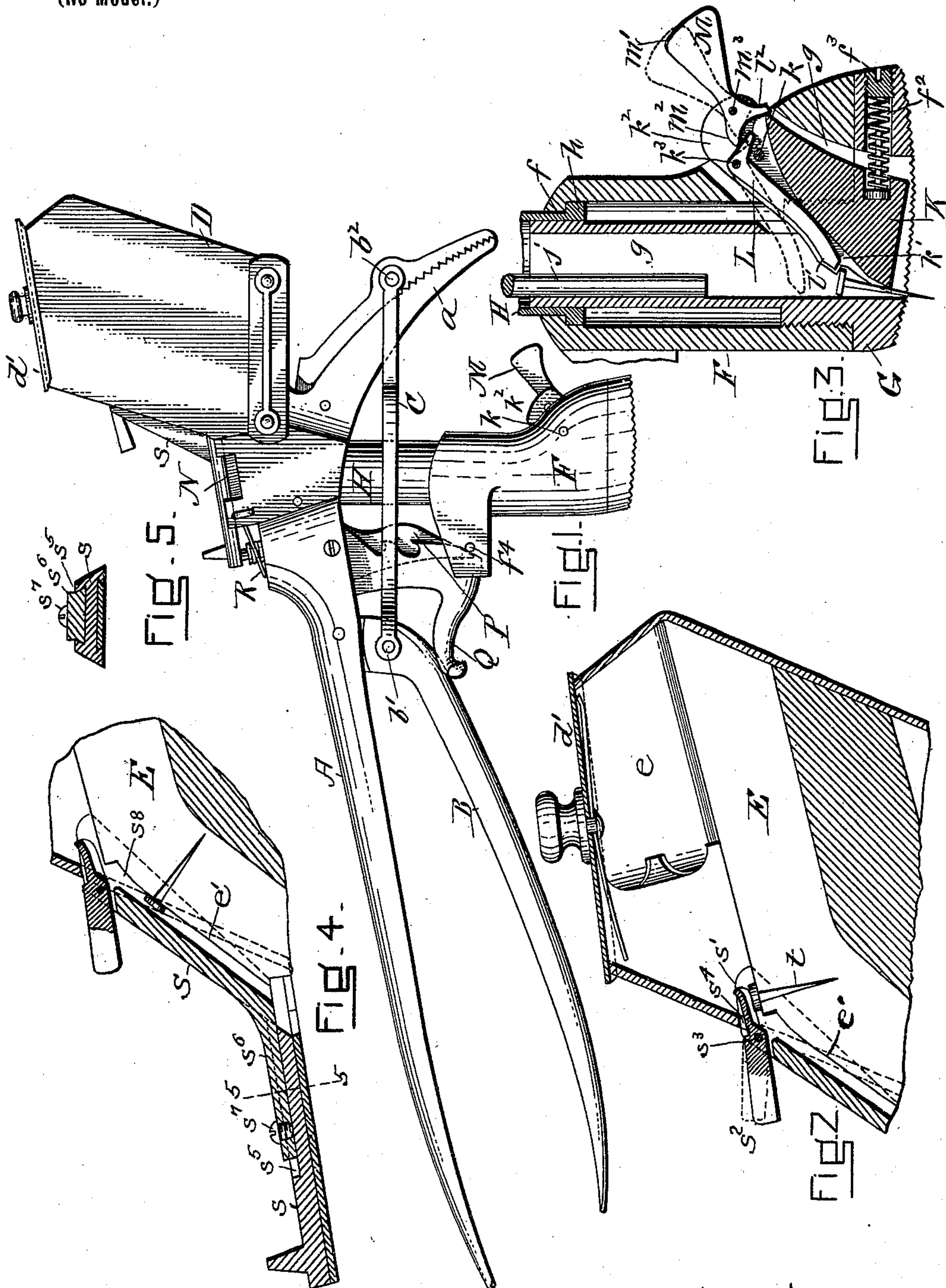


No. 670,496.

Patented Mar. 26, 1901.

A. HEBERT.  
HAND TACKING TOOL.  
(Application filed Oct. 20, 1900.)

(No Model.)



WITNESSES :

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# UNITED STATES PATENT OFFICE.

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## HAND TACKING-TOOL.

SPECIFICATION forming part of Letters Patent No. 670,496, dated March 26, 1901.

Application filed October 20, 1900. Serial No. 33,686. (No model.)

*To all whom it may concern:*

Be it known that I, ARSENE HEBERT, a subject of the Queen of Great Britain, residing in Manchester, in the county of Hillsboro and State of New Hampshire, have invented a new and useful Improvement in Hand Tacking-Tools, of which the following is a specification.

My invention relates to hand tacking-tools wherein tacks or nails are automatically fed one by one into the path of a driving instrument or plunger, so that they may be driven successively without requiring any work on the part of the operator other than that which is involved in striking a series of blows with the tool, and is herein shown as embodied in improvements in that class of hand magazine tack-hammers of which the tool shown and described in my application for United States Letters Patent, Serial No. 11,444, filed April 4, 1900, is a representative.

The object of my present improvement is to guard against every possible failure of the tool to operate effectively and accurately.

In the hand tacking-hammer described in my aforesaid application an important feature is the so-called "trip-lever," which automatically prevents a tack which has been fed to the nose of the hammer-head from becoming accidentally dislodged and returning into the tack-channel, where it would inevitably interfere with the proper feeding and driving of the next succeeding tack, and in practice the magazine-tool described in my aforesaid application has proved efficient and for the most part free from liability to interruptions in the regular course of feeding and driving tacks. When the tacking-tool aforesaid is clean and in good order, interruptions in its normal and regular course of operations are extremely rare, occurring only in cases where a workman using the tool has not acquired the knack of handling it.

In connection with the use of tools such as described in my application aforesaid it has been observed that the black-lead coating, which is applied to almost all the tacks manufactured, is transferred to the movable tack-stops in the nose of the hammer-head to such an extent that occasionally the trip-lever, which is extremely light and delicate, becomes

clogged and fails to operate with the desired promptness. In order to properly perform its function, this trip-lever must be capable of instantaneous operation. When the workman raises and brings down the tool in order to drive a tack, he reverses the movement of the tool suddenly and a tack lodged in the nose of the hammer-head is in danger of being jerked back into the tack-channel by this reversal of movement. The trip-lever, which is located above the head of the tack, is made so light and is hung so freely that the same reverse movement of the hammer which tends to dislodge a tack from its place in the nose of the hammer-head causes the trip-lever to fly out into the tack-channel before the tack has time to be jerked upward.

While for the most part and under the normal conditions of operation the tack-stop and trip-lever in my aforesaid application operate perfectly to accomplish the above result, yet there are occasions when through the inexperience of the workman or the clogging of the trip-lever the tool fails to operate as accurately as expected, and one object of my improvements, presently to be described, is to provide against this occasionally-recurring contingency.

My improvements relate also to the operation of the magazine and tack-engaging blades which lead to the feed mechanism and to the construction of the raceway down which tacks are conducted. The necessarily violent movements of the hammer quite frequently cause tacks which have been deposited upon the gathering-blades which constitute the raceway to fly back or off and fall again into the heap of tacks in the hopper, and I have contrived a device by which dislodgment of tacks and possible failure to keep the stream of tacks continuous is prevented. I also provide means whereby the raceway for tacks may be readily adjusted to accommodate various sizes of tack-heads.

In the drawings hereto annexed, Figure 1 is a view in side elevation of a hand tacking-tool of the character indicated. Fig. 2 is a cross-section of the upper portion of the magazine, showing my device for insuring the constant flow of tacks. Fig. 3 is a view in cross-section of the lower portion of the reciprocating



ing hammer-head. Fig. 4 is a sectional view of the raceway leading to the feed mechanism. Fig. 5 is a cross-section of Fig. 4 at the line 5 5.

5 A full description of the principal working parts of the tool shown in the drawings is found in my application aforesaid, and for convenience of reference the drawings hereto annexed are marked with the same letters  
10 as are used in the drawings of my said application.

In Fig. 2 are shown one of the tack-receiving inclines  $e$  and one of the tack-gathering blades  $E$ , which receive the points of the tacks  
15 as they slide down the incline  $e$ . A tack  $t$  is shown in the position in which it lies after it has been received by the gathering-blades, of which  $E$  is one. The sudden movements of the tool which throw tacks from the heap into  
20 the top of the hopper and onto the incline  $e$  tend also to jerk the tacks which have been lodged upon the gathering-blades  $E$  off into the heap again, and also are likely to throw  
25 back tacks which lie in the inclined raceway  $e'$  and interrupt the regular tack-feed. In order to prevent this, I provide the device shown in Fig. 2. A shoe  $s'$  is suspended over  
30 that portion of the gathering-blades  $E$  which leads directly to the tack-raceway  $e'$ . The shoe  $s'$  is pivoted at  $s^3$  and is integral with or connected to a counterweight  $s^2$ , which projects through an aperture  $s^4$  in the rear side  
35 of the tack-hopper. The counterweight  $s^2$  sufficiently overbalances the shoe  $s'$  to keep the latter normally elevated from the gathering-blades  $E$  a sufficient distance to permit  
40 the tacks  $t$  to pass freely under the sole of the shoe  $s'$ . By the movement of the tool the magazine is thrown violently upward and then checked in its movement. The counterweight  $s^2$  instantly assumes the position indicated by dotted lines in Fig. 2, and consequently depresses the shoe  $s'$ , confining the  
45 tack which has passed under it, and thus checks any tendency of the row of tacks in the raceway  $e'$  to slide upward.

The movability of the shoe  $s'$  and the ample clearance which is thereby provided between its sole and the gathering-blades  $E$   
50 makes sufficient allowance for variations in the thickness of tack-heads, and consequently any tack can pass under the shoe  $s'$ . A stationary guard sufficient for uniformly-sized tack-heads will in practice prove inadequate,  
55 because if it is placed close enough to the gathering-blades to prevent dislodgment of the tacks having normal heads it will be too close to permit the entrance of an unusually thick-headed tack. The tacks passing down  
60 the raceway at  $e'$  slide behind a cover-plate  $S$ , between which and the raceway-blades  $e'$  there must be sufficient space to accommodate the tack-heads, and yet not so much clearance as to allow the tacks to jump up  
65 from the conducting-raceway blades. In order to provide means for properly adjusting the cover-plate  $S$  over the raceway or for re-

adjusting it in case of wear or a change in thickness of the tack-heads, I make the cover-plate separate from the slide  $s$ , as shown in  
70 Figs. 4 and 5. The tailpiece  $s^6$  of the cover-plate  $S$  is made with beveled edges and dovetails into the groove  $s^5$ , cut in the top of the slide  $s$ , making therewith a close sliding fit. A set-screw  $s^7$  enables the machinist to fix  
75 the cover-plate  $S$  at any desired point and to alter its adjustment when desired.

I have made an improvement also in the operating parts in the hammer-head of the tool. The liability of the trip-lever  $L$  (which  
80 in the tool described in my aforesaid application constitutes the tack-guard or back-stop and guards against accidental retirement of a tack from the nose-stop  $K$  into the tack-channel  $g$ ) to become slightly gummed  
85 and to fail in its delicate operation has been alluded to. In order to overcome this defect, which occasionally developed in the use of tools constructed as described in my application  
90 aforesaid, I provide a tack-guard actuator, consisting of a piece of sufficient weight to give the necessary impulse to the tack-guard  $L$ , and mount this actuator loosely in the hammer-head or in such position that  
95 its movement is communicated promptly to the tack-guard. This actuator may be connected to the tack-guard by mechanical articulations; but I believe the best mode of arranging it to be that one in which the actuator  
100 is so mounted as to give the tack-guard a sharp impulse, as from a blow. An embodiment of this invention is shown in Figs. 1 and 3. The tack-guard  $L$  is shown in this case as a latch mounted in the slot  $k'$ , cut for  
105 the purpose in the block which constitutes the stop  $K$ . The tack-guard  $L$  is pivoted loosely at  $k^3$  and is provided with a finger  $l'$ , whose end lies adjacent to the tack-channel and is susceptible of movement into the tack-channel above the head of the tack, which for  
110 the time being hangs in the nose-stop  $K$ , and with a projection  $l^2$ , which is relatively short. The tack-guard actuator  $M$  is a pivoted weight hung loosely at  $m^3$  in the upper part  
115 of the stop-block  $K$ , provided with the heavy end  $m'$  and a projection  $m^2$ . The projecting parts  $l^2$  and  $m^2$  on the tack-guard and actuator, respectively, lie in close proximity to each other. The instant that the tool is  
120 moved upward in preparation for driving a tack the weighty end  $m'$  of the actuator  $M$  acquires momentum. When the movement of the tool is reversed for the tack-driving descent, the momentum of the weight  $m'$  carries  
125 the actuator  $M$  into the position shown in dotted lines in Fig. 3. This causes the projection  $m^2$  to strike against the projection  $l^2$  and throws the finger  $l'$  into the position shown in dotted lines in Fig. 3, thus effectually preventing a tack from jumping back  
130 out of the tack-stop  $K$ . Ordinarily the loosely-mounted tack-guard  $L$  will of its own momentum assume the dotted-line position when the motion of the tool is reversed, as above de-



scribed; but if by any chance the tack-guard L fails to work in this manner of its own motion the actuator M strikes it and insures its proper operation. It is to be observed that any movement of the tool which tends to throw a tack back from the tack-stop K also impels the tack-guard L and actuator M to move as described and to prevent the dislodgment of the tack.

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

1. In a hand tacking-tool of the character indicated, the combination of a hammer-head, a tack-channel therein leading to the nose thereof, a tack-stop at the bottom of the tack-channel, a tack-guard above the tack-stop hung adjacent to and susceptible of being moved across the tack-channel, and a tack-guard actuator movably mounted in such relation to the tack-guard that by its motion in response to a movement of the tool which tends to throw a tack back from the tack-stop it actuates the tack-guard to close the tack-channel.

2. In a hand tacking-tool of the character indicated the combination of a hammer-head, a tack-channel therein, a tack-stop in the tack-channel, a tack-guard consisting of a latch provided with a tack-engaging finger adjacent to and movable into the tack-channel above the tack-stop, and a tack-guard actuator, comprising a movable weight, so supported with relation to the tack-guard that movement of the said actuator, in response to a movement of the hammer which tends to throw a tack back from the tack-stop, is communicated to the tack-guard, and the tack-guard finger thereby moved into the tack-channel.

3. In a hand tacking-tool of the character indicated the combination of a hammer-head, a tack-channel therein, a tack-stop at the bottom of the tack-channel, consisting of a movable stop-block, a tack-guard mounted in the tack-stop block and provided with a tack-engaging finger adjacent to and movable into the tack-channel above the tack-engaging point of the tack-stop, and a tack-guard actuator, comprising a movable weight, supported in the tack-stop block in such relationship to the tack-guard that movement of the said actuator, in response to movement of the hammer which tends to throw a tack back from the tack-stop, is communicated to the tack-guard and the tack-guard finger thereby moved into the tack-channel.

4. In a hand tacking-tool of the character indicated the combination of a hammer-head, a tack-channel therein, a tack-stop at the bottom of the tack-channel, a tack-guard consisting of a pivoted latch having a finger adjacent to and movable into the tack-channel above the tack-stop and a projection in operative connection with a tack-guard actuator, and the tack-guard actuator, consisting of a pivoted lever, whereof one end is weighted and the other is in operative connection with

the aforesaid projection on the tack-guard, the tack-guard and actuator being so proportioned and arranged that movement of the weighted end of the actuator in response to a movement of the hammer which tends to throw a tack back from the tack-stop is communicated to the tack-guard and the finger thereof moved into the tack-channel.

5. In a hand tacking-tool of the character described, the combination of a hammer-head, a tack-channel therein, a tack-stop at the bottom of the tack-channel consisting of a pivoted stop-block, centrally slotted and provided with a tack-guard in the slot and pivoted to the stop-block, and with a tack-guard actuator in the said slot and pivoted to the stop-block, the tack-guard provided with a finger adjacent to and movable into the tack-passage and a projection in juxtaposition to the actuator, the actuator consisting of a lever, juxtaposed to the tack-guard projection at one end and weighted at the other, all arranged in such manner that movement of the weighted end of the actuator in response to movement of the hammer which tends to throw a tack back from the tack-stop causes the tack-guard finger to move into the tack-channel.

6. In a hand tacking-tool of the character described the combination with a hammer-head, a tack-channel and a tack-stop, of a tack-guard L, having a finger  $l'$  and projection  $l^2$  and pivot  $l^3$ , and a tack-guard actuator M, having a weighted end  $m'$  projection  $m^2$  and pivot  $m^3$  substantially as described.

7. In a hand tacking-tool of the character indicated, the combination of a hammer-head, a tack-channel therein leading to the nose thereof, a tack-stop at the bottom of the tack-channel, a tack-guard above the tack-stop, hung adjacent to and susceptible of movement across the tack-channel, and a tack-guard actuator, separate from and movable against the tack-guard.

8. In a hand tacking-tool of the character described, the combination of a tack-hopper, and raceway, and a tack-retaining shoe pivoted at the entrance of the raceway, and counterweighted so that the same movement of the tool which tends to throw tacks out of the raceway depresses the shoe.

9. In a hand tacking-tool of the character described, the combination of a tack-hopper, raceway and gathering-blades, and a pivoted tack-retaining shoe suspended over the raceway and provided with a counterweight, the said shoe being normally lifted away from the gathering-blades by the counterweight, and so proportioned with relation to the counterweight that a movement of the tool which tends to jerk tacks out of the raceway also lifts the counterweight and depresses the shoe.

10. In a hand tacking-tool of the character described, the combination of the tack-hopper D, raceway-blades E, shoe  $s'$  pivoted at  $s^3$  and counterweight  $s^2$  all substantially as described.



11. In a hand magazine tacking-tool the combination of the hopper D, raceway *e'*, cover-plate S, slide *s*<sup>6</sup>, groove *s*<sup>5</sup>, and set-screw *s*<sup>7</sup>, substantially as described.

5 12. In a hand tacking-tool of the character described, the combination of a tack-hopper and raceway, and a tack-retaining shoe pivoted at the entrance of the raceway, normally standing clear of the tacks in the raceway,

and counterweighted so that the same movement of the tool which tends to throw tacks out of the raceway depresses the shoe.

Signed by me at Manchester, New Hampshire, this 18th day of October, 1900.

ARSENE HEBERT.

Witnesses:

FRANKLYN A. ANGIER,  
ARTHUR W. MORGAN.