

L. H. Wood

Cutting Leather

N^o 48,474

Patented June 27, 1865.

Fig. 1.

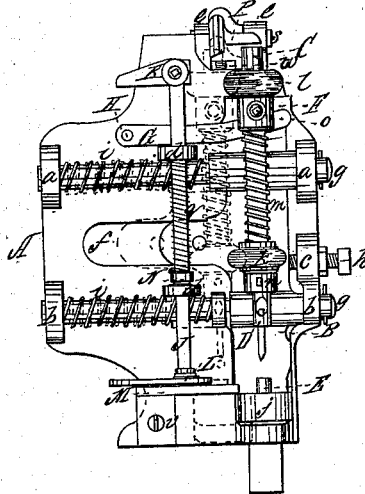
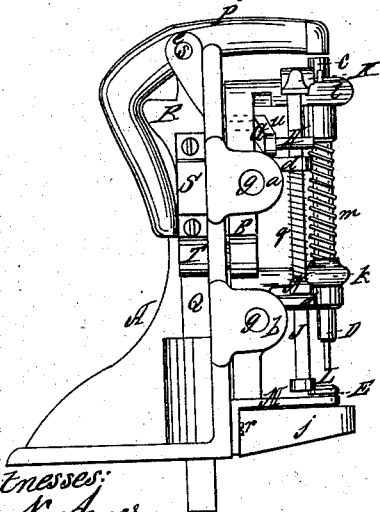
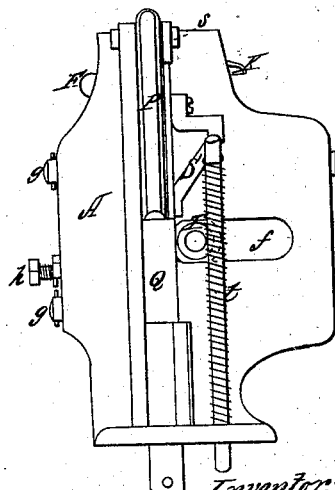


Fig. 2.



Witnesses:
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Fig. 3.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR PUNCHING LEATHER.

Specification forming part of Letters Patent No. 48,474, dated June 27, 1865.

To all whom it may concern:

Be it known that I, L. H. WOOD, of Marlborough, in the county of Middlesex and State of Massachusetts, have invented a new and useful Self-Feeding Punch; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front elevation; Fig. 2, a side elevation, and Fig. 3 a back elevation.

Like parts are indicated by the same letters in all the figures.

The nature of my invention consists, first, in feeding the work along by means of the punch itself, which has a lateral motion imparted to it for that purpose; second, in holding the work by means of a presser while the punch is moving from it; third, in rendering the punch adjustable, so as to punch holes at any required distance apart; and, fourth, in so arranging the presser in relation to the punch as to draw the work off of the latter in case it happens to stick upon it.

To enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

A is a stationary frame consisting of a single piece of cast-iron or other suitable material, the general shape of which is shown in the drawings. This frame is placed upon a bench or table of any required height, and attached thereto by means of screws.

a a and *b b* are ears or starts on the front side of the frame A, as shown in Figs. 1 and 2, through which are passed the round rods *g g*.

B is the punch-carrier, of cast-iron or other suitable material, sliding freely on the rods *g g*, being forced to the right, or to the position shown in Fig. 1, by means of the two spiral springs *i i*, and carried to the left, or to the position represented by the colored lines in Fig. 1, by the cam S on the vertical rod Q, said cam striking against the friction-roller T, which turns on a pin projecting from the back side of the punch-carrier through the slot *f* in the frame A.

C is a round shaft, which plays freely through the starts *k* and *l*. This shaft is thrown up by means of the spiral spring *m*, the upper end of

which bears against the thimble F, which is made fast to the shaft by means of the set-screw *o*.

D is the punch, of the usual construction, entering the lower end of the shaft C, and confined by means of the set-screw *n*.

E is the bed, of any suitable metal or material, on the upper side of the start *j* of the carrier B, on which bed the punching is done.

h is a set-screw passing through the start *c* and against the side of the punch-carrier B, by means of which the lateral motion of the latter may be regulated, so as to punch holes any required distance apart.

J is the presser-shaft, which plays freely through the starts *d d*, being forced down by the spiral spring *q*, the lower end of which rests upon the thimble N.

L is the flat presser-foot attached to the bottom of the shaft J.

M is the step or table, between which and the presser L the material to be punched is held while the punch is receding from it. This table M may be cast upon the face of the frame A, or attached thereto by means of screws, as shown in Figs. 1 and 2.

G is a vibrating lever, connected with the carrier B by means of the pivot *u*. (See Fig. 2.)

H and I are pins or starts projecting from the opposite ends of the lever G.

The thimble F, as shown in Fig. 1, is provided with an arm, the under side of which strikes upon the top of the pin I. The top of the presser-shaft J is also provided with an arm, K, directly over and at right angles with the pin H. Thus, when the punch-shaft C is depressed it is obvious that the presser L will be raised by means of the pin H striking against the under side of the arm K at the proper time, as hereinafter explained.

P is a crooked lever, the shape of which is clearly shown in the drawings, turning freely on the fulcrum-pin *s* between the ears *e e* on the top of the frame A, *v* being a spring, the tendency of which is to throw the front end of the lever up.

Q is a square or flat sided rod, which slides freely in a suitable bearing in the lower part of the frame A, as represented in Figs. 2 and 3.

This rod Q is thrown up by means of the spring *t*, or its equivalent, and brought down in the act of punching by means of a crank,

lever, or treadle connected with its lower end in any obvious manner.

The operation of the machine is as follows: The material to be punched being placed in the proper position under the punch D and presser L, the rod Q is forced downward, which causes the cam R to act upon the lever P, which, in turn, forces the punch down to the bed E and punches the hole. The cam R has now reached the straight part of the lower portion of the lever P, over which it may move without communicating any further motion to the same. The rod Q is now forced still farther down, when the cam S comes in contact with the friction-roller T, which moves the punch-carrier toward the presser L, which in the meantime is raised by the action of the lever G, so that the material to be punched is carried along by the punch and under said presser the distance required between the holes and until the top of the punch-shaft C has passed from under the end of the lever P, when the spring *m* instantly throws the punch upward and allows the presser L to be forced downward by the spring *g*. The presser now confines the material to be punched, and as the rod Q ascends and the cam S gets above the friction-roller T the springs *i i* will push the punch-carrier B, with its appendages, back

into the position shown in Fig. 1, (from the red lines to the black.) Thus the work will be fed along by the punch itself, and the punched holes will be made at equal distances apart, and by simply turning the set-screw *h* the distance between the holes can be varied at pleasure.

In punching holes in some kinds of work—as, for instance, in enameled leather—the punch is apt to stick in the holes and lift the material with it; but this is prevented in my machine by the presser L holding down the material till the punch is withdrawn therefrom.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Giving a simultaneous lateral motion to the punch-carrier B and bed E, substantially as set forth, and for the purpose described.
2. Holding the work by means of the presser L during the lateral translatory movement of the punch, substantially as described.
3. Rendering the punch adjustable, so as to punch holes any required distance apart, substantially as described.

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Witnesses:

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