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J. L. ALLEN

2,475,936

TACK DRIVING TOOL

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FIG. 1

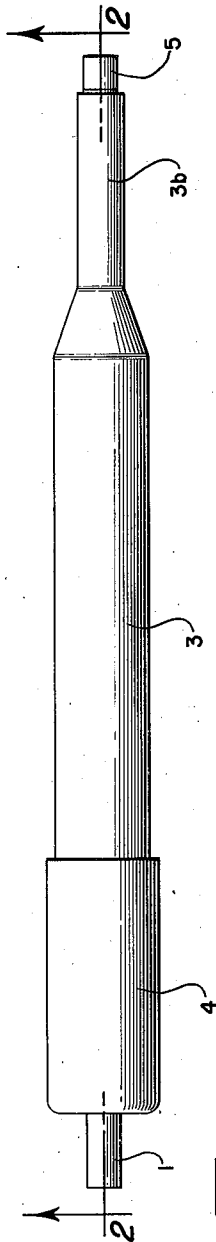


FIG. 2

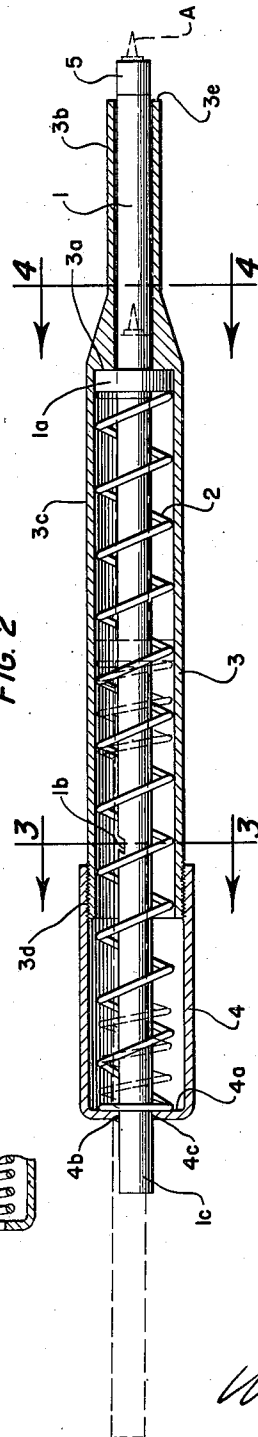


FIG. 3

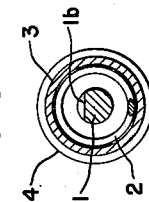


FIG. 4

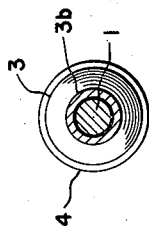
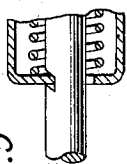


FIG. 5



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TACK DRIVING TOOL

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6 Claims. (Cl. 1-47)

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My invention relates to a tack driver more particularly for use in connection with upholstery or other similar jobs and the objects of my invention are:

First, to provide a tack driver of this class which requires only one hand of the operator for the manipulation of said tack driver while the other hand of the operator may be used in holding various objects being tacked.

Second, to provide a tack driver of this class which supports the tack being driven preliminary to the driving of said tack.

Third, to provide a tack driver of this class in which a spring loaded plunger may be tripped by the forearm in connection with the operator's hand holding the tack driver.

Fourth, to provide a tack driver of this class which facilitates the driving of tacks in remote places such as corners or other places inaccessible to a conventional tack driving hammer.

Fifth, to provide a tack driver of this class which is very powerful and drives large tacks with a single stroke.

Sixth, to provide a tack driver of this class which drives tacks straight and true normal to the axis of the plunger of said tack driver.

Seventh, to provide a tack driver of this class which is very compact and easy to operate.

Eighth, to provide a tack driver of this class which is very simple and economical of construction, efficient in operation and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon forming a part of this application in which: Figure 1 is a side elevational view of my tack driver. Figure 2 is a longitudinal sectional view thereof, taken from the line 2-2 of Fig. 1 showing parts in elevation to facilitate the illustration. Fig. 3 is transverse sectional view taken from the line 3-3 of Fig. 2. Fig. 4 is a transverse sectional view taken from the line 4-4 of Fig. 2, and Fig. 5 is a sectional view illustrating the construction for retaining the plunger in retracted position.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawings.

The plunger 1, spring 2, casing 3, casing cap 4, 55

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and magnetic tip 5 constitute the principle parts and portions of my tack driver.

The plunger 1 is preferably a circular in cross section steel rod having an enlarged diameter shoulder 1a thereon adapted to stop against the shoulder 3a of the casing 3 at the transition of said casing from the plunger guide portion 3b which is relatively small in diameter to the body portion 3c of said casing 3 in which the compression spring 2 is positioned. This compression spring 2 engages the shoulder 1a of the plunger 1 and at its opposite end abuts the inner side 4a of the casing cap 4 which is externally screw threaded on the screw threaded portion 3d of the casing 3 at its open end all as shown best in Fig. 2 of the drawings. The forward end of the plunger 1 is provided with a magnetic tip 5 which is commonly known as "Alnico" and is of permanent magnetic material. The plunger 1 is provided with a sear 1b which is a notched sear in the side of said plunger 1 and this sear 1b is adapted to be laterally engaged with the edge portion 4b of the opening 4c in the end of the casing cap 4 as indicated by dash lines in Fig. 2 of the drawing.

The operation of my tack driver is substantially as follows: A tack as indicated by dash lines A in Fig. 2 of the drawings is first placed adjacent the magnetic tip 5 so that the flat head of the tack A is fully engaged with the magnetic tip. Then the plunger 1 is retracted until the sear 1b passes backwardly to the opening 4c in the casing cap 4. The sear 1b is then forced laterally into engagement with the edge portion 4b of the opening 4c. Thus the spring 2 is maintained in compression intermediate the shoulder 1a and the inner side 4a of the casing cap 4 whereby said spring 2 tends to force the plunger 1 toward the open end 3e of the reduced in diameter casing portion 3b. The operator then grasps the body portion 3c of the casing 3 and places the end 3e of the casing 3 adjacent the location at which the tack is to be driven. The casing 3 is then forced laterally until the end portion 1c is engaged by the forearm of the operator for forcing the sear 1b of the plunger 1 out of engagement with the edge portion 4b of the opening 4c in the casing cap 4. The spring 2 then goes into action and forces the shoulder 1a of the plunger 1 forwardly driving the tack A into the object in which it is desired to imbed the same. It will be noted that small diameter of the casing portion 3e may be placed in relatively inaccessible locations for efficiently driving tacks in such obscure places. Though I have shown and described a particu-

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lar construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction, combination and arrangement but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a tack driver of the class described, the combination of a casing, a plunger in said casing, a magnetic tip on the end of said plunger, a spring in said plunger tending to force said magnetic tip outwardly, said casing having an opening in its rear end through which said plunger reciprocates, said plunger provided with a sear portion engageable with said casing at said opening whereby lateral movement of said plunger in said opening engages said sear at the edge of said opening.

2. In a tack driver of the class described, the combination of a casing, a plunger in said casing, a magnetic tip on the end of said plunger, a spring in said plunger tending to force said magnetic tip outwardly, said casing having an opening in its rear end through which said plunger reciprocates, said plunger provided with a sear portion engageable with said casing at said opening whereby lateral movement of said plunger in said opening engages said sear at the edge of said opening, said casing provided with a reduced diameter plunger guide portion at its forward end and an enlarged diameter portion extending to the opposite end of said casing from said guide portion in which said spring is mounted.

3. In a tack driver of the class described, the combination of a casing, a plunger in said casing, a magnetic tip on the end of said plunger, a spring in said plunger tending to force said magnetic tip outwardly, said casing having an opening in its rear end through which said plunger reciprocates, said plunger provided with a sear portion engageable with said casing at said opening whereby lateral movement of said plunger in said opening engages said sear at the edge of said opening, said casing provided with a reduced diameter plunger guide portion at its forward end and an enlarged diameter portion extending to the opposite end of said casing from said guide portion in which said spring is mounted, said casing having an abrupt shoulder portion near one end of said enlarged diameter portion.

4. In a tack driver of the class described, the combination of a casing, a plunger in said casing, a magnetic tip on the end of said plunger, a spring in said plunger tending to force said magnetic tip outwardly, said casing having an opening in its rear end through which said plunger reciprocates, said plunger provided with a sear portion engageable with said casing at said open-

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ing whereby lateral movement of said plunger in said opening engages said sear at the edge of said opening, said casing provided with a reduced diameter plunger guide portion at its forward end and an enlarged diameter portion extending to the opposite end of said casing from said guide portion in which said spring is mounted, said casing having an abrupt shoulder portion near one end of said enlarged diameter portion, said plunger provided with a shoulder engageable with said shoulder portion of said casing and forming an abutment for said spring.

5. In a tack driver of the class described, the combination of a casing, a plunger in said casing, a magnetic tip on the end of said plunger, a spring in said plunger tending to force said magnetic tip outwardly, said casing having an opening in its rear end through which said plunger reciprocates, said plunger provided with a sear portion engageable with said casing at said opening whereby lateral movement of said plunger in said opening engages said sear at the edge of said opening, said casing provided with a reduced diameter plunger guide portion at its forward end and an enlarged diameter portion extending to the opposite end of said casing from said guide portion in which said spring is mounted, said casing having an abrupt shoulder portion near one end of said enlarged diameter portion, said plunger provided with a shoulder engageable with said shoulder portion of said casing and forming an abutment for said spring, the rearward portion of said casing having a cap in connection therewith in which said opening is positioned.

6. In a tack driver of the class described, the combination of a plunger, a casing for said plunger, a spring in said casing tending to force said plunger longitudinally thereof, said plunger having a magnetic tip on its forward end and a sear portion intermediate its opposite ends, said casing having an opening in its rear end, through which said plunger extends and reciprocates, said sear engageable at the edge of said opening for holding said spring in compressed position when said plunger is drawn rearwardly in said casing and substantially extended from the rear end thereof.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
541,038	Clark	June 11, 1895

FOREIGN PATENTS

Number	Country	Date
6,355	Great Britain	Apr. 14, 1891
447,828	Germany	Aug. 1, 1927