

(No Model.)

2 Sheets—Sheet 1.

T. J. LANGSTON.
NAIL OR TACK DRIVING IMPLEMENT.

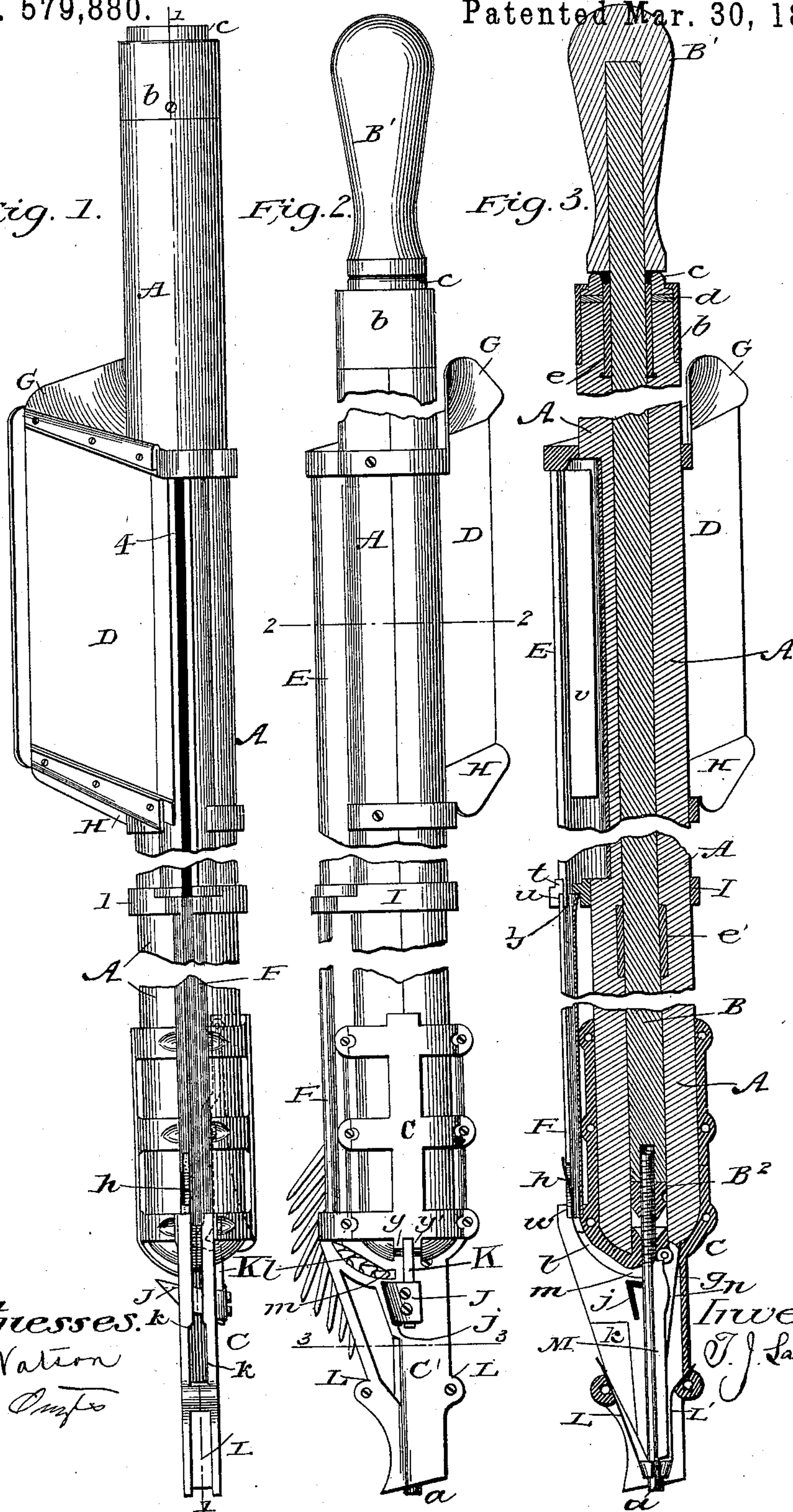
No. 579,880.

Patented Mar. 30, 1897.

Fig. 1.

Fig. 2.

Fig. 3.



Witnesses.
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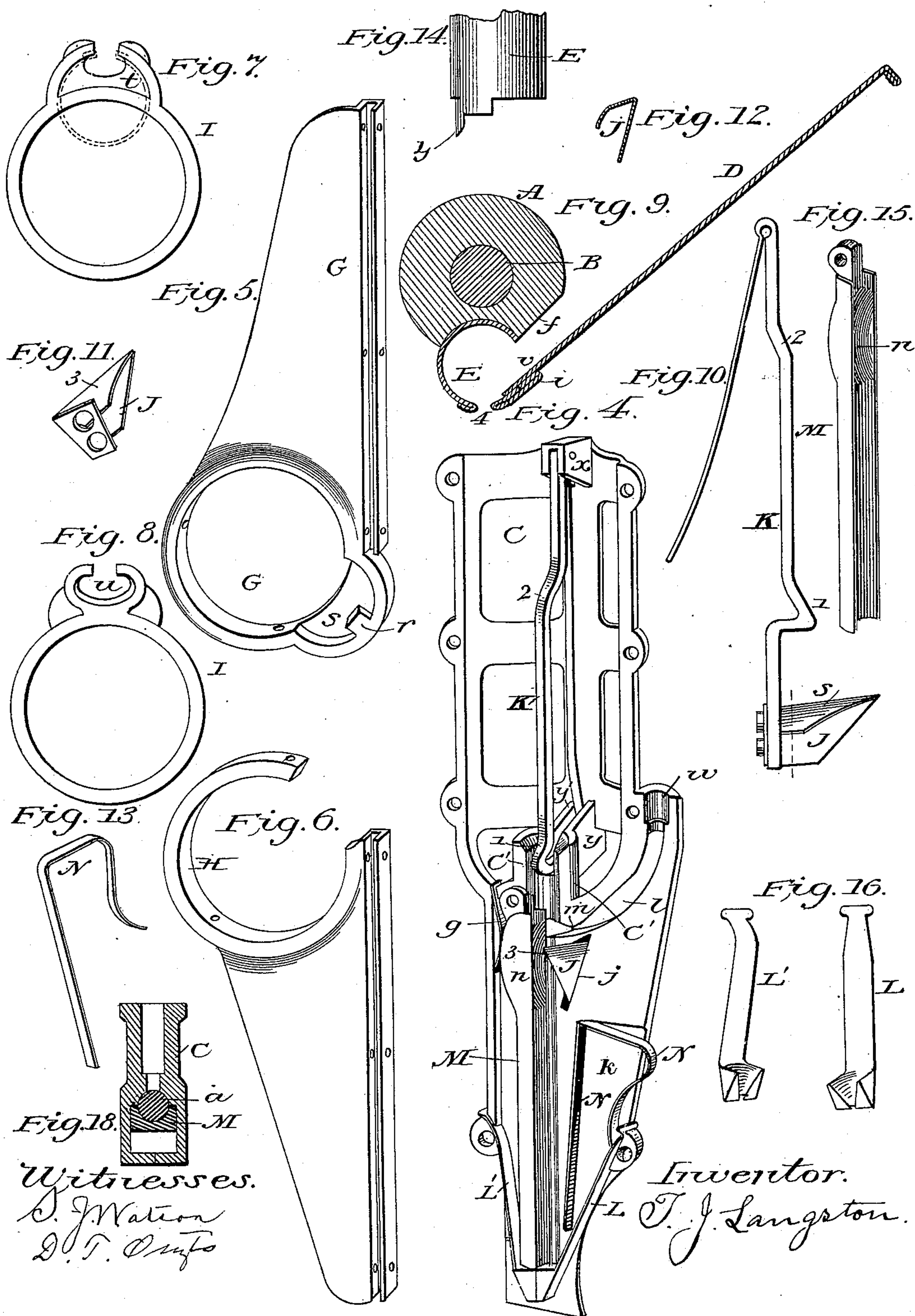
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UNITED STATES PATENT OFFICE.

THOMAS JUDSON LANGSTON, OF JOHNSTON, SOUTH CAROLINA.

NAIL OR TACK DRIVING IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 579,880, dated March 30, 1897.

Application filed July 3, 1895. Serial No. 554,815. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JUDSON LANGSTON, a citizen of the United States, residing at Johnston, in the county of Edgefield and State of South Carolina, have invented a new and useful Implement for Driving Nails or Tacks, of which the following is a specification.

My invention relates to a machine or implement for facilitating the driving of nails and tacks by hand.

The object of my invention is to provide an improved machine, easily and conveniently carried in the hand, in which nails or tacks may be put and automatically arranged and fed to the driving mechanism one at a time.

My invention consists in details, arrangement of details, and general construction of implement to drive nails and tacks.

In the drawings, Figure 1 is a broken front elevation of my nailing and tacking implement. Fig. 2 is a broken side elevation. Fig. 3 is a sectional broken view taken from the same point of observation as Fig. 2. Fig. 4 is an inside perspective view of one side of driving end or head, showing the interior mechanism in position, the opposite side being removed. Figs. 5 and 6 are perspective views of the rings and wings that hold arranging chute and plate D in position, also forming a part of the hopper. Figs. 7 and 8 are plan views of opposite sides of the ring that holds the lower and upper ends of arranging and conveying chutes. Dotted lines in Fig. 7 show how the arranging-chute E fits into the ring I. Fig. 9 is a cross-section through the hopper on dotted line 2 2, Fig. 2. Fig. 10 is a back view of feed-bar, arrester, and feeder attached. Fig. 11 is a perspective view of arrester and feeder detached from feed-bar. Fig. 12 is a sectional view of arrester and feeder on dotted line in Fig. 10. Fig. 13 is a perspective view of an attachment to prevent tacks reversing after entering driving-rod way. Fig. 14 is a detail side view in elevation of lower end of arranging-chute. Fig. 15 is a perspective view of safety-tongue. Fig. 16 is a perspective view in detail of the pieces that arrest, center, and hold the nail or tack while being driven.

A is a handle, preferably made of wood, in

halves held together by cap *b*, rings G H I, and driving-head C, each half half-round grooved out inside, forming when the halves are together a round bore of proper size to receive the driving-rod B. This bore is enlarged in suitable places to receive bearings *e* and *e'*, as shown in Fig. 3. An opening is made in the lower end to receive and allow the feed-bar K free room. The outside of handle A should have a groove to receive the chute E and also a chamfer between hopper-wings G and H, allowing sufficient room for nails or tacks to enter freely. (Shown in Fig. 9.) At *f* the top end of handle A is surmounted by cap *b*, seat *c*, and cushion *d*. Cap *b* has a flange on its top edge or end, seat *c* a flange on its bottom edge or end, the two flanges combining to confine seat *c* in place and cushion *d* between seat *c*, and handle A should be of suitable material to prevent bruising the top by blows on seat *c*. Cushion *d* is also confined between cap *b* and bearing *e*, bearing *e* having a flange on its lower edge or end to hold it in place.

B is a plunger-rod, with handle B', driving-point *a*, and set-nut B². The driving-point *a* is threaded a sufficient portion of its length to screw into the plunger-rod and be secured at any length desired by set-nut B². Handle B' is preferably cast on the plunger-rod, which is adapted to move freely in handle A and driving-point *a* through the chamber in the barrel of driving-head C.

D is a plate forming a trough or hopper and held in position by being secured to wings G and H, projecting from and attached to or forming a part of rings that are secured to handle A. The inner edge of the plate D is held in due position with a chute by a double or folded strip *i*, fastened to the plate D. (Shown in Fig. 9.)

s is a recess in a laterally-projecting portion of ring G that chute E fits into, with lug *r* through the slit or nail-path, thereby securing the upper end of chute E to and preventing its turning on handle A.

I is a ring that secures the lower end of chute E and upper end of chute F to the handle A, the chutes projecting into recesses *t* and *u*.

z represents points on the end of chute E,

projecting into chute F to secure an easy passage of nails or tacks from chute E to chute F.

Chute E has an opening *v* in one side (shown in Figs. 3 and 9) to receive the nails or tacks from hopper D. Chute F receives the nails or tacks from chute E, conveying them to head C, with the heads inside and shanks extending through the slit of the chute. Near its lower end the chute F is cut away at one side, Figs. 1 and 3, to form an opening, which is closed by the free portion of a plate-spring *h*. The latter allows a crooked or misshapen nail or tack to be removed.

e and *e'* (shown in Fig. 3) are bearings, *e* for rod A, the same having a flange on its lower end or edge to hold it in place.

C is a head or driving end, preferably made in two parts held together by screws. Its interior mechanism is shown in Fig. 4 with tack attachment N in position. This device merely prevents the possibility of tacks reversing. It is (see Fig. 4) a bent plate-spring having its outer end in contact with a lateral projection and its straight inner side arranged at a slight angle to the nail-pathway.

At *w* a chamber or recess is formed to receive the lower end of chute F, from which nails or tacks enter to driving-point way between the guide-wings projecting from the barrel C'. These wings are connected with the rim of head C by the walls of the recess or chamber *w* and have corresponding curved spaces between their upper edges and corresponding spokes or arms connecting the barrel and rim of head C. Said spaces constitute the path for nails or tacks and enlarge at *l*, reduce at *m*, and enlarge again in entrance to the chamber of barrel.

At *x*, Fig. 4, wings or jaws project inward to or nearly to the plunger-way. Between these jaws feed-bar K is pivoted.

y and *y'* are guide-jaws projecting out from the barrel, connecting with the rim or band which fits closely around handle A. These jaws guide feed-bar K accurately in its work. Other arms or spokes also connect rim and barrel of head C, insuring rigid and accurate alinement with driving-point *a*. The upper end of barrel C' projects into the bore of handle A.

M is a spring-controlled half-round grooved tongue (shown in Figs. 3, 4, and 15) fulcrumed on one of the screws that fasten the two parts of head C together. This tongue has a back swell at *n* to allow heads of nails or tacks to pass feed-wing 3, which projects from arrester J into the path of driving-point *a*. Spring *g* holds tongue M in position, and should more than one nail or tack be in the path of driving-point *a* at one time the tongue M will swing back and enlarge the passage, thereby preventing wedging and injury to the machine.

K is a spring-controlled feed-bar pivoted between the jaws *x*, (and guided in operating by guide-jaws *y* and *y'*) with feed and arrester

J attached. The elbow at 1 projects into the bore of barrel C', and the shoulder at 2 projects into the bore of handle A. The feed-bar is shown in its normal or closed position by dotted lines in Fig. 1.

In operating the driving-point *a* strikes the elbow at 1, moving the feeder and arrester J back sufficient to allow the driving-point *a* to pass the feed-wing 3. Then the plunger or set-nut on plunger-rod strikes shoulder 2, moving the feeder and arrester J back entirely from the nail or tack way, which allows the innermost nail or tack to move in against the driving-point. In withdrawing the rod when the set-nut passes the shoulder 2 on feed-bar K the point of feed and arrester will enter the nail or tack way just outside of the innermost nail or tack. On the further withdrawal of driving-rod this nail or tack will be forced by feed-wing into the chamber of barrel C' and fall into position for driving. J, the feeder and arrester, is attached to the feed-bar K by screws passing through holes larger than the body of the screws, which permits adjusting. The elbow 1 on bar K, projecting into the chamber of barrel C', makes it possible to drive overhead.

L and L' are springs the lower ends of which, when brought together in position, form a funnel, centering and insuring the nail or tack being driven centrally.

N is a spring attachment which is inserted, as shown in Fig. 4, when tacks are to be driven, which prevents them reversing.

To fill, hold the implement in an inclined position with the driving end lowest and the chutes underneath. This brings the hopper in position to receive nails or tacks, which must be sprinkled into it. In and after entering chute E the shanks of nails or tacks will fall through the slit or space 4, (shown in Figs. 1 and 9,) hanging with the heads inside the chute, passing in this position into chute F and head C against arrester J. In driving, the chutes are to the front and uppermost.

What I claim, and desire to secure by Letters Patent, is—

1. In a nail or tack driving implement, the combination, with a hollow handle, a plunger arranged therein, an exterior chute or slideway for the nails or tacks, a driving-head fixed on one end of said handle and having guide-wings forming a slideway which constitutes a continuation of said chute, and the safety-tongue M, pivoted at the upper end of the slideway, and lying normally parallel thereto, whereby it forms practically one side of the slideway, and a spring for pressing the tongue inward, whereby the latter is adapted to operate as specified, and prevent wedging of nails or tacks, substantially as shown and described.

2. In a nail or tack driving implement, the combination, with the hollow handle, a slotted driving-head secured on the lower end of said handle, a plunger sliding in both said handle and driving-head, a nail-arrester which works

in a slot transversely of the nail-pathway, a bar carrying said nail-arrester and arranged in the pathway of the plunger, and a pivoted, spring-pressed, and grooved tongue M, arranged parallel to and forming part of the nail-pathway, and having a back swell or recess, as specified.

3. In a nail or tack driving implement, the combination, with the hollow barrel and slotted driving-head attached thereto, a plunger sliding therein, and a nail arrester or cut-off which traverses the nail-pathway transversely, the same having a beveled or inclined side, and the pivoted bar K, carrying said cut-off, said bar being arranged in the nail-pathway and having two bevels 1 and 2, as shown and described, to operate as specified.

4. In a nail or tack driving implement, the combination, with the hollow handle, a plunger sliding therein, a chute, for the nails or tacks, having a slotted or enlarged portion, and a spring arranged to cover such portion, to permit withdrawal of a defective nail or tack, substantially as shown and described.

5. In a nail or tack driving implement, the combination, with the hollow handle, and plunger sliding therein, of rings embracing said handle and having laterally-projecting portions provided with recesses, and a detachable chute formed of sections whose ends fit and are held in such recesses, as shown and described.

6. In a nail or tack driving implement, the combination, with the hollow handle, the plunger sliding therein, rings applied to the handle and having laterally-projecting portions provided with recesses and inwardly-projecting lugs, and the chute-sections, having notched and tongued ends which fit in said recesses and engage the lugs, substantially as shown and described.

7. In a nail or tack driving implement, the combination, with the hollow handle, a chute extending along the same and having a lateral opening, a sliding plunger, and the laterally-projecting hopper composed of a plate D, and the two side guide-wings G and H, having interior grooves to receive said plate, and rings forming part of said wings and secured on said handle, as shown and described.

8. In a nail or tack driving implement, the combination, with the handle, having a central bore and a lengthwise slot at the lower end, of the driving-head C, formed of two longitudinal parts, having socket portions to receive the handle, and chambered and slotted extending portions forming a nail-guide, and the nail arrester or cut-off, and its carrying-bar K, pivoted to part C, and working in the slot of the handle, as shown and described.

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Witnesses:

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