

I. FRECHETTE-
Shank-Cutting Machines.

No. 155,937.

Patented Oct. 13, 1874.

Fig. 2.

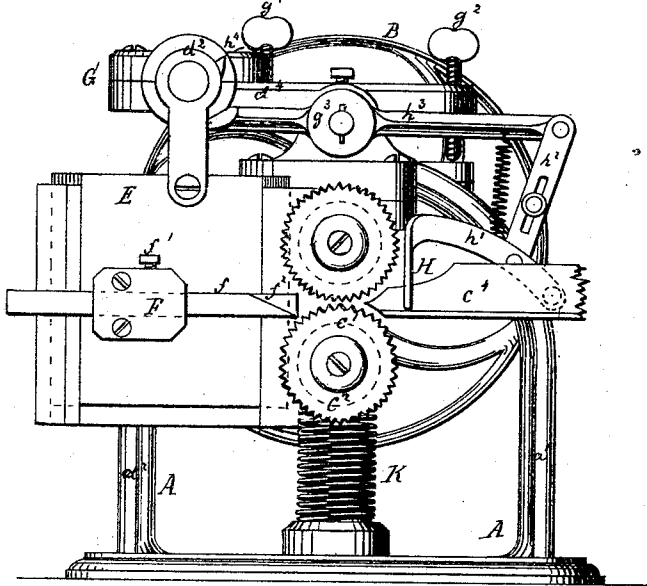


Fig 3.

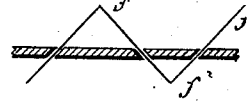


Fig5.

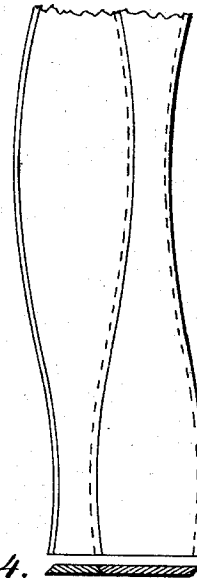


Fig 4.

Fig 6.

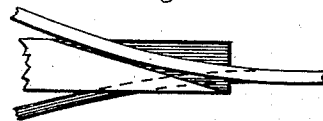
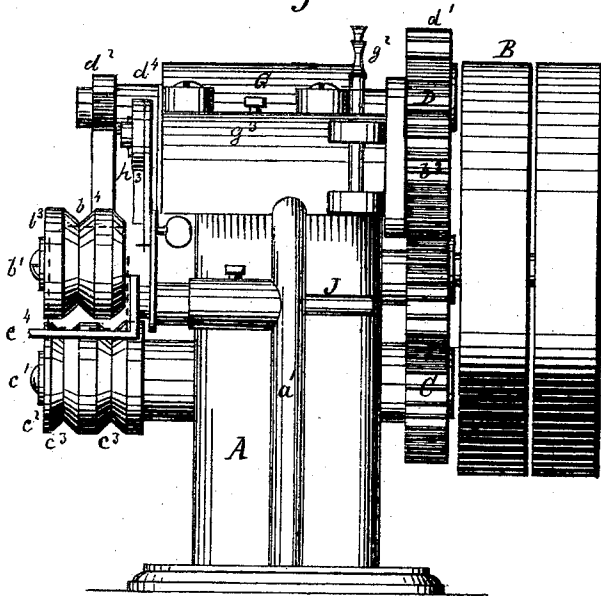


Fig 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

ISAÏE FRÉCHETTE, OF SAINT HYACINTHE, CANADA.

IMPROVEMENT IN SHANK-CUTTING MACHINES.

Specification forming part of Letters Patent No. **155,937**, dated October 13, 1874; application filed August 5, 1874.

To all whom it may concern:

Be it known that I, ISAÏE FRÉCHETTE, of Saint Hyacinthe, county of Saint Hyacinthe, Dominion of Canada, have invented a Shank-Cutting Machine, of which the following is a specification:

The nature of my invention consists in placing upon a sliding plate having a reciprocating rectilinear motion, a knife with a cutting-edge of zigzag form in front of the circumference of two feeding-rollers, so that a sheet of leather or other analogous substance, by being placed between said rollers, may be forced against the moving edge of the knife, will be cut into strips of varying breadth having inclined or beveled edges, and the proper shape usually given to boot or shoe shanks without any loss of material. It consists, also, in placing the whole of the moving parts belonging to the knife upon a tipping-frame, so as to easily adjust the knife's position with respect to the leather, and thus obtain shanks of the required breadth.

Figure 1 is a view of the left side of the machine. Fig. 2 is a front elevation. Fig. 3 shows, in full size, the edge of the knife. Fig. 4 is a section of the strips cut for shanks. Fig. 5 shows the waving lines of the cuts produced by the joint action of the moving knife and of the leather. Fig. 6 shows how the strips separate, and pass above and below the knife-blade.

A A, frame, bearing all the moving parts of the machine; $a^1 a^2$, flanges to strengthen the frame; B, pulleys to set the machine in motion. One is loose, and the other fixed upon the principal shaft, b^1 ; b^2 , toothed wheel fixed upon the principal shaft, b^1 ; b^3 , feed-roller with a corrugated periphery and grooves b^4 corresponding to the angles of the knife's edge; C, toothed wheel, receiving its motion from the wheel b^2 ; c^1 , shaft bearing on one end the toothed wheel C, and on the other the feed-roller c^2 , with corrugations and grooves c^3 for the same purpose as those on feed-roller b^3 ; c^4 , guiding-table, to support and guide the leather to be cut; D, toothed wheel, which receives its motion from wheel b^2 , and communicates it to another and smaller wheel, d^1 , attached to a shaft, the other end of which is turned eccentrically, so as to give a rectilinear motion to the connecting and oscillating arm d^2 , which is pivoted, by its oth-

er extremity, to the sliding plate E, which it moves up and down, and gives the knife attached to it a corresponding motion. The wheel D is turning on a fixed pin attached to a swinging arm (not shown in the drawing) carried by the tipping-frame, so as to allow said wheel to adapt itself to the other geared wheels when the tipping-frame is raised or lowered. d^4 , collar upon the shaft of the eccentric. It bears a projection mentioned hereafter. F, knife-bearer fixed to the sliding plate E. It is provided with a mortise, through which the knife passes, and is adjusted and firmly kept in position by one or more set-screws, f^1 . f , cutting-knife, whose edge forms a zigzag line with equal angles f^2 . (See Fig. 3.) G, tipping-frame for regulating the position of the knife, and thus obtaining, at will, broader or narrower strips. It is brought and kept in any position by thumb-screws $g^1 g^2$ and hinges on the shaft g^3 . H, starting-gate. It is a plate, which rises at the moment the eccentric brings the connecting-arm to its lowest point. Dotted lines show it raised. It is attached to the end of the lever of the third kind, h^1 , which is raised by the connecting-rod h^2 suspended to the exterior arm of the lever of the first kind, h^3 , which is raised when the projection h^4 presses, in its rotation, upon its other end. This gate falls by its own weight; or, better, by the action of a spring attached for that purpose to any suitable place. The connecting-rod h^2 is made of two parts, kept together by a thumb-screw, so as to be adjustable in its length when the position of the tipping-frame is altered. J, rod bearing the guiding-table c^4 ; K, spring to allow the feed-roller c^2 to adjust itself to the inequalities in the thickness of the leather passing between it and the feed-roller b^3 .

The machine being constructed substantially as just described, its operation is as follows: The pulley B being set in motion, the feed-rollers b^3 and c^2 revolve in the direction of the arrows. A plate or band of leather is then placed upon the guiding-table, and pressed against the rollers, which seize it by means of their corrugations, and push it steadily against the edge of the knife f^2 , which will cut as many strips as there are spaces between the oblique lines of the blade. One strip passes above,

and the next under, the knife, &c., alternately, as seen in Fig. 6.

If the middle of the thickness of the knife were exactly opposite the space between the feed-rollers, and if the knife were kept stationary, the strips of leather would all be straight and of the same breadth. But, as the knife moves up and down while the leather advances, the strips of leather are alternately broad and narrow, and may afterward be cut of the required lengths, each broad at both ends and narrow in the middle, with beveled edges, such as shoemakers require them, no paring by hand being necessary, and no material being lost.

Parts of shank-strips may be seen in plan in Fig. 4, and in sections in Fig. 5.

When the operator wants to introduce a new length of leather, he waits until the starting-gate rises. He then pushes the leather suddenly. This secures the beginning of a series of strips in their broadest part, and thus a number of pieces which, if irregular, would have to be cut off and lost.

I do not claim the feed-rollers c^2 , nor the cutter f , when the latter is stationary; but

What I claim as my invention is—

1. The horizontal cutter f , reciprocating vertically with a rectilinear motion while in the act of cutting at right angles to its cutting direction, substantially as and for the purpose hereinbefore set forth.

2. The reciprocating cutter f , adapted to receive vertical rectilinear motion, in combination with the stationary feed-rolls c^2 and b^3 , constructed and operating substantially as and for the purpose hereinbefore set forth.

3. The cutter f , in combination with the feed-rollers c^2 and b^3 , and the starting-trap H , operating and constructed substantially as and for the purpose hereinbefore set forth.

4. The regulating-swing G , in combination with the cutter f , for adjusting the latter's position with relation to the feed-rollers c^2 and b^3 , constructed and operating substantially as and for the purpose hereinbefore set forth.

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Witnesses:

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