C. S. THOMPSON.

TOOL FOR DRIVING CORRUGATED FASTENERS.

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1,108,279.

Patented Aug. 25, 1914.

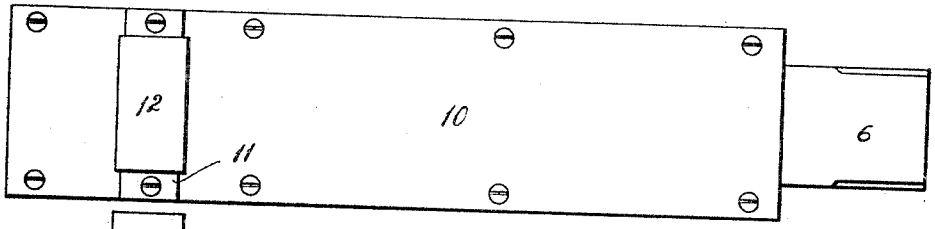


Fig. 1.

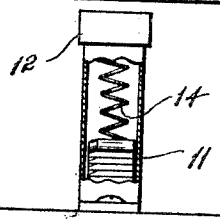
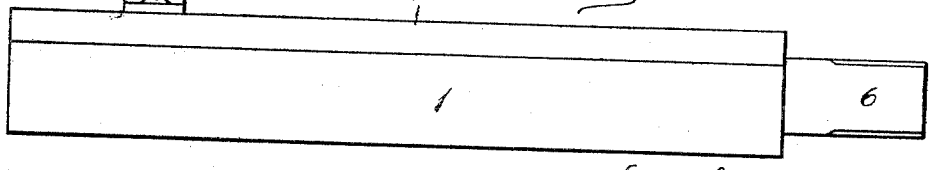


Fig. 2.



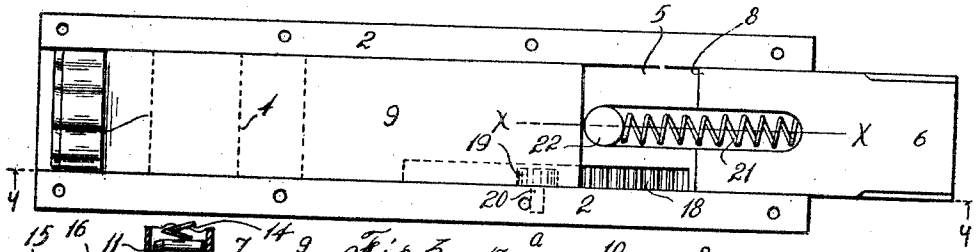


Fig. 3.

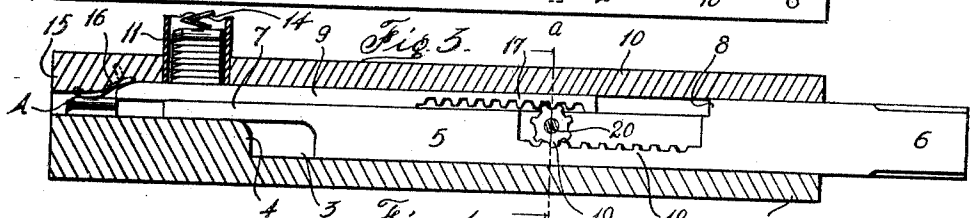


Fig. 4.

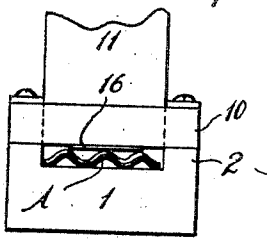


Fig. 5.

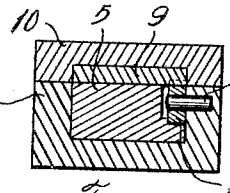


Fig. 6.

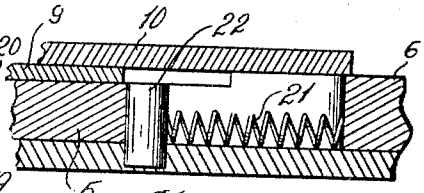


Fig. 7.

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UNITED STATES PATENT OFFICE.

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TOOL FOR DRIVING CORRUGATED FASTENERS.

1,108,279. Specification of Letters Patent. Patented Aug. 25, 1914.

Application filed July 21, 1913. Serial No. 780,345.

To all whom it may concern:

Be it known that I, CARL S. THOMPSON, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented certain new and useful Improvements in Tools for Driving Corrugated Fasteners, of which the following is a specification.

This invention relates to new and useful tools for driving corrugated fasteners and the like.

The object resides in the provision of a tool having a magazine adapted to feed corrugated fasteners to a driving plunger, thereby providing a tool automatic and fast in action.

Finally the object of the invention is to provide a device of the character described that will be strong, durable, efficient and easy of operation, simple and comparatively inexpensive to construct and also one in which the several parts will not be likely to get out of working order.

With the above and other objects in view, the invention has relation to certain novel features of construction and operation, an example of which is described in the following specification and illustrated in the accompanying drawing, wherein:

Figure 1 is a plan view of the tool. Fig. 2 is a side elevation of the tool. Fig. 3 is a plan view with the cover plate removed. Fig. 4 is a longitudinal sectional view taken upon the line *y—y* of Fig. 3. Fig. 5 is a front view of the tool. Fig. 6 is a sectional view taken upon the line *a—a* of Fig. 4. Fig. 7 is a partial longitudinal view of the tool, the section being taken upon the line *x—x* of Fig. 3.

In the drawings the numeral 1 denotes an elongated rectangular body member in which the prime operating parts are mounted. Said member as shown is formed with raised integral side portions 2, which form a channel 3 in which the reciprocating parts are guided. The channel 3, Fig. 4, has considerable depth and extends approximately two thirds the length of the body and terminates at a boss 4. A guide-way is formed over the boss to a depth of about the thickness of the corrugated fasteners.

The tool is provided with two reciprocating plungers 5 and 9. The plunger 5 is adapted to be struck by a hammer or operated by other suitable means, to drive home the fastener into the material worked, while the plunger 9 is provided as a feed plunger. The purpose of the plunger 9 is to feed the corrugated fasteners from a source of supply to the driving plunger.

The driving plunger 5 is shown disposed in the channel of the body member or casing. A portion 6 of said plunger projects rearwardly from the casing to provide a suitable striking head or connecting end, which may be struck with a hammer or connected to a suitable machine. The forward portion 7 of the plunger 5 is of a thickness equal to the thickness of the corrugated fastener it is adapted to drive. A shoulder 8 formed on the drive plunger provides a recess of sufficient depth to receive the feed plunger 9. This plunger rests in contact with the upper face of the driving plunger and is adapted to slide back and forth thereupon as will later be seen. As previously mentioned, it is the purpose of the plunger 9 to feed the fasteners from a magazine one at a time.

A cover plate 10 is secured to the upper face of the body member, in this instance by a number of screws, and carries fixed on its outer face and forward end, a magazine 11. The magazine is preferably made of sheet metal rectangular in cross section and of a size sufficient to freely receive the fasteners. The magazine is secured to the cover plate by screws and has its side walls extending through an aperture in the cover plate and terminating flush with the under face of the cover plate. The magazine is filled from the top and is provided with a cover cap 12. To keep the fasteners in close contact with the upper face of the feed plunger a coiled spring is disposed in the magazine between the cover cap 12 and the uppermost fastener. The plunger 9 slides rearwardly far enough to allow a fastener from the magazine to drop into the path of said plunger so that the latter upon its return stroke will carry the fastener to the position shown at A in Figs. 3 and 4. The cover plate on its forward end is provided with a boss 15 somewhat thicker than the plate proper. This boss reduces the channel to a depth just sufficient to receive the fastener. To retain the fastener in positive position until driven, a leaf spring 16 is secured in a recess to the under side of the boss 15. The fastener upon entering the reduced channel or guide-way is engaged by the spring 16 whereby it is retained in the tool until driven into the work. The

plunger 9 has a toothed rack 17 milled in its under face. In a recess in the driving plunger, a similar rack 18 is provided. A pinion 19 carried by a stud 20 fixed in the side wall 2 of the body member, is interposed between the two racks and meshes therewith. The movable relation established between the two plungers will be clearly seen. It is the purpose of the pinion to transmit motion from the driving plunger 5 to the feed plunger 9. When the driving plunger is displaced forward to drive the fastener the feed plunger is displaced rearwardly until past the magazine, at which time the fastener will be carried into the path of the feed plunger and will engage the upper face of the driving plunger. When the feed plunger starts forward the driving plunger will move rearwardly. The fastener will be carried forward and positioned in front of the driving plunger.

The rear portion of the driving plunger has a slot of substantial size in which is disposed a compression spring 21 and pin 22. The pin is rigidly fixed in the lower wall of the member 1 and serves to limit the rearward displacement of the plunger. The spring is placed between the pin and wall of the recess to move the plunger 5 rearwardly or to normal position as shown in the drawings. The end 6 of the plunger is intended to receive the blow of a hammer or a mallet or it may be attached to any form of machine suitable for its operation.

The invention is presented as including all such modifications and changes as properly come within the scope of the following claims.

What I claim is:

1. In a staple driving device, the combination of an elongated casing having a staple entrance in one side and a staple ejecting opening at one end, a feed plunger mounted in the casing and reciprocating across the staple entrance, a driving plunger reciprocating in the casing parallel to the feed plunger, means for retracting one plunger and moving the other forward, the feed plunger being arranged to deliver staples in the path of the driving plunger, and a stop limiting the forward movement of the driving plunger.

2. In a staple driving device, the combination of a casing having a longitudinal plunger guideway and a staple entrance opening into the guideway, said casing having a staple ejecting opening at one end, a feed plunger reciprocating in the casing guideway across the staple entrance, a driving plunger reciprocating in the guideway of the casing parallel to the feed plunger, said plungers being connected to reciprocate in opposite directions, and a staple holding member disposed in the ejecting opening of the casing out of the path of the feeding plunger.

3. In a staple driving device, the combination of a casing having a staple entrance in one side and a staple ejecting opening at one end, a feed plunger reciprocating in the casing across the staple opening, a driving plunger reciprocating in the casing parallel to the feed plunger, a gearing connection between the plungers for moving the feed plunger in an opposite direction to the driving plunger, and a spring mounted in the casing acting to retract the driving plunger.

4. In a tool of the character described, a casing, a magazine arranged on the casing, a driving plunger, a feed plunger, the feed plunger adapted to receive corrugated fasteners from the magazine and deliver said fasteners to the guideway of the driving plunger, and means disposed between the plungers for establishing an opposed movable relation therebetween.

5. In a tool of the character described, a casing, feed and driving plungers mounted in the casing, the feed plunger being arranged to receive corrugated fasteners from the magazine and dispose said fasteners in the path of the driving plunger, gear racks carried by the two plungers, and a pinion interposed between the two gear racks, establishing an opposed movable relation between the two plungers.

6. In a tool of the character described, a casing, a magazine mounted on the casing, feed and driving plungers mounted in the casing, the feed plunger being arranged to receive corrugated fasteners from the magazine and dispose said fasteners in the path of the driving plunger, gear racks integral with the two plungers, a pinion interposed between and meshing with the gear racks, establishing a positive opposed movable relation between the said plungers, means for holding the fastener in the path of the driving plunger, and means for returning the parts to normal position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CARL S. THOMPSON.

Witnesses:
EARLE C. WIGHT,
JACK A. SCHLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."