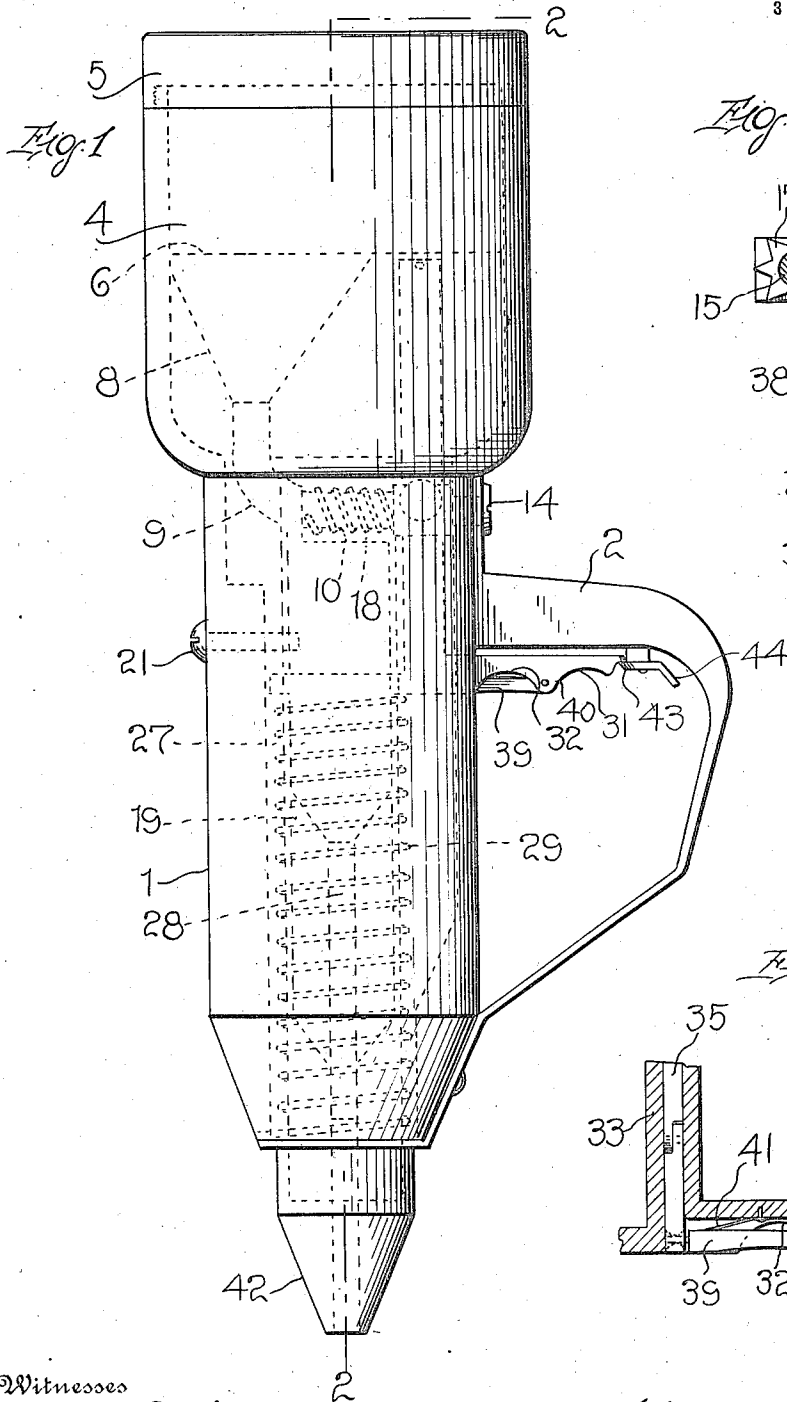
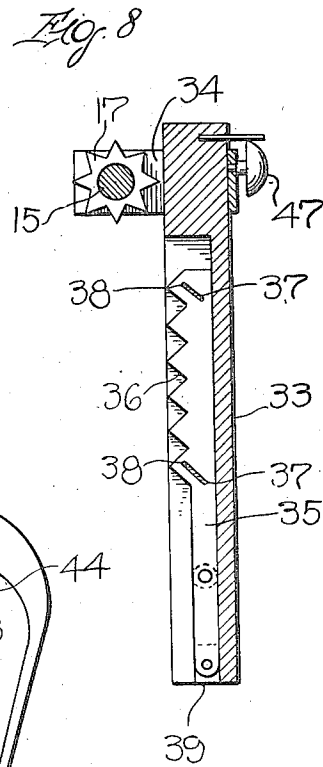
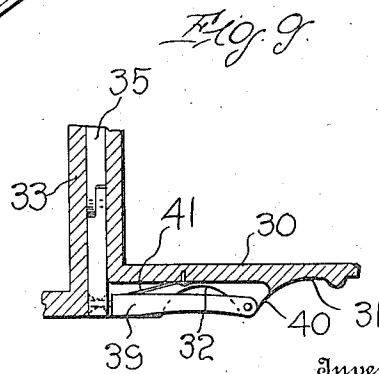


J. P. GARDNER.
TACK DRIVER.
APPLICATION FILED DEC. 29, 1913.

1,106,646.

Patented Aug. 11, 1914.

3 SHEETS-SHEET 1.



Witnesses
Robert M. Sutphen
A. J. Hind.

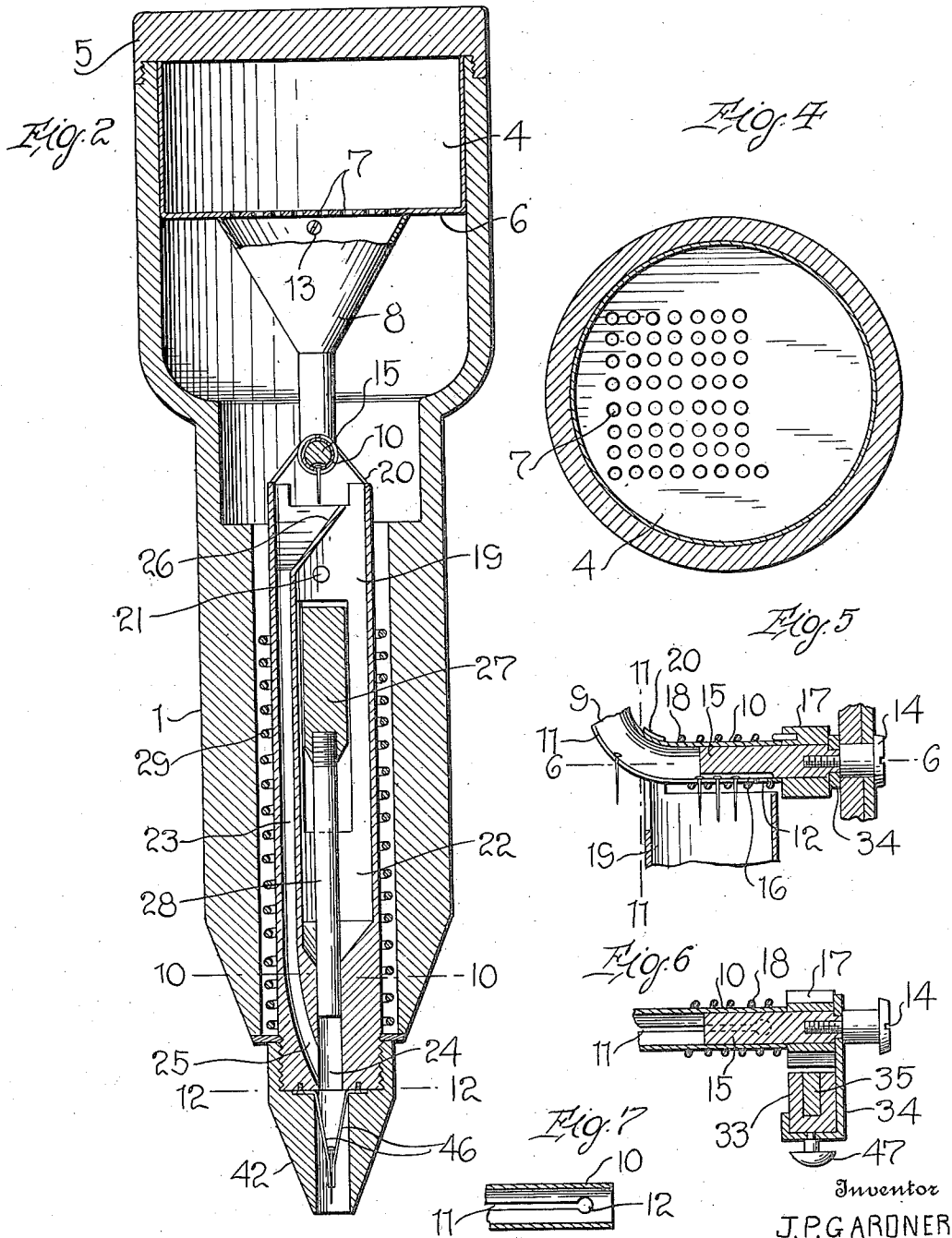
Inventor
J. P. GARDNER

By *Watson E. Coleman*
Attorney

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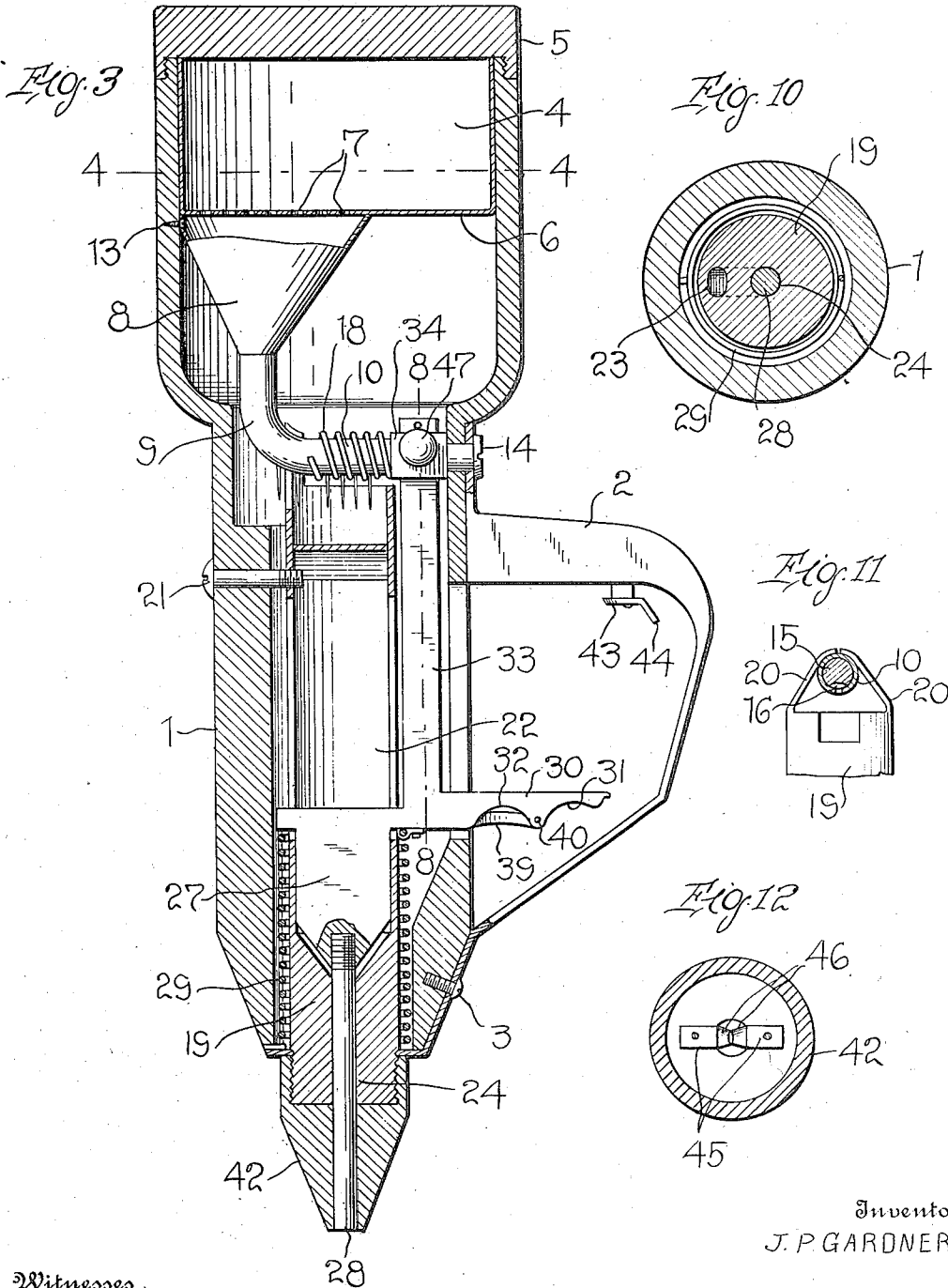
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Attorney

UNITED STATES PATENT OFFICE.

JOHN P. GARDNER, OF CAIRO, ILLINOIS.

TACK-DRIVER.

1,106,646.

Specification of Letters Patent.

Patented Aug. 11, 1914.

Application filed December 29, 1913. Serial No. 809,348.

To all whom it may concern:

Be it known that I, JOHN P. GARDNER, a citizen of the United States, residing at Cairo, in the county of Alexander and State of Illinois, have invented certain new and useful Improvements in Tack-Drivers, of which the following is a specification, reference being had to the accompanying drawings.

This invention comprehends certain new and useful improvements in tack drivers and has for its primary object to provide a device of this character which will be of improved and simplified construction and operation as well as highly efficient and effective in use.

Another object is to provide a device of this character which will be of improved construction and operation, composed of a comparatively small number of parts, which may be readily replaced should they become worn or broken.

A further object is to provide a device of this character having an improved form of tack guiding and feeding means which will be automatic in operation.

A further object is to provide a device of this character which will be of such construction that it may be manufactured in various sizes for driving tacks and the like of various sizes.

A further object is to provide a device of this character constructed in such manner as to be especially adapted for use in driving brads and which will feed only one brad at a time to the discharge end of the device upon each inward movement of the plunger.

With the above and other objects in view, my invention consists in certain novel constructions, combinations, and arrangements of parts to be hereinafter more fully described, claimed, and illustrated in the accompanying drawings, in which,

Figure 1 is an elevational view of my complete device; Fig. 2 is a longitudinal sectional view on the line 2—2 of Fig. 1; Fig. 3 is a longitudinal sectional view at right angles to Fig. 2; Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 3; Fig. 5 is a fragmentary detail sectional view of the tack guiding and releasing means; Fig.

6 is a detail sectional view on the line 6—6 of Fig. 5; Fig. 7 is a fragmentary detail sectional view of the lower end of the funnel-shaped guide; Fig. 8 is a detail sectional view on the line 8—8 of Fig. 3; Fig. 9 is a detail sectional view through the trigger bar and parts carried thereby; Fig. 10 is a detail transverse sectional view on the line 10—10 of Fig. 2; Fig. 11 is a fragmentary detail view, partly in section, showing the manner in which the upper end of the barrel is secured upon the lower end of the funnel-shaped guide; and Fig. 12 is a transverse sectional view on the line 12—12 of Fig. 2.

Referring more specifically to the drawings in which similar reference characters designate corresponding parts throughout the several views, 1 designates the hollow body of the device, and 2 the handle which is secured to the main or body portion 1 of the device, as shown at 3.

At the upper end of the barrel is positioned the tack feed hopper 4, the upper end of which is closed by the cap 5. The bottom 6 of the feed hopper 4 is flat and has a portion perforated, as shown at 7.

Beneath the perforated portion 7 of the feed hopper bottom 6 is the funnel shaped guide 8, the small or lower end of which is curved, as shown at 9, and extended transversely in the upper or inner end of the body 1, as shown at 10. The curved and perforated portions of the lower end of the funnel shaped guide 8 are provided with the longitudinal slot 11 in the lower faces thereof with its outer end enlarged, as shown at 12, whereby the tacks may be readily discharged from the slot 11, as will be clearly understood.

The upper portion of the hopper is secured in position by a screw 13 or other suitable securing means engaged transversely through the upper end of said funnel shaped guide and into the outer wall of the enlarged upper or outer end of the body 1 within which the feed hopper 4 is formed. The lower end of the hopper is secured in position, however, by the screw 14 threaded through the body 1 and into the outer end of the supporting pin 15, the inner end of

which is engaged in the open horizontal portion 10 of the lower end of the funnel shaped guide 8 and provided with a longitudinal groove 16 in its lower face registering with the longitudinal slot 11 but slightly wider than the same to accommodate the heads of tacks traveling along and projecting through said slot 11.

The lower extremity of the funnel shaped guide is spaced from the outer wall of the body 1 and between said extremity and said outer wall, I have positioned a pinion 17 having secured to one face, one end of a helical rotary tack guide 18 which is engaged around the transverse portion of the lower end of the funnel shaped guide to guide the tacks along the longitudinal slot 11 and groove 16 to the outer ends of the same, said guide 18 serving to retain the tacks in spaced relation and prevent more than one tack from being fed to the enlarged outer end of the slot 11 at a turn, when said guide 18 is rotated.

Extending from within a spaced distance to a suitable distance beyond the small tapered end of the body 1, is the barrel 19 which has the inwardly curved arms 20 formed on its upper or inner end and engaged around the lower end of the funnel shaped guide 8 at the junction of the transverse portion with the curved portion thereof. The barrel 19 is also secured in position by a screw 21 or other suitable securing member engaged through the side of the body 1 and into the barrel 19. The barrel 19 has a central longitudinal plunger passage 22 and an outer longitudinal tack passage 23. The lower end 24 of the central longitudinal plunger passage 22 is reduced and of circular form in cross-section while the lower portion 25 of the outer longitudinal tack passage 23 is curved and connected with the reduced circular lower portion 24 of the plunger passage 22. The upper end of the outer longitudinal tack passage 23 is flared to present a large open upper end with the inclined walls 26 to receive the tacks from the slot 11 and properly guide the same to the main portion of said outer longitudinal tack passage 23 with the points of said tacks directed downwardly.

It will be understood that the main portion of the central longitudinal plunger passage is preferably of rectangular form in cross-section to accommodate the plunger head 27 slidably mounted in the same and having the inner end of the plunger 28 threaded therein, said plunger 28 working in the reduced circular portion 24 of the plunger passage 22. The plunger 28 and the plunger head 27 are resiliently retained in their outermost positions by the helical spring 29 which has one end thereof secured in the body 1 at its outer extremity. The opposite

end of the spring is connected to a trigger bar 30 which is secured to the inner end of the plunger head 27, the trigger bar projecting outwardly through registering slots in the barrel 19 and the body 1.

The trigger bar 30 has its outer end inclosed in the handle 2 and has a pair of notches 31 and 32 in its lower face. Projecting upwardly from the trigger bar 30 is a longitudinally slotted arm 33 which is guided in its longitudinal movement by the angular guide arm 34 carried by the supporting pin 15 and having its free end loosely engaged around the upper portion of said arm 33. Within the longitudinal slot of the arm 33 is a rack bar 35 which has the teeth 36 formed on its outer face near its inner or upper end and adapted for engagement with the pinion 17. The rack bar 35 has a plurality of inclined slots 37 formed therein, through which are engaged the guide pins 38 positioned transversely through the slotted portion of the arm 33. The lower end of the rack bar 35 is pivoted upon the inner end of the rack bar actuating arm 39 which is extended at right angles to the rack bar and has its outer end pivoted to the perforated ear 40 separating the notches 31 and 32, said pivoted rack bar actuating arm 39 extending across the notch 32. The arm 39 is resiliently retained in inoperative position by the spring 41 having one end secured to the trigger bar 30 while its opposite end bears against said arm 39 to retain the latter in spaced relation with said trigger bar. It will be understood that the handle 2 has its opposite ends directed inwardly and that one end of said handle is preferably engaged over the reduced end of the body 1 and held in position against the same by the tapered nut 42 threaded upon the end of the barrel 19 projecting beyond the reduced end of the body 1.

When a finger is engaged in the notch 32 and the trigger bar 30 raised or drawn back against the tension of the helical spring 29, the rack bar 35 will be forced upwardly and outwardly previous to movement of the trigger bar 30 and upon the inward or upward movement of the trigger bar 30, the teeth 36 of the rack bar will engage the pinion 17 and cause rotation of the latter and the helical rotary tack guide 18 until one tack is guided to the enlarged outer end of the longitudinal slot 11 and released, said tack dropping upon the inclined walls 26 of the upper end of the outer tack passage 23 and finally finding its way to the reduced lower circular portion 24 of the plunger passage 22, in advance of the plunger 28. As soon as the trigger bar 30 is released, however, the rack bar actuating arm 39 will be returned to normal position, thereby drawing inwardly and downwardly upon

the rack bar 35 and disengaging the teeth 36 thereof from the pinion 17. Owing to the strength of the helical spring 29, the plunger 28 will be forced outwardly or forwardly with sufficient force to drive the tack into the surface against which the end of the tapered nut 42 is engaged. Should it be desired to cause the plunger 28 to strike the tack a number of blows, the trigger bar 30 is drawn inwardly or rearwardly by engaging the finger in the notch 31 only, thereby preventing engagement of the teeth 36 of the rack bar 35 with the pinion 17 to feed more tacks to the tack passage 23.

15 The trigger bar is automatically caught at the end of each inward or rearward movement thereof by the latch member 43 carried by the handle 2 and said trigger bar may be readily released to allow the helical spring 20 29 to return the same together with the plunger 28 and plunger head 27 to normal position, by turning the latch member 43 by the handle 44 thereof.

In order that the tack may be properly supported in position while being driven into the material, I have provided a pair of opposed spring arms 45 having their inner ends 46 directed outwardly at about right angles and secured against the outer end of the barrel 19, at diametrically opposite points. The outer ends of the opposed spring arms 45 are engaged against one another and tapered, and slightly concaved upon their inner faces, whereby the tack 35 may be readily held between said spring arms.

In order that the operator may know when the tack is driven into the surface with its head engaged against the latter, I have provided a gong 47 mounted upon the angular guide arm and a stop arm carried by the longitudinally slotted arm 33 and adapted for engagement with the gong as said arm 33 completes its outward or forward movement.

While I have shown the preferred embodiment of my invention, it will be understood that minor changes in the details of construction and arrangement of parts may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing any of the advantages of the same.

What I claim is:—

55 1. A device of the class described comprising a body, a barrel in said body, a plunger mounted within said barrel, a tack compartment within said body, a tack passage communicating with said barrel, a rotatable tack guiding and releasing member, means for moving the plunger inwardly and causing rotation of the tack guiding and releasing member to cause the tack to pass along the tack passage to a position forwardly of the plunger, and means for re- 65 turning the plunger to normal position.

2. A device of the class described comprising the combination of a body, a barrel in said body, a tack compartment, a rotatable tack guiding and releasing member, 70 said barrel being provided with a tack passage, a plunger in said barrel, means for moving the plunger inwardly, means connected to the last mentioned means for engagement with the rotatable guiding and releasing member to rotate the same upon inward movement of the plunger, and means for returning the plunger to normal position.

3. A device of the class described comprising the combination of a body, a barrel in said body, a tack compartment, a tack guide, a tack guiding and releasing member, said barrel being provided with a tack passage, a plunger in said barrel, means for 85 moving the plunger inwardly and causing operation of the tack guiding and releasing member to allow a tack to travel along the tack passage to position forwardly of the plunger, and means for returning the plunger to normal position. 90

4. A device of the class described comprising the combination of a body, a barrel in said body, a plunger within said barrel, a trigger connected with said plunger, a 95 slotted arm carried by said trigger bar, a tack guiding and releasing member, a pinion connected with said tack guiding and releasing member, means connected with the trigger bar and engaged in the slotted arm 100 for rotating the pinion to operate the tack guiding and releasing member upon movement of the trigger bar in one direction, and means for returning the trigger bar and plunger to normal position. 105

5. A device of the class described comprising a tack feeding and guiding member, a tack guiding and releasing member engaged around one end of the first mentioned member, said end of the tack feeding 110 and guiding member being longitudinally slotted with one end of the slot enlarged, said tack guiding and releasing member being arranged to guide tacks to the enlarged end of said slot and release said tacks in order, a plunger, means for drawing the plunger inwardly, means connected with the plunger for operating the tack guiding and releasing member upon inward movement of said plunger, and means for returning 120 said plunger to normal position.

6. A device of the class described comprising the combination of a barrel, a plunger in said barrel, said barrel being provided with a side longitudinal tack passage, 125 the outer end of the bore of the barrel being reduced, said tack passage connecting at its outer end with the reduced outer end of

the bore of the barrel, the inner end of the
tack passage being flared, tack guiding
means for guiding tacks to the upper end of
said tack passage, a tack guiding and re-
5 leasing member for releasing the tacks to
allow the same to enter the inner end of
said tack passage, means for drawing the
plunger inwardly, means carried by the last
mentioned means for operating the tack

guiding and releasing member, and means 10
for returning the plunger to normal po-
sition.

In testimony whereof I hereunto affix my
signature in the presence of two witnesses.

JOHN P. GARDNER.

Witnesses:

JOS. GOTTHART,
E. E. COMINGS.