

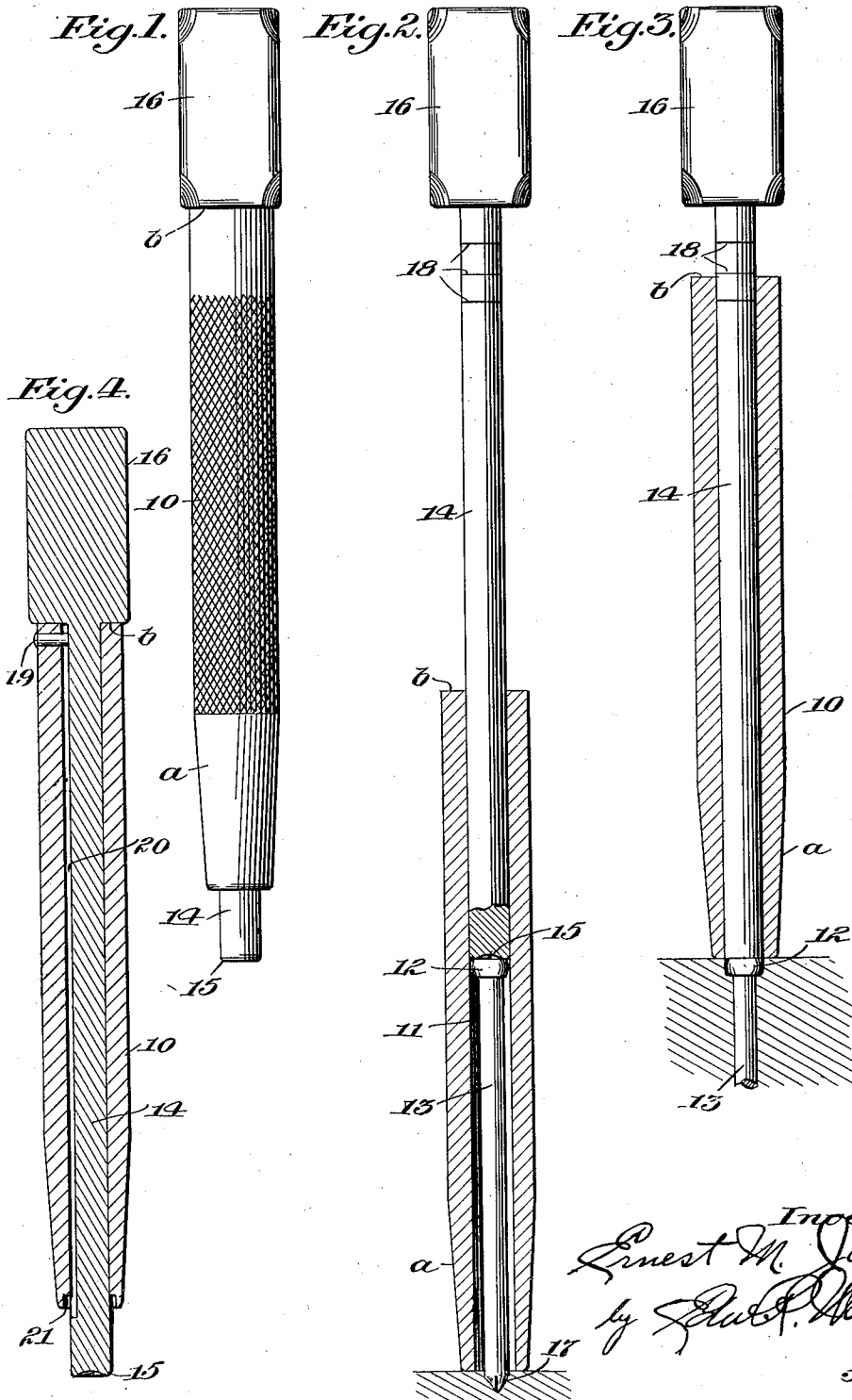
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NAIL DRIVER AND SET

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# UNITED STATES PATENT OFFICE.

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## NAIL DRIVER AND SET.

Application filed November 18, 1925. Serial No. 69,873.

*To all whom it may concern:*

Be it known that I, ERNEST M. Joy, a citizen of the United States, residing at Hollywood, in the county of St. Marys and State of Maryland, have invented a new and useful Nail Driver and Set, of which the following is a specification.

The present invention relates to tools and is a combined nail driver and set.

10 In the woodworking art, it is found that ordinary wire or finishing nails cannot be driven into the hard wood without the nail bending, unless the wood has been previously bored or a suitable passage provided into  
15 which the nail may be driven. This greatly increases the labor cost in construction employing hard wood; and in carpenter work, it is not always possible or practical to provide openings or passages into which the  
20 nails may be driven.

The present invention has for its object to overcome the above drawbacks and to provide a hand tool, in the form of a nail driver and set by the use of which nails can be  
25 driven directly into hard wood without previously providing a passageway into which the nail may be received, this device preventing the nail from bending and marring the wood and will also act as a set to  
30 countersink the nail.

With this and other objects in view, the invention resides in the sundry details of construction, combination and arrangements of parts hereinafter more fully described in  
35 the drawings.

In the drawings which show the preferred embodiment of the invention as at present devised:

40 Figure 1 is an elevation of the tool in its normal condition;

Figure 2 is a vertical sectional view of the tool showing the same in position for use for driving nails into place;

45 Figure 3 is a vertical section of the tool showing the same after it has driven the nail into place and countersunk the head into the wood, and Fig. 4 is a vertical sectional view through the tool of the invention and showing a slight modification in  
50 construction.

Like characters of reference refer to like and corresponding parts throughout the specification and drawings.

55 Referring in detail to the drawings, the tool of the present invention comprises an elongated body 10 having one end slightly

tapered at *a* providing the usual nail-set having its exterior surface preferably roughened or knurled, for purposes well understood. The bore or passageway 11 is provided longitudinally in the body 10 and co-  
60 extensive therewith penetrating at each end thereof and, preferably, of the same diameter throughout. The length of the punch-like body 10 and its bore 11 should be at  
65 least fifty per cent longer than the length of nails to be used therewith and in like manner the diameter of the bore 11 is to be such as to accommodate the diameter of the nail. In the use of the present in-  
70 vention as a nail driver and set it is contemplated to use wire or so called "finishing" nails where the head 12 of the nail is only a slight enlargement over the diameter of the nail itself; and it is the purpose to have  
75 the diameter of the bore 11 just sufficiently large to permit the passage of the head 12 of the nail 13 therethrough. Thus it will be seen that the size of the tool is to be determined by the size of nail with which it is  
80 to be used.

The punch-like body 10 has slidably fitted in the bore 11; a nail driving plunger or pin 14, in the form of an elongated rod corresponding in cross-section to the shape of  
85 the bore 11 and of a diameter to fill the bore to prevent bending or buckling, and of a length in excess of that of the body 10. One end of the plunger 14 is slightly concaved or cupped on its extremity, as at 15,  
90 so as to receive and center the head of the nail thereagainst. The upper end of the plunger 14 is provided with an enlarged blow receiving driving head 16, which is of greater diameter than the bore 11 and will  
95 act as a stop to limit the downward movement of the plunger 14 through the set. It will be observed also that with this construction the driving plunger or pin 14 may be readily removed or withdrawn from the bore  
100 11 thereby permitting the body member 10 to be used as a centering punch, in the usual manner.

It will be seen that in the use of the present tool, as a set, it is only necessary that  
105 the point 17 of the nail 13 be driven for a slight distance into the wood so that the nail will be sustained in position. The end *a* of the body of the tool is then placed over the head 12 of the nail and  
110 brought into contact with the surface of the wood, as shown in Figure 2, whereby the

body will act as a guide to prevent the nail from bending or buckling as it is being driven into the wood. In this position the plunger 14 is slid backwardly in the barrel. The nail may be driven into position by applying blows of the hammer or other object upon the driving head 16 of the plunger 14, whereby the nail will be driven completely into the wood without previously preparing an opening or passage for the nail and without the nail bending or becoming distorted as is the usual experience. Of course, the nail may be previously inserted into the bore 11 at the end *a* of the punch-body instead of first starting the nail into the wood as just described. The body 10 acts as a guide while the nail is being driven into position, the bore 11 of the barrel being only sufficiently large to receive nails of a given size, whereby there is not space enough in the bore 11 to permit a buckling or bending of the nail.

With the present tool the nail may be countersunk into the wood also, but in order to prevent the blows of the hammer being transmitted through the body and mar the wood, the plunger 14 is of greater length than that of the barrel 10, and has at its upper end adjacent the driving head 16 a mark or indication 18 to cooperate with the upper end of the barrel *b* to show when the nail of a given length has been driven into the wood and countersunk therein.

Thus it will be seen that when the nail of given length has been driven and properly countersunk in the material, one of the marks 18 will coincide with the upper end *b* of the barrel and thus give notice to the worker of the condition before the head 16 is driven down against the end *a* of the barrel to mar the wood.

It is contemplated in the use of this invention to have several of these devices of varying sizes to accommodate nails of various sizes. However, in some instances the workers may use one size of tool for several nails of sizes more nearly alike, and in this case several markings 18 may be provided on the plunger 14 for the purpose just described. Also, in use of the device the nail may be initially inserted in the barrel 10 and held against the wood to be driven therein.

In order that the driving pin or plunger 14 may not become disengaged from the body 10 in some forms of the tool, a key 19 extends from the latter into a longitudinal groove or key-way 20 on the pin 14, as shown in Fig. 4, but this is not necessary. Also, the end *a* can be countersunk, as at 21, so as to fit over the head of a nail, thus adapting the device as an ordinary nail punch. It is also obvious that by holding the barrel 10 in one hand and permitting the end 15 of the pin to extend therefrom the device may be used as a nail punch or set.

Having thus described the invention in the form in which it is at present considered to be the best, it is to be understood that the invention is no limited to the form herein shown as the same may be varied without departing from the spirit of the invention, and that the patent which is to be granted shall only be limited by the terms of the claims hereto appended.

Having thus described the invention what I claim is:

1. A nailing tool designed to inset nails a predetermined distance below the surface of material into which nails may be driven, comprising a body having a bore therein, a pin slidable in said bore, a head on the pin to receive the impact of a hammer, said pin being of such length that when the nail is driven said predetermined distance the said head of pin is spaced from said body, and an indicator on said pin for indicating when the pin has been driven to said predetermined depth.

2. A nailing tool designed to drive nails a predetermined distance into material, comprising an elongated body having a bore therein, a driving pin slidable in said bore, an enlarged blow receiving head on one end of said pin, said pin being of such length that when the nail has been inset said predetermined distance, said head is out of contact with the adjacent end of said body, and an indicating mark on said pin cooperating with the said adjacent end of said body to indicate when the nail has been driven said predetermined distance into said material.

In testimony whereof I have hereunto set my hand.

ERNEST M. JOY.