

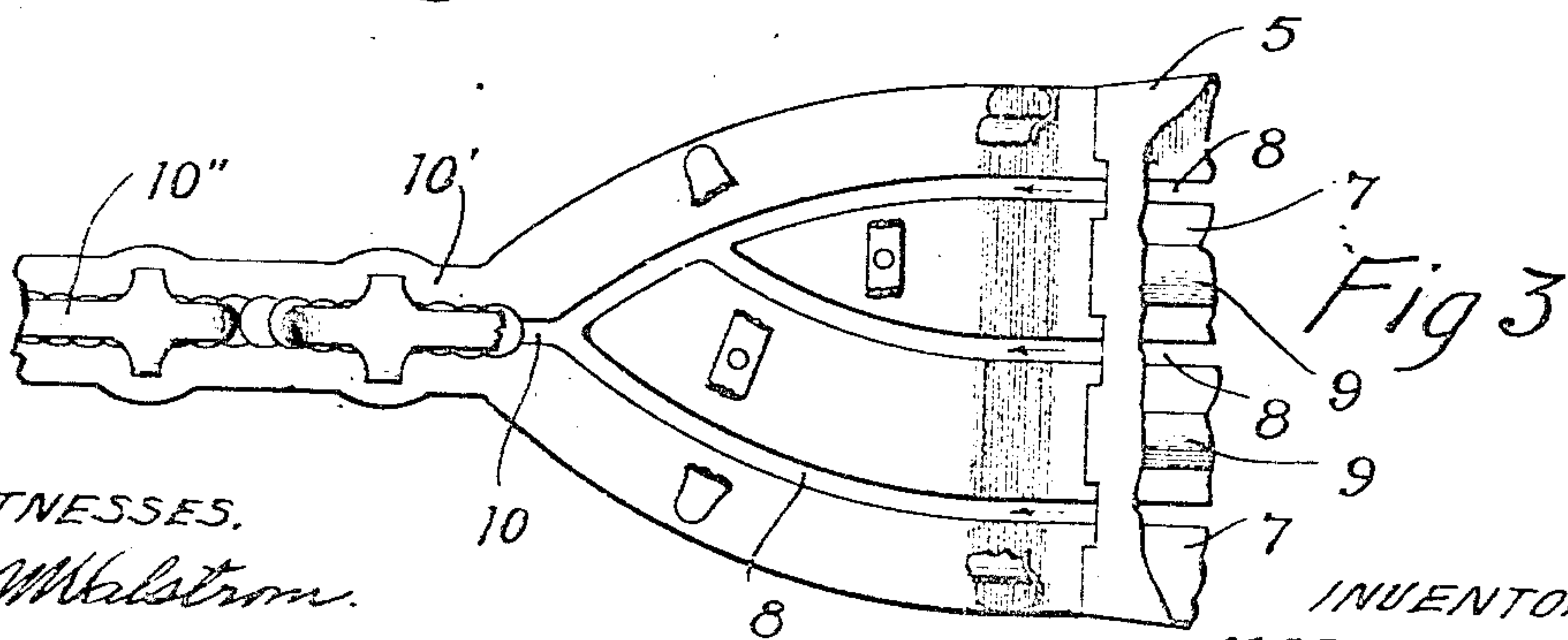
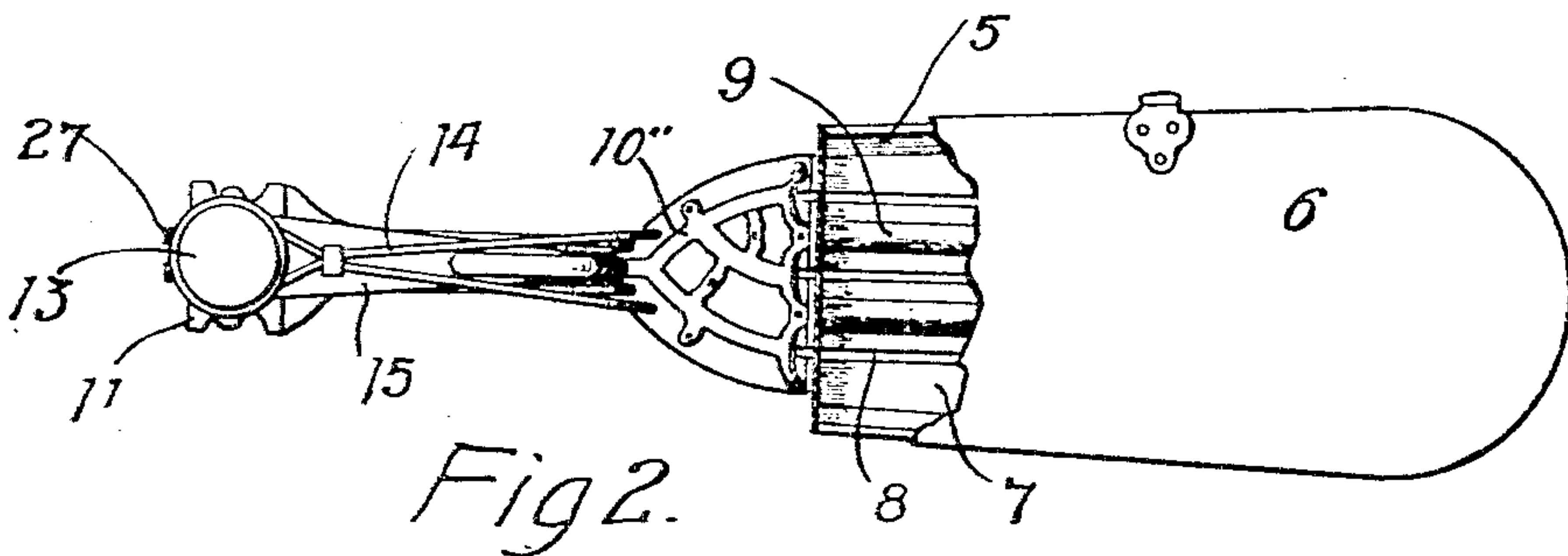
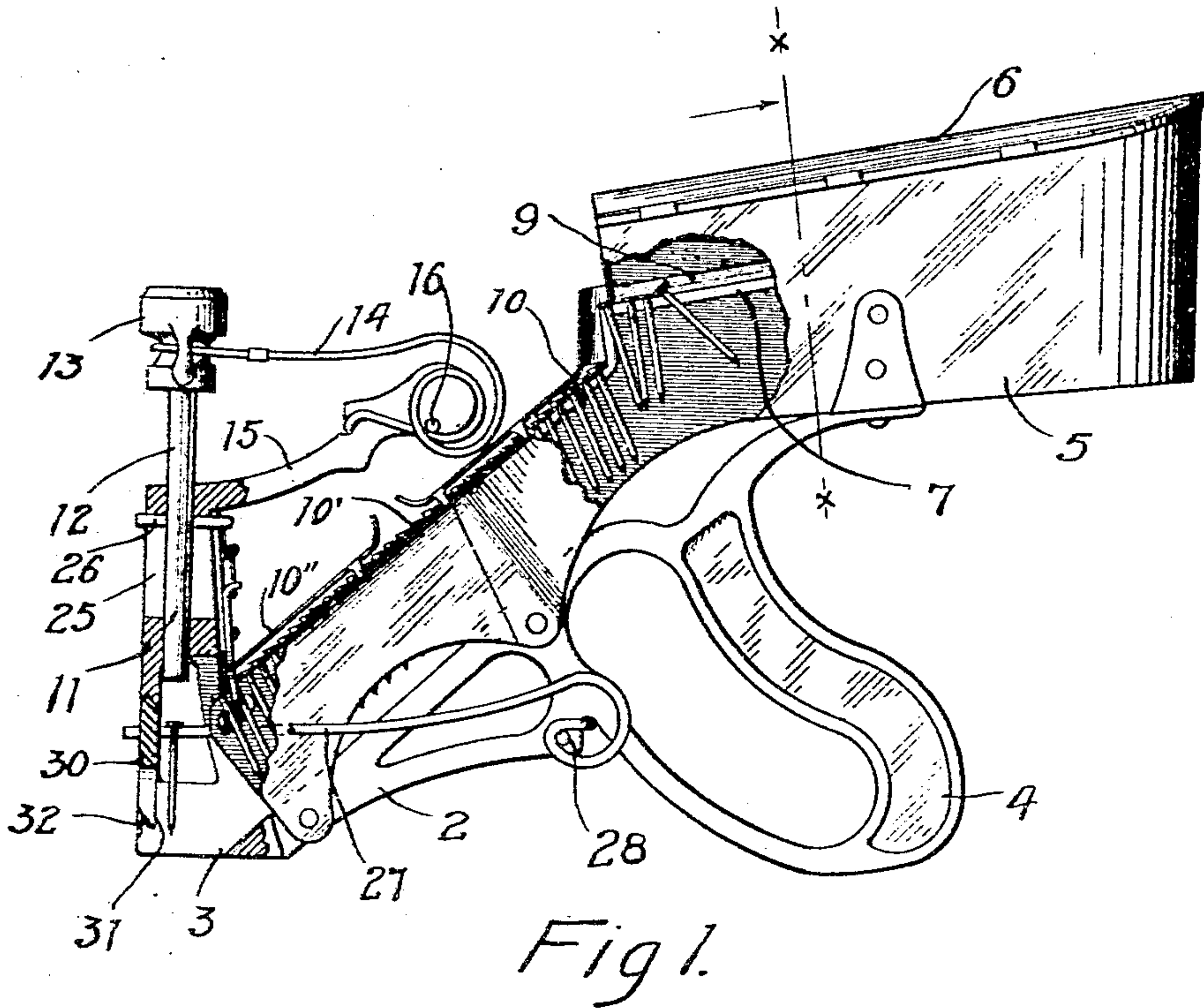
No. 876,086.

PATENTED JAN. 7, 1908.

M. PEARSON.
NAILING TOOL.

APPLICATION FILED MAR. 3, 1906.

2 SHEETS—SHEET 1.



WITNESSES.
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C. Thannstrom

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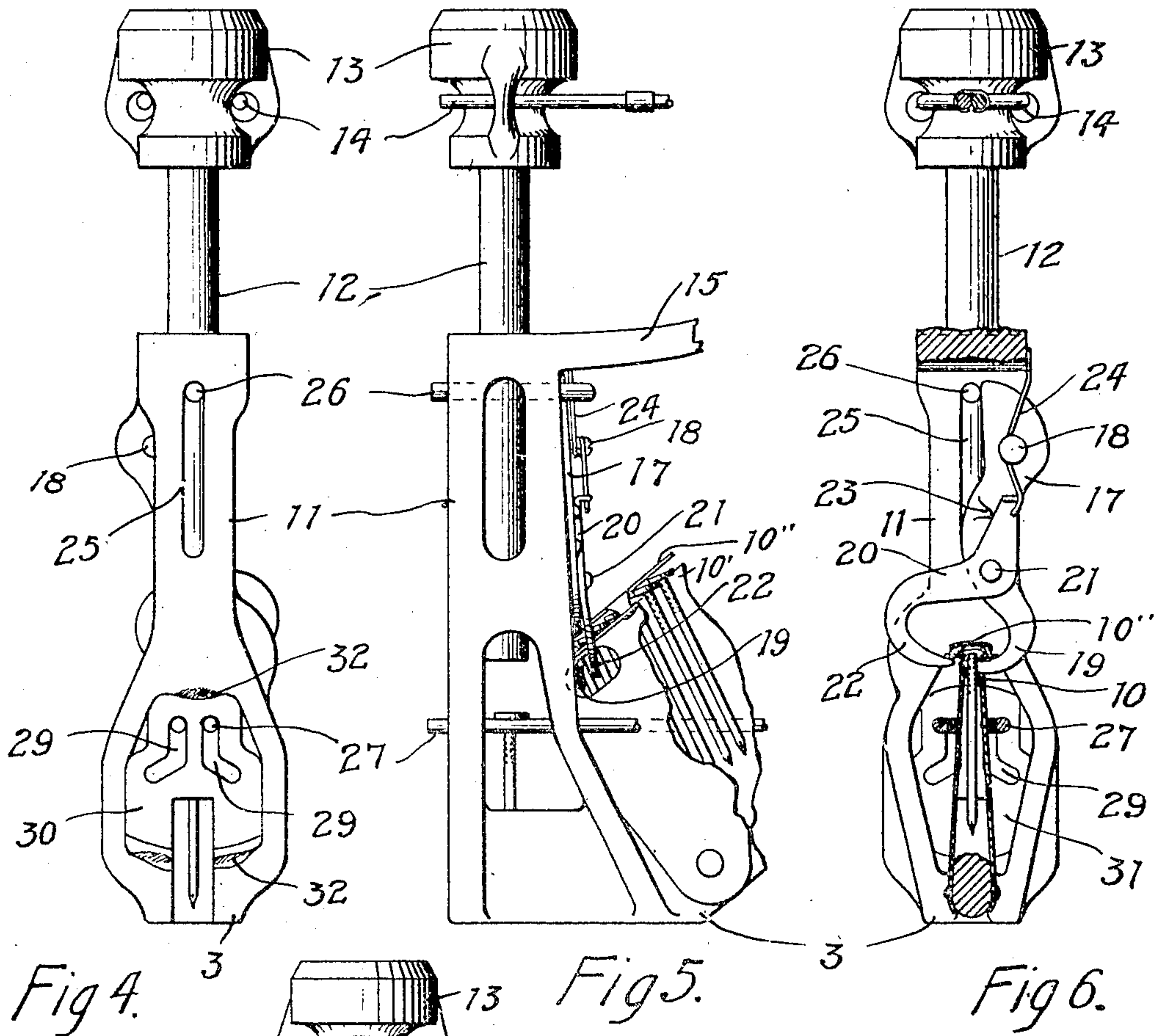


Fig 4.

Fig 5.

Fig 6.

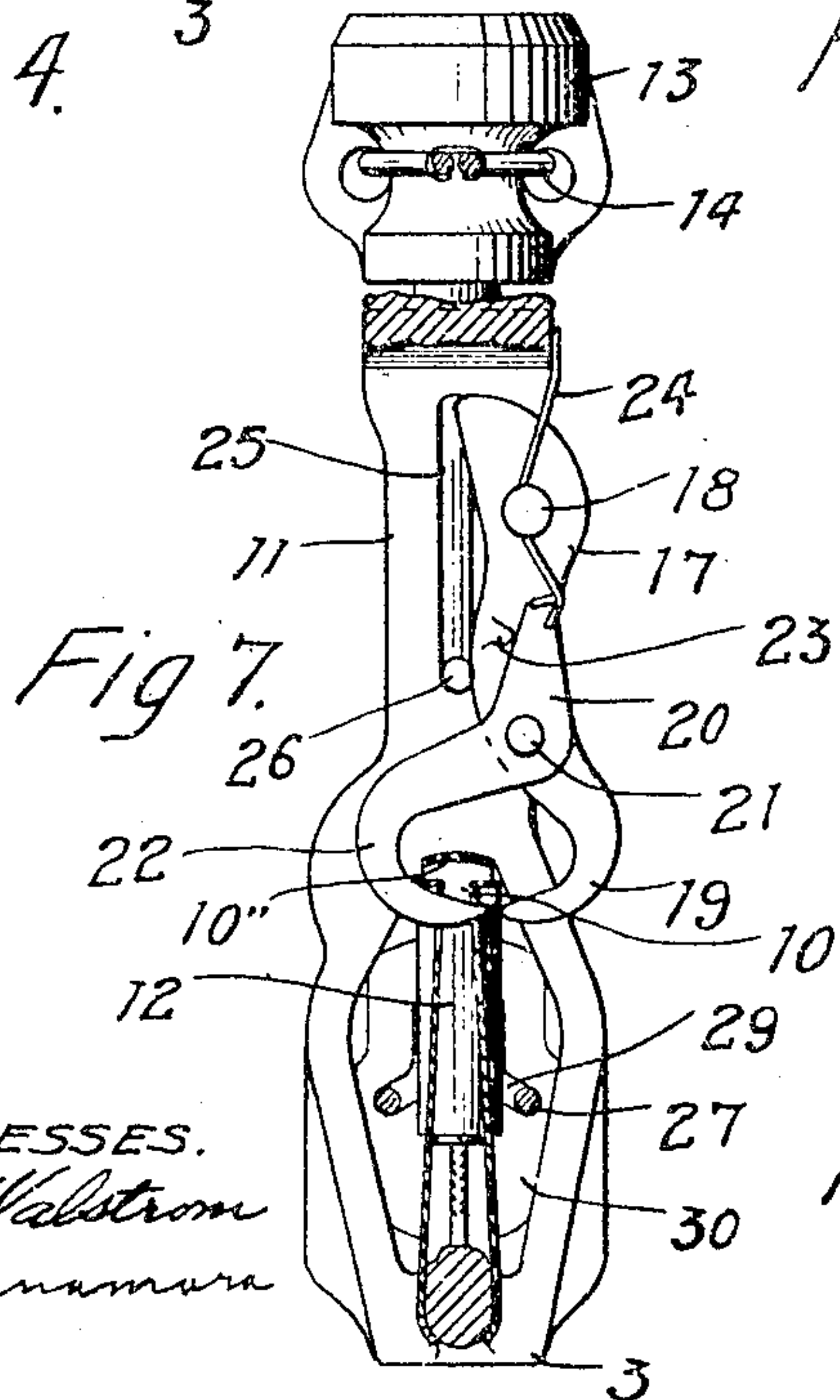
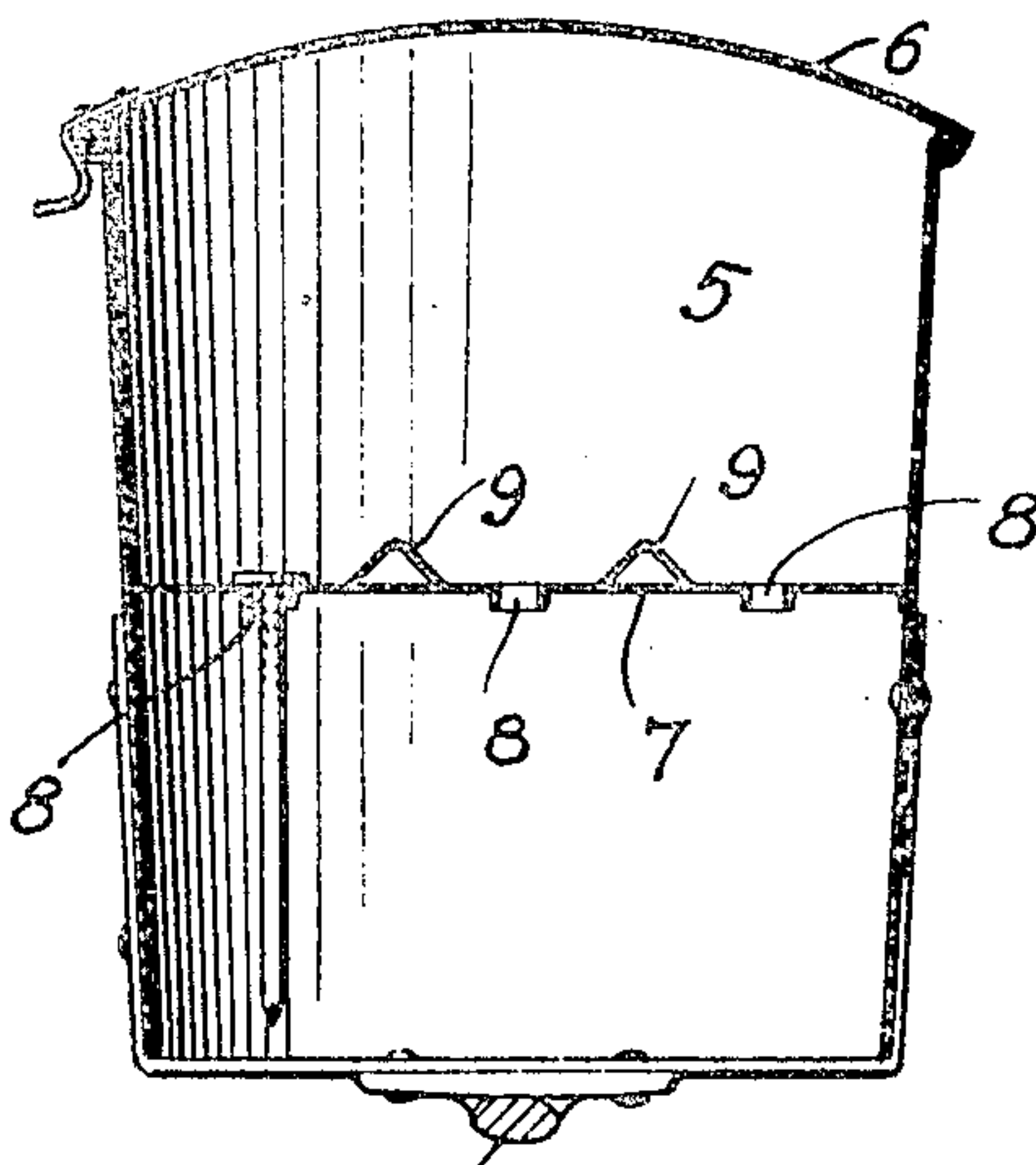


Fig 7.

Fig 8.



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UNITED STATES PATENT OFFICE.

MARTIN PEARSON, OF ROBBINSDALE, MINNESOTA.

NAILING-TOOL.

No. 876,086.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed March 3, 1906. Serial No. 303,991.

To all whom it may concern:

Be it known that I, MARTIN PEARSON, of Robbinsdale, Hennepin county, Minnesota, have invented certain new and useful Improvements in Nailing-Tools, of which the following is a specification.

My invention relates to tools adapted to feed nails into the path of a driving plunger, and the object of my invention is to improve the device shown and described in Letters Patent of the United States, No. 467,864, issued to me January 26, 1892, and to adapt the device for handling and driving nails.

The invention consists, generally, in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a side elevation partially in section of a nailing tool embodying my invention. Fig. 2 is a top view of the same. Fig. 3 is an enlarged view illustrating the feed chutes through which the nails are conducted down to the driving plunger. Fig. 4 is an end view of the tool. Fig. 5 is a side elevation of the forward end of the tool showing the devices for controlling the feed of the nails. Fig. 6 is a sectional view showing the driving plunger in its normal raised position. Fig. 7 is a similar view showing the driving plunger depressed. Fig. 8 is a sectional view of the hopper on the line $x-x$ of Fig. 1.

In the drawing, 2 represents a stock or frame for the tool, having a lower end 3 and a handle portion 4 adapted to rest upon the surface into which the nail is to be driven. A hopper 5, having a suitable cover 6, is mounted on the top of the handle 4, and is inclined slightly and has a bottom 7 provided with a series of longitudinal slots 8 forming chutes or guideways into which the shanks of the nails drop and are suspended by their heads therein. The bottom 7 is a sufficient distance from the lower part of the hopper to allow the nails to stand vertically in the chutes, which are of sufficient width to allow the nail shanks to drop through, but are too narrow to permit the passage of their heads. Ribs 9 V-shaped in cross section are mounted longitudinally on the bottom 7 between the slots therein for the purpose of engaging the nails and directing them into the slots. When a nail strikes the inclined surfaces of the ribs it will roll down thereover into one of the slots, and the shank falling there-

through will swing down to a vertical position. The inclination of the slots is sufficient to cause the feed of the nails by gravity therein.

I have shown a hopper provided with three parallel slots, but a greater or less number may be provided if preferred. These slots extend through the end wall of the hopper and converge and merge into a single chute or slot 10 provided in an inclined plate 10' which extends downwardly from the end wall of the hopper. Suitable guards 10'' are provided over the chutes, for the purpose of holding the nails in place therein. The nails traveling down the chutes 8 will converge and finally all mingle in one chute 10 and pass along therein to the driving mechanism. The nails are placed in the hopper and will automatically find their way into the feed chutes and work down therein into the chute 10. The shaking and jarring of the tool incident to its movement over the surface to be nailed will ordinarily be sufficient to cause proper feeding of the nails, but if necessary at any time the operator can shake the hopper to break up any clogging of the nails therein and insure their rapid and uniform feed. A stop 11 is mounted on the frame of the tool, and a vertically moving driving plunger 12 having a head 13 is mounted in said stop, and is normally held in its raised position by a spring 14, which is supported on an arm 15 and is looped around a pin 16 without contact therewith, and has ends adapted to straddle the head 13. Upon the depression of the driving plunger the spring 14 will be put under tension to return the plunger to its normal position when the nailing operation is completed. The loop in the spring 14 is carried around each end of the pin 16, the spring at the beginning of the loop bearing on said pin, but being out of contact therewith except at one point whereby the flexing of the spring will be uninterrupted, and its power through the greater portion of its length may be utilized. A lever 17 is pivoted at 18 on the stock, and has a depending inwardly curved arm 19 at its lower end which normally projects across the lower end of the chute 10 and blocks the same to prevent the discharge of a nail. A second lever 20 is pivoted at 21 on the lever 17, and also has an inwardly curved arm 22 at its lower end near the arm 19 and normally out of the path of a nail passing down the chute 10. A stop 23 is provided on the

lever 17 against which the lever 20 is yield-
 ingly held by a spring 24. A slot 25 is pro-
 vided in the stock in which a pin 26 mounted
 on the plunger 12 is adapted to slide, the
 lever 17 normally projecting across said slot
 into the path of said pin. When the pin de-
 scends the lever 17 will be oscillated on its
 pivot and the arm 19 withdrawn temporarily
 from the path of the nails, and the arm 22
 will be moved across the chute 10 to obstruct
 the passage of the nails. During the time,
 however, that the arm 19 is being withdrawn
 and the arm 22 moved across the chute, a
 single nail will be allowed to feed forward
 past the arms. When the pin 26 returns to
 its normal position it will engage the upper
 end of the lever 17 and swing its lower end
 and the arm 19 back to its normal position
 across the chute. Thus, as indicated in
 Figs. 5 and 6, a single nail will normally oc-
 cupy the space between the arms 19 and 22
 and be fed forward out of the chute as soon
 as the arm 19 is withdrawn. After leaving
 the chute 10 the nails fall upon parallel
 spring jaws 27 supported at 28 on the frame
 of the tool and extending beneath the lower
 end of the chute 10 and across the space be-
 neath the driving plunger and having their
 free ends inserted into curved slots 29 pro-
 vided in a plate 30 at the lower end of the
 stock. The spring jaws are a sufficient dis-
 tance apart to allow the nail shanks to drop
 between them, but are too near together to
 permit the passage of the nail head, conse-
 quently when a nail falls out of the chute it
 will drop between the jaws and be suspended
 thereon, as indicated in Fig. 1. The slots 21
 extend downwardly and outwardly, and
 when the spring jaws are depressed the shape
 of the slots will cause the separation of the
 jaws sufficiently to allow the passage of the
 nail head. The plate 30 is fitted into a re-
 cess 31 in the stock, and is substantially flush
 with the surface thereof and is secured pref-
 erably by means of the projecting loops 32
 provided at the edge of the recess.

The spring jaws will normally be in the up-
 per ends of the slots 29 and substantially
 horizontal, and the nails as they are fed
 down out of the chute 21 will fall upon these
 jaws in the path of the driving plunger, and
 when the plunger is struck by a hammer and
 driven downward its lower end will engage
 the head of the nail and force it and the
 spring jaws downward until the point of the
 nail is driven into the surface on which the
 tool is placed. About the time the driving
 plunger reaches the limit of its downward
 movement, the spring jaws will be separated
 by the outward curve of the slots 29, and the
 nail head will pass between the jaws and be
 freed from the grasp thereof, the plunger con-
 tinuing its downward movement between
 the separated jaws until it reaches the limit
 of its stroke. The spring 14 put under ten-

sion by the depression of the plunger will lift
 it to its normal position and the nail dis-
 charged from the chute when the plunger
 moved down and prevented from dropping
 upon the spring jaws by the presence of the
 plunger between them will now be allowed to
 drop between the jaws which have returned
 to their normal position ready to be de-
 pressed again upon the next stroke of the
 plunger. The nails can therefore be driven
 into a surface as rapidly as the blocks can be
 struck on the driving plunger.

I claim as my invention:

1. In a nailing tool, a vertically arranged
 stock, a driving plunger mounted therein and
 having a head provided with an annular
 groove and guards on each side of said head,
 a spring having its middle portion looped
 around said head in said groove and passing
 through said guards, whereby the accidental
 disengagement of said spring from said head
 is prevented, an arm mounted on said stock
 and extending rearwardly therefrom, and
 said spring having its ends secured to said
 arm and provided with a suitable coil be-
 tween said ends and said head, substantially
 as described.

2. In a nailing tool, a vertically arranged
 stock, a driving plunger mounted therein and
 having a head, an arm mounted on the upper
 end of said stock and extending rearwardly
 therefrom, the upper portion of said arm be-
 ing on a level substantially with the upper
 portion of said plunger, a pin arranged trans-
 versely in the upper portion of said arm, and
 a spring having its middle portion looped
 around said head and its ends curved down-
 wardly and coiled around said pin, and the
 extremities of said ends bearing on said arm,
 and said spring tending, normally to hold
 said plunger in a raised position.

3. In a nailing tool, the combination, with
 a stock, of a vertically moving plunger
 mounted therein, a nail chute arranged to
 deliver nails into the path of said plunger, a
 lever pivoted on said stock and having a
 curved arm arranged to project across said
 chute and normally prevent the discharge of
 nails therefrom, a second lever pivoted on
 said first named lever and having an arm
 that is normally out of the path of the nails
 in said chute, said first named lever having a
 stop thereon, and a spring device for nor-
 mally holding said second named lever
 against said stop and yieldingly holding said
 first named arm across said chute, and a pin
 provided on said plunger and arranged to en-
 gage said first named lever and move its arm
 out of the path of the nails and move said
 second named arm across said chute into the
 path of the succeeding nails when the one in
 front has been discharged.

4. In a nailing tool the combination, with
 a stock, of a vertically moving plunger
 mounted therein, a nail chute arranged to

deliver nails into the path of said plunger, a lever pivoted on said stock and arranged to project across said chute, and normally prevent the discharge of nails therefrom, a second lever pivoted on said first named lever and adapted to swing in the same plane therewith and normally out of the path of the nails in said chute, and a single spring arranged to yieldingly hold said first named lever across the path of the nails in said chute, and means on said plunger arranged to en-

gage said first named lever and move it out of the path of the nails and move said second named lever across said chute into the path of the succeeding nails when the first one has been discharged.

In testimony whereof, I have hereunto set my hand this 24th day of February 1906.

MARTIN PEARSON.

Witnesses:

RICHARD PAUL,
C. MACNAMARA.