Oct. 4, 1949. W. D. WESTMORELAND 2,483,796

ASBESTOS SHINGLE NAIL HOLE PUNCH

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FIG. 1

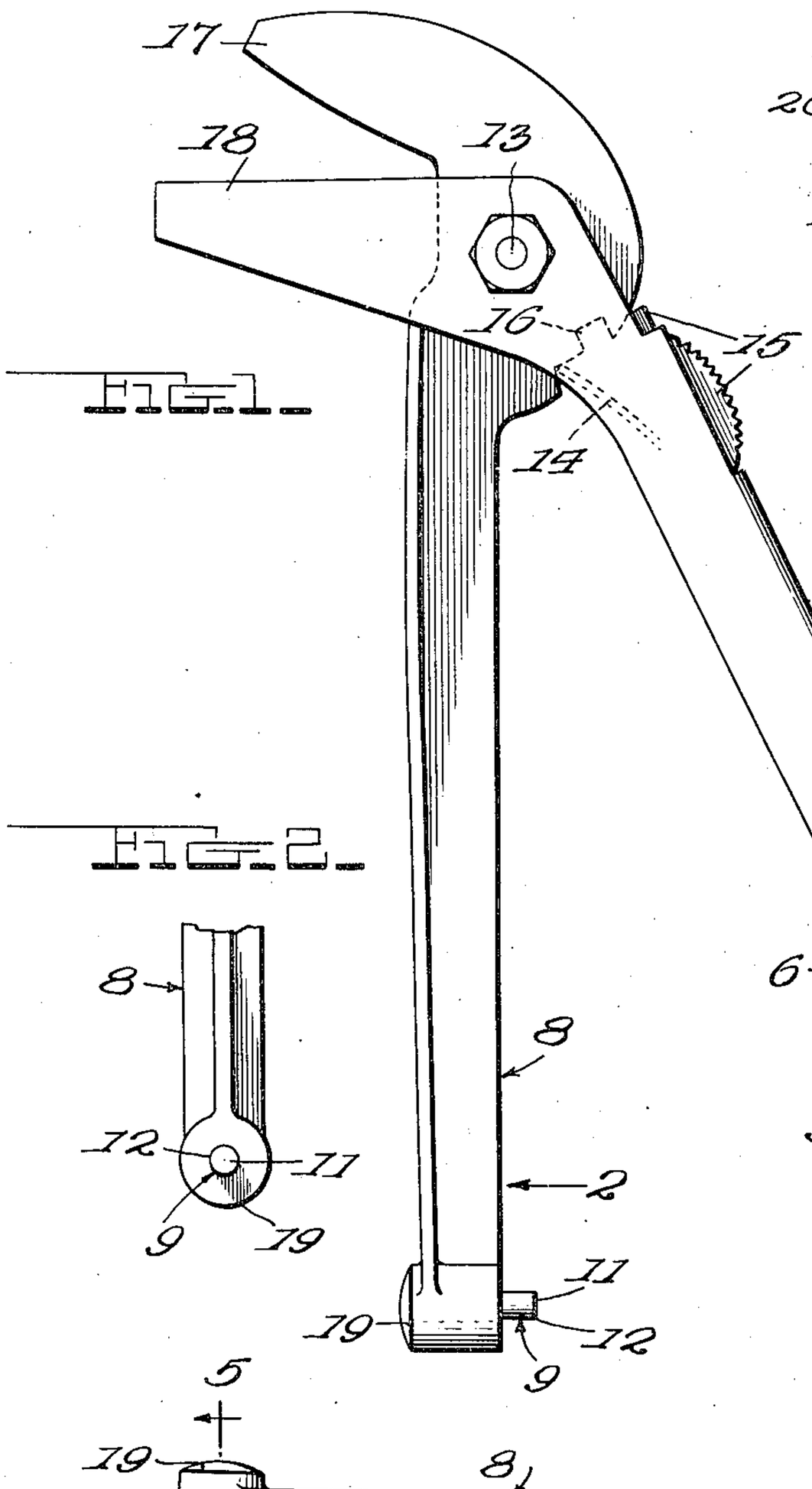

FIG. 2

FIG. 3

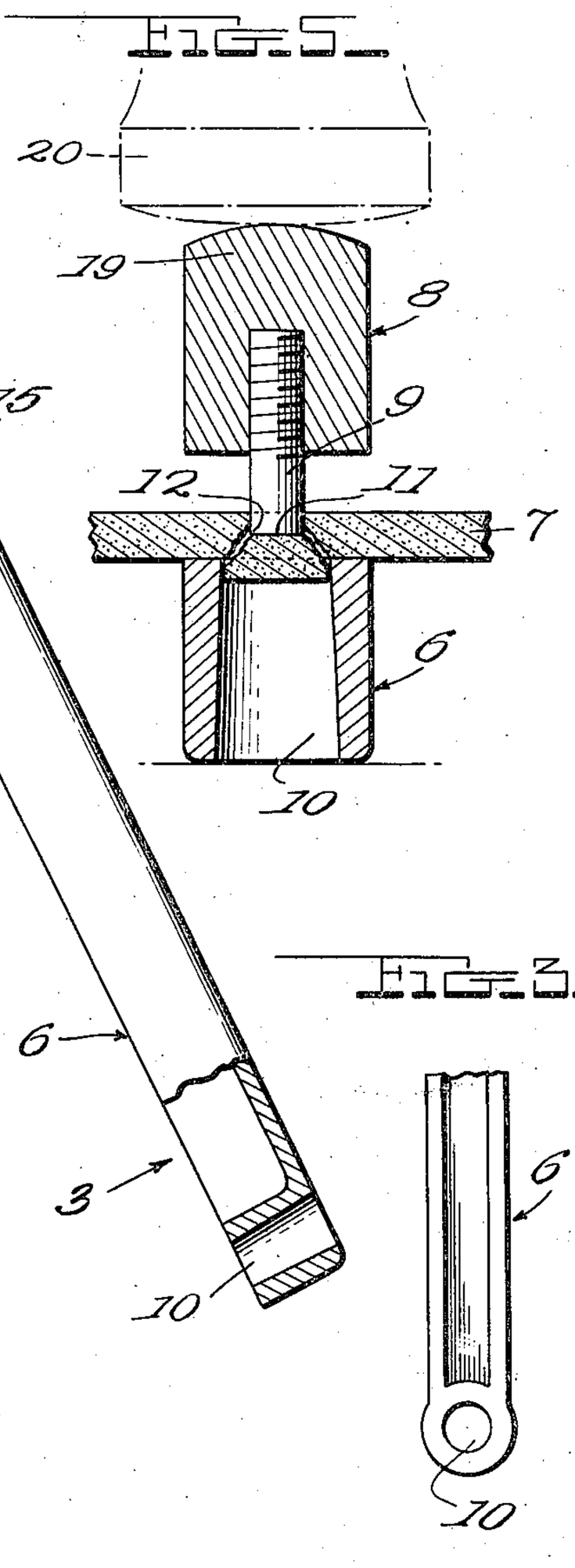

FIG. 4

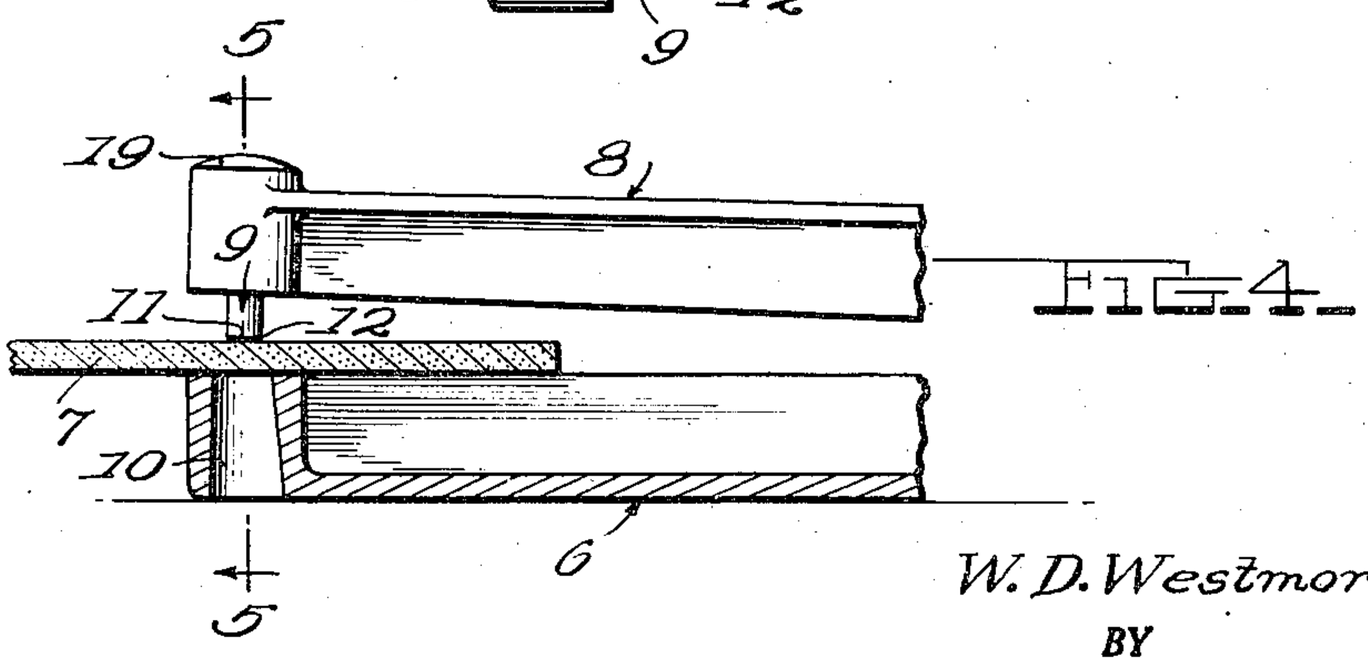

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FIG. 6.

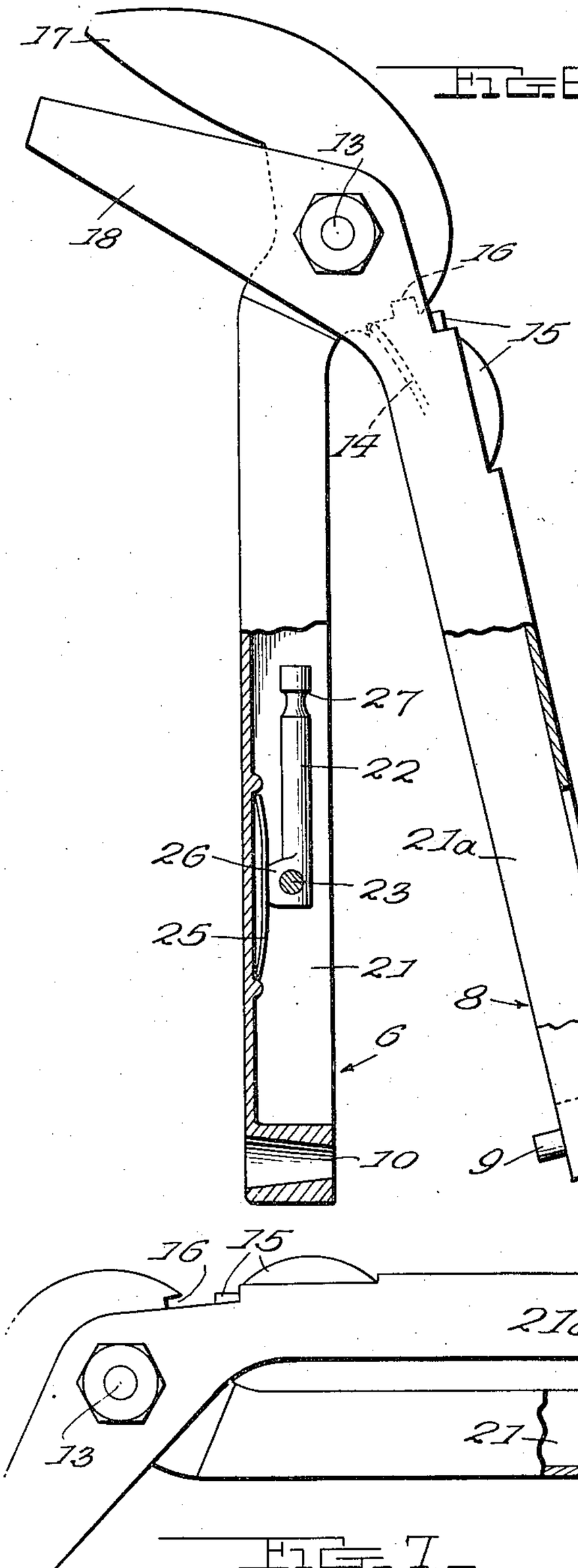


FIG. 8.

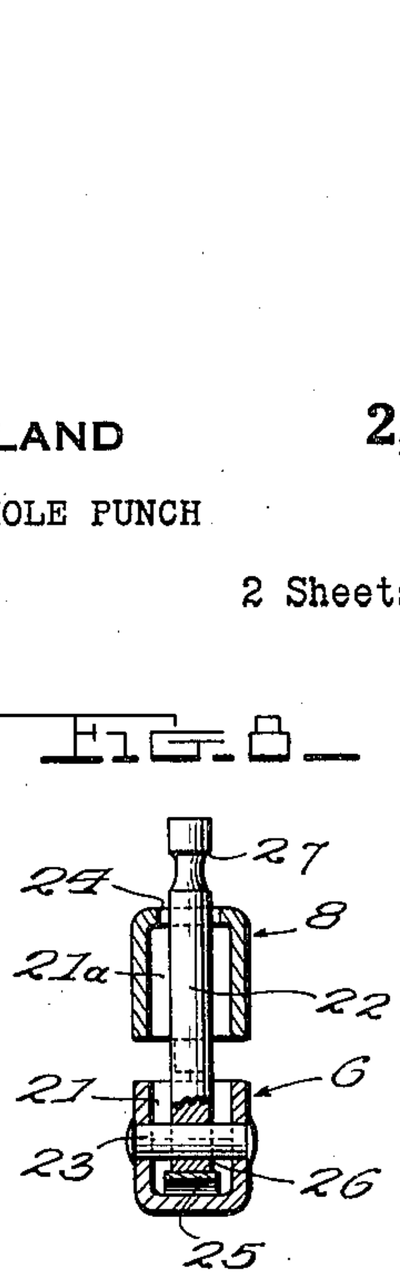


FIG. 9.

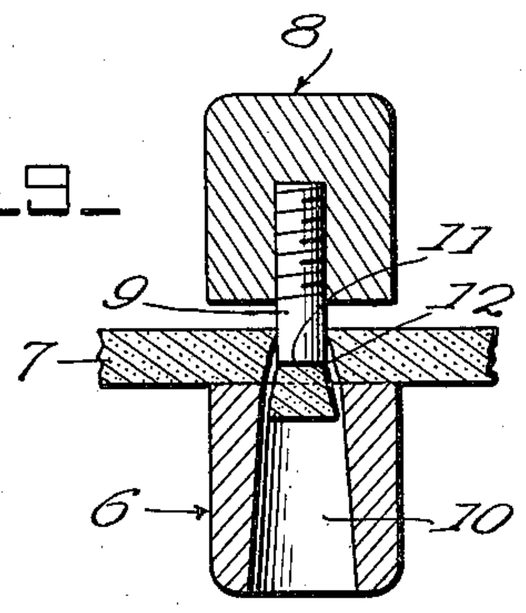
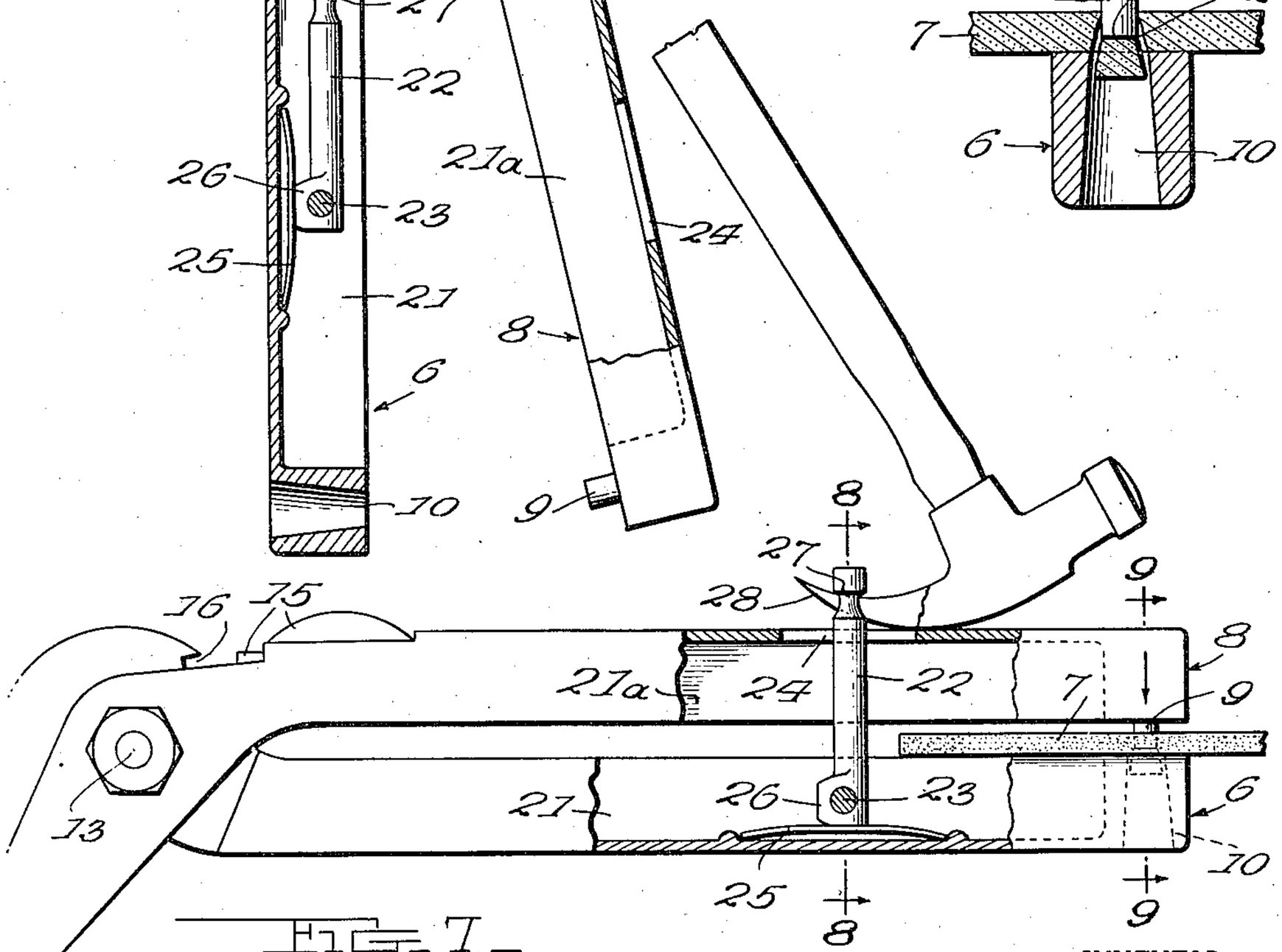


FIG. 7.



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ASBESTOS SHINGLE NAIL HOLE PUNCH

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Application October 24, 1947, Serial No. 781,779

4 Claims. (Cl. 125—23)

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In applying asbestos shingles, it is frequently necessary to use nails in portions thereof not provided with nail holes at the factory, and this is particularly true when securing relatively small pieces of shingle in place. Attempts at merely driving nails through the hard and brittle shingles frequently result in shingle breakage, and drilling the required openings not only requires a great deal of time and inconveniences but is ruinous to drills. My invention, however, has aimed to provide a simple, easily operable and efficient tool for forming the nail holes wherever required, and successful use has shown that this end has been attained with a tool sufficiently small to be readily carried in a workman's pocket. The tool is similar to known punching tools for other purposes, in that a punch on a punch carrier is movable into an opening in an anvil, but whereas such known tools must cut through the material and are not suitable for hard and brittle shingles, the present tool forms the opening primarily by a localized breaking action.

Figure 1 of the accompanying drawings is a side elevation showing the tool embodying the elements of the present invention combined with those claimed in my co-pending U. S. patent application Serial No. 778,517, filed October 7, 1947, which has been abandoned.

Figs. 2 and 3 are detail edge views as indicated by the arrows 2 and 3 of Fig. 1.

Fig. 4 is a fragmentary longitudinal sectional view partly in elevation showing the manner of positioning the shingle with respect to the tool preparatory to the formation of a nail hole through said shingle.

Fig. 5 is an enlarged transverse section on line 5—5 of Fig. 4 showing the manner in which the nail hole is formed, primarily by a localized breaking action.

Fig. 6 is a side elevation partly in section showing a different form of the tool.

Fig. 7 is a view similar to Fig. 6 but showing the manner of using the tool.

Figs. 8 and 9 are transverse sectional views on lines 8—8 and 9—9 of Fig. 7.

The tool embodies an anvil 6 to support an asbestos shingle 7, a punch carrier 8 movable toward and from said anvil 6, and a punch 9 suitably secured to said carrier 8 and receivable in an opening 10 in said anvil 6. The punch 9 is of a diameter considerably less than the diameter of the opening 10 and is of course centered with respect to this opening, and the difference in diameters is preferably such that there

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will be about one-sixteenth of an inch space between the periphery of the punch and the wall of the opening, when the punch is received in this opening. The punch is cylindrical and is provided with a flat shingle-engaging end surface 11 in a plane at a right angle to the punch axis, said end surface coacting with the periphery of the punch in providing a continuous sharp corner 12. When the tool is closed upon a shingle positioned as in Fig. 4 or in Fig. 7, and the punch carrier 8 is operated, the sharp corner 12 cuts only slightly into one side of the shingle as seen in Figs. 5 and 9 and the rest of the nail hole is formed by a localized breaking action as seen in these views.

In the forms of construction herein disclosed, the anvil 6 and punch carrier 8 are in the form of elongated members connected with each other at one end by means of a pivot 13 and provided with the punch and opening at their other end, a suitable spring 14, a part of which is dotted in Figs. 1 and 6 being preferably used to hold the members 6 and 8 in relatively open positions and to reopen them after closing of the tool. It is also preferable to provide some sort of latch such as a slide 15 engageable with a notch 16, to hold the members 6 and 8 in relatively closed position when the tool is not in use, permitting carrying of said tool conveniently in a workman's pocket.

The jaws 17 and 18, at the pivoted ends of the members 6 and 8, form parts of shingle-severing means claimed in the application above referred to.

In the tool shown in Figs. 1 to 5, the punch 8 is provided with a head 19 to be struck with a hammer 20 (Fig. 5) for operating the tool, but other suitable provision could of course be made for relatively closing the members 6 and 8. A very advantageous means for this purpose is shown in the form of construction illustrated in Figs. 6 to 9. In these views, the two members 6 and 8 are of longitudinally channeled form with their channels 21 and 21a disposed inwardly. An arm 22 is pivoted at 23 in the channel 21 of the member 6 and normally occupies a position longitudinally within this channel, as seen in Fig. 6. This arm 22, however, may be swung inwardly from the member 6 to a position in which it will extend through an opening 24 in the member 8, as seen in Figs. 7 and 8, when the tool is closed. A suitable spring 25 in the channel 21, is cooperable with a flat-sided head 26 on the pivoted end of the arm 22, to yieldably hold said arm in either of its positions. This arm is provided near its outer end with a shoulder

27 to be engaged by the claws 28 of a common claw hammer, as seen in Fig. 7, whereupon the hammer will fulcrum in nail-pulling position upon the member 8, thus operating the tool to punch the desired opening.

From the foregoing, taken in connection with the accompanying drawings, it will be seen that novel and advantageous provision has been made for carrying out the objects of the invention, and while preferences have been disclosed, it is to be understood that minor variations may be made.

I claim:

1. A punching tool comprising two members having a punch and a punch-receiving opening respectively, means mounting said members for relative opening and closing movements, and an arm connected to one of said members and extending beyond the other of said members, the outer end of said arm having a shoulder to be engaged by the claws of a claw hammer when the latter is fulcrumed in nail-pulling position upon said other of said members, whereby, the hammer is operable to relatively close said members.

2. A structure as specified in claim 1; said arm being pivotally connected to said one of said members to swing to an inoperative position in compact relation with said one of said members.

3. A structure as specified in claim 1; said arm being pivotally connected to said one of said members to swing to an inoperative position in compact relation with said one of said members, said arm and said one of said members having coacting means for yieldably holding said arm in either of its positions.

4. A structure as specified in claim 1; said arm being pivotally connected to said one of said members to swing to an inoperative position in compact relation with said one of said members, said one of said members having a recess which receives said arm when the latter is swung to said inoperative position.

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The following references are of record in the file of this patent:

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