

June 11, 1946.

W. OLSON

2,401,840

FASTENER DRIVING DEVICE

Filed Dec. 22, 1943

2 Sheets-Sheet 1

FIG. 1.

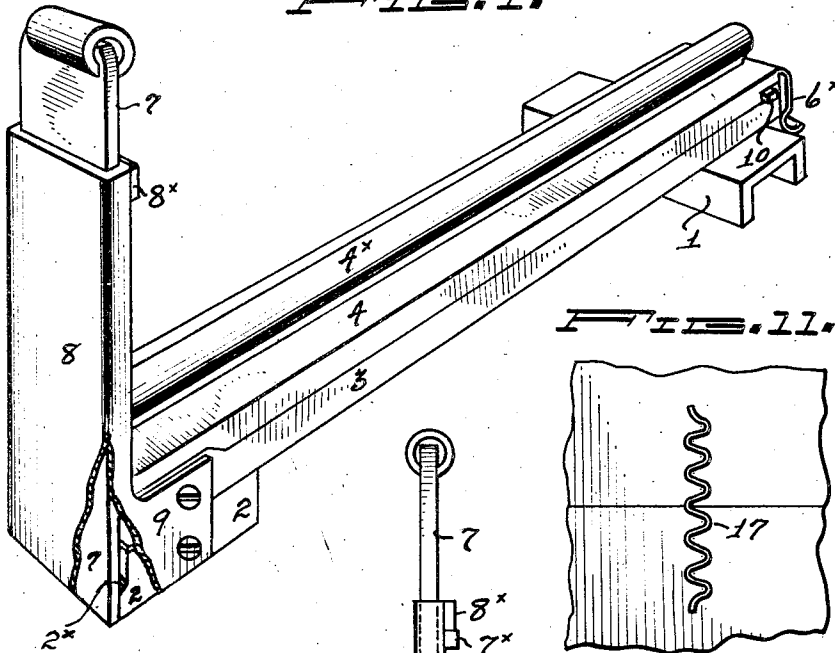


FIG. 11.

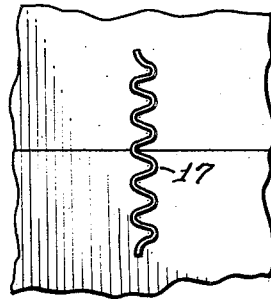


FIG. 2.

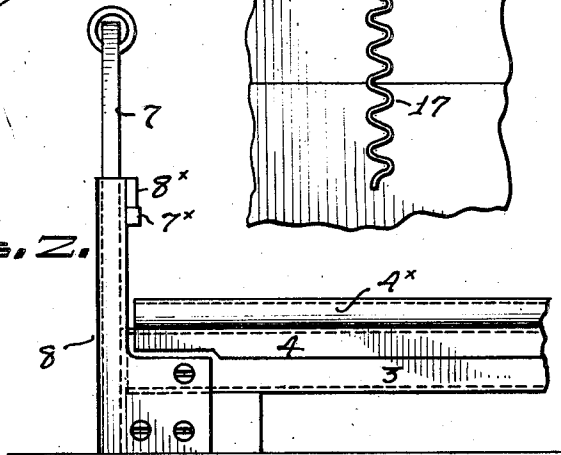


FIG. 3.

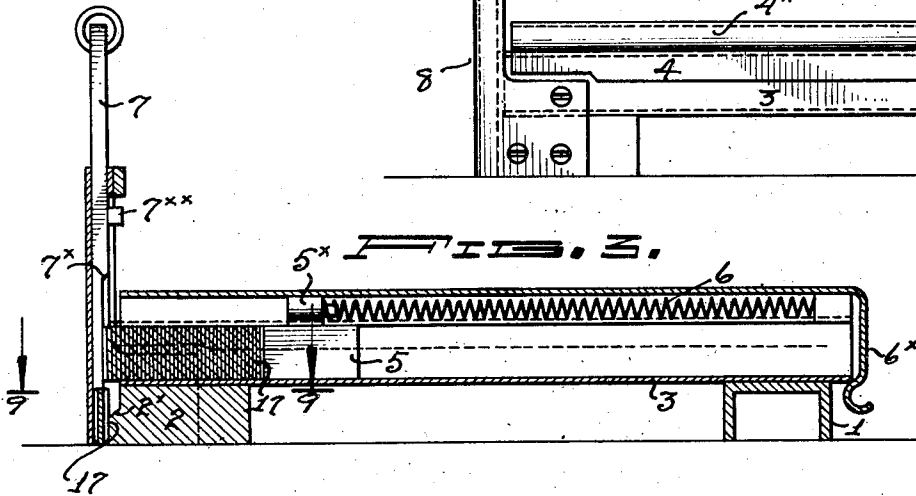
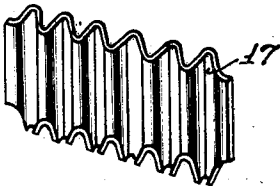


FIG. 10.



INVENTOR.

William Olson

BY

H. Lee Helms

ATTORNEY

June 11, 1946.

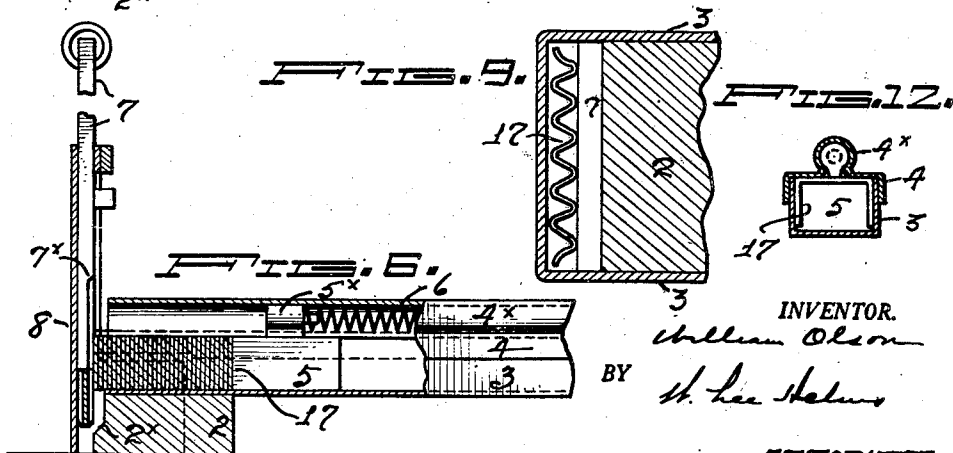
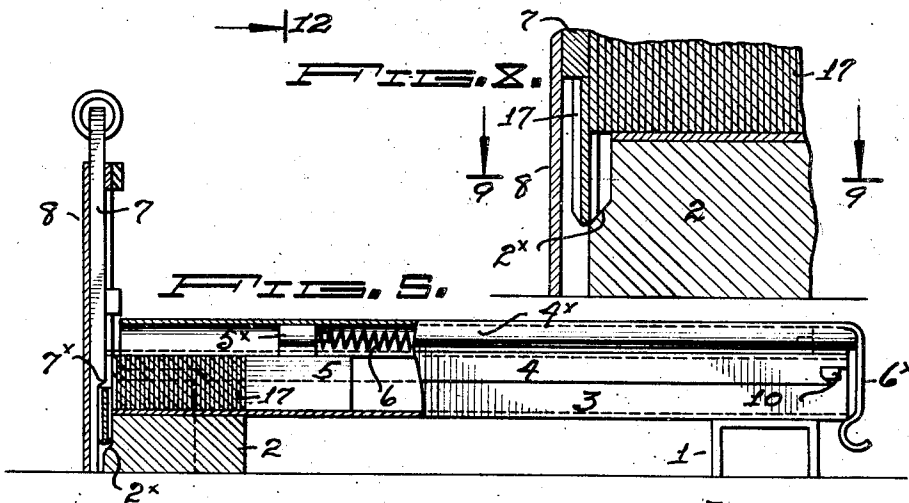
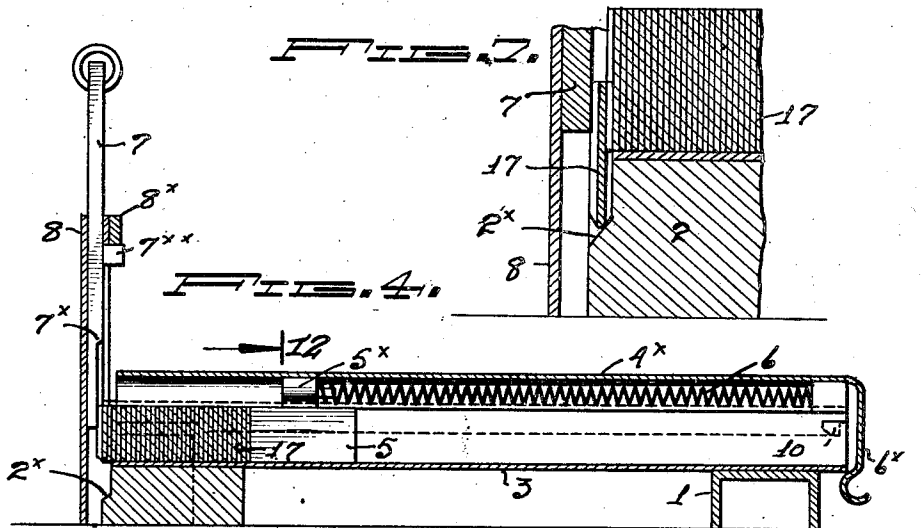
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2 Sheets-Sheet 2



INVENTOR.
William Olson
BY
H. Lee Helms

ATTORNEY.

UNITED STATES PATENT OFFICE

2,401,840

FASTENER DRIVING DEVICE

William Olson, New York, N. Y.

Application December 22, 1943, Serial No. 515,236

2 Claims. (Cl. 1—46)

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This invention relates more particularly to a device for feeding and depressing box fasteners, the latter consisting of strips which are corrugated or wavy in form and which present difficulties in automatic feeds. By means of my invention a simple and effective feeding arrangement is provided in conjunction with a combined hammer or driver and fastener positioning member, so that jamming of the device is prevented. A characteristic of my device is that in an upward movement of the hammer or driver, followed by a driving movement, one fastener is driven and a succeeding fastener is positioned for hammer feed into driving position.

The invention will be described with reference to the accompanying drawings, in which—

Fig. 1 is a perspective view showing an embodiment of the invention, partly broken away.

Fig. 2 is a fragmentary side elevation.

Fig. 3 is a longitudinal vertical section of the device ready for driving a fastener.

Fig. 4 is a view similar to Fig. 3 showing the hammer raised at the very beginning of an operation, after loading the device with fasteners.

Fig. 5 is a view similar to Fig. 4 showing the hammer dropped from the position of Fig. 4.

Fig. 6 is a view similar to Fig. 5 showing the foremost fastener under the hammer and a succeeding fastener in position to be moved into driving position upon the driving of the foremost fastener.

Fig. 7 is an enlarged fragmentary vertical section taken at the hammer end of Fig. 4 showing a fastener in position as the driver is retracted after the initial downstroke.

Fig. 8 is an enlarged fragmentary vertical section taken at the end of Fig. 5 showing a fastener in position under the driver ready for the fastening drive.

Fig. 9 is a fragmentary horizontal section on the line 9—9, Fig. 3.

Fig. 10 is a perspective view of the fastener used in the machine.

Fig. 11 is a fragmentary plan view showing the fastener joining to abutted members, as for example, box walls.

Fig. 12 is a reduced vertical section on the line 12—12, Fig. 4.

Referring to the drawings, the embodiment therein shown consists of two base blocks 1 and 2, the latter supporting a relatively long U-shaped casing member 3, the latter being open at its top and of a width corresponding to the length of fasteners received therein. Casing member 3 is normally closed by a cover member

4, preferably made of sheet metal so that the sides will be somewhat springy and will fit over upon casing member 3 with a close fit.

Cover member 4 has a longitudinally extending tubular formation 4^x at its top, and which communicates with the lower area of the cover member. Thus, a follower 5 within casing member 3 may have its vertical extension 5^x projected upwardly into the tubular part of member 4 and be engaged by spring 6 therein for action upon the fasteners 17, as shown more particularly in Figs. 3, 4 and 12.

The spring engaged follower arrangement just described is desirable for several reasons. For example, when a fresh supply of fasteners is required, the cover may be readily lifted and it carries with it the follower. When the fasteners are placed in casing 3 the cover may be lowered to position the follower rearwardly of the fasteners, and the forward movement of the cover will automatically tension the spring and position the cover for latching on the casing 3.

The latching means for the cover is very simple. Referring to Fig. 5, a lug 10 projects from one of the side walls of casing 3 and the side wall of the cover 4, at the rear end thereof, is notched, thus providing a shoulder for abutment with the lug. This arrangement may be provided at each side of the device. To enable ready lifting of the cover, the top wall thereof, at the rear end, is downwardly bent and finally curved, as shown at 6^x, the curvature forming a shoulder which may be sprung under casing 3 when the cover is in final position. In removing the cover, the operator may use the fingers of one hand to exert a lifting stress on the curved end of member 6^x while his thumb presses the cover inwardly the slight distance required to disengage it from the latching lug or lugs.

The driver is shown at 7. It consists of a bar of steel which at its lower end, is formed with a depression bounded at its top by a slanting or beveled wall 7^x. The hammer is mounted for sliding movement in a bracket 8, having side wings 9, secured to the base 2, and casing 3. If it is desired the hammer may have a stop lug 7^{xx} to abut a stop member 8^x carried by bracket 8. At its side facing the casing 3, the bracket is cut away to permit the entrance of the fasteners.

Mounting block 2 at its lower portion is spaced from the major wall of bracket 8, a distance equivalent to the thickness of each fastener. Above said lower portion, the block is cut away to provide an increased clearance, the extent of which is about or slightly less than the thickness

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of each fastener, the base of the clearance being bounded by inclined or beveled wall 2^x.

In the initial operation of the device, the hammer is raised to the position of Fig. 7, whereupon spring 6 and follower 5 will move the stack forwardly to carry the foremost fastener under shoulder 7^x of the hammer. Downward movement of the hammer will carry the fastener to the position of Fig. 5 and thus against 2^x. A second upward movement of the hammer will carry its lower end above said foremost fastener and the fastener will be moved by the spring and follower to the position of Fig. 6. The foremost fastener will now lie under the hammer and a succeeding fastener will be sprung into register with shoulder 7^x as the hammer is driven down to carry said foremost fastener into the wood. Immediately preceding the fastener driving movement, the parts will have the position shown in Fig. 3.

After the parts have reached the position shown in Fig. 3, each downward movement of the hammer will both drive a fastener and position a succeeding fastener to the position of Fig. 5, and the raising of the hammer will cause movement of the foremost fastener to the position of Fig. 6.

It will be understood that while the drawings illustrated a suitable embodiment of the invention, the form and arrangement of the element may be varied without departing from the spirit of the invention. It will be also understood that any suitable power means, manual or otherwise, may be applied to the driver for operating it. Thus, in Fig. 1, it will be seen that the driver 7

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is straight-walled at its lower end and lacks the depression 7^x shown in the succeeding figures.

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

1. A fastener driving device of the character described, comprising a casing adapted to hold a plurality of fasteners in face to face arrangement, a driver, spring means for moving the fasteners toward the driver, and a stationary guide block opposite one face of the driver, the driver at its lower end area having a recess surmounted by a shoulder, the recess being approximately the same depth as the thickness of the fastener for which the apparatus is designed, the block being formed on its face opposite the driver with a recess disposed above the base area of the block, as and for the purpose described.

2. A fastener driving device of the character described, comprising a casing adapted to hold a plurality of fasteners in face to face arrangement, a driver, spring means for moving the fasteners toward the driver, and a stationary guide block opposite one face of the driver, the driver at its lower end area having a recess surmounted by a tapered shoulder, the recess being approximately the same depth as the thickness of the fastener for which the apparatus is designed, the block being formed on its face opposite the driver with a recess, disposed above the base area of the block, the block recess having at its lower end a tapered face, as and for the purpose described.

WILLIAM OLSON.