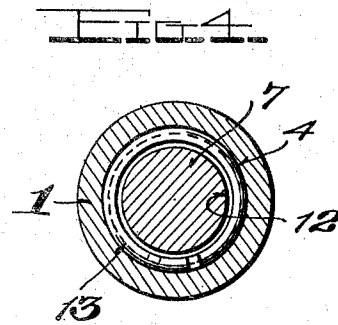
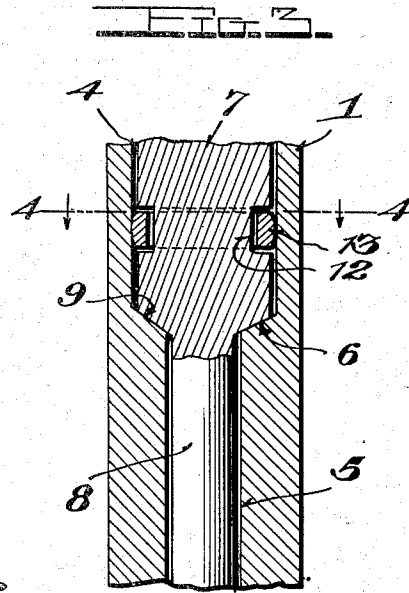
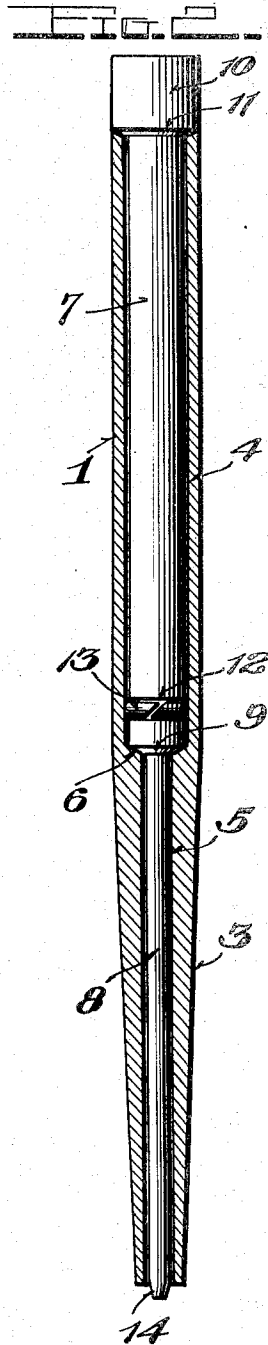
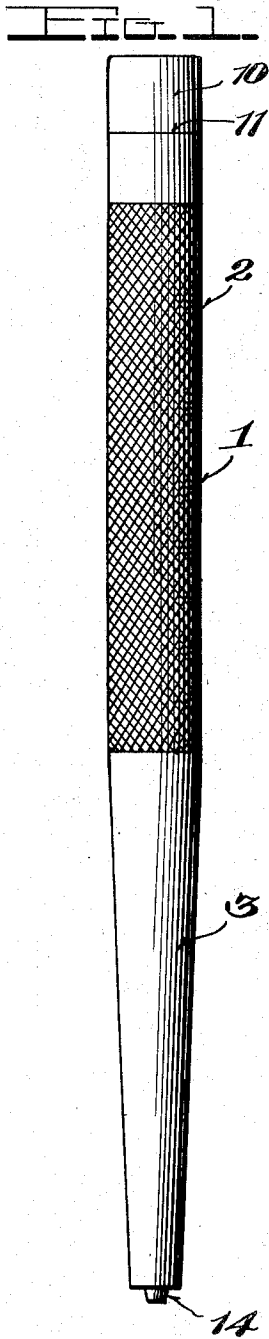


Sept. 23, 1930.

E. C. WILSON
NAIL DRIVER AND SET
Filed Feb. 23, 1928

1,776,646



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UNITED STATES PATENT OFFICE

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NAIL DRIVER AND SET

Application filed February 23, 1928. Serial No. 256,338.

This invention relates to improvements in nail drivers and sets, and the primary object thereof is to provide improved means for holding or latching the driving plunger in any predetermined position within the barrel against sliding due to the action of gravity, in use and for otherwise preventing disengagement of the parts, while still permitting free sliding movement of the plunger when blows are delivered thereto in driving nails.

The invention further aims to provide latching means which is of simple and economical form; which is positive in operation and which distributes wear on the barrel bore uniformly throughout the entire circumference thereof.

The invention still further aims to provide latching means which is self-sustaining, i. e., which holds itself in position, thereby dispensing with the use of extraneous fastenings, such as screws, welding or the like, and to also provide a latching means which can be readily removed and replaced upon wear or injury.

In the drawings:—

Fig. 1 is a side elevation of the invention, the plunger being at its extreme driving position;

Fig. 2 is a longitudinal sectional view of Fig. 1;

Fig. 3 is an enlarged detail sectional view of the latching means, and

Fig. 4 is a section on line 4—4 of Fig. 3.

In proceeding in accordance with the present invention, a barrel 1 is employed which has its exterior at one end thereof preferably knurled or otherwise roughened so as to afford a convenient hand grip. The opposite end of the barrel is tapered as indicated at 3. The barrel is provided with a main bore 4 and a smaller bore 5, the two communicating and being separated by a circular seat 6. A nail driving plunger 7 is provided having its body conformably and slidably received in the bore 4 and having a driving portion 8 connected thereto and separated from the body by a circular shoulder 9 which latter is tapered to engage the correspondingly tapered seat 6 of the barrel. The body of the plunger is formed with an enlarged

driving head 10, to which latter the blows of a hammer are delivered. A shoulder 11 at the base of the head 10 is designed to engage the outer end of the barrel 1, whereby to limit driving movement of the plunger relative to the barrel. In this regard, it will be noted that seat 6 and the shoulder 9 at the lower end of the body of the plunger may also engage, as shown in Fig. 3, so as to relieve the outer end of the barrel from receiving all of the pressure when the head 10 is at the limit of its driving movement.

For the purpose of holding or latching the plunger within the barrel not only in use of the tool, but in transportation of the same, a circular groove 12 is formed in the body of the plunger 7 adjacent the shoulder 9 and receives therein a preferably split spring ring 13. The periphery of the ring is rounded as illustrated in Fig. 3, so as to provide a curved bearing surface which engages the main bore 4 of the barrel so as to cause minimum wear upon such bore. The driving end 14 of the plunger is preferably tapered as shown in Figs. 1 and 2.

From the foregoing, it will be seen that invention provides a holding or latching means which distributes wear on the main bore 4 of the barrel throughout the entire circumference of the latter, thus obviating grooving or scarring of the latter as compared to latches which engage the bore at a single point, or one less than the entire circumference of the bore. By locating the latching means at the lower end of the body of the plunger, it will be seen that maximum separation of the plunger relative to the barrel can be had without disengaging the latch from the barrel. It will also be noted that it is merely necessary to spring the ring into its groove, and that no special or extraneous fastening for the ring is required. It will also be observed that in event of the ring losing its resiliency or upon undue wear, a new or larger ring can be substituted at will. Obviously the degree of engagement of the latching ring with the bore of the barrel is only such as to hold the parts against separation upon same being subjected to the action of gravity, and that the degree of engage-

ment permits free driving of the plunger in nailing operations.

What is claimed is:—

In a nail driver and set, a barrel having
6 a main bore and a smaller bore communicating therewith and separated therefrom by a circular downwardly tapering seat, a nail driving plunger in the barrel having a body slidable in the main bore and having a driving
10 portion of less diameter throughout than that of the plunger body and being slidable in the smaller bore and separated from the body by a circular shoulder, said body of the plunger being formed with a circular groove
15 adjacent to the shoulder, and a split spring metal ring in the groove having a rounded periphery to frictionally engage substantially the entire inner circumference of the main bore of the barrel, the ring being of such resiliency so as to lightly engage the main bore of
20 the barrel thereby to permit the ring during driving of the plunger to freely slide lengthwise of the main bore, said circular shoulder of the plunger tapering downwardly to conform to the taper of said seat and so as to
25 wedge within and cause the ring to spring outwardly in applying the ring over said driving portion of the plunger, thereby to facilitate placement of the ring in the groove.

30 In testimony whereof I affix my signature.

ELBERT C. WILSON.

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