

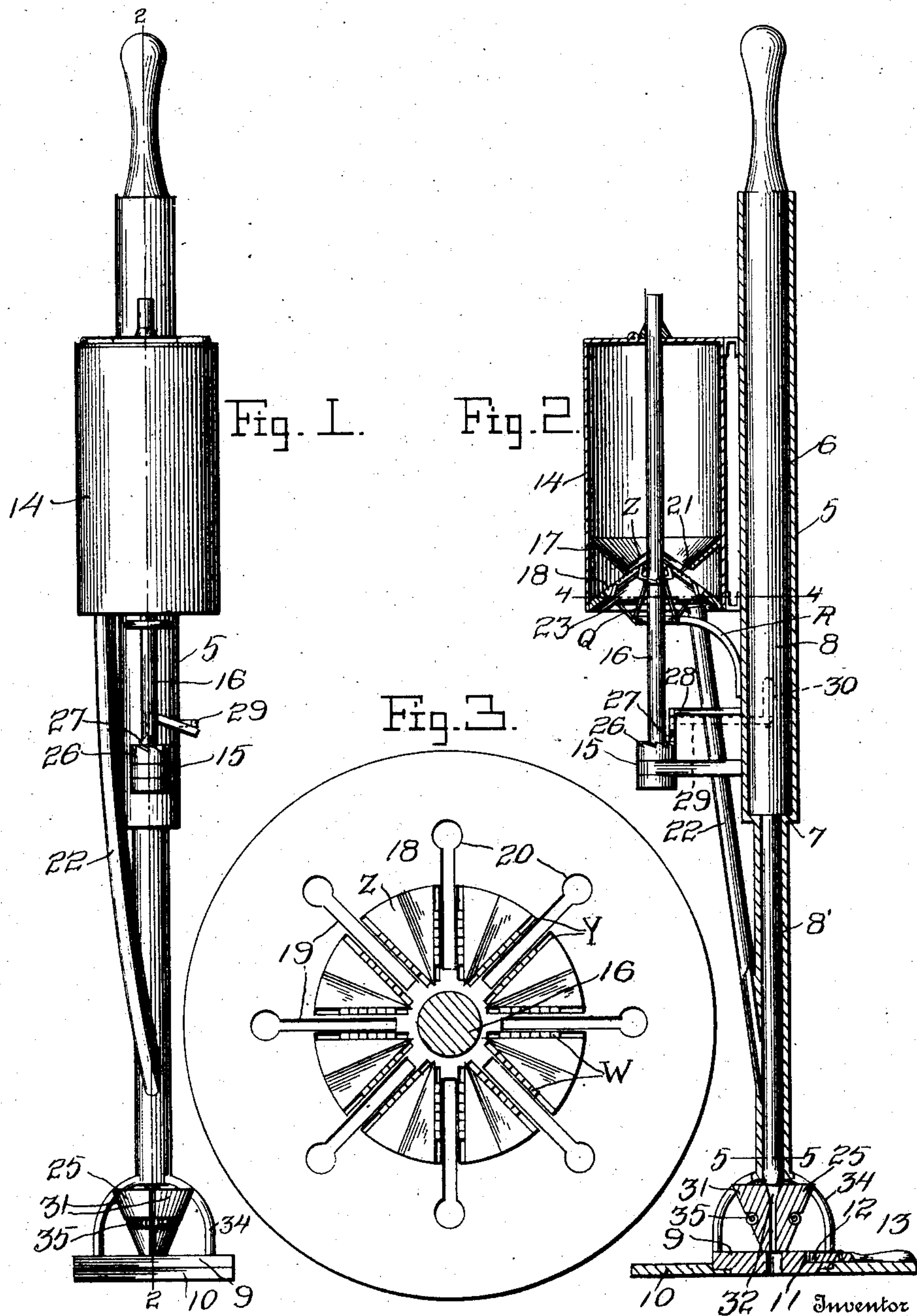
No. 854,180.

PATENTED MAY 21, 1907.

H. W. SCHEVE.
NAIL DRIVER.

APPLICATION FILED JUNE 5, 1906.

2 SHEETS—SHEET 1.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 4.

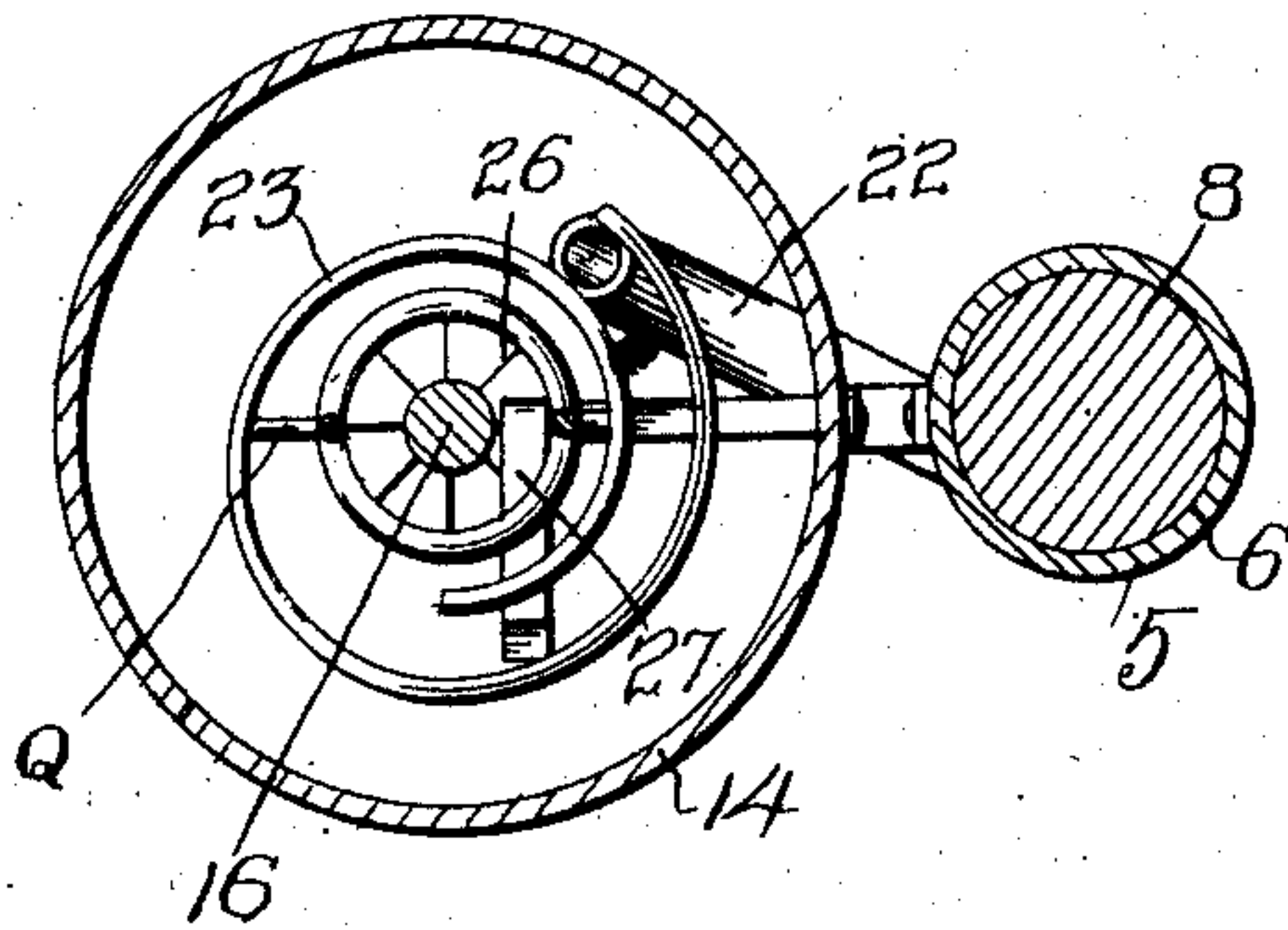


Fig. 5.

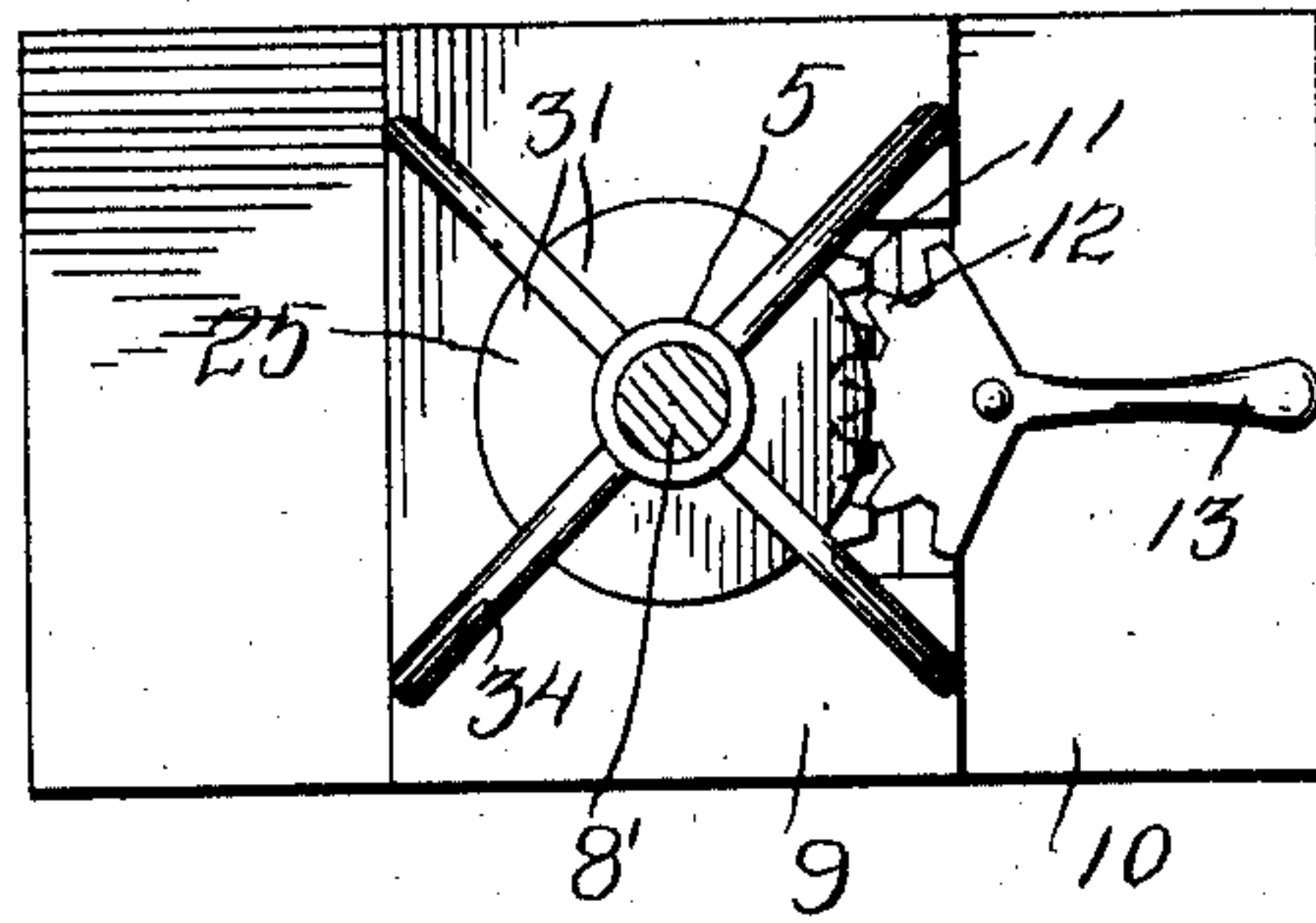
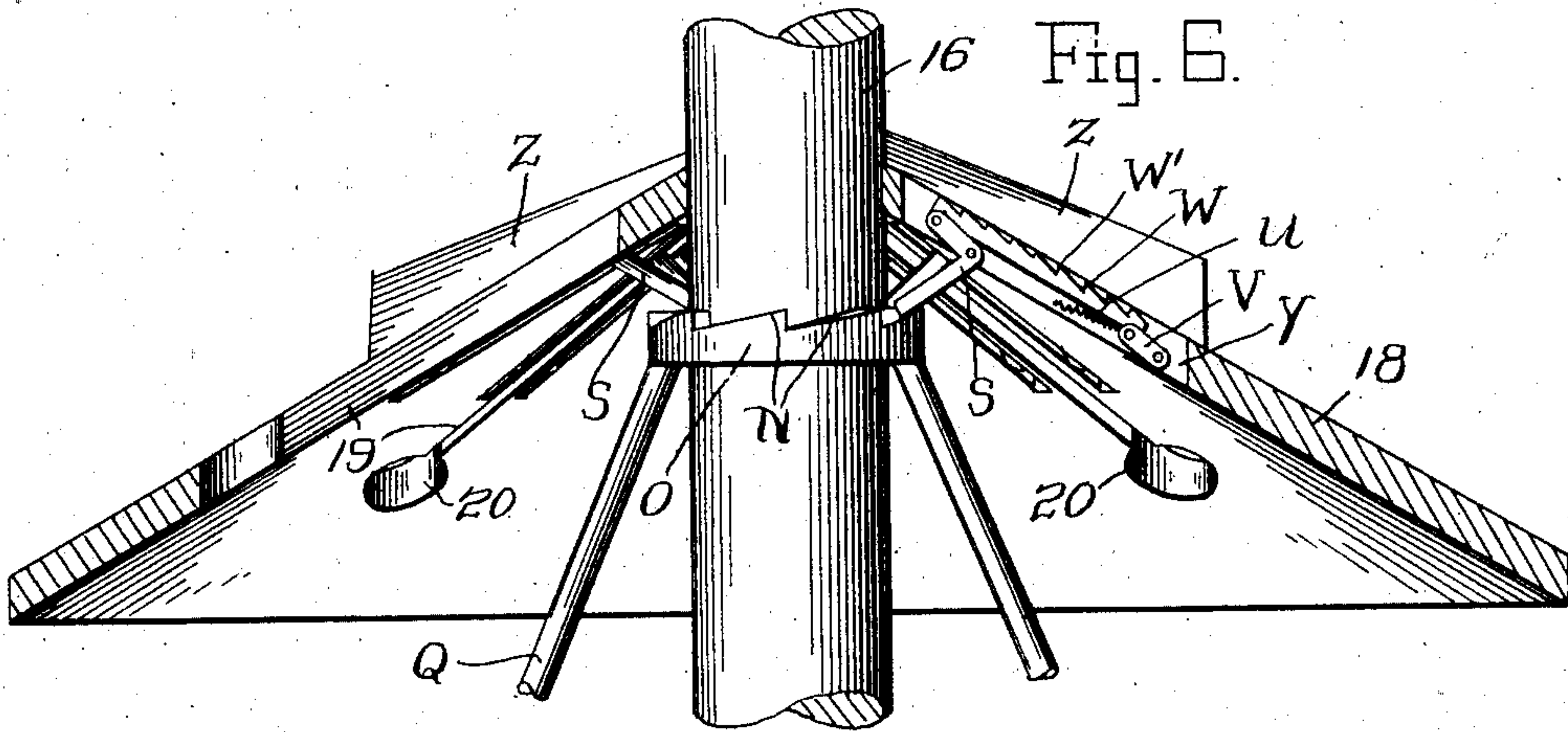


Fig. 6.



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UNITED STATES PATENT OFFICE.

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NAIL-DRIVER.

No. 854,180.

Specification of Letters Patent.

Patented May 21, 1907.

Application filed June 5, 1906. Serial No. 320,356.

To all whom it may concern:

Be it known that I, HENRY W. SCHEVE, a citizen of the United States, residing at Jansen, in the county of Jefferson, State of Nebraska, have invented certain new and useful Improvements in Nail-Drivers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to carpenter's implements and more particularly to nail drivers and has for its object to provide an implement for driving nails which will include a nail magazine, a plunger and means for automatically feeding nails into position to be struck by the plunger and driven when the implement is in operation.

Other objects and advantages will be apparent from the following description.

In the drawings forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views: Figure 1 is a front elevation of the present implement. Fig. 2 is a vertical section on line 2—2 of Fig. 1. Fig. 3 is a detail view showing the cone. Fig. 4 is a view partly in section taken on line 4—4 of Fig. 2, the retainer being shown in top plan. Fig. 5 is a section on line 5—5 of Fig. 2 showing the holder and the foot plate in top plan. Fig. 6 is an enlarged sectional view through the cone.

Referring now to the drawings, the present invention comprises a frame 5 including a vertical guide passage 6 which is reduced at its lower end to form a shoulder 7. A plunger 8 is slidably engaged in the guide passage for vertical movement and has a lower reduced portion 8' moving in a reduced portion of the passage, the frame being extended downwardly in tubular form to produce this passage, the lower end of the tubular portion being mounted in a plate 9 which extends horizontally and which is slidably engaged in a foot plate 10 for horizontal movement. The plate 9 carries a horizontal rack bar 11 and pivotally mounted upon the foot plate 10, there is a rack pinion 12 having a laterally extending hand lever 13 by means of which it may be operated, the rack segment meshing with the rack bar 11, so that when the rack segment is oscillated, the plate 9 and the remainder of the implement are shifted horizontally with respect to the foot plate.

A vertical nail magazine 14 is carried by the frame at the upper portion thereof and the frame also carries bearing brackets 15 in which there is revolubly mounted a vertical shaft 16 which passes upwardly through the nail magazine. The magazine is cylindrical in form and has a circular downwardly directed chute 17 at its bottom, and into this chute there extends upwardly the minor portion of a conical member 18 which is mounted upon the shaft 16 for rotation therewith. The conical member is hollow and is open at its bottom and has a plurality of radial slots 19 extending into the inclosure of the chute 17 and terminating at their lower ends in enlargements 20 which lie outwardly of the chute. At one point, the chute is provided at its lower edge with a notch 21 with which the slots 19 are successively registered as the shaft and conical member are revolved and adjacent to this notched portion of the chute and at one side thereof, there is a feed tube 22, which is open at its upper end and which extends downwardly to communicate with the guide passage 6 adjacent to the lower end thereof. The feed tube 22 lies at one side of the notch 21 and between the end of the tube and the chute, there extends a portion of a retainer 23 consisting of a rod extending in the general form of a circle and having its end portions overlapped, the rod thus in reality forming a portion of a spiral. The overlapped portions of the rod lie in spaced relation and at one end beneath the slot 19 which is in registration with the notch 21, and inwardly of the enlarged portion 20 thereof, the overlapped portions lying at their other ends inwardly of the open upper end of the feed tube 22 and at one side thereof.

It may be readily seen from the drawings, that nails placed within the magazine 14 will pass to the conical member 18, and the shanks of the nails will enter the slots 19, these slots being sufficiently narrow to prevent the passage of the heads of nails there-through. Means to be later described, is provided for revolving the shaft 16 when the plunger 8 is operated and this revolving of the shaft will successively register the slots 19 with the notch 21, as will be understood. This notch is of a size to permit of the passage of nail heads therethrough so that when the slot is registered with the notch, a nail will pass through the notch and its shank will pass into the space between the over-

lapped portions of the retainer 23, which will prevent the nail from passing into the enlarged portion of the slot. It will be understood that the retainer 23 lies within the inclosure of the circle formed by the enlarged portion 20 of the slots, while the tube 22 lies directly beneath the enlarged portions successively as the cone is revolved. It will thus be seen that a nail first passes from within the chute to the retainer and is held by the latter from passing into the enlarged portion of its slot, the next nail being also held from passing through the notch, and when the cone has been further revolved to bring the shank of the nail out of the retainer, it will pass into the enlarged portion of the slot and will fall therethrough into the tube 22, down which it will pass to rest against the plunger 8. When this plunger is raised, the nail will pass into the lower portion of the passage 6 and will be prevented from passing outwardly through the lower end of the passage by a holder 25. When the plunger is lowered, it will strike the nail in the holder and drive it through the latter into the wood upon which the foot plate 10 rests, downward movement of the plunger revolving the shaft 16 to bring another nail into the tube 22. The means for revolving the shaft 16 consists of a ratchet disk 26 and a dog 27, the latter being carried by a pivoted arm 28 disposed in position for engagement by a finger 29 which extends laterally from the plunger 8 through a slot 30 formed in the wall of the guide passage 6. The arrangement is such that each downward movement of the plunger revolves the shaft 16 to register another slot 19 with the notch 21.

The holder 25 consists of a plurality of sections 31, which surround a central downwardly tapered passage 32, this passage being disposed in position to receive nails from the passage 6. The holder 25 is connected with the plate 9, the lower end of the tubular portion of the frame 5 being supported above the holder by means of brackets 34. The several members 31 are surrounded by a continuous helical spring 35 which holds them yieldably against outward movement. The members are slidably mounted between the brackets 34.

Within the chute 17 the conical member 18 is provided with ridges Z between its slots 19, the mutually adjacent faces of these ridges being converged downwardly toward the slots. Formed in the member 18 at the sides of the slots 19 and longitudinally thereof, there are slots Y, and pivoted in the outer ends of these slots there are links X, movable to lie at times in the slots, and at times to extend upwardly therefrom.

Plates W are pivoted at their outer ends to the inner ends of the links V and lie normally below the upper surface of the member 18, and in position for upward movement

through the slots Y, and springs U are connected with the plates to hold them yieldably in this position and against upward movement. A plurality of angle-levers S are pivoted to the cone 18 and to the inner ends of the plates W. An arm R supports the retainer 23, and members Q connected with this arm support, a member O having a plurality of cam surfaces N which lie in position for engagement successively by the angle levers S to move them upon their pivots when the cone is revolved, and the arrangement is such that when the levers are thus engaged, they are moved outwardly from the shaft, this movement being communicated to the plates W, which are thus slid outwardly, and by reason of their connection with and the mounting of the links V, the plates W are moved upwardly out of the slots Y above the ridges Z. The plates W have serrated upper edges W', and these serrations engage any nails, which may be lying transversely of the ridges, and when the cam surfaces pass beyond the angle levers, the latter, with the plates W, are returned to their normal positions by springs U. It will thus be seen that nails engaged by the plates will be shifted and will be caused to fall between the ridges Z to enter the slots 19.

What is claimed is:

1. An implement of the class described comprising a nail magazine having a chute at its bottom, said chute having a notch in its lower edge, a conical member disposed with its minor portion extending upwardly into the chute and lying in close relation to the lower edge of the chute, said conical member having a plurality of radial slots therein terminating at their outer ends in enlargements, said slots being arranged for the reception of shanks of nails and for the passage of nail heads through their enlargements only, said notch being arranged for the passage of nail heads therethrough, said enlargements lying outwardly of the chute, means for revolving the conical member to register its slots successively with the notch, a nail holder, means for conducting nails from the enlargement of a slot, registered with the notch, to the holder, and means for driving nails engaged in the holder.

2. An implement of the class described comprising a nail magazine having a chute at its bottom, said chute having a notch in its lower edge, a conical member disposed with its minor portion extending upwardly into the chute and lying in close relation to the lower edge of the chute, said conical member having a plurality of radial slots therein terminating at their outer ends in enlargements, said slots being arranged for the reception of shanks of nails and for the passage of nail heads through their enlargements only, said notch being arranged for the passage of nail

heads therethrough, said enlargements lying outwardly of the chute, means for revolving the conical member to register its slots successively with the notch, a nail holder, means 5 for conducting nails from the enlargement of a slot, registered with the notch, to the holder, means for driving nails engaged in the holder, and a retainer disposed to receive the shanks of nails after the heads thereof 10 have passed through the notch and before they reach the enlargements of the slots and to hold said nails against further outward movement until the slot is moved out of registration with the notch.

15 3. In an implement of the class described, the combination, with a nail magazine hav-

ing a chute at its bottom, of a revoluble slotted conical member extending into the chute and adapted for the reception of nails in its slots, means for revolving the member, members 20 arranged for movement into and out of position to engage nails extending transversely of the slots to shift the positions of such nails, and means for operating the nail-engaging members when the cone is re- 25 volved.

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

HENRY W. SCHEVE.

Witnesses:

GEO. G. HILL,
W. ROBERTSON.