

(No Model.)

2 Sheets—Sheet 1.

E. M. WHITE & J. M. SPROW, Jr.
SHOE CHANNELING MACHINE.

No. 577,814.

Patented Feb. 23, 1897.

FIG. 1.

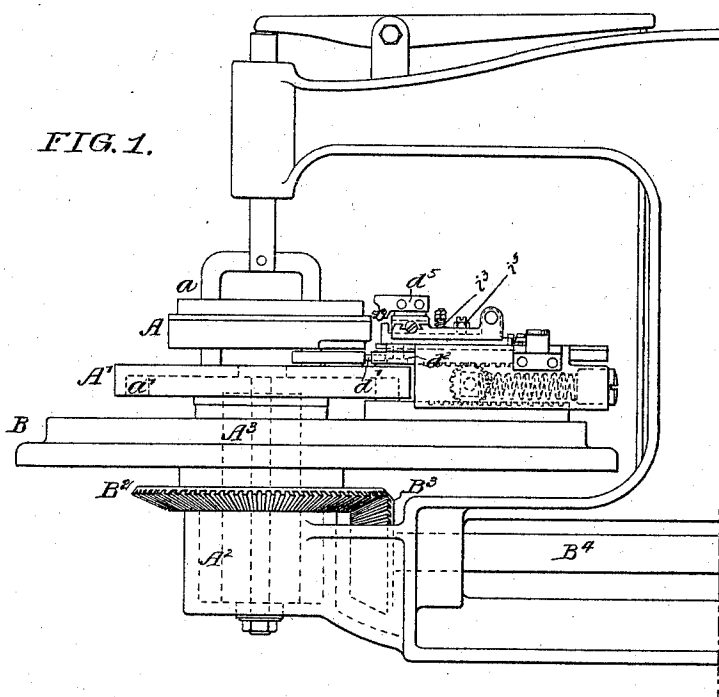


FIG. 2.

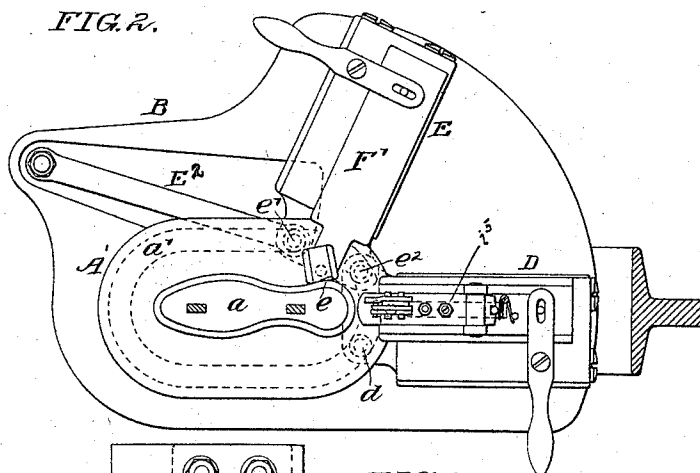
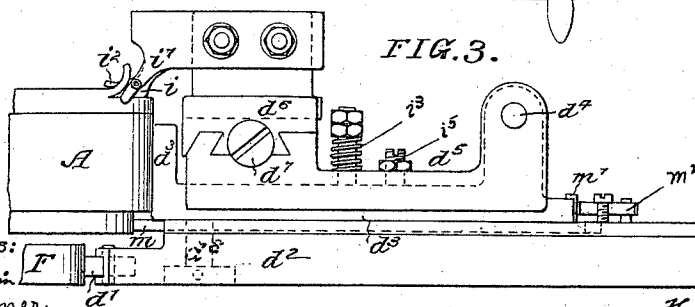


FIG. 3.



Witnesses:

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J. C. Renner

Inventors:
Ernest M. White
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Jacob M. Sprow, Jr.
by their Attorneys

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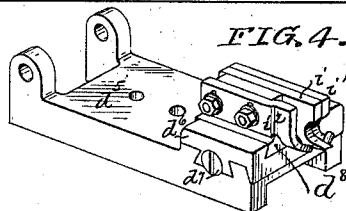
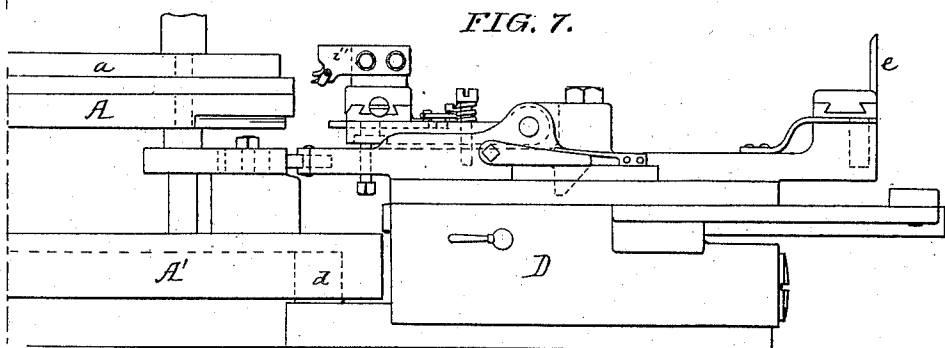
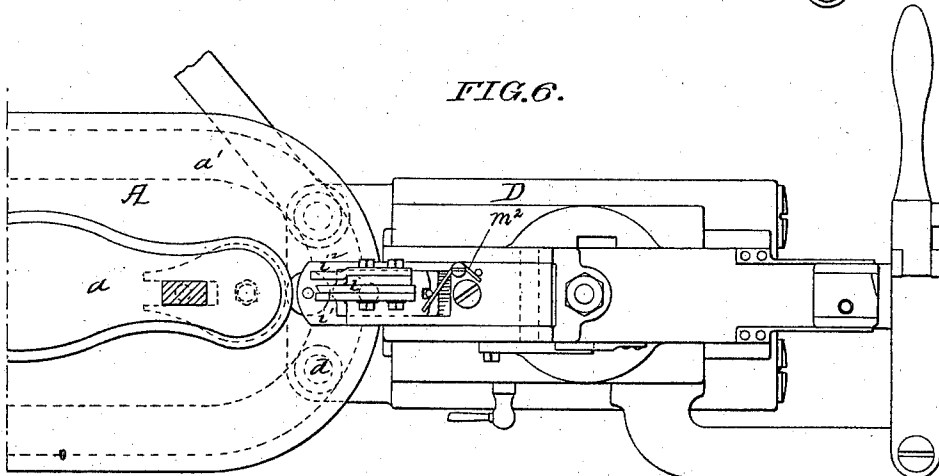
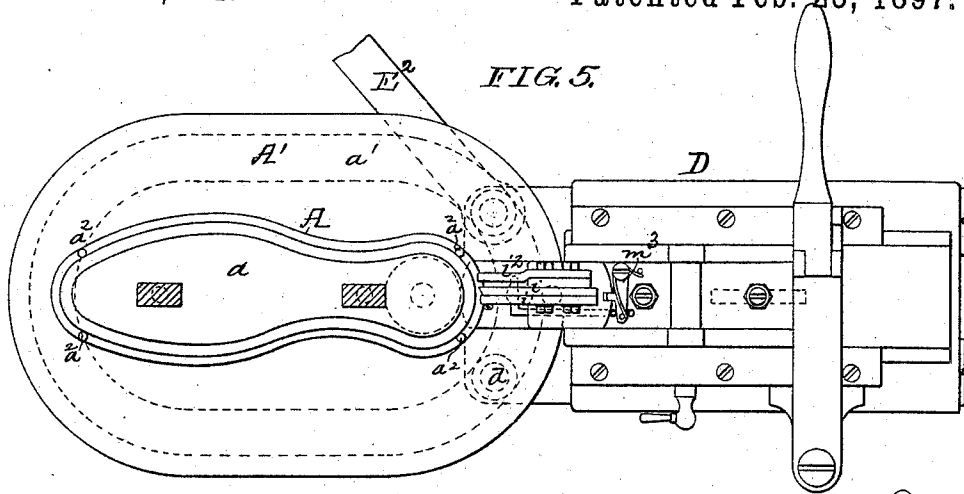
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2 Sheets—Sheet 2.

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G. D. Goodwin
F. L. Renner

Inventors:
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UNITED STATES PATENT OFFICE.

ERNEST M. WHITE, OF PHILADELPHIA, PENNSYLVANIA, AND JACOB M. SPROW, JR., OF CAMDEN, NEW JERSEY; SAID SPROW, JR., ASSIGNOR TO CLARENCE B. WHITE, OF PHILADELPHIA, PENNSYLVANIA.

SHOE-CHANNELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 577,814, dated February 23, 1897.

Application filed August 29, 1895. Renewed September 19, 1896. Serial No. 606,447. (No model.)

To all whom it may concern:

Be it known that we, ERNEST M. WHITE, of Philadelphia, Pennsylvania, and JACOB M. SPROW, Jr., of Camden, New Jersey, citizens of the United States, have invented certain Improvements in Shoe-Channeling Machines, of which the following is a specification.

Our invention relates to certain improvements in machines for channeling the soles of boots and shoes; and the main object of our invention is to so construct the machine that the sole will be clamped in a stationary position and the channeling-tool will be traversed around the sole, as fully described hereinafter.

A further object of the invention is to combine the machine with a sole rounding or cutting machine so that the sole can be cut to shape and channeled and grooved in one operation.

These objects we attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1 is a view of sufficient of a machine to illustrate our invention. Fig. 2 is a plan view showing the channeler combined with a sole rounding or cutting machine. Fig. 3 is an enlarged view showing the channeler in action. Fig. 4 is a perspective view of the head with the cutting-knives. Fig. 5 is a plan view illustrating a machine to be used only as a channeler and groover. Fig. 6 is a view illustrating a machine in which the channeling and grooving knives are mounted at one end of the turret and the sole-rounding knife mounted on the opposite end. Fig. 7 is a side view of Fig. 6.

While the sole rounding or cutting machine illustrated is of the ordinary construction, the present machine is made in accordance with the patent granted on the 16th day of October, 1894, and numbered 527,676. In this machine the leather to be cut is preferably a square blank, which is held rigidly onto the former-plate A by the clamp-plate *a*.

A' is a fixed cam-plate having a cam-groove *a'* cut in its under side, as shown by dotted lines in Fig. 2. This cam-plate, as well as the

former A, is mounted rigidly on a bracket A², projecting from the standard of the machine. 50

Directly under the fixed cam A' is a revolving table B, adapted to the standard A³, carrying the cam A', and this table is carried by a bevel-wheel B², driven by a pinion B³ on the driving-shaft B⁴, as clearly shown in Fig. 1, 55 so that the table B will rotate around the standard A³.

Carried by the plate, as shown in Figs. 1 and 2, are two carriages D and E. The carriage E carries the sole-rounding mechanism, 60 of the ordinary construction, and has a cutting-knife *e* clamped to the slide F', and this cutting-knife is arranged to cut the sole-leather outlined by the former A as the slide bears against the former. The carrier E has 65 rollers *e'* and *e''*, adapted to the cam-groove *a'* on the underside of the cam-plate A. The carrier E is connected to the rotating table B by a rod E². This connecting-rod is attached to a pin directly under the antifriction-roller *e'*, 70 and by this means the carrier E will travel around the former and cut the blank and will slide upon the table to a limited extent, as indicated by the cam-plate, so that the cutter will conform readily to the shape of the former A. 75

The carrier D, having the channeling and grooving knives, is connected to the carrier E, in the present instance by a pin, preferably in line with a roller *e''*, and the carrier D has 80 a roller *d*, adapted to a groove in the cam-plate, so that the carrier D will conform to the outline of the former A, at the same time being conveyed around the former by the table B' through the carrier E. Thus by providing suitable knives for channeling and 85 grooving the sole, as shown in Fig. 3, the sole can be channeled and grooved while clamped in the sole-rounding machine, thus dispensing with independent channelers. Furthermore, the channel will be properly made owing to the fact that the same dies or formers which guide the cutters of the sole-rounding mechanism guide the channeler as well, thus insuring accuracy. As the heel portion of 95 the sole is not channeled, we provide mech-

anism for moving the channeler away from the sole as it passes around the heel.

Mounted directly below the heel portion of the former A is a cam F. This cam is adjustably secured to the fixed portion of the machine, so that it can be regulated to accommodate different-sized formers.

Resting against the cam F is a roller d' , carried by a slide d^2 , connected to the slide d^3 of the carriage D. As the channeling-knife is mounted on this carriage, the knife will be moved away from the heel portion of the sole as soon as the roller comes in contact with the cam F. As soon as the carriage passes around the heel the channeling-tool will be again thrown into action by the springs within the carriage D. The slide d^3 rests against the former A, and to this slide is pivoted at d^4 the head d^5 . Carried by the head d^5 is a cross-slide d^6 , adjusted laterally by a feed-screw d^7 , and on this slide is a tool-carrier d^8 , longitudinally adjustable and carrying the channeling-knife i , grooving-knife i' , and presser-foot i^2 . The presser-foot rests upon the upper surface of the sole and is held down by the spring i^3 , mounted between the head d^5 and a nut on a stem i^4 , projecting from the slide d^3 . A set-screw i^5 is used to regulate the head in respect to the slide d^3 . Thus it will be seen that the head, with the tools, is free to move on the pivot d^4 , as the head does not rest against the former A, the slide d^3 , carrying the head, taking all the pressure, and the tools can be adjusted in any position in respect to the former.

Carried by the slide d^2 is a bolt m , having a pin m' , which, when the tool is passing around the heel, engages with the slide d^3 and prevents it turning laterally on its pivot d^9 . A spring m^2 forces the pin into engagement with the slide. When the carriage D is passing around the sole, the bolt m is pushed back by the former A, releasing the slide d^3 , which moves on the pivot d^9 to accommodate itself to the former and sole.

In Fig. 5 we have shown a latch m^3 , acted upon by the bolt, the latch in this instance engaging with the pivoted head, and in this figure we have shown a channeling-machine without the rounder. In this case the sole-blank, which has been previously cut out on a rounding-machine, is clamped on the former, and pins a^2 on the former hold the sole in proper position. The pins, however, do not project to such an extent as to interfere with the channeler.

In Figs. 6 and 7 we have shown a turret mounted on the slide, so that the machine can be used as a combined rounding-machine and channeler. In this instance, the rounding-knife is mounted at one end of the turret and the channeler and groover on the opposite end, so that the leather blank is clamped in position. The turret is turned so that the rounding-knives will cut the blank to shape, after which the turret is turned so as to place the

channeling and grooving knives in position, after which the machine is again set in motion, and as the carriage passes around the sole the channeling and grooving knives will be thrown into action and channel the sole.

Various modifications of the channeling and grooving knives may be used, and slides of different designs may also be used without departing from our invention.

We claim as our invention—

1. The combination of a former, a clamp for the sole, a cam-plate, a carriage engaging with said cam-plate, a slide on the carriage movable toward and from the former, a channeling-knife on said carriage and a cam so situated under the heel portion of the former that as the carriage passes around the heel the slide will be moved laterally away from the sole, substantially as described.

2. The combination of the clamp for the sole, a sole-blank, a former, a fixed cam, two carriages adapted to travel around the former in engagement with the fixed cam, a rounding-knife on one carriage, a channeling-knife on the other carriage, the carriage having the channeling-knife adapted to follow the carriage having the rounding-knife, a cam acting to withdraw the channeling-knife from the sole as it passes around the heel portion thereof without acting upon the rounding-knife, substantially as described.

3. The combination of the fixed clamp-plates for the sole, a fixed cam, a carriage controlled by the cam and adapted to travel around the clamp, a slide, a movable head on said slide carrying the channeling-knife, with a lock acting to lock the head of the slide prior to the withdrawal of the channeling-knife from the heel portion of the sole, substantially as described.

4. The combination of the fixed clamps for the sole-blank, a fixed cam, the lower clamp acting as a former for the channeler, a carriage, a slide on said carriage, a movable head on the slide, said head carrying the channeling and grooving knife, a lock for locking the head to the slide during a portion of the revolution of the carriage around the clamp, the lower clamp being cut away at the heel portion so as to allow the locking-bolt to act and thus lock the head to the slide, substantially as described.

5. The combination in a channeling-machine, of the fixed former upon which the sole is clamped, a fixed cam-plate, a carriage adapted to travel around the former and controlled by the cam-plate, a slide pivoted to the carriage so as to swing laterally, said slide resting against the former, a head so pivoted to said slide that it can be adjusted vertically, a channeling-tool and presser-foot carried by said head, substantially as described.

6. The combination in a channeling-machine of the fixed former upon which the sole is clamped, a fixed cam-plate, a carriage adapted to travel around the former and con-

trolled by the cam-plate, a slide pivoted to the carriage and resting against the former, a head pivoted to the said slide so as to be adjusted vertically, a laterally-adjustable
5 slide carried by said head and a longitudinally-adjustable tool-carrier mounted on the slide and tools carried thereby, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of 10 two subscribing witnesses.

ERNEST M. WHITE.

JACOB M. SPROW, JR.

Witnesses:

WILL. A. BARR,

JOS. H. KLEIN.