narrow pointed end portion. At the rear of the extension 14 is a transverse recess 17 adapted to receive the head of a nail 18. The recess 17 is substantially semi-circular in shape and with sufficient depth to receive the head of a nail, screw, etc. The arcuate shape of the groove 15 and the concave recess 17 permit the use of various size nails, including the so-called roofing nails having a large head and used by electricians in the installation of outlet boxes, etc.

By cutting away the head along the line 13, as indicated, and by providing the semi-circular recess 17, it will be noted that the head 18 of the nail is perfectly centered with respect to the center of the solid shank 10. Thus, a solid channel of steel, concentric with the nail, is interposed between the hammer and the nail head, resulting in the driving of the nail along a true direct line. The enlarged head 12 presents a wide area adapted to receive heads or different sizes while, at the same time, providing a heavy mass of metal extending all the way around the semi-circular recess 17 and thus connecting the extension 14 sturdy therewith.

The tapered narrow end of the extension 14 permits the small screw or nail to be set within a narrow recess while, at the same time, the driving head 12 concentric with the solid shank 10 is available for driving the nail or screw well into the timber at the back of the recess.

The semi-circular recess 17 may be formed by milling or by any other suitable means or, if desired, the recess may be cut transversely of the shaft and the side walls then filled in by welding to provide the closed sides, as illustrated more clearly in Figs. 2 and 5. It is particularly advantageous to have the side walls of the recess 17 closed and solid with the remaining structure,
so that an extremely sturdy connection is provided between the head 12 and the extension 14. Thus, under hammer blows there is no tendency for the extension 14 to break off or for the connecting walls to buckle. Even if the extension 14 strikes the timber, the force of the blow does not break off the nail-holding extension.

In the operation of the structure, a nail, screw, etc., is placed with the Shank thereof resting within groove 15 which is arcuate in shape and adapted to center nails, etc., of varying diameters. The head of the nail, etc., rests within the recess 17 and the head of the nail is substantially centered with the head 12 and shank 10. At the same time, the cutaway top portion of the extension greatly aids the operator in placing the nail in position and for sighting the point thereof as it is pressed against the spot selected. With the point of the nail against the selected spot on the timber, the punch tool is next driven to force the nail deeply within the timber. After the nail has been driven fairly deeply into the timber, the nail head is disengaged from the supporting grooves and the point of the tool is then brought against the nail and serves as a punch for completing the nail-driving operation. In other words, the tool serves not only as a holder for placing the nail and starting it, but also as a tool for completing the final punching operation.

In supporting an extremely long nail 18 in position, the operator, if the nail is of an unusual length, may extend his finger beyond the extension 14 so as to provide a slight extension therefor and thus support the nail as it is being placed with the point against the selected spot in the recess. The tool is then driven to force the nail as far within the timber as desired.

Where the nail is driven into the timber for about four-fifths of its length, and a portion of the nail and head still extends slightly out of the timber, the present tool may be used also as a means for withdrawing the nail, since the head can readily be inserted within the recess 17 in the cut away forward portion of the head 12 and the Shank of the nail received within groove 15. The closing of the side walls of the semicircular groove 17 provides a grip which extends around a considerable area of the head and thus enables the force to be applied over a relatively wide area of the head.

The cutting away of the forward end of the head is also particularly advantageous in freeing the tool from engagement with the nail after it has been driven well into the timber, and it is necessary to move the head only a slight distance laterally to bring about the release. In the release operation, the tapered forward end of the tool permits the handle to be swung upwardly slightly and thus facilitates the removal of the head from recess 17 after the punching operation.

While in the foregoing specification, I have set out a large number of details as illustrating one mode in which the invention may be practiced, it will be understood that such details may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

A tool for driving nails, comprising an elongated shank member, an enlarged head formed integrally with said shank, said enlarged head having its upper forward portion cut away to provide a vertical rear wall and a horizontal forwardly-extending platform portion, said vertical rear wall being provided with a longitudinally-extending groove, and said head being also provided with a half-moon shaped recess extending transversely thereof and communicating with the rear portion of said groove, the rear portion of said head being connected to said platform portion by a semi-circular band of metal enclosing said transverse recess, said head having its lower portion tapering forwardly and inwardly and terminating in a flat end adapted to serve as a punch for nail.

NEIL J. POLLOCK.

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