(No Model.) 2 Sheets—Sheet 1.

E. B. ALLEN.

HEEL LOADING MACHINE.

No. 348,092. Patented Aug. 24, 1886.

Fig. 1.

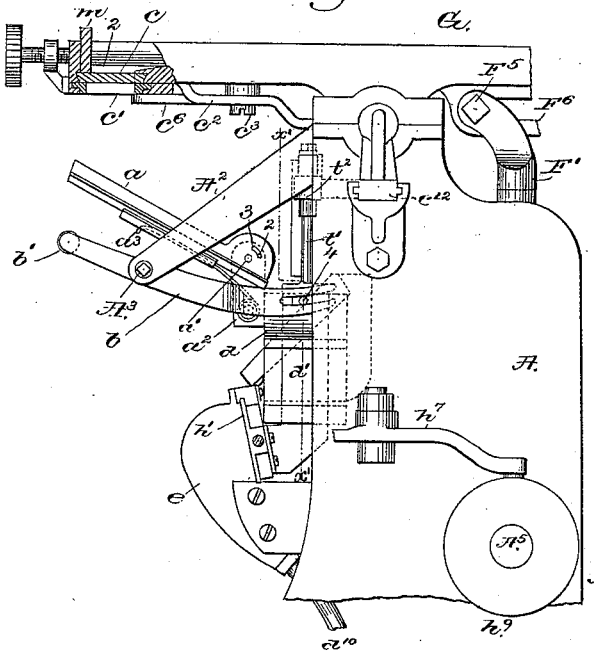


Fig. 2.

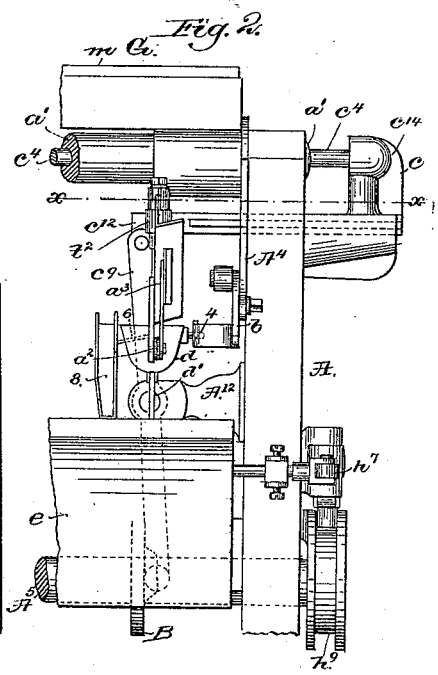


Fig. 4.

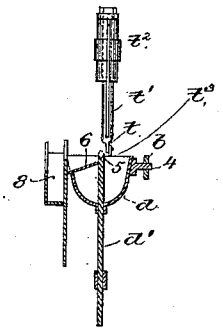
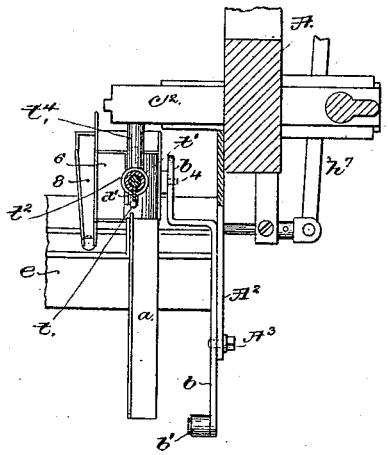


Fig. 3.



Witnesses.
John F. C. Pennebeck
Fred L. Emery.

Inventor.
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by Crosby Gregory attys.

(No Model.) 2 Sheets—Sheet 2.

E. B. ALLEN.

HEEL LOADING MACHINE.

No. 348,092. Patented Aug. 24, 1886.

Fig. 5.

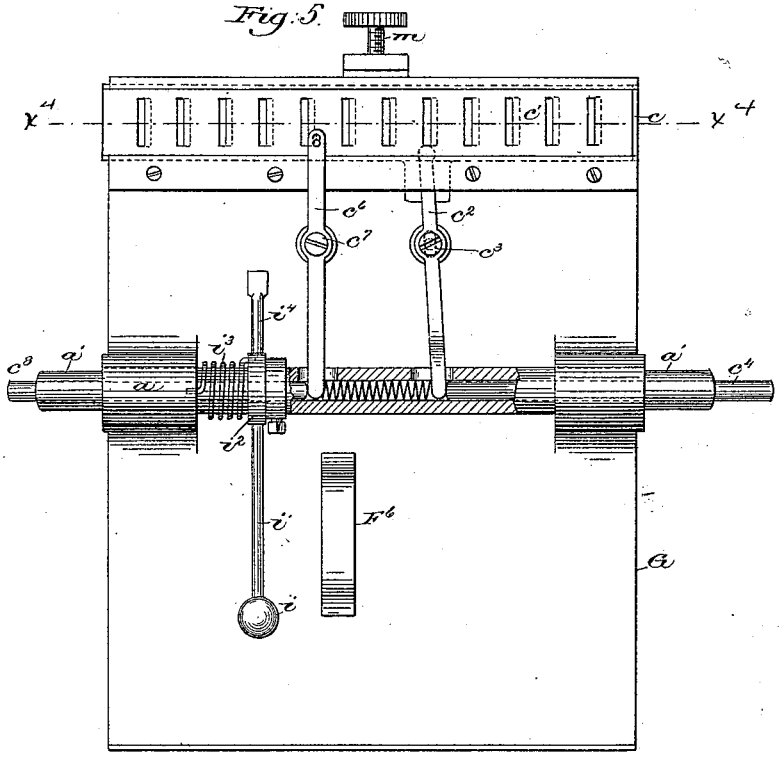
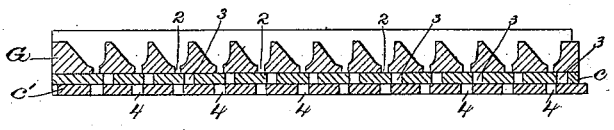


Fig. 6.



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UNITED STATES PATENT OFFICE.

EDWARD B. ALLEN, OF PORTLAND, MAINE, ASSIGNOR TO JAMES W. BROOKS, TRUSTEE, OF CAMBRIDGE, MASSACHUSETTS.

HEEL-LOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 348,092, dated August 24, 1886.

Application filed October 7, 1885. Serial No. 179,221. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. ALLEN, of Portland, county of Cumberland, and State of Maine, have invented an Improvement in Heel-Loading Mechanisms, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention in machines for loading heel or other blanks with nails is an improvement upon the apparatus shown and described in my application Serial No. 179,220, filed on the 7th day of October, 1885, to which reference may be had. In the application referred to the nails are delivered singly from different grooves or channels in a tilting table by means of slotted cross-slides, the said nails entering passages in a conductor in direct communication with a nail-receiving device, which is so constructed as to overturn into a hopper all the nails which enter it, heads foremost, the nails entering the nail-selecting device points foremost, being discharged therefrom through the bottom plate into the tubes leading to the nail-loading die. In this improvement the nails are first delivered from like slotted cross-slides of the tilting table into a chute, and thence into a vertically-reciprocating nail-receiver, made to resemble a pan slotted at its under side and sliding upon a thin vertically-placed guide-plate provided at its upper end with a groove for the reception of a single nail, the said nail-holder being operated by a lever which derives its movement from the tilting table. At each descent of the nail-receiver a single nail is left in the grooved upper end of the guide-plate, and the nail so left is discharged therefrom by a knocking-off device actuated by a sliding carriage, the nail so removed falling upon a table, where it rests until the nail-receiver in its next ascent passes high enough to carry the nail therein above the side of a raceway leading to the nail-selecting device common to the said application, when the nail slides off the inclined surface of the table and enters the said raceway sidewise and slides down the same into a passage of the nail-selecting device.

My present invention relates more especially to the novel mechanism or mechanical organization employed between the cross-slides of the tilting table and the nail-selecting device instead of the conductor shown in the said application.

The particular features in which my invention consists are set forth in the claims at the end of this specification.

Figure 1 in side elevation and partial section represents a sufficient portion of a heel-loading machine, which, taken in connection with the machine represented in my said application, will enable one to understand my invention; Fig. 2, a view of Fig. 1 from the left; Fig. 3, a section of Fig. 2 in the line $x\,x$ looking down; Fig. 4, a section of Fig. 1 in the line $x'\,x'$. Fig. 5 represents an under side view of the tilting table, its supporting-shaft, the cross-slides, and devices for moving them; and Fig. 6 is a transverse section of Fig. 5 in the dotted line x^4.

The tilting table G, its lug F^6, the eccentric strap F, the hollow shaft a', the rod c^4, the lug c^{14}, the carriage c^{12}, the lever c^9, and the cam B to move it, the main shaft A^5, the cross-slides c and c', the levers c^2 and c^6 to move them, the nail-selecting device having the slide-plate h', the lever h^7 to actuate it, the cam h^9 on the main shaft A^5, the hopper e, and the tube d^{10} are and may be all as in the machine described in the said application, where they are designated by like letters. The cross-slides c and c' in the tipping movement of the table are moved longitudinally at such time one with relation to the other, as described in the said application, as to permit the nails to be dropped from the recesses of the lowermost slide, c', into a narrow chute, a, pivoted at a' on a lug or ear, a^2, attached to the nail-receiver d, to be described, the said chute being acted upon by a spring, a^3, which normally keeps its free end elevated, as in Fig. 1, to be struck by the end of the table as the latter descends, the chute being somewhat depressed while the nail is being dropped into it. The chute a has at one side a pin, 2, which enters a slot, 3, in the lug or ear a^2, the pin and slot limiting the extent of movement of the chute. The frame-work A has extended from it a bracket, A^2, on which, by the stud A^3, is pivoted the lever b, having at one end the roll b', which is also struck by the table at each descent, the opposite end of the said lever being slotted to embrace the pin

4, extended from the side of the nail-receiver *d*, made somewhat like a pan and slotted at its bottom, to be placed upon a guide-plate, *d'*, fixed with relation to the frame-work, the movement of the lever *b* by the table G causing the nail-receiver to slide up and down on the said guide-plate. The guide-plate *d'*, at its upper end, (see Fig. 4,) has a notch, 5, extended lengthwise thereof, in which drops a nail when the nail-receiver is raised, so that the top of the guide-plate is substantially flush with the inner side of the bottom of the nail-receiver, and thereafter the lowering of the nail-receiver leaves one nail in the said groove, as shown by dotted lines, Fig. 4. The nail-receiver has at one side an inclined table, 6, which when the said nail-receiver is in its depressed position comes below the notched top of the guide-plate *d'* and the nail in the said notch. The nail is swept off from the top of the guide-plate upon the table 6 by means of a knocking-off device, herein shown as composed of a foot, *t*, at the lower end of a rod, *t'*, held loosely in a socket, t^2, of an arm, t^4, (see Fig. 3,) extended from the carriage c^{12}, the latter being moved horizontally when it is desired that the foot knock the nail from the plate *d'*. The rod *t'* is raised and lowered in unison with the receiver *d* by the projection t^3 of the foot which rests on the receiver. The nail knocked off upon the inclined table during the descent of the nail-receiver remains upon the said table and against one side of the raceway 8 until the nail-receiver is again made to ascend, when the nail falls sidewise from the said inclined table into the said raceway, and from the latter the nail enters the openings or passages of the nail-selecting device common to my application referred to, from which the nail is delivered, as therein provided for, with its point or small end foremost into the tube d^{10}.

Herein I have considered it necessary to show but one set of devices between one groove of the tilting table and a nail-passage of the nail-selecting device; but it will be understood that the said parts will be duplicated for each of the said passages, there being in practice a passage and tube d^{10} for each nail-hole in the loading-die to be used.

I claim—

1. In a machine for loading heel or other blanks, a nail-selecting device, substantially as described, and a raceway leading to one of its passages, combined with the reciprocating nail-receiver and the table, to operate substantially as described.

2. In a machine for loading heel or other blanks, the tilting table having one or more cross-slides provided with recesses, as described, and the chute and reciprocating nail-receiver, and guide-plate notched at its top for the retention of a single nail, combined with a knocking-off device, to operate substantially as described.

3. In a machine for loading heel or other blanks, the tilting table having one or more cross-slides provided with recesses, as described, and the chute and reciprocating nail-receiver, and guide-plate notched at its top for the retention of a single nail, a knocking-off device, an inclined table and raceway combined with the nail-selecting device, substantially as described, and with tubes d^{10}, to lead the nails, point foremost, into the holes of a loading-die, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD B. ALLEN.

Witnesses:
G. W. GREGORY,
F. L. EMERY.