

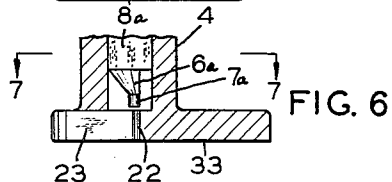
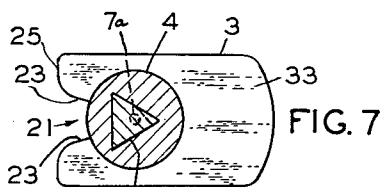
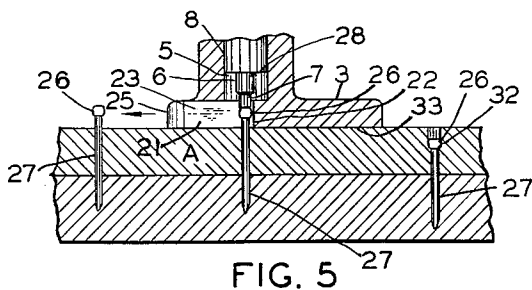
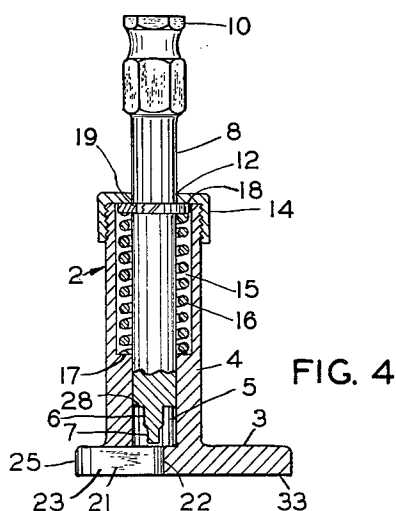
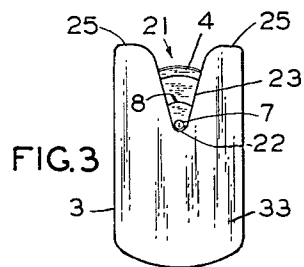
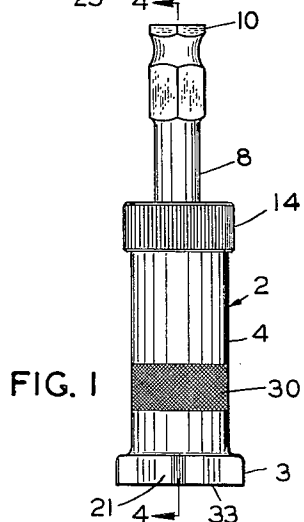
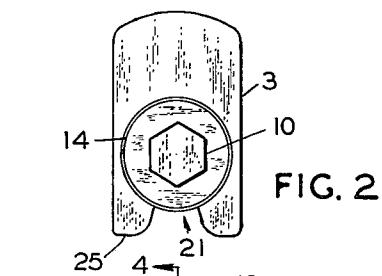
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AUTOMATICALLY POSITIONING NAIL SET

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2,979,092

AUTOMATICALLY POSITIONING NAIL SET

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2 Claims. (Cl. 145—46)

This invention pertains to an automatically positioning nail set.

One of the objects of the invention is to provide a means for centering the set over the center of the nail which is to be driven into the setting point.

One of the objects is to provide a means for housing and enclosing the setting element so that it is out of contact with the user's fingers and hand at all times during operation, and so that the positioning plate will be at all times available to locate and center the setting prong;

Still another object is to provide a base for a guide tube for a nail set, which base has a V-shaped notch adapted to engage and center nail heads which are left protruding slightly from the work; said V-shaped notch having its sides disposed so as to engage the bottom of the set to provide an adequate and convenient stop;

Other objects will appear hereinafter.

I attain the foregoing objects by means of the devices, parts and combinations of parts shown in the accompanying drawing which is made a part hereof, and wherein—

Figure 1 is a vertical front elevational view of a nail set incorporating my improvements and invention;

Figure 2 is a plan view thereof;

Figure 3 is a bottom view thereof;

Figure 4 is a center sectional view of the complete set with the section line taken substantially on line 4—4 of Figure 1;

Figure 5 is a section taken substantially on line 4—4 Figure 1 with the set in a position contacting the head of a nail to be set and at the beginning of its downward setting stroke.

Figure 6 is a mid-sectional view of a modified form of my nail set showing a setting shaft of different cross sectional form and a means for obtaining greater strength of the setting point relative to the shaft; and

Figure 7 is a plan view of the modified form shown in Figure 6 with the upper part of the guide cylinder sectioned off on line 7—7 of Figure 6.

Similar numerals refer to similar parts in the several views.

This set 2 includes a rectangular base 3 to which the bottom of vertical guide cylinder 4 is welded. Nail set shaft 8 slides axially in the guide cylinder.

There is a nail set shaft guide area 5 within the lower part of cylinder 4 which guides and directs the setting shaft 8. A tip supporting part 6 of reduced diameter is formed at the lower end of shaft 8. A setting point 7, having a still smaller diameter, is then formed at the tip of the lower end of shaft 8. Shaft 8 of the nail set is provided with the usual striking head 10 which is tempered somewhat softer than the rest of the shaft, tip and point. While the lower end portion of the shaft 8 is guided by the portion 5 of the cylinder 4, at the bottom, the upper portion of the shaft is guided by hole 12 in the threaded cap 14 which screws onto the upper end of cylinder 4.

The upper portion of cylinder 4 is bored out to a

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larger diameter than the lower guide portion 5 to form a cage 15 for return spring 16. The lower end of spring 16 is bedded in the annular bottom 17 of this bore and is compressed at the top by the removable split washer 18 which is bedded in an annular groove 19 formed in the upper part of shaft 8. The cap 14 bears on the upper face of washer 18 to create a slight tension.

Within the front portion of base 3 there is a V-shaped notch 21 which extends centrally and inwardly to a rounded end 22 which has its center approximately under the axis of the setting shaft. The side walls 23 of this notch diverge outwardly from this curved end and are provided with smoothly rounded outer corners where the notch side walls join the ends 25 of the base 3.

The angle of divergence of the side walls is such that there is adequate clearance for the admission of a nail head, such as 26 of nail 27 when the notch 21 is moved onto the nail head. There is also adequate room within the end 22 and between the side walls 23 of the notch to admit the driving tip 7, as well as the part 6 which supports the tip. Thus, when the tip 7 contacts the nail head 26, as shown in Figure 5, there is adequate clearance to receive the cylindrical tip support 6, without any contact with the walls 23 of the notch 21. Note that there is a definite annular shoulder 28 between the lower end of the upper part of the setting shaft 8 and the tip support 6. This annular shoulder is intended to contact the upper face of the base 3 on each side of the notch 21. This provides a definite stop for the shaft of the set and limits the distance which the head of the nail 27 may be driven into the work A.

In the modified form of the device, shown in Figures 6 and 7, the cylindrical shaft 8 has been supplanted by a shaft 8a which has a triangular section, as shown in Figure 7. On the bottom end of this shaft there is a semi-conical point supporting element marked 6a which takes the place of the part 6 in the principal figures. This part has more material between the tip 7a and the end of the shaft 8a and is, therefore, stronger.

In use the device is grasped by the cylinder 4 which is conveniently knurled at 30 for this purpose. It is then moved on the face of the work A until the notch 21 includes the upwardly protruding head 26 of nail 27. The head of the nail is centered by the side walls 23 of notch 21 and the end of the notch 22 is stopped by contact with the head of the nail. When the device is in this position, as shown in Figure 5, the head 10 of the set shaft 8 is struck a smart blow with a hammer and the nail head is driven home to set position, as shown at 32, Figure 5.

From the foregoing it will be understood that it is only necessary to slide the lower face 33 of the base 3 over the work until it centers and stops on a nail head. A blow on the top 10 of shaft 8 then sets the nail and the whole device may then be slid to another nail. This operation is easily learned and becomes very rapid in use. Due to its simplicity and rapidity of action setting of nails in carpentry work is greatly speeded up and the nails are always set to the correct depth. For these reasons the set is an improvement over all devices presently used.

I claim:

1. An automatically positioning nail set composed of a metal base having a top and a flat bottom face, a vertical edge having a V-shaped notch that is adapted to receive a nail to be set, the inner end of said V-shaped notch having an arcuate curved face substantially conforming to the periphery of the head of a nail to be set, a guide cylinder attached to the upper face of said base and extending upwardly therefrom and having its axis aligned with the axis of the curved inner end of said notch; said cylinder having an axial bore hole provid-

ing a lower shaft guide and a counterbore above said guide hole forming an annular return spring cavity, a cylindrical setting shaft having a striking head at its upper end, a tip support of reduced diameter at its lower end, a setting tip at the lower end of said tip support, an annular shoulder on said shaft above said tip support adapted to contact said base adjacent the side walls of said V notch, a return spring in said cavity resiliently holding said tip upward, a cap attached to the top of said cylinder and having a guide hole guiding the upper portion of said shaft, a split ring attached to said shaft confining the upper end of said shaft and contacting said cap to provide a stop for the upward travel of said shaft.

2. The device as described in claim 1, wherein the nail setting tip is supported on a substantially semi-conical tip support on the lower end of the setting shaft; said support having slanting walls extending from the upper end of the tip to the periphery of the lower end of the shaft away from the apex of said V-shaped notch.

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