(No Model.) 2 Sheets—Sheet 1.

H. S. GARR.

NAIL SETTING HAMMER AND MEANS FOR CHARGING SAME WITH NAILS.

No. 554,595. Patented Feb. 11, 1896.

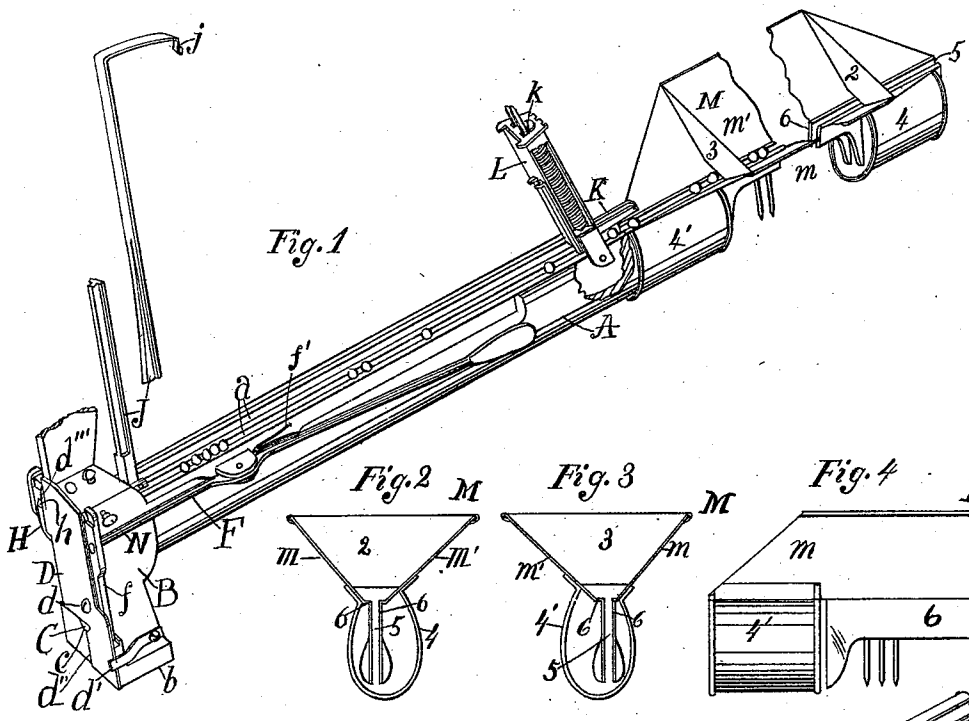

Fig. 1

Fig. 2

Fig. 3

Fig. 4

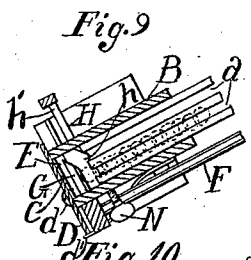

Fig. 9

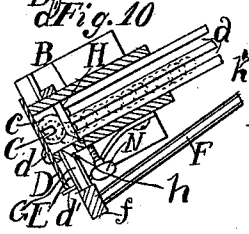

Fig. 10

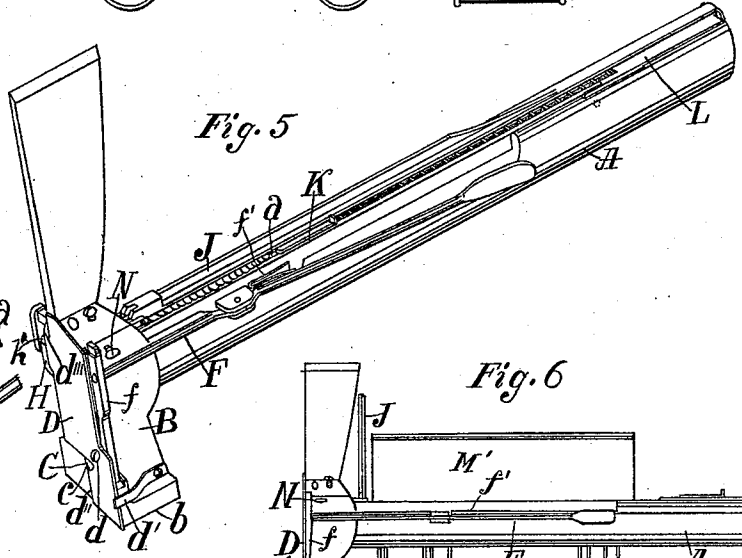

Fig. 5

Fig. 6

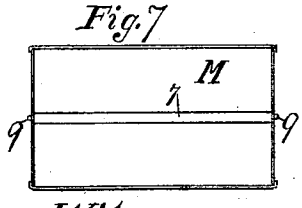

Fig. 7

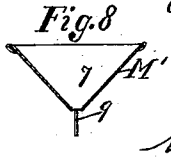

Fig. 8

Witnesses:
F. T. Johnson.
F. M. Townsend.

Inventor:
Horace S. Garr
by Hazard & Townsend
his attys.

(No Model.) 2 Sheets—Sheet 2.

H. S. GARR.

NAIL SETTING HAMMER AND MEANS FOR CHARGING SAME WITH NAILS.

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Fig. 11

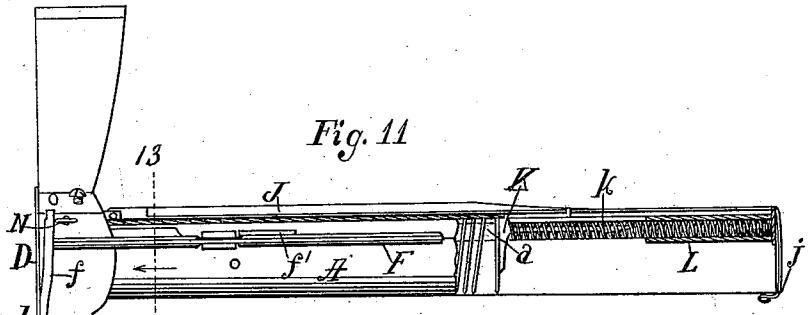


Fig. 12

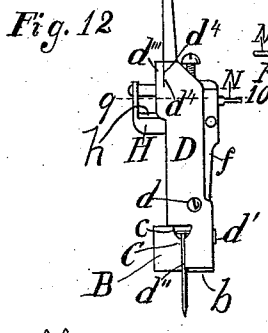


Fig. 13

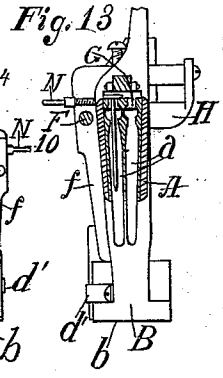


Fig. 14

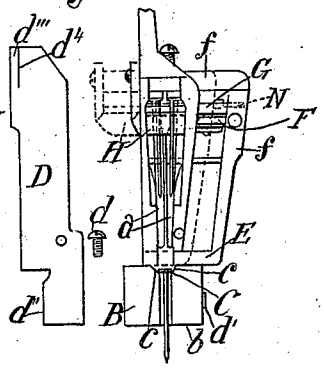


Fig. 15

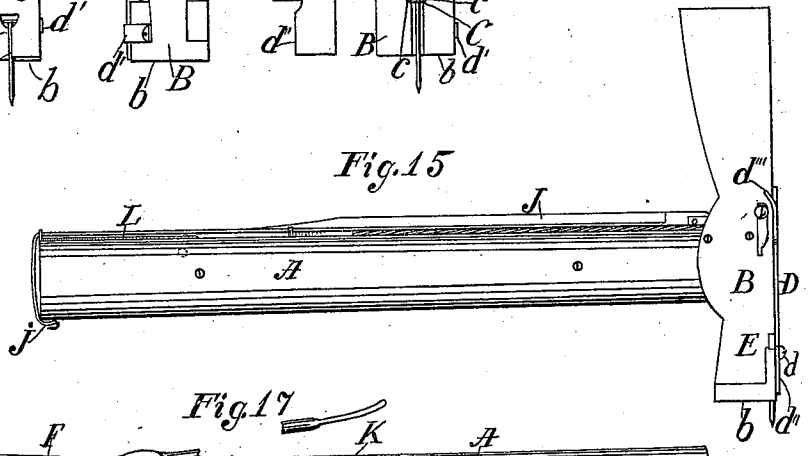


Fig. 16

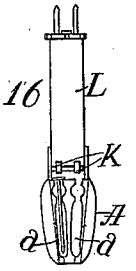
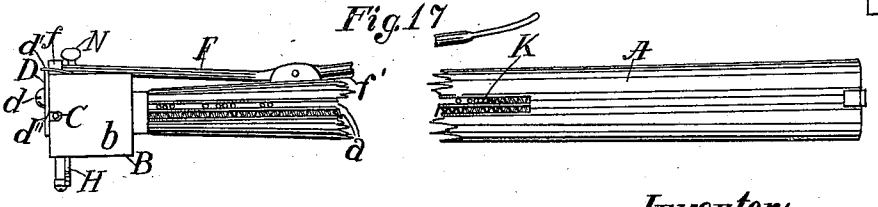


Fig. 17



Witnesses:

F. T. Johnson

F. M. Townsend.

Inventor:

Horace S. Garr

by Hazard & Townsend

his attys.

UNITED STATES PATENT OFFICE.

HORACE S. GARR, OF LOS ANGELES, CALIFORNIA, ASSIGNOR OF ONE-THIRD TO HERMAN W. FRANK, OF SAME PLACE.

NAIL-SETTING HAMMER AND MEANS FOR CHARGING SAME WITH NAILS.

SPECIFICATION forming part of Letters Patent No. 554,595, dated February 11, 1896.

Application filed May 22, 1895. Serial No. 550,290. (No model.)

To all whom it may concern:

Be it known that I, HORACE S. GARR, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Nail-Setting Hammer and Means for Charging the Same with Nails, of which the following is a specification.

The object of my invention is to provide a hand implement whereby a workman can set and drive nails with great speed and facility in various situations and without the necessity of holding the nails with the hand while setting them into the material to be nailed; also, to provide means whereby a man having but one arm can readily set and drive nails.

My invention is adapted for the use of tinners, carpenters, lathers, box-makers, and other workmen who are required to drive large numbers of nails in rapid succession.

My invention is more particularly designed for use with wire shingle-nails, lathing-nails, and box-nails, but I do not wish to limit my claim to an implement for any particular kind or size of nails.

My invention embraces a hammer or hatchet, the handle of which is provided with a runway for the nails, and the head of which is provided with a nail-outlet and operative mechanism for feeding, one at a time, the nails from the runway and allowing the same to be partially ejected and then held to receive the blow of the hammer to start the nail in the part to be nailed, and then allow the implement to be withdrawn from the nail, leaving it in position to be driven home by another blow with the same implement.

My invention also embraces the means whereby the nails are introduced into the runway in the handle.

It also embraces the various parts and combinations hereinafter set forth and claimed.

My implement is arranged to enable the workman to conveniently operate the nail-feed by his thumb, which is the most idle and most convenient member of the hand for this purpose.

The accompanying drawings illustrate my invention.

Figure 1 is a fragmental perspective view of my invention while the handle is being charged with nails. Fig. 2 is an elevation of one end of the feeding-hopper. Fig. 3 is an elevation of the other end of such hopper. Fig. 4 is a side elevation of one end of the hopper. Fig. 5 is a perspective view of the hammer after the handle has been charged with nails and has its parts adjusted so that the tool is ready for use by the workman. Only a partial charge of nails is shown. Fig. 6 shows a modified form of hopper in place on the implement. This is designed for use with nails the length of which is greater than the depth of the handle. Fig. 7 is a plan of such hopper. Fig. 8 is a vertical cross-section of such hopper. Fig. 9 is a fragmental sectional plan showing the nail intercepting and supporting slide, and the nail-separating slide in position to be operated to feed a nail into the outlet. The nail is shown in dotted lines. Line 9 10, Fig. 12, indicates the line of section. Fig. 10 is a like view when the slide has been operated and the nail has been moved into position to fall down the outlet. Fig. 11 is a side elevation, partly in section. Fig. 12 is an elevation of the front side of the hammer-head with nail in position to be set. Fig. 13 is a sectional elevation from the rear. Line 13 13, Fig. 11, indicates the line of section. Fig. 14 is a front elevation, the nail-intercepting plate being removed to expose the parts. In this view the nail-intercepting slide is shown thrown out of its nail-intercepting position. Dotted lines show it thrown into its nail-intercepting position. Fig. 15 is a side elevation looking to the right in Fig. 12. Fig. 16 is an elevation of the end of the handle with follower-case raised. Fig. 17 is a fragmental plan of the under side of the hammer and handle.

For economy of space and clearness of illustration the views are drawn to different scales.

The nail-setting hammer is composed of the handle A, provided with one or more nail-runways *a*, a head B, fastened to the handle and provided with a nail passage and outlet C, which communicates with the nail-runway *a* and extends therefrom to the striking-face *b* of the hammer, and which is of such dimensions at its lower portion as to al-

low the nail to pass therethrough to the front side of the hammer, but is provided with stops *c*, arranged to intercept the head of the nail after the point of the nail has projected from the striking-face. I provide nail intercepting and releasing means arranged across the side of the outlet. The same consists of a gate or spring-plate D, pivoted to the head and extending only partially across the outlet through which the nail must pass laterally, and means for holding the lower portion of the plate normally partly across the lateral outlet.

d indicates the pivot by which the plate is pivoted to the hammer-head.

d' indicates the spring for normally holding the plate in position partly across the lateral outlet.

The pivot *d* is set at such a point with relation to the body of the plate D and the intercepting edge *d''* thereof that when the hammer is held upright, as indicated in Figs. 11, 12, &c., the force of gravity will tend to cause the plate to swing against the retracting-spring *d'* to withdraw the intercepting edge *d''* from the lateral outlet through which the nail is to be withdrawn. The effect of this is that when the hammer sets the nail into the material into which it is to be driven the sudden stoppage of the hammer causes the momentum of the plate to operate to swing the plate against the force of the spring *d'*, and this withdraws the intercepting edge *d''* of the plate from the lateral outlet and allows the nail to be easily withdrawn from the hammer. The plate is beveled on its inner side along the intercepting edge *d''*, so that if the nail is pressed against the bevel it will swing the plate aside and allow the nail to be withdrawn.

E indicates a nail-seating block arranged above the stops *c* to engage the head of the nail when the nail is being set into the material into which it is to be driven. This block is connected with the thumb-lever F, which is pivoted to the handle and constitutes means for reciprocating the block across the outlet.

f indicates a cross-head by which the block is connected with the lever.

The thumb-lever F is pivoted to one side of the handle, and one of its arms is pivoted to the reciprocating slide and its other arm is arranged along the handle in position to be operated by the thumb of the hand which holds the handle.

I provide means for feeding the nails singly into the nail passage and outlet.

G indicates a reciprocating nail-intercepting and nail-head-supporting slide arranged near the top of the runway and adapted to play across the end thereof and to receive and support the front edge of the head of the nail after the body of the nail has issued from the runway.

H indicates a nail-separating slide arranged at the other side of the runway and extending to reciprocate across the end thereof and terminating near the end of the nail-head support but arranged closer to the end of the runway, so that there is a space *h* between the ends of the two slides to allow the body of the nail to pass therebetween. The ends of the slides are beveled so as to pass the nail readily. The sliding nail-head support G and the nail-separating slide H are connected together by the cross-head *f* which connects the striking-block E with the lever F, which is pivoted to the handle so that when the lever is actuated it will withdraw the nail-head support from in front of the nail-runway and from beneath the edge of the nail-head, and when this is done will insert the nail-separating slide behind the body of the nail which had rested upon the support, and when the support has been fully withdrawn from before the runway will push the nail away from the runway and allow it to fall down the outlet C. The same movement of the lever will have withdrawn the nail-setting block E from across the outlet, thus allowing the nail to freely fall until its head is intercepted by the stops *c*. Then upon the release of the lever F it is returned by the spring *f'*, provided for that purpose, and the nail-setting block E will pass across the outlet C above the head of the nail so that when the nail is struck against the material into which it is to be set the nail-setting block E will be engaged by the nail-head and will strike the nail-head and seat the nail. The sudden stoppage of the hammer-head will cause the gate D to swing slightly to withdraw from across the outlet so that the nail is readily released when the workman withdraws the hammer from the nail. The nail can then be driven home by another blow with the striking-face of the hammer. The workman then operates the lever F and causes another nail to fall into position to be seated as above described, and then the operation above set forth is repeated. The upper face *h'* of the nail-separating slide is beveled downward and outward so that the nail will fall readily.

J indicates a nail-holding strap or bar for holding the nails in the handle of the implement. This fits along and over the nail-runway but is arranged so as not to press upon the nails with sufficient force to prevent them from sliding freely along the runway. The nails may be slid along the runway by the force of gravity and thus be brought to the nail-separating slide at the end of the runway, but I provide a suitable spring-pressed follower K to force the nails along the runway and into the outlet. The nail-holding strap J is pivoted to the hammer and is provided with a catch *j* by which it is fastened in place over the nail-heads to hold them in the runway.

In order to readily charge the tool with nails, I provide a hopper-trough having a nail-slot in the bottom thereof and having a socket to fit on the end of the hammer-han-

dle when the strap J has been raised. In order to apply this readily the follower must be withdrawn out of the way, and to provide for this I have arranged at the end of the handle a pivoted follower-case L, into which the follower and spring can be drawn and which can then be turned up out of the runway, as indicated in Fig. 1, thus allowing the nails to be fed into the runway from the hopper-trough.

I will now describe the hopper M. (Illustrated in Figs. 1, 2, 3 and 4.) This is composed of sloping sides *m m'*, which are fastened together by suitable means, such as end pieces 2 and 3 and the ties 4 4', which form the sockets to receive the hammer-handle. 5 indicates a slot at the bottom of the trough large enough to readily receive the body of the nail to be used, but too narrow to allow the head of the nail to fall therethrough, so that when the nails are put into the trough and shaken their bodies will swing down into the slot, while the heads are supported by the tops of the walls 6 which form the slot. The bottom of the trough (which is formed by the tops of said walls) is flat on each side of the slot, so that the heads of the nails will not wedge, but will slide freely along the trough when it is inclined for that purpose.

In practice a handful of nails sufficient to charge one of the nail-runways of the tool is placed in the hopper, which is shaken sufficiently to cause the nails to fall into place with their bodies hanging down through the slot. The end of the handle A is then or previously inserted into one of the sockets 4 4' in the end of the hopper, thus bringing the slot 5 to register with one of the runways from which the followers have been removed by tipping up the follower-case, as above stated. The handle and hopper are then inclined to cause the nails to run down into the runway, thus filling the runway. Then the hopper is removed from the handle, the follower-case is lowered into position and the strap J is brought down above the nails and fastened in place by the catch *j* and the implement is then ready for use.

In a hammer-handle of ordinary width there is room for two nail-runways and I have shown the implement provided with two runways. In order to fit the two runways I arrange a socket at each end of the hopper-trough, but arrange such sockets in reverse positions with relation to the slot, so that when one socket is fitted upon the end of the handle the slot will register with one of the runways and when the other socket is fitted upon the handle the slot will register with the other runway.

It might be desirable to use a longer nail than the depth of the handle would receive, and in order to do this the runways of the handle are open at the bottom, as indicated in Fig. 13, and the opening into the hammer-head from the handle is long enough vertically to accommodate the longer nail desired to be used.

In case the longer nails are used the runway cannot be charged by means of a hopper of the character shown in Figs. 1, 2, 3, and 4, and I have therefore shown a modified form of hopper M' in Figs. 6, 7, and 8. This hopper is provided in its bottom with a slot 7, wide enough to allow the heads of the nails to pass therethrough, and the hopper is provided at each end with a pintle 9. In practice the hopper is placed above the runway with the pintles in the runway, and the nails are then dropped into the hopper, which is then shaken to cause the nails to fall through the slot into the runway, the top of the runway stops the heads, and the nails then swing freely in the runway.

k indicates a catch for the follower K to hold it when it is drawn into the follower-case L.

It is to be understood that ordinarily the workman will charge both runways with nails before he begins nailing. N indicates a stop-screw arranged at the end of one of the runways to set into the path of the nails to hold them in such runway. The purpose of this is to allow the nails in the other runway to discharge first. After the nails have been discharged from the other runway, then the stop N will be turned to unscrew it and withdraw it from the path of the nails in its runway, and thus allow such nails to be fed into the hammer-head.

In case the hammer is provided with two nail-runways the movement of the nail intercepting and releasing slides is to be sufficient to reciprocate across both of the runways. The same slides will serve for both runways. The spring *f'* will normally hold the nail intercepting and supporting slide G across the ends of both of the runways.

d''' indicates a spring-catch at the top of the gate or trough D to hold the plate from swinging so far as to entirely close the outlet C. This spring is formed integral with the plate D, a slit *d⁴* being cut into the plate for this purpose. When it is desired to gain access to the interior of the head, the spring *d'''* is pressed forward, thus allowing it to pass the hammer-head to allow the gate or plate D to swing to open the upper part of the outlet C, thus to gain access to the interior.

Now having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A nail-setting hammer composed of a handle provided with a nail-runway; a head fastened to the handle and provided with a nail-outlet which communicates with the nail-runway and extends therefrom to the striking-face and to one side of the head and which is of such dimensions at its lower portion as to allow a nail to pass therethrough to the side of the head but is provided with stops arranged to intercept the head of the nail after the point of the nail has projected from the

striking-face; nail intercepting and releasing means arranged across the end of the runway; means for operating the same; nail intercepting and releasing means arranged across the side of the outlet; a nail-setting block arranged to slide above the stops and adapted to engage the head of the nail when the nail is being set into the material into which it is to be driven, and means for operating the block.

2. The combination of the handle provided with the nail-runway; the head fastened to the handle and provided with the nail-outlet which communicates with the runway and extends therefrom to one side of the head and to the striking-face of the head, and which is of such dimensions at its lower portion as to allow a nail to pass therethrough to the side of the head, but is provided with stops arranged to intercept the head of the nail after the point has projected from the striking-face; nail intercepting and releasing means arranged across the end of the runway; means for operating the same; nail intercepting and releasing means arranged across the side outlet; a reciprocating nail-setting block arranged to reciprocate across the outlet above the nail-intercepting stops, and means for reciprocating such block.

3. The combination of the handle provided with a nail-runway; a head fastened to the handle and provided with a nail-outlet which communicates with the runway and extends therefrom to one side of the head and to the striking-face of the head, and which is of such dimensions at its lower portion as to allow the nail to pass therethrough to the side of the head, but is provided with stops arranged to intercept the head of the nail after the point has projected from the striking-face; a nail-separating slide arranged at one side of the runway and adapted to play across the end thereof; a reciprocating nail-head support arranged at the other side of the runway and adapted to play across the end thereof, and to receive and support the head of the nail, and terminating near the end of the nail-separating slide; the nail-seating block arranged to slide above the stops and adapted to engage the head of the nail when the nail is being set into the material into which it is to be driven; and means for reciprocating the block, the slide and the nail-support.

4. A hammer having a handle provided with a nail-runway a follower-case hinged at the rear end of the handle; the spring-follower arranged in such case and adapted to run in the runway, and means for securing the follower in and releasing it from, its case.

5. The combination of the handle provided with a nail-runway; a hopper-trough provided along its bottom with a slot wide enough to allow passage therethrough of the body of the nails and narrow enough to intercept the heads of the nails, and a socket for the end of the handle and arranged in such relation to the slot, the handle and the runway, that when the handle is inserted into the socket the slot will be in position to discharge its contents into the runway.

6. The nail-charging device for nail-setting hammers composed of a hopper-trough provided along its bottom with a slot of sufficient width to allow the body of the nails to pass and to intercept the heads of the nails and provided at its opposite ends with reversely-arranged handle-receiving sockets, so that when the hammer-handle is inserted in one of the sockets, the slot will be at one side of the handle, and when the handle is set in the socket at the other end of the hopper the slot will be at the other side of the handle substantially as and for the purpose set forth.

7. A hammer having a handle provided with two nail-runways; the head provided with a nail-outlet communicating with both of such nail-runways; a movable nail-stop in one of such runways; nail intercepting and releasing means arranged to reciprocate across the end of both of the runways; and a lever pivoted to the handle and arranged to operate such means.

8. In a hammer, the combination of the head provided with a nail passage and outlet; a reciprocating striking-block arranged to reciprocate across the passage; means for retaining a nail in the passage below the striking-block; means for feeding nails singly into the passage and means for reciprocating the block.

9. A hammer having a nail passage and outlet in its head and having a spring-pressed gate pivoted to the head at such a point that it is normally across the outlet but will, when the hammer stops, when a blow is struck, swing under the force of its momentum and withdraw from across the outlet.

10. The combination of the hammer handle and head provided with the nail passage and outlet; means for feeding nails into the passage and outlet; a gate pivoted across the side of the outlet by a pivot which is so arranged that when a blow is struck the momentum of the gate will cause it to swing from across the side of the outlet; and a spring arranged to normally hold the gate across the side of the outlet.

HORACE S. GARR.

Witnesses:
JAMES R. TOWNSEND,
F. M. TOWNSEND.