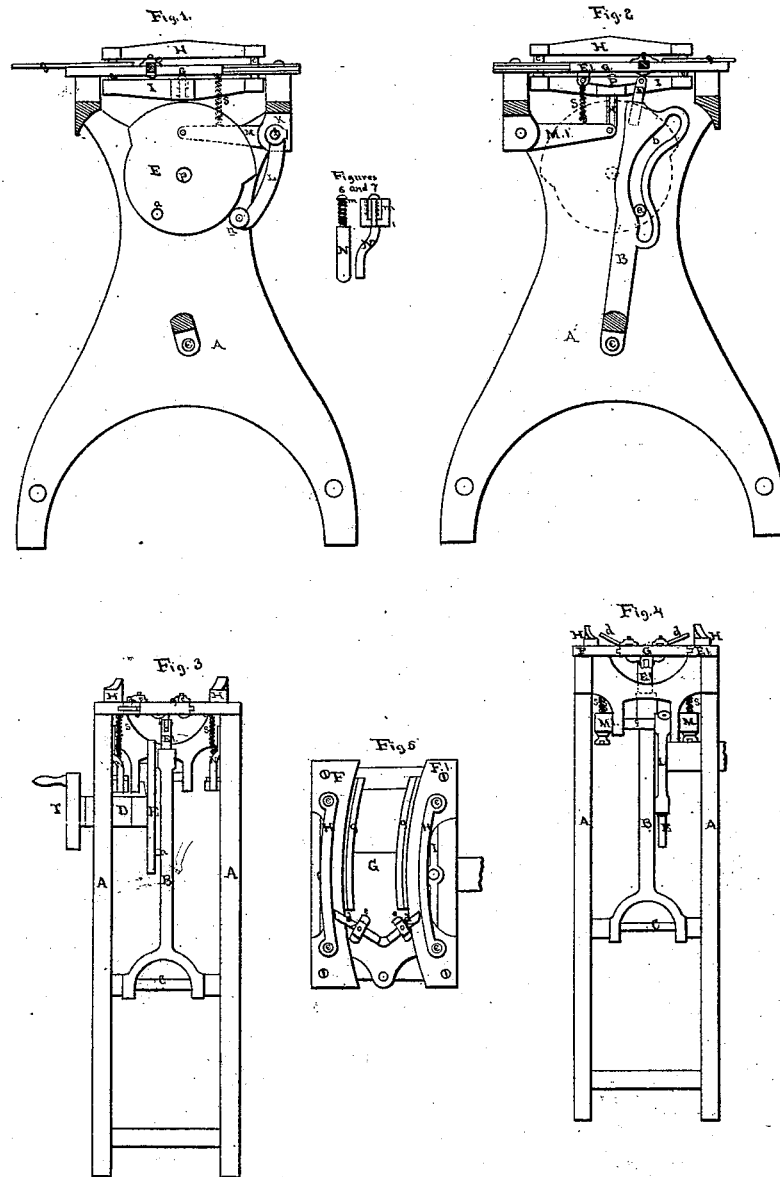


J. P. CROOKS.

Machine for Skiving Leather.

No. 108,687.

Patented Oct. 25, 1870.



Witnesses.
J. R. Richards.
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JOHN P. CROOKS, OF HOPKINTON, ASSIGNOR TO GEORGE E. FRANKLIN, OF NATICK,
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Letters Patent No. 108,687, dated October 25, 1870.

IMPROVEMENT IN MACHINES FOR SKIVING LEATHER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN P. CROOKS, of Hopkinton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Skiving Leather, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figures 1 and 2 represent opposite sectional elevations on the same central line;

Figures 3 and 4 are opposite sides; and

Figure 5, a top view.

Figures 6 and 7 show different elevations of detached lever connections, and the mode or means of connecting them with the lower cross-heads so as to give them a yielding action independent of each other, or so as to allow an independent yielding action of each of the lever connections.

This invention relates to machines which are used for skiving the curved edges of boot-counters or stiffenings for boots and shoes, and has for its object to simplify the process and the machinery, and to cheapen the production, each curved edge of the boot-counter or stiffening being suitably skived by a single stroke of a knife carried by the curved knife-carriage.

In the drawing—

A A are two ends which form the frame-work between which I arrange a driving-lever, B, pivoted at its lower end to a shaft, C, on which it swings; above this is a second shaft, passing through a hub, D, and on the inner end of this shaft is a cam, E.

This cam is provided with a pin or roller-stud, *a*, which operates in a groove, *b*, formed in the driving-lever.

On the top of the ends A A are curved guides F and F', and between these guides I arrange a curved knife-carriage, G, furnished with knives or cutters *d*, set at an angle and secured by clamps *e*, and clamping-screws to hold the cutters in position, all as clearly shown in figs. 4 and 5.

Curved gauge-bars *g* are secured to the top of the knife-carriage, projecting beyond one end of the latter and forward of the knives.

Above the curved guides F are curved clamps H, and beneath the guides are cross-heads I, connected with the clamps by rods or guides *c*, and both are movable vertically.

Above the cam-shaft, and at one side of the machine, a lever-shaft, *f*, is arranged in suitable bearings *k*, and on this shaft I arrange three levers, L, M, and M', the former to be actuated by the cam E, and the two latter, for operating the cross-heads to draw down the clamps, by means of curved connections N, each attached to the end of a lever, M, and to the center of each cross-head where the upper end of each connection works in a socket, and is surrounded

by a spiral spring, *m*, which provides for a yielding action, as before described.

The forked lower end of the lever L contains a wheel or roller, *n*, to give it an easier action on the rise of the cam.

A swivel-stud, E', depends from the lower side of the curved knife-carriage, and a similar stud rises from the top end of the driving-lever, and between these two studs is a connecting-rod, P, pivoted to each of the latter.

Springs S are arranged between the levers M and the lower side of each curved guide F, to keep the former elevated and the clamps above the guides, while the roller *n* works on the smaller diameter of the cams E; when the larger diameter of the cam reaches said roller the clamps are drawn downward to bind the leather inserted beneath them.

The revolving cam, and its roller-stud *a*, imparts motion to the driving-lever B, and this imparts reciprocating motion to the knife-carriage; the clamps H rising at each backward motion of the latter, are drawn downward upon the curved-edged counter or stiffening placed beneath either of them, and their edges against the curved gauge-bars *g*, when, by the forward-motion of the carriage, the knives or cutters remove a portion of the edge of the leather, or skive it at a single stroke, and in a superior manner.

The forward motion of the carriage and cutters is performed while the larger part of the cam passes the roller *n*, and the backward motion is performed while the smaller portion of the cam passes the said roller; and, when the latter motion is being performed, or at the end of the stroke, the leather is inserted beneath either clamp, and, being skived by the forward motion and by the cutters, is removed when the carriage recedes and other pieces inserted before the carriage advances, each piece being quickly inserted and withdrawn as the rapidly-moving carriage and cutters as rapidly perform their work; each part performing its intended function, and all the parts operating in harmony together.

A wheel or pulley, F, on the outer end of the cam-shaft *p*, furnishes means for operating the machine.

At each backward and forward motion of the knife-carriage the swivel-studs E' move or turn slightly in their respective sockets, and this allows a curvilinear reciprocating motion of the carriage between the curved guides F, and as the curved edges of boot-counters or stiffenings are generally the same or on the same curve regardless of the size, the curved knife-carriage properly constructed, and carrying its cutters on a curved line, as described, is adapted for skiving boot-counters or stiffenings of any standard size, and the yielding action of the lever connections N, caused by the spiral springs *m*, operating in the sockets of the cross-heads I, provides for inequalities

in the thickness of the boot-counters inserted beneath the clamps H, and forward of the cutters, or for holding or clamping thick or thin counters, when the clamps are drawn downward by the action of the levers and the operating cam.

I claim as my invention—

1. The curved knife-carriage G, provided with knives or cutters *d*, and curved gauge-bars *g*, and having a rectilinear reciprocating motion between curved guides F, as described, and operated by a cam, E, a driving-lever, B, and a connecting-rod, P, pivoted to swivel-studs E', substantially in the manner and for the purpose set forth.

2. In combination with the curved knife-carriage operating as described, the curved clamps H, and cross-heads I, and yielding lever-connections, as set forth, and operated by a cam, E, and levers L and M, substantially in the manner and for the purpose specified.

3. The lever connections N, constructed as described, and combined with the cross-heads by yielding socketed springs *m*, in the manner and for the purpose set forth.

4. The cam E, constructed as described, and pro-

vided with a pin or stud *a*, whereby it is adapted for operating the driving-lever B, and the roller-lever L, and their specified connections, substantially as described, and for the purpose specified.

5. The driving-lever B, constructed as described, with a roller-groove, *b*, and provided with a swivel-stud, E', and connected with the ends A by a shaft, O, and with the curved knife-carriage, and operated by the cam E, in the manner and for the purpose specified.

6. The combination, substantially as described, of two branches or sets of operating elements, one branch consisting of the cam E, lever B, swivel-studs E', connection P, and curved knife-carriage G, provided with cutters and guides; the other branch or set of elements consisting of the cam E, roller-lever L, levers M, connections N, cross-heads I, curved clamps H, and connections *c*, all arranged to effect the objects herein set forth.

JOHN P. CROOKS.

Witnesses:

STEPHEN F. GATES,
JOHN E. CRANE.