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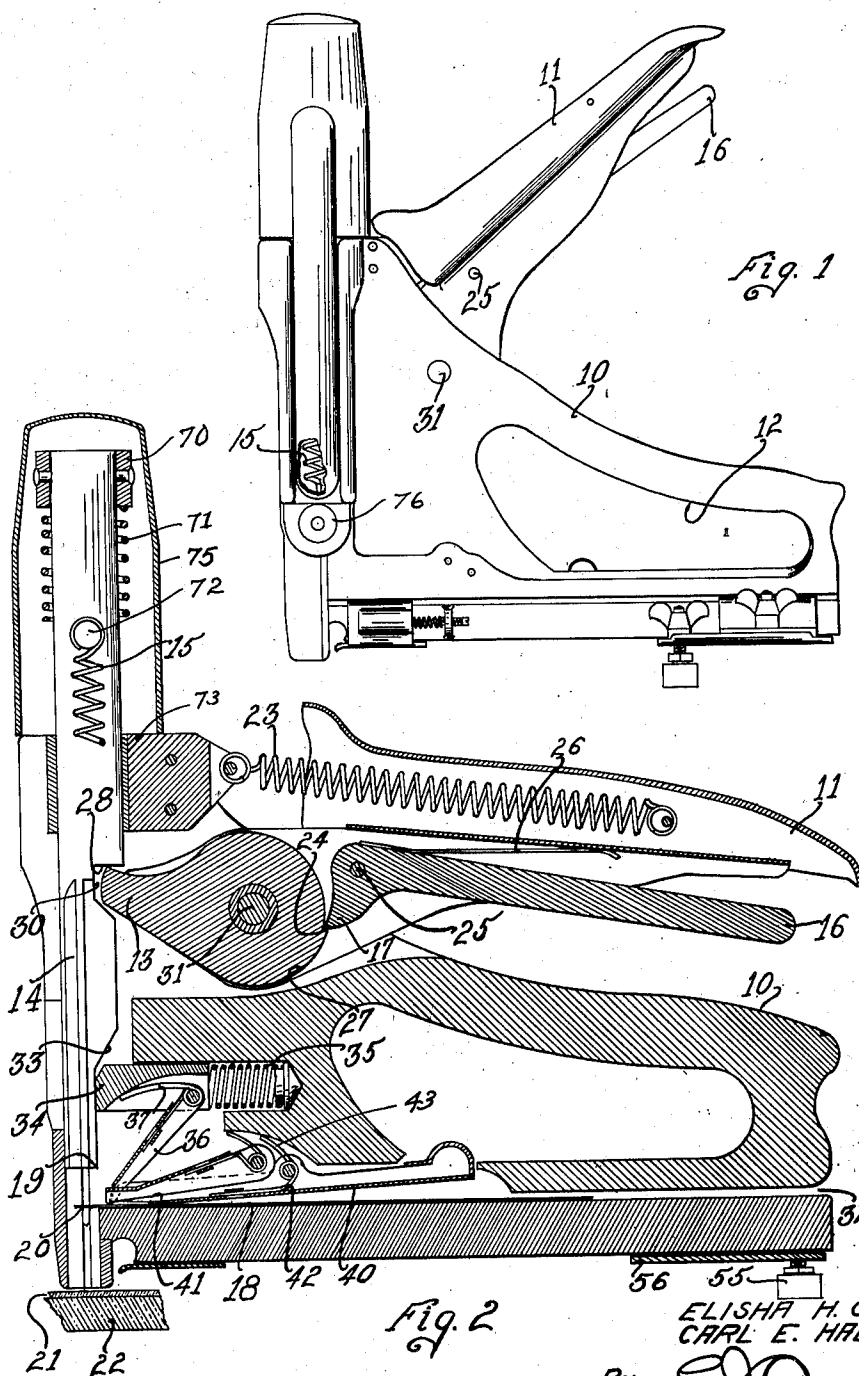
E. H. CROFOOT ET AL

1,990,725

TACKER

Filed June 3, 1932

2 Sheets-Sheet 1



INVENTORS.
ELISHA H. CROFOOT
CARL E. HALLEN
BY *E. J. Andrews*
Att'y.

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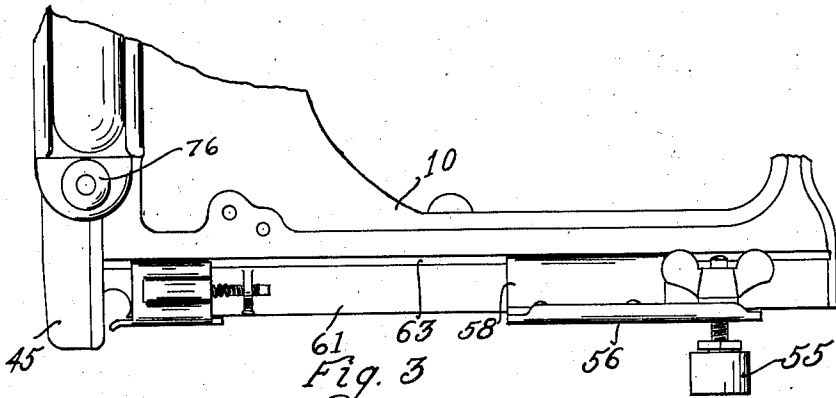
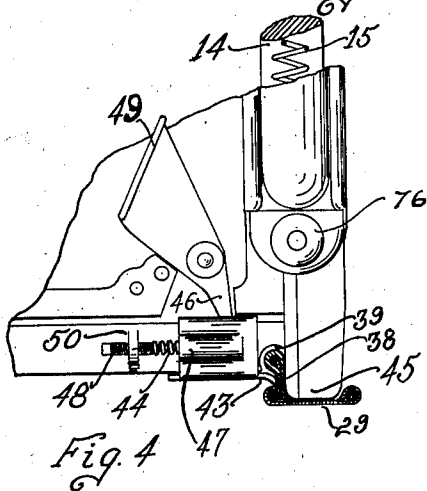
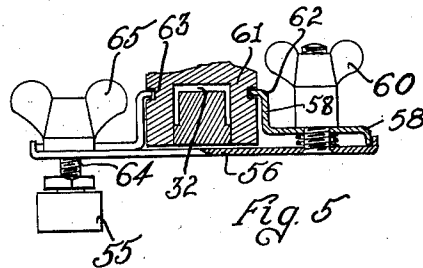
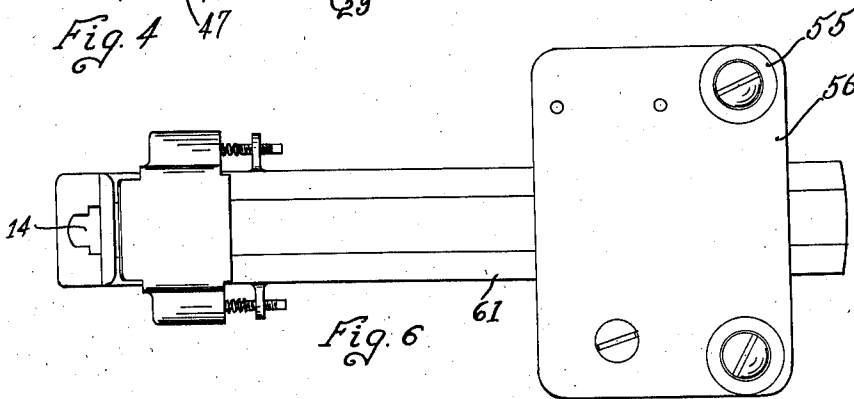
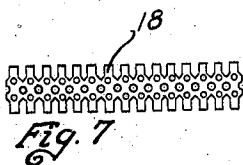
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INVENTORS:
ELISHA H. CROFOOT
CARL E. HALLEN

E. J. Andrews

BY

Att'y.

UNITED STATES PATENT OFFICE

1,990,725

TACKER

Elisha H. Crofoot and Carl E. Hallen, Mount Prospect, Ill., assignors to John B. Crofoot, Mount Prospect, Ill.

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8 Claims. (Cl. 1—48)

This invention relates to tackers or similar devices used for driving tacks or staples, more particularly for fastening sheets or strips of various kinds, to wood or similar substances. One of the objects of the invention is to provide improved means for operating a tacker, particularly for releasing the hammer of the tacker. Another object of the invention is to provide means for guiding the tacker along strips which are being fastened to surfaces. Another object of the invention is to provide means for guiding the tacker along the edge of boards, such as moldings, when used for driving a row of tacks or staples into the molding or other board.

Of the accompanying drawings, Figure 1 is an elevation of the tacker which embodies features of my invention. Figure 2 is a somewhat enlarged central sectional view of the tacker. Figure 3 is an elevation of the lower portion of the tacker, showing the guiding means reversed with regard to Figure 1. Figure 4 is a fragmental view of the converse side of the base portion showing certain friction and release mechanism; Figure 5 is a sectional elevation of one of the guiding means of the device; Figure 6 is a bottom view of the tacker; and Figure 7 is a plan view of a staple strip.

As is well understood, the purpose of the tacker is to drive fastening means of various kinds into soft material, such as wood, either for riveting objects to the wood or fastening them to the surface. Our tacker is arranged to cut and feed staples as they are used, and is particularly valuable when setting a series of staples, usually in rows, in order to fasten wires or molding of various sorts to the surfaces of the wood or other substances. It is customary with tackers to use strips of staple material, such as is indicated in Fig. 7. The strip is inserted in the device and each time that the hammer is operated the staple is cut from the end of the strip and is then driven into the board.

The device comprises a frame 10 to which is pivoted an operating handle 11. The device is grasped by passing the fingers through some convenient opening, such as the opening 12, with the palm of the hand pressing on the handle. As the handle is pressed downwardly, a finger 13 is arranged to elevate a hammer 14 against the force of the springs 15, one on each side of the hammer. When the handle reaches a certain position, a trip arm 16 strikes on the frame 10, and the nose 17 of the trip is forced out from the shoulder 24 of the finger member. This releases the hammer, and the force of the springs drives

it down against the end of the projecting strip 18. The edge 19 of the hammer cuts off the staple 20 and presses it down through the member 21 and into the board 22, thus fastening the member 21 firmly to the board.

As the handle 11 is released, a spring 23 rotates it upwardly to the initial position. At the same time, the trip arm 16, which is pivoted by a pivot 25 to the handle, is rotated upwardly, while the nose 17, by means of the spring 26, is pressed against the surface 27 of the finger 13, until the nose trips over the shoulder 24 as indicated. The device is then in normal position for driving another staple, and it is necessary only to force the handle downward with the hand and the process is repeated.

With tackers of this nature, it has been common to have some means of releasing the hammer when it is under the tension of the spring by automatically forcing a finger, corresponding to the finger 13, out from under some portion of the hammer, as the shoulder 28. This we find is objectionable for various reasons, and we prefer to provide means for releasing the hammer without moving relatively the shoulder and finger, and without removing the finger 13 from the slot or recess 30. In order to accomplish this, we prefer to pivot the finger to the frame 10 by means of a pivot 31, or in any other suitable manner, so that the end of the finger is at all times in the recess 30. As the handle 11 is forced downwardly to the position indicated in Fig. 2, the finger is rotated upwardly as stated, carrying with it the hammer. When the finger member is released, the finger rotates downwardly with the hammer, and the position of the pivot is such that the finger is never removed from the recess. To release the hammer, we release the finger member as hereinabove described. This prevents any possibility of misplacement of the finger with reference to the hammer, and substantially eliminates the friction between the hammer and the finger and the consequent wearing tendency, and is otherwise a more desirable arrangement.

The staple strip 18 is placed in the slot 32, and is fed automatically in the following manner: At each downward stroke of the hammer, a cam shoulder 33 on the hammer forces inwardly a pin 34 against a spring 35. This pin carries with it a finger 36 which is pressed, by a spring 37, downwardly on the staple strip 18. As the pin 34 is forced inwardly, the finger slips inwardly on the strip and grasps another section of the strip. As the hammer is elevated, the pin 34 is allowed to be forced outwardly by the spring, carrying with

it the finger 36 and delivering a new staple section beneath the hammer for the next operation.

A stop 41 is arranged to prevent the backward movement of the strip 18 as the finger 36 is moved backwardly; the end of the stop coacts with the sections of the strip to prevent such backward movement. This stop is forced downwardly on the strip, by means of a spring 42, and the stop can be elevated from the strip by pressing downwardly on the outer end of a release strip 40. The inner end of the release strip elevates the stop and, in this manner, the staple strip is released and may be removed.

It is common with tackers of this nature to fasten strips, such as sections of electric wires, to some board surface. For this purpose, and particularly for fastening to the board pairs of electric wires, we provide special guiding means. These wire strips 29 (Fig. 4) are formed with a projecting flange 38 and in operation the tacker is applied to the strip with the flange in the slot 39. A finger 43 is forced against the flange by means of a spring 44, preferably one on each side of the base of the tacker. This presses the flange firmly against the nose 45 of the tacker.

In operation, the strip is placed where desired, the tacker is applied to the strip, and a staple is driven in, thus fastening the strip to the wood. The tacker is then slid along with the flange in the slot 39 to the position desired for another staple. In this way, staples can be driven continuously very rapidly until the entire strip is fastened to the board. In order to pull the strip taut, so as to force it to lie straight on the board, the springs 44 may be adjusted so as to press the finger 43 as firmly against the flange as may be desired. In this way, the friction produced will be sufficient to keep the strip straight or even stretched, in cases where it may be desired.

However, in order to more freely slip the tacker along on the flange, the compression of the springs may be reduced by the operator by pressing on a lever arm 49. The other arm 46 of the lever is operatively associated with the casing 47 which carries the finger 43, so as to force the casing and finger away from the flange. In this manner the compression of the springs may be reduced as much as may be desired, and the operator can very quickly apply the device to the strip or remove it or slip it along. The compression of the springs may be adjusted by means of the screw 48 which is threaded into the flange 50.

It is also desirable to have means for guiding the tacker along the edge of boards or the like where strips of any kind are to be fastened to the board. For this purpose we provide the rolls 55 which are fixed to a plate 56 adjustably mounted on the base of the tacker. In operation these rolls are placed on the edge of the board, with the adjustment such that the nose 45 of the tacker is properly spaced from the edge. The operator then slides the tacker along on the edge of the board, driving staples whenever desired, merely maintaining the rolls on the edge of the board. In this way one can very readily operate the device for a row of staples the exact distance from the edge of the board that may be desired.

The clamp 58, by means of a thumb nut 60 provides means for clamping the plate 56 firmly to the base 61 of the tacker. The flanges 62 being positioned in the slots 63 of the base. Also the rolls 55 may be adjustably spaced from the plate

56, as the shank 64 is threaded into the plate 56, and is locked therein by the nut 65.

Mounted on the upper end of the hammer is an enlargement, such as the collar 70, and encircling the hammer shank is a buffer spring 71 between the collar and the pin 72 to which the springs 15 are connected. When the hammer is forced downwardly, the spring 71 comes in contact with the hammer guide 73 just before the hammer strikes the strip 21 or other article which is being fastened. This prevents the objectionable pounding which would result if no buffer spring were used.

Enclosing this buffer spring 71 and also the forcing springs 15 is a housing 75 which thus encloses all of the moving parts protecting them from injury by dust or otherwise, and providing a convenient means for grasping the tacker by one hand if desired. The housing is removably mounted on the frame, and may be detachably connected thereto by means of nuts 76 or otherwise.

We claim as our invention:

1. In a tacker, a frame, a hammer slidably mounted in the frame, a pivoted member, a shoulder on the hammer, a finger fixed to the member and arranged to press against the shoulder as the member is rotated, pivoted means for rotating the member, and means for releasing the member from the rotating means, said member and rotating means having a common center of rotation.

2. In a tacker, a frame, a hammer slidably mounted in the frame, a pivoted member, a shoulder on the hammer, a finger fixed to the member and arranged to press against the shoulder as the member is rotated, means for rotating the member, and means for releasing the member from the rotating means, said rotating means comprising a handle pivoted to the frame coaxial with the pivoted member, and said releasing means comprising a trip pivoted to the handle.

3. In a tacker for tacking a strip having a flange thereon, a hammer head, a slot beneath the head and adapted to receive the strip flange, means for pressing the flange against one side of the slot, and means for varying the pressure on the flange, said pressing means comprising a spring, and said varying means comprising means for adjusting the force of the spring.

4. In a tacker having a hammer head, guide means, said means comprising a pair of rollers mounted on the base of the tacker, the axes of the roller projecting perpendicularly from the base, and means for adjustably positioning the rollers with reference to the hammer head, said means comprising a plate, said rollers being mounted adjacent one edge of the plate, and said positioning means comprising means for clamping the plate to the base with the said edge either between the hammer and clamping means or on the opposite side of the clamping means.

5. In a tacker, a frame, a hammer mounted for vertical movement in the frame, a handle pivoted to the frame, a finger pivoted to the handle and adapted to elevate the hammer as the handle is rotated downwardly, means to prevent relative movement of the handle and the finger, and means to render the latter means inoperative when the handle is rotated downwardly a predetermined distance.

6. In a tacker, a frame, a hammer slidably mounted in the frame, resilient means tending to force the hammer in one direction, a pivoted finger arranged when rotated to move the ham-

mer against the spring, means for rotating the finger, and means for releasing the rotating means from the finger, said hammer having a recess therein in which the finger is at all times
5 positioned, and one surface of the recess coacting with the finger as the finger moves the hammer, said rotating means comprising a handle having a common rotating center with the finger.

7. In a tacker, a frame, a hammer mounted
10 for vertical movement in the frame, a spring continuously tending to force the hammer downwardly, a handle pivoted to the frame, a finger pivoted to the handle coaxially therewith and adapted to elevate the hammer as the handle is
15 rotated downwardly, means to prevent relative

movement of the handle and the finger, and means to render the latter means inoperative when the handle is rotated downwardly a predetermined distance.

8. In a tacker, a frame, a hammer slidably
5 mounted in the frame, a handle pivoted to the frame, a member pivoted to the handle, a shoulder on the hammer, a finger fixed to the member and arranged to press against the shoulder as the member is rotated by the handle, and means for
10 releasing the member from the handle as it is rotated.

ELISHA H. CROFOOT.
CARL E. HALLEN.