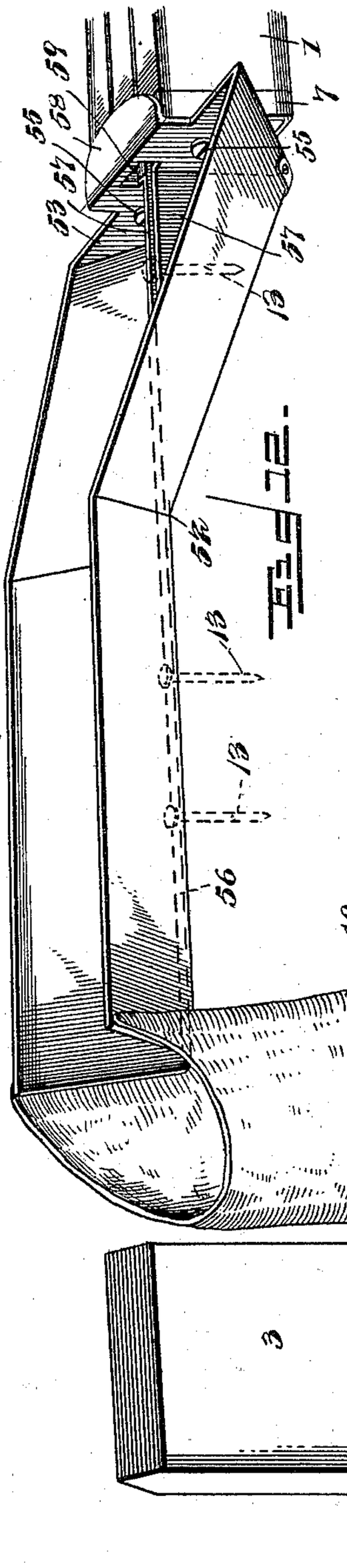
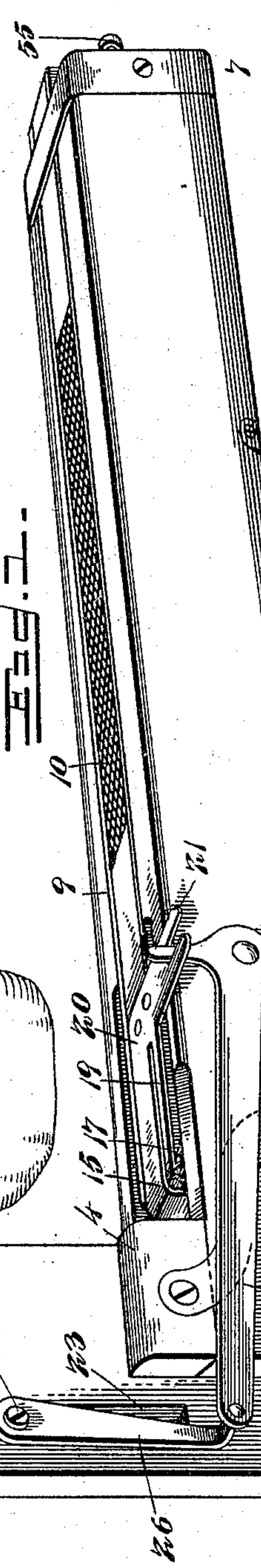
(No Model.) 3 Sheets—Sheet 1.

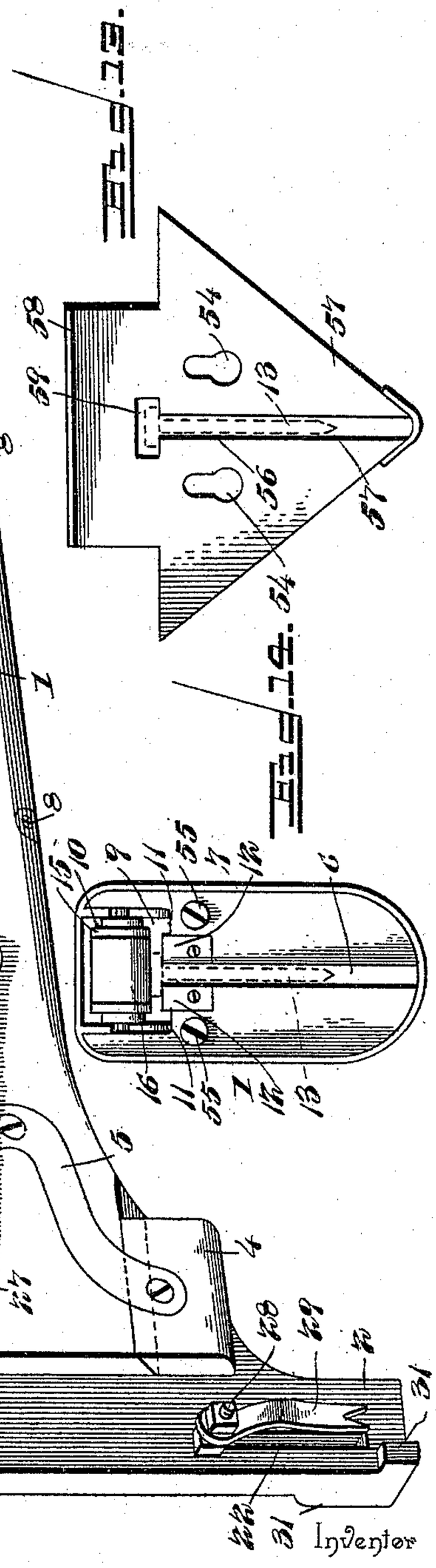
T. S. SMITH.

MAGAZINE HAMMER OR TOOL.

No. 582,103. Patented May 4, 1897.







Witnesses

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(No Model.) 3 Sheets—Sheet 2.

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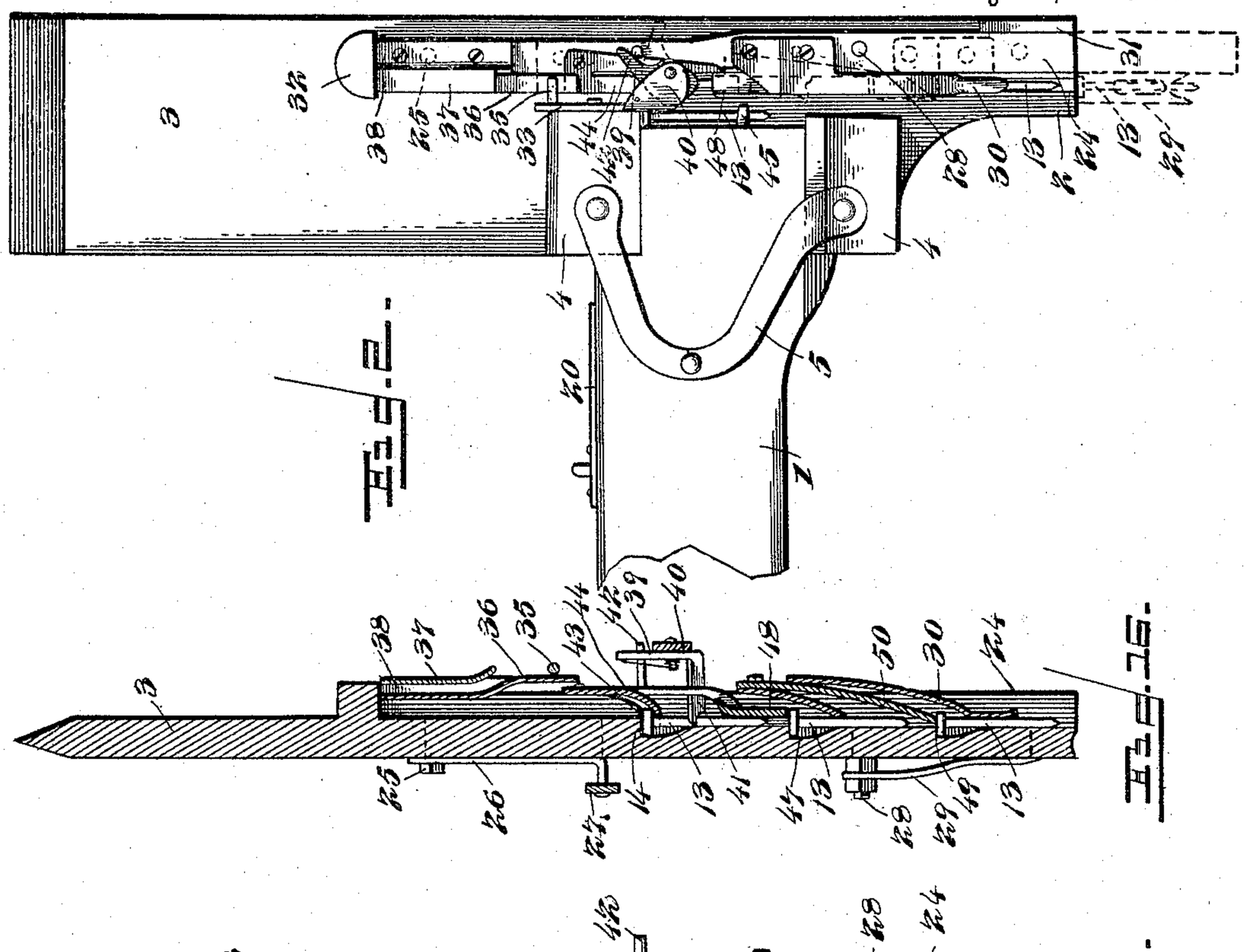

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

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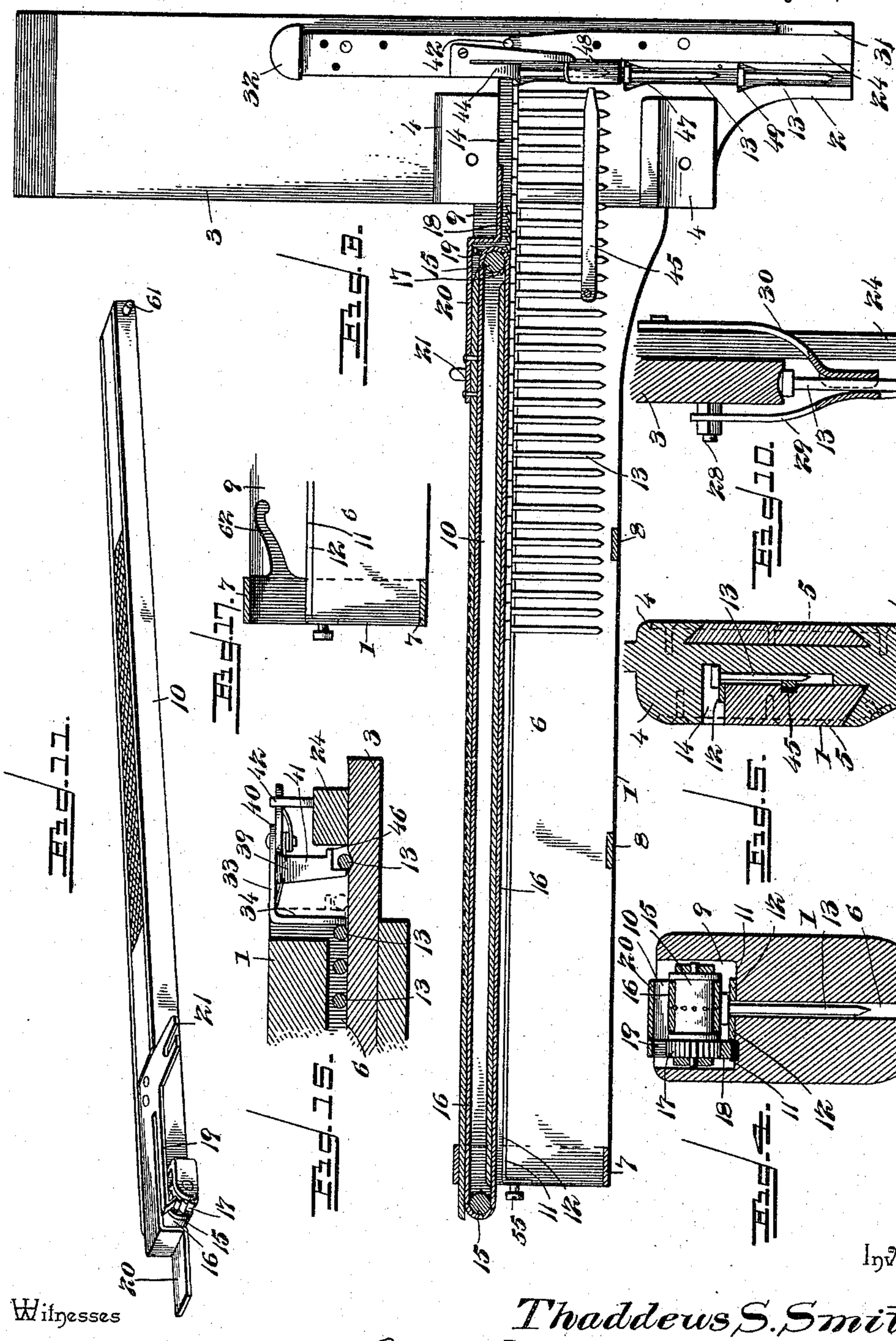

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UNITED STATES PATENT OFFICE.

THADDEUS S. SMITH, OF CHARLESTOWN, INDIANA.

MAGAZINE HAMMER OR TOOL.

SPECIFICATION forming part of Letters Patent No. 582,103, dated May 4, 1897.

Application filed May 29, 1896. Serial No. 593,626. (No model.)

To all whom it may concern:

Be it known that I, THADDEUS S. SMITH, a citizen of the United States, residing at Charlestown, in the county of Clark and State of Indiana, have invented a new and useful Magazine Hammer or Tool, of which the following is a specification.

This invention relates to magazine hammers or tools; and the object in view is to provide a hammer or hatchet or other similar tool with suitable mechanism whereby a quantity of nails, brads, or other pointed fasteners contained in a magazine in the handle may be fed to the poll and held in front of the same while striking a blow, thus enabling each nail to be driven home at a single blow. The mechanism is partially automatic in its action, the blow of the tool assisting in the feeding of the nails, the rest of the operation being effected by the thumb or one of the fingers of the operator's hand by grasping the handle of the tool.

Another object of the invention is to provide a novel form of filler adapted to be removably attached to the tool for filling the magazine thereof.

Other objects and advantages of the invention will appear in the course of the ensuing description.

The invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter particularly set forth, illustrated in the drawings, and embodied in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the improved magazine hammer or tool. Fig. 2 is an elevation of the same, taken from the opposite side. Fig. 3 is a longitudinal section through the device. Fig. 4 is a transverse section through the handle, taken near the head. Fig. 5 is a similar view illustrating the connection between the handle and head. Fig. 6 is a sectional view taken longitudinally through the head in line with the longitudinal slots therein. Fig. 7 is a detail perspective view of the separator and shifter, &c., disassociated. Fig. 8 is a detail perspective view of the same associated. Fig. 9 is a similar view of the feeding-slide, showing the arrangement of the several feeders carried thereby. Fig. 10 is a detail section showing the position in which a nail is held preparatory to driving the same. Fig. 11 is a perspective view of the finger-slide and nail-carrier detached. Fig. 12 is a perspective view of the filler, showing also the contiguous end of the tool-handle and illustrating the connection between the same. Fig. 13 is an end view of the filler. Fig. 14 is a similar view of the handle. Fig. 15 is a detail section taken adjacent to the discharge end of the nail-race in the handle. Fig. 16 is a longitudinal section through the head of the hatchet, taken in line with the path of the nails. Fig. 17 is a detail section through the end of the handle.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

Referring to the accompanying drawings, 1 designates the handle of the improved tool, to one end of which is attached a head comprising a poll 2 and a chopping or cutting blade 3. The junction between the handle and head is made by forming a slot in the end of the handle and setting the head therein. The portions of the handle which lie on each side of the head have their opposite edges chamfered off in dovetail form, and the head is provided upon each side with spaced lugs 4, between which the end portions of the handle are inserted, the said lugs being undercut upon their adjacent inner edges to receive the dovetailed ends of the handle and bind closely upon the same. The outer faces of the lugs 4 and the adjacent end of the handle 1 are formed with recesses or depressions to receive metal reinforcements 5 of substantially U shape, the said reinforcements being secured to both the handle and head by suitable fasteners and serving to brace and stiffen the connection between the head and handle.

The handle 1 is formed with a longitudinal slot 6, extending the entire length thereof and also through the handle transversely, in effect dividing the handle into two parallel sections, the inner surfaces of said sections being spaced apart a distance slightly greater than the thickness of the shanks of the nails or other fasteners designed to be driven by the tool. The two sections of the handle are tied together and braced at the inner or handle end by means of a metal sleeve or ferrule

7 and at points intermediate their length by cross-straps 8, which bridge the slot 6.

The slot 6 upon that side of the handle which is held next to the operator is enlarged, as indicated at 9, thus forming a longitudinal recess in which the finger-slide 10 is arranged to reciprocate. The widening of the slot 6 to form the recess 9 also establishes longitudinal shoulders 11 upon each side of the slot 6, and said shoulders are reinforced by smooth metal strips 12, extending the entire length of the handle. While the shanks of the nails (indicated at 13) rest and travel in the slot 6, the heads of such nails rest upon the reinforced shoulders 11 and prevent the escape of the nails. A nail-race is thus formed extending the entire length of the handle, opening out at the inner end thereof, and also extending through to the extreme end of the handle, to which the head is applied, the head itself being formed with a recess 14, constituting an extension of such race. The nails or other fasteners thus enter at one end of the handle, pass entirely through the handle longitudinally, and are fed out at the other end thereof, where they are severally grasped by a shipper and placed upon the slide in a manner that will hereinafter appear.

In order to cause the nails or other fasteners to move evenly and uniformly through the race, the finger-slide 10, which is preferably made in the form of a square tube, is provided at each end with a roller 15, and an endless band or carrier 16, of textile material or any suitable material, travels around these rollers, one portion of the band or carrier traveling inside of the tube and the other portion outside thereof, the inner surface of the tube serving as a backing or bearing for that portion of the band which travels outside of the tubular finger-slide. The band or carrier 16 travels in contact with the heads of the nails or fasteners 13 and serves to move the same longitudinally through the handle, and the band is moved in the proper direction by means of a ratchet-wheel 17, fast on the spindle of one of the rollers 15, the said ratchet-wheel being engaged as the finger-slide is reciprocated by means of a spring-rack 18, arranged in a recess in the handle. The retrograde movement of the ratchet-wheel 17 is prevented by means of a spring catch or detent 19 on the finger-slide 10. The finger-slide 10 is held in place at one end by means of the sleeve or ferrule 7, beneath which the finger-slide reciprocates, and at the other end by means of a spring-finger 20, which enters a longitudinal recess in the head of the tool. The finger-slide 10 also carries a fork or lateral arm 21 at or near that end adjacent to the head of the tool, the purpose of which will hereinafter appear.

The head of the tool is provided with a pair of longitudinal slots 22 and 23, arranged, respectively, at the poll and blade ends thereof. Upon one side of the head is arranged a slide-bar 24, which is provided near its rear end with a pin or lateral extension 25, passing through the slot 23 and receiving pivotally one end of a link 26, the opposite end of which connects pivotally with an elbow-lever 27, fulcrumed on the handle 1 and having its other and shorter arm engaged by the fork 21 on the finger-slide 10. Thus by reciprocating the finger-slide the slide-bar 10 is also reciprocated. At or near its front end the slide-bar 24 has a pin or lateral extension 28, which passes through and works in the slot 22 and has attached to its extremity a nail-holder 29, constructed, preferably, of spring metal and having its free advance end notched or forked to partially embrace the shank of a nail. Upon the other side of the head and secured fast to the slide-bar 24 is another spring nail-holder 30, the free end of which is preferably made half-round or of semicircular shape in cross-section, so as to embrace the shank of a nail upon one side. These nail-holders spring apart to allow the slide-bar 24 to recede when a blow is struck, but when the slide-bar is thrown forward the said nail-holders meet in front of the working face of the poll and grasp a nail as it is thrust forward by the terminal feeder and hold said nail with its head in front of the poll. The poll is also provided upon each side with integral lateral extensions 31, which serve to broaden the working face of the poll, so that a second blow may be struck, if necessary, and also serve as guides for the slide-bar 24 and nail-holder 29. A laterally-projecting lug 32 is provided upon one side of the head for taking the back thrust of the slide-bar 24.

33 designates a separator which is pivoted intermediate its ends on the head of the tool on an axis parallel with the plane in which the nails 13 move. This separator is provided at one end with a finger 34, which as the separator rocks in one direction enters between the outermost nail in the nail-race and the next adjacent nail and separates the two, preventing the second nail from being withdrawn from the race. At its opposite end the separator is provided with a laterally-projecting stud 35, which in the backward movement of the slide-bar 24 is acted upon by a flat spring 36 for moving the separating-finger behind the outermost nail, as just above described. In the forward movement of the slide-bar the stud 35 is acted upon by the flange 37 of a plate 38, secured to the slide-bar, said flange having an inclined portion which acts upon the stud 35 in the nature of a cam, serving to rock the separating-finger away from the path in which the nails travel.

39 indicates a shipper which is in the form of a small lever fulcrumed intermediate its ends upon a wing or extension 40 of the separator. This shipper has a shipping-finger 41, which normally lies close to the separating-finger and in the same plane therewith. This shipping-finger is actuated simultaneously with the separating-finger and by the same mechanism and passes in behind the

outermost nail, together with the separating-finger. Just prior to the completion of the inward movement of the slide-bar 24, however, a pin or stud 42 strikes against the shipper 39, swinging the same upon its fulcrum and causing the shipping-finger to move the outermost nail toward the slide-bar 24 and engage the head of the nail in front of a shoulder 43 at the adjacent side or edge of said bar, the nail being at the same time moved, as to its shank, beneath a spring-retainer 44, attached to the slide-bar 24 and having its free end notched or forked to engage and hold the nail.

45 indicates a spring-catch arranged at the discharge end of the nail-race for resisting the too-easy escape of the nails, and 46 is a shoulder located just above the point of the shipping-finger for preventing the nails from moving away from the head of the tool, against which they rest continuously after leaving the nail-race. The nail is now carried outward as the slide-bar reciprocates in a corresponding direction, and upon reaching the limit of the throw of said bar the head of the nail drops into a recess 47 in the side face of the poll, said recess being formed at its inner end with an abrupt shoulder, which prevents the backward movement of the nail. The slide-bar 24 is thrust backward upon striking a blow and the spring-retainer 44 passes backward over the head of the nail, leaving the nail in the recess 47. In the same backward movement of the bar 24 a spring feeder 48 slips behind the head of the nail, said feeder being secured at one end to the slide-bar 24 and having its free end arranged in the path in which the nails move as they are actuated by said bar.

Upon the next forward movement of the bar 24 the feeder 48 moves the nail toward the end of the poll until at the end of the stroke the head of the nail drops into a second recess 49 in the side face of the poll. Upon striking a blow the bar 24 is again thrust rearward and another spring-feeder 50, secured to and carried by said bar, moves in behind the head of the nail, while the spring-holder 30 embraces at its free end the shank of the nail upon one side. The slide-bar 24 is again thrust forward, and in this movement the feeder 50 moves the head of the nail beyond the front end of the poll, the shank of the nail being grasped between the nail-holders 29 and 30 and the head of the nail dropping in front of the poll. By now striking a quick sharp blow with the tool the slide-bar 24, together with the nail-holders, are caused to recede back of the plane of the front end of the poll, and the nail is driven into the place desired.

In order to fill or load the handle of the tool with the nails or other fasteners, a chute 51 is employed. This chute is preferably made of sheet metal and is in the form of a V-shaped trough provided intermediate its ends with an obtuse bend, as shown at 52. At one end this trough or chute is provided with an attached bag or sack, in which a large quantity of nails or fasteners may be placed. The opposite end of the chute is closed by an end wall 53, provided with keyhole-slots 54, by means of which the chute may be removably fitted upon headed studs or screws 55 at the inner or handle end of the handle 1. The vertex of the trough is cut away in order to form a longitudinal slot 56 which will admit the shanks of the nails or fasteners, but prevent the passage of the heads thereof. Between the bend 52 and the end wall 54 are arranged parallel triangular webs 57, forming a continuation of the slot 56, the upper edges of said webs or flanges serving as a race, along which the heads of the nails may pass, the shanks of the nails passing between said webs or flanges. The space between the webs or flanges opens out through the end wall 53 of the chute, so as to allow the nails to pass into the inner end of the handle 1.

58 designates a guard, which extends over the end of the handle 1 and is formed with an aperture 59, through which the heads of the nails pass. The chute or filler above described is attached to the end of the handle, after which the bag referred to and indicated at 60 is lifted sufficiently to allow a number of nails to pass into the filler. By agitating the filler the shanks of the nails slip through the slot 56 and hang pendent therefrom. By now tilting the filler the nails will gravitate down the slot 56 and along the webs or flanges 57 and will finally pass into the nail-race within the handle of the tool. Before applying the filler the finger-slide 10 is removed from the handle by slipping the fork 21 out of engagement with the elbow-lever 27 and moving the same rearward until the spring-finger 20 is moved out of engagement with the head of the tool. The front end of the finger-slide may now be rocked away from the handle, after which the same is slid forward or toward the head of the tool and removed.

If desired, the finger-slide at its rear end may have laterally-projecting studs 61, which work in oblique slots 62 at the corresponding end of the handle, the slots being so arranged as to permit a sufficient movement of the finger-slide to allow the nails to feed into the handle without interfering.

The magazine hammer or tool hereinabove described is especially designed for use as a lather's hatchet, as it will greatly facilitate and expedite the work of lathing a wall. The workman needs only to push the finger-slide forward after each blow, thus obviating the necessity of holding the nails in one hand while striking a light blow upon the same in order to get them to stick and afterward striking a harder blow to drive the nails home. The same principles, however, may be used in connection with any form of hatchet, ham-

mer, or driving-tool for feeding a supply of pointed and headed fasteners in front of the poll.

It will be understood that the device is susceptible of changes in the form, proportion, and minor details of construction which may accordingly be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. A magazine-tool, comprising a handle having a race for the fasteners, in combination with a poll, a feeding device on the poll for positively moving the fasteners into position to be driven, and a shipper for transferring the fasteners from the discharge end of the race to the feeding device, substantially as described.

2. A magazine-tool comprising a handle having a race for the fasteners, in combination with an endless carrier above the race frictionally engaging the fasteners to move them along the race, substantially as described.

3. A magazine-tool, comprising a handle having a race for the fasteners, in combination with an endless carrier for moving the fasteners along the race, and means whereby said carrier may be moved in one direction only, substantially as described.

4. A magazine-tool, comprising a handle having a race for the fasteners, in combination with a reciprocating finger-slide arranged in the handle and an endless carrier operated thereby for moving the fasteners along the race, substantially as described.

5. A magazine-tool, comprising a handle having a race for the fasteners, in combination with a reciprocating slide arranged in the handle, an endless carrier on the finger-slide, and means for actuating said carrier in one direction only as the slide is reciprocated, substantially as described.

6. A magazine-tool, comprising a handle having a race for the fasteners, in combination with a reciprocating finger-slide, an endless carrier on said slide running over rollers journaled in the slide, a ratchet-wheel on the spindle of one of the rollers, a rack for actuating said ratchet-wheel, and a detent engaging said ratchet-wheel, all combined substantially as described.

7. In a magazine-tool, the combination with the handle thereof having a race for the fasteners, of a reciprocating slide arranged in the handle and made tubular in cross-section, rollers at each end of said slide, an endless band or carrier running over said rollers and passing through the slide, and provision for actuating said band or carrier in one direction simultaneously with the reciprocation of the slide, substantially as described.

8. In a magazine-tool, the combination with a handle having a raceway for the fasteners, and a head having a vertical channel communicating at its upper end with the raceway, of devices to support a series of the fasteners in said channel one above the other and to move them simultaneously downward in the channel, and means to transfer the fasteners one at a time from the said raceway to the said channel.

9. In a magazine-tool, the combination with a handle having a race in which the fasteners travel and a poll attached to said handle, of a slide-bar on the poll having a series of feeders for positively and successively moving the fasteners into position to be driven, and a shipper for transferring the fasteners from the race into engagement with said slide-bar, substantially as described.

10. In a magazine-tool having a race for the fasteners, the combination with the poll, of a slide-bar mounted to reciprocate toward and away from the end of said poll, one or more feeders carried by the slide for moving successively the fasteners toward the poll, and the nail-holders for holding the nail or fastener in position to be driven, said holders being arranged to recede back of the working face of the poll, substantially as and for the purpose described.

11. In a magazine-tool, having a race for the fasteners, the combination with the head of the tool having one or more recesses for engaging the fasteners as they are fed forward, of a reciprocating slide-bar mounted on said head, one or more spring feeders for advancing the fasteners connected to said bar, and provision for reciprocating said bar, substantially as described.

12. In a magazine-tool having a race for the fasteners, the combination with a reciprocating feeding device for moving the fasteners forward, of a separating device for separating the fasteners, a shipper having a finger for moving the fasteners severally into engagement with the feeding device, and provision on said feeding device for simultaneously operating the separator and shipper, substantially as described.

13. In a magazine-tool, the combination with the feeding device for moving the fasteners forward, of the separator for separating the fasteners, a pivoted shipper fulcrumed on the separator and adapted to move the fasteners severally into engagement with the feeding device, and means connected with the feeding device for actuating the separator and shipper, substantially as described.

14. In a magazine-tool having a race for the fasteners, the combination with the handle, of a finger-slide for moving the fasteners along the race, a slide-bar on the poll operating in a plane substantially at a right angle to said finger-slide, successive feeding device on said slide-bar for moving the fasteners forward, and an elbow-lever interposed between and operatively connected to said slide and the slide-bar whereby both are simultaneously operated, substantially as described.

15. In a magazine-tool, the combination with the handle having a race for the fasteners, of a finger-slide connected with the han-

dle and adapted to move the fasteners along the race, a slide-bar carrying a feeding device and operating in a plane at right angles to the said finger-slide and adapted to move the fasteners forward, and connections between said slide and the feeding device whereby the latter is reciprocated by the former, substantially as described.

16. The combination with a magazine-tool, of a filler adapted to be removably secured thereto, the said filler consisting of a trough or receptacle for the fasteners and being provided with a slot through which the fasteners may race, and a flexible bag or sack connected to one end of said filler, and adapted to hold a supply of fasteners and to be moved for dumping the fasteners into the trough, substantially as and for the purpose described.

17. The combination with a magazine-tool provided near its receiving end with one or more headed pins or studs, of a filling or loading device consisting of a trough having a central longitudinal slot along which the fasteners may race, an end wall having an aperture through which the fasteners may pass, and parallel flanges or webs forming a race for said fasteners, said end wall being provided with one or more slots adapted to engage said pins or studs, whereby the said filling or loading device may be detachably connected to the magazine-tool, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

THADDEUS S. SMITH.

Witnesses:

JOHN W. H. OWENS,

JAMES M. TUPLE.