

(No Model.)

B. YOCH.
NAIL MACHINE.

No. 423,017.

Patented Mar. 11, 1890.

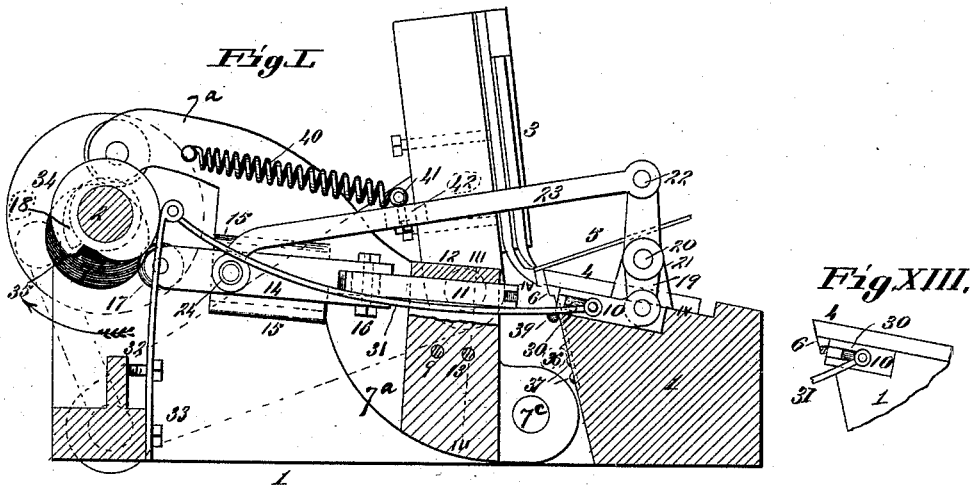


Fig. II.

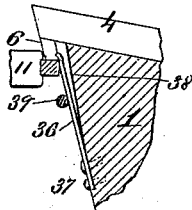


Fig. III.

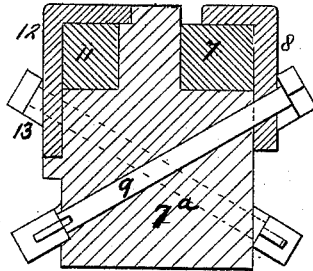


Fig. IV.

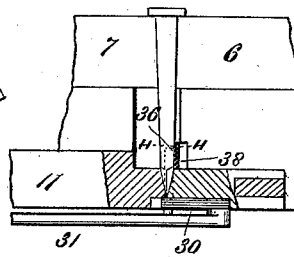


Fig. VIII.

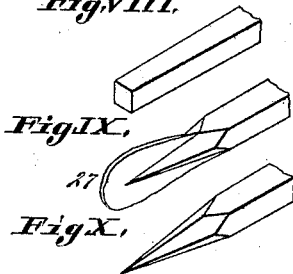
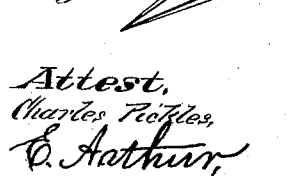


Fig. IX.



Fig. X.



Attest,
Charles Pfeiffer,
C. Arthur,

Fig. V.

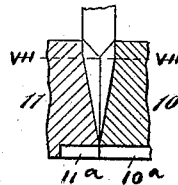


Fig. XI.



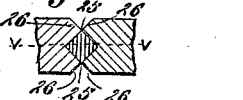
Fig. XII.



Fig. VI.



Fig. VII.



Inventor,
Benhard Yoch
By Knight & Brown
Attys

UNITED STATES PATENT OFFICE.

BENHARD YOCH, OF BELLEVILLE, ILLINOIS.

NAIL-MACHINE.

SPECIFICATION forming part of Letters Patent No. 423,017, dated March 11, 1890.

Application filed April 6, 1889. Serial No. 306,245. (No model.)

To all whom it may concern:

Be it known that I, BENHARD YOCH, of Belleville, in the county of St. Clair and State of Illinois, have invented a certain new and useful Improvement in Nail-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

10 Figure I is a vertical section illustrative of my invention. Fig. II is a detail section showing the spring for dislodging the nails after they are pointed, this section being taken on line II II, Fig. IV. Fig. III is a section
15 taken on line III III, Fig. I. Fig. IV is a section taken on line IV IV, Fig. I. Fig. V is a section taken on line V V, Fig. VII, and illustrates the dies for forming the points. Fig. VI is an end view of one of the dies. Fig. VII
20 is a section taken on line VII VII, Fig. V. Fig. VIII is a view of the small end of a nail before being pointed. Fig. IX is a view of this end of the nail after it is pointed, showing the fin produced by the act of pointing
25 still in place on the nail. Fig. X is a view of this end of the nail showing the point completed. Fig. XI represents this end of the nail having a conical or round point. Fig. XII represents this end of the nail having a
30 four-sided point. Fig. XIII represents a modification.

My invention relates to a machine for pointing cut nails; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents the main bed-plate of the machine, in which is journaled a shaft 2, provided with cams for operating the various parts.

3 represents the movable and 4 the fixed knife for cutting the blanks from the sheet 5. To these parts my invention in no manner relates, and any well-known form of knives or cutters may be employed.

45 As the nails are cut off they are grasped, as shown in Fig. IV, between a fixed member 6 and a movable member 7 of the holder. The member 7 of the holder is secured by an angle-plate 8 and bolt 9 to a lever 7^a, pivoted at
50 7^c to the bed-plate 1. (See Fig. III.) At the proper time the member 7 of the holder is forced forward to grasp the nail, as shown in

Fig. IV, by means of a cam 7^b on the shaft 2, which comes against the lever 7^a, which I have not fully shown, and which I will not
55 describe, for the reason that they form no part of my invention, and any well-known device to accomplish this purpose may be used.

While the nail is retained by the holder it is pointed by means of dies 10 and 11. The
60 die 11 is held to the lever 7^a, so as to permit it to slide by means of an angle-plate 12 and a bolt 13, (see Fig. III,) and it is operated by means of a link or bar 14, held to the bed-
65 plate 1 by suitable slides 15, and to which the die is connected at 16. The outer end of the bar 14 is provided with a friction-roller 17, against which bears a cam 18 on the shaft 2.
(See dotted lines, Fig. I.) Thus at the proper
70 time, which is after the nail has been gripped between the members 6 and 7, the die 11 is forced forward by the cam 18, to pinch or press the end of the nail between it and the
die 10 to make the point.

To avoid danger of bending the nails, I prefer
75 to make the die 10 also movable, so that it will approach the die 11, as well as the latter approaching it. To accomplish this, I arrange the die 10 in a bearing which will permit it to slide endwise, and connect it to the
80 lower end of a lever 19, which is pivoted at 20 to an ear or extension 21 on the bed-plate 1, and to the upper end of which is connected, at 22, the outer end of a pitman or link 23,
85 the inner end of which is made fast at 24 to the bar 14. Thus when the bar 14 is operated to move the die 11 this motion is imparted to the die 10, and the two dies are thus made to approach each other. I do not, however, wish
90 to confine myself to making the die 10 movable, as it may be made stationary in the bed-plate 1, as shown in the modification, Fig. XIII.

The adjacent ends or faces of the dies are
95 grooved out to form desired shape points on the nails. (See Figs. V, VI, and VII, where each is shown as having a V-groove running to a point.) From the outer edges 25 of these grooves the dies are beveled off, as shown at
100 26, to form sharp cutting-edges for the purpose of severing the fins 27 from the nail. (See Fig. IX.) These fins are formed by the dies, and it is of course necessary that they should be removed, and for the purpose of

forming cutting-edges 25, that will thus remove them, I bevel off the dies, as shown at 26.

Instead of forming the grooves in the faces of the dies of the shape shown in Figs. V to VII, inclusive, they may be formed in other shapes to produce any desired shape of point on the nail—th t is, instead of forming a point like that shown in Fig. X, they may be formed to produce such a point as is shown in Fig. XI, or such a point as is shown in Fig. XII. The dies are provided with projections 11^a and 10^a, respectively, which come together just as the cutting-edges 25 meet for the purpose of protecting the cutting-edges.

In case it should happen that the dies would not entirely sever the fins from the nails, (as, for instance, they might at times become dull,) I employ a mechanism to accomplish this purpose consisting of a sliding block or piece 30, which is fitted in the die 10, and which is connected by a rod 31 to the upper end of a spring-arm 32, connected at 33 to the plate 1. In its normal position the block 30 is held back from the face of the die 10 by means of a cam 34 on the shaft 2, which bears against the spring-arm 32. The cam 34 is provided with an offset 35, and when this offset reaches the arm 32 the latter springs back and draws the block 30 forward, which is so located as to strike the fin 27 and break it from the nail if it has not been entirely severed by the dies. Then the cam 34, continuing to rotate, moves the block 30 back again on the die 10. Of course the parts are so disposed that the block 30 will be drawn forward just as the dies have completed their action on the nail and have started to recede.

In case the nails should have a tendency to stick and not drop freely and quickly from the holder after they are pointed, I secure a spring 36 to the bed-plate 1 at 37, (see Figs. I, II, and IV,) which, just as the dies and the holder recede, is released and springs forward, dislodging the nail. It is shown in its forward position in Figs. II and IV. In its normal position it is held back in a recess or groove 38 in the bed-plate 1 by means of a pin or projection 39 on the rod 31. This pin or projection 39 being on the rod 31, it will be understood that the spring will be released at the same time the block 30 moves forward, so that the blow of the block against the fin and the dislodgment of the nail will be substantially simultaneous.

For the purpose of causing the dies to recede after they have been forced forward by the cam, as described, I employ a spring 40, which is connected at one end to any suitable support and at the other end, at 41, to the link or pitman 23. The tendency of this spring is to pull the die 11 and bar 14 backward toward the cam and to move the die 10 in the other direction. I prefer to make the spring adjustable for the purpose of regulat-

ing its tension, and this may be accomplished by passing the bolt 42, that connects the spring to the link 23, through a slot on the link, the slot being shown by dotted lines in Fig. I.

I claim as my invention—

1. In a machine for pointing cut nails, the combination of a suitable bed-plate, two movable dies, a bar to which one of the dies is secured, a cam for moving the bar, a pivoted lever to which the other die is secured, and a link connecting said lever to said bar, whereby both of the dies are caused to approach each other by the cam acting on said bar, substantially as and for the purpose set forth.

2. In a machine for pointing cut nails, the combination of a suitable bed-plate, a die, a sliding bar to which the die is secured, a cam for operating the die, a second movable die, a pivoted lever to which the last-mentioned die is secured, a link connecting said lever to said bar, and a spring having adjustable connection with said link, substantially as and for the purpose set forth.

3. In a machine for pointing cut nails, the combination of a suitable bed-plate, the opposing dies, and mechanism for operating one or both of said dies, said dies having cutting-edges 25, formed by grooves, to produce the point, and bevels 26, substantially as and for the purpose set forth.

4. In a machine for pointing cut nails, the combination of a suitable bed-plate, dies, mechanism for moving one or both of said dies to form the point, and a striker to remove the fin from the nail which is formed by the dies, substantially as and for the purpose set forth.

5. In a machine for pointing cut nails, the combination of a suitable bed-plate, dies, mechanism for moving one or both of said dies, a sliding block for removing the fins formed by the dies, and mechanism for operating said block, consisting of a spring-arm, cam, and a rod connecting the arm to the block, substantially as set forth.

6. In a machine for pointing cut nails, the combination of a suitable bed-plate, dies, mechanism for operating one or both of the dies, a sliding block held in one of the dies, and mechanism for operating the block, substantially as and for the purpose set forth.

7. In a machine for pointing cut nails, the combination of a suitable bed-plate, dies, mechanism for operating one or both of the dies, a spring 36, an arm, a cam for operating the arm, and a rod connected to the bar and provided with a pin or projection bearing against said spring, substantially as and for the purpose set forth.

BENHARD YOCH.

In presence of—

GEO. H. KNIGHT,
EDW. S. KNIGHT.