

(No Model.)

3 Sheets—Sheet 1.

C. E. HOUGHTON.
DIE FOR CUT NAIL MACHINES.

No. 475,768.

Patented May 31, 1892.

Fig. 1.

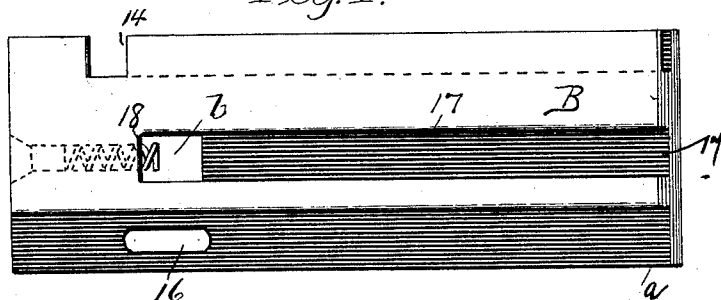


Fig. 2.

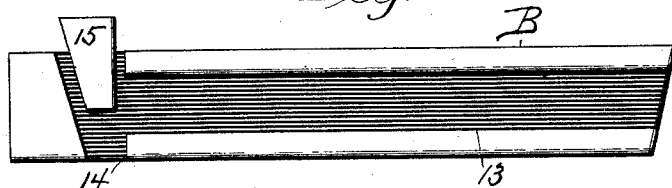


Fig. 4.

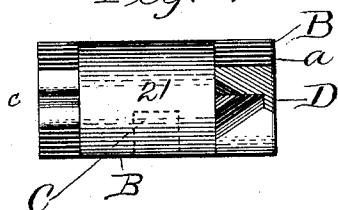


Fig. 3.

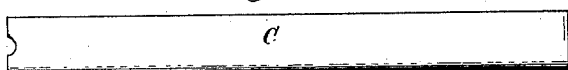


Fig. 7a.

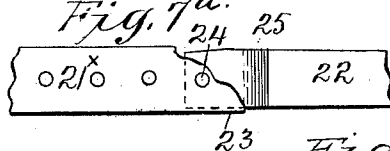


Fig. 6.

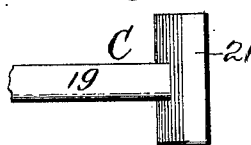


Fig. 5.

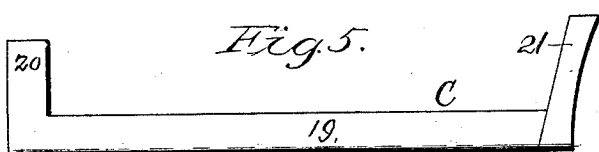
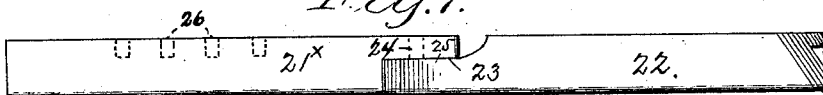


Fig. 7.



D

Witnesses

R. M. Cary,
R. Johnson.

Inventor

Chas. E. Houghton,
by A. G. Heylman,
Attorney.

(No Model.)

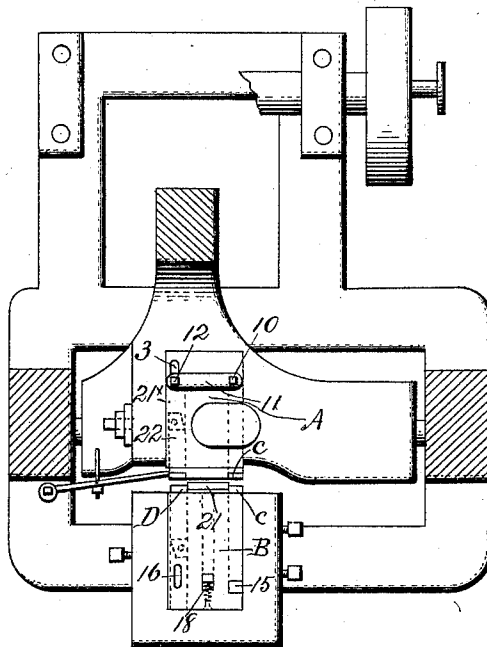
3 Sheets—Sheet 2.

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Patented May 31, 1892.

Fig. 1^a



Witnesses

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(No Model.)

3 Sheets—Sheet 3.

C. E. HOUGHTON.
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Fig. 8

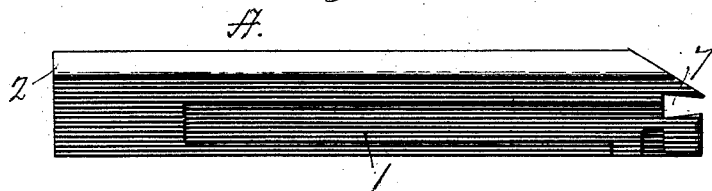


Fig. 9.¹⁰

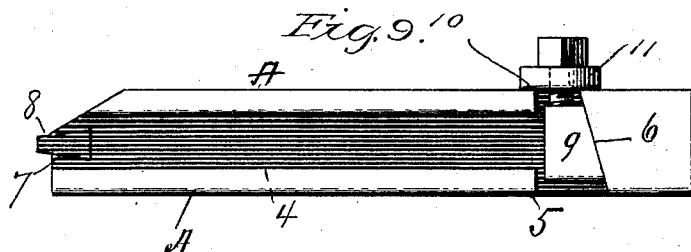


Fig. 10.

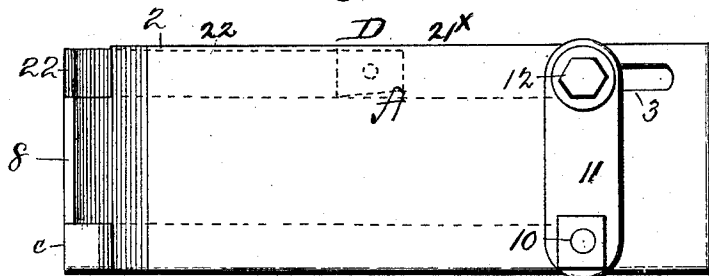


Fig. 11.

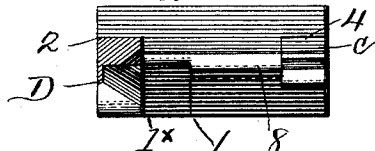


Fig. 12.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES E. HOUGHTON, OF NORTHUMBERLAND, PENNSYLVANIA, ASSIGNOR
OF ONE-HALF TO HORACE RUFUS JOHNSON, OF SAME PLACE.

DIE FOR CUT-NAIL MACHINES.

SPECIFICATION forming part of Letters Patent No. 475,768, dated May 31, 1892.

Application filed December 1, 1891. Serial No. 413,718. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. HOUGHTON, a citizen of the United States of America, residing in Northumberland, in the county of Northumberland and State of Pennsylvania, have invented certain Improvements in Dies for Cut-Nail Machines, of which the following is a specification.

My invention relates to improvements in dies for cut-nail machines, and especially relates to improved constructions, arrangements, and combinations in the gripping and point-cutting dies; and the object is to provide an improved die case or holder in which all the parts associated therewith are conveniently arranged, and also to make the case with a detachable gripping-face; also, to provide improved dies; and the invention consists in the details of construction as hereinafter specified, and particularly pointed out in the claims.

I have fully and clearly illustrated my invention in the accompanying drawings, wherein—

Figure 1^a is a plan view of a nail-machine wherein my improvements are shown arranged in operative position on the gripping-lever and knife-bed of the machine, certain parts of the machine being removed and others shown in section. Fig. 1 is a bottom plan view of the bed-die holder or casing, showing the respective channels and seats formed therein. Fig. 2 is a side view of the die-case, showing the adjusting-block arranged in the vertical way at the rear of the die-seat. Fig. 3 shows a gripping-die. Fig. 4 is an end view of the casing with the dies and nail-ejector arranged in relative position. Fig. 5 is a side view of the nail-ejector. Fig. 6 is a top view of the same, the stem being shown broken off. Fig. 7 is a side view of an improved point-cutting die. Fig. 7^a is a plan view of the point-cutting die, the ends of the parts being broken off, showing the lapped joint partly broken away to illustrate the curve or incline on the side face of the die. Fig. 8 is a side view of the die-casing for moving the die and nipper. Fig. 9 is a reverse side view of the die-casing, showing the removable end piece inserted. Fig. 10 is a top plan view of the moving die-case, showing the dies and removable end piece therein. Fig. 11 is an end

view showing the dies inserted, and Fig. 12 shows plan and edge views of removable end piece.

A designates the die-case for the moving dies and nipper. This consists of a substantial piece of suitable metal of the requisite dimensions to afford room for the different elements it is intended to hold or receive. In the side of the case is formed a channel 1, extending back well toward the end of the case to take and hold the nipper 1^x, consisting of a bar to fit the channel and connected to the nipper-bar by any of the usual means, and parallel to the sides of this channel is a flange 2, under which the point-cutting die is arranged when the case is arranged on a bed in the gripping-lever of a nail-machine. In the flange 2 is a slot 3, through which a holding-screw passes, as hereinafter specified. On the opposite side of the case is formed a channel 4 to take the gripping-die c, and at the rear of this channel is a vertically-arranged way 5, having an inclined back wall 6, as shown in Fig. 9 of the drawings. Across the front end of the case is a dovetail groove 7, in which is arranged a gripping-bit 8, extending between the respective dies, as shown, to serve as a gripping piece or bit to hold the body of the nail straight against the opposing surface presented by the head of the nail-ejector in the other or bed-die casing. In the way 5 is a block 9, having an inclined edge to engage the incline 6 of the case, the block being formed with a threaded extension 10, having a nut thereon, under which is a plate 11, extending across the case and at the other end has a screw-bolt 12, projected through it and the slot 3 into the rear part of the point-cutting die. By means of the nut on the block it may be moved to adjust the gripping-die c endwise, and by the other screw 12 the point-cutting die is held in adjusted position when the case is removed from its seat.

B designates the die case or holder for the gripping-die, the point-cutting die, and the nail-ejector back piece. This case consists of a body of metal having a channel 13 in its side to take the gripping bed-die and a vertical way 14, having inclined back wall, an adjusting-block 15 being fitted in the way to adjust the die endwise. On the other side of the case is a side flange a, under which the point-

cutting die is placed and made adjustable and held against displacement by a screw let through a slot 16 in the flange. In the bottom of the casing is a central channel 17, in which the stem of the nail-ejector lies, and at the rear of the channel is a seat or slot *b*, opening through the case to receive a stud on the stem of the nail-ejector. At the end of the channel 17 is a spring 18 to throw the ejector outward when the moving dies have receded.

C designates the nail-ejector and back piece. This consists of a metal stem 19, having a vertical stud 20 to take in the slot *b* through the case and carrying at its outer end a broad head-piece 21, having its back made to rest in coincidence with the surface of the end of the casing and its face slightly curved in vertical contour to serve as an abutting-piece for the nail when pushed back by the bit of the moving case. At the rear of the stem the spring 18 bears against the stud 20, so that after the nail has been completed and the moving dies have receded the nail-ejector will be moved out and the nail discharged.

D designates the point-cutting dies. These consist of two pieces of metal joined together by a lapped joint and a pin through the leaves of the joint. The rear portion 21^x is a rectangular piece of metal in thickness intended to fit snug and flush in the seat made for it and serve as a liner in conjunction with the flange of the casing. In this part may be a series of threaded holes 26 to take a threaded bolt (not shown) let through the die-casing to hold the rear portion of the die fast in position. The front part 22, constituting the point-cutting portion, is, as stated, connected to the rear portion by a lapped joint 23 and a pin 24, on which it has a limited play, and to effect this play with certainty the outer face 25 of the lapped joint is made slightly curved. The part 22 is narrower throughout its entire length than the part 21^x, so that it may have lateral movement in the seat to effect the shearing movements on the point of the nail.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A point-cutting die consisting of two sections jointed together, the rear section being broader than the forward and point-cutting section, substantially as described.

2. A point-cutting die consisting of two sections jointed together by a lapped joint and a pin fixed in one leaf of the joint and loosely projected through the other leaf, substantially as and for the purpose specified.

3. A point-cutting die consisting of two sec-

tions, the rear section being broader than the forward or point-cutting portion and connected by a lapped joint and a pin fixed in one leaf of the joint and projected through the other leaf, substantially as described.

4. The combination of the die-casing formed with a side flange provided with a longitudinally-arranged slot therein, and a point-cutting die arranged in the casing under the flange and consisting of a rear portion and a front portion hinged together, the front portion being narrower than the rear portion, substantially as described.

5. The die-casing for the moving dies of a nail-cutting machine, consisting of a body formed with a channel in its side to take a gripping-die, a seat in the bottom for the nipper, and a seat for a point-cutting die adjoining the nipper-seat, substantially as described.

6. The die-casing for the moving dies of a nail-cutting machine, consisting of a body formed with a transverse groove across its face end and a back piece secured in the groove, a channel in its side to take the gripping-die, a seat in the bottom for the nipper, and a seat for a point-cutting die adjoining the nipper-seat, substantially as and for the purpose specified.

7. The combination, with the die-casing having dies arranged in its opposite sides and formed with a longitudinal groove in its bottom face, of a nail-ejector having a stem in the groove of the bottom of the casing and a head-piece on the outer end of the stem extending across the end face of the casing between the dies, substantially as described.

8. The combination, with the die-case having a groove in its bottom face, of a spring-actuated nail-ejector consisting of a stem to fit the groove in the case, and an ejector-head arranged to substantially cover and set against the exterior of the end of the die-case, substantially as described.

9. The improved point-cutting die herein described, consisting of a rear broad portion and a front narrower portion united by a lapped joint and a pin, and the lap of the front part being curved inwardly on the outer face, substantially as described.

In witness whereof I have hereto set my hand in the presence of two attesting witnesses.

CHARLES E. HOUGHTON.

Attest:

WM. H. BATES,
ALBERT B. BLACKWOOD.