

(No Model.)

2 Sheets—Sheet 1.

E. M. WHITE.

SHOE CHANNELING AND GROOVING MACHINE.

No. 577,498.

Patented Feb. 23, 1897.

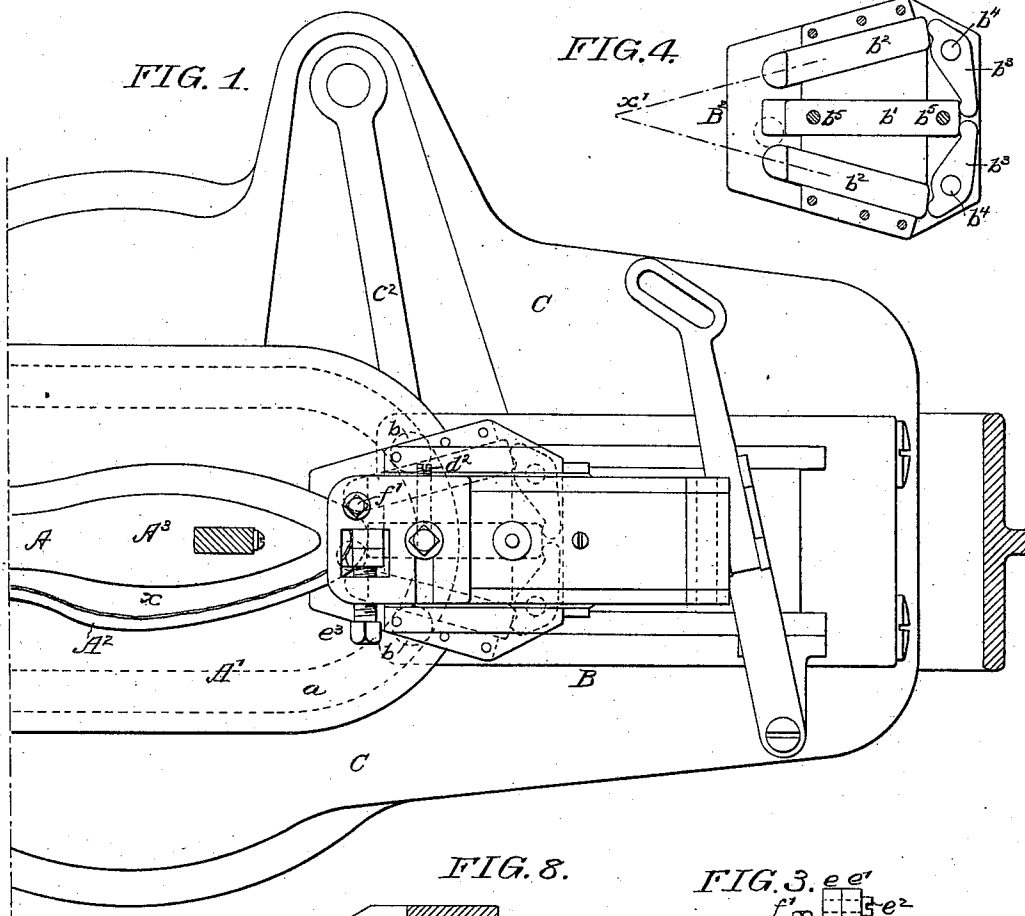


FIG. 8.

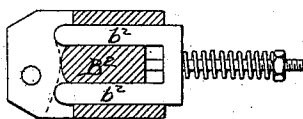


FIG. 3. $e e'$

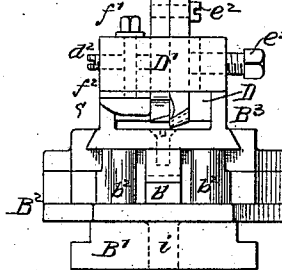
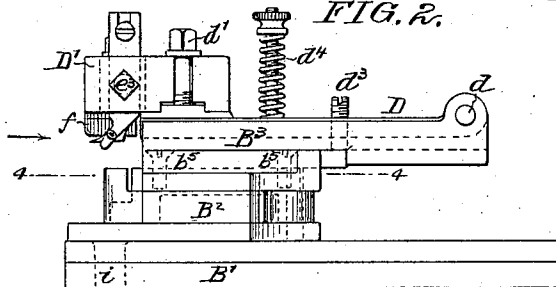


FIG. 2.



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Inventor:
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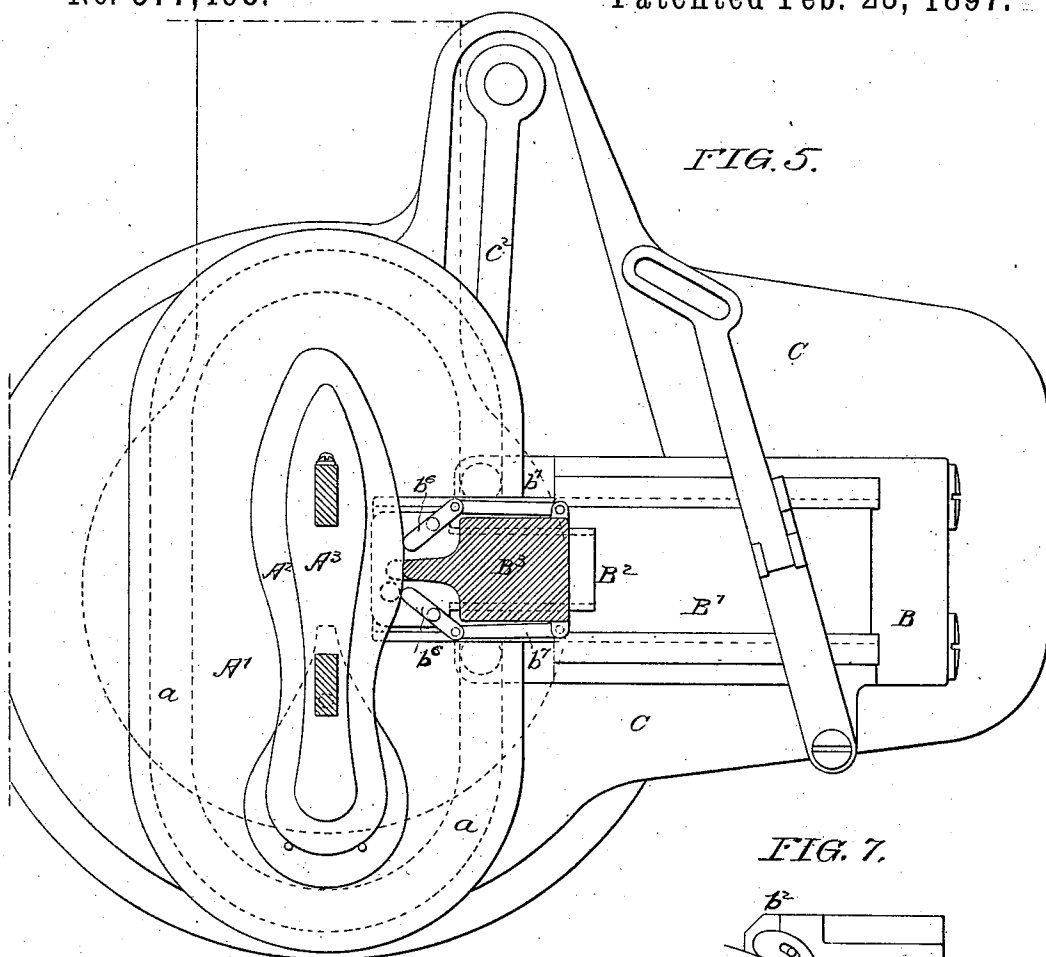


FIG. 5.

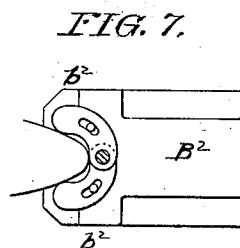


FIG. 7.

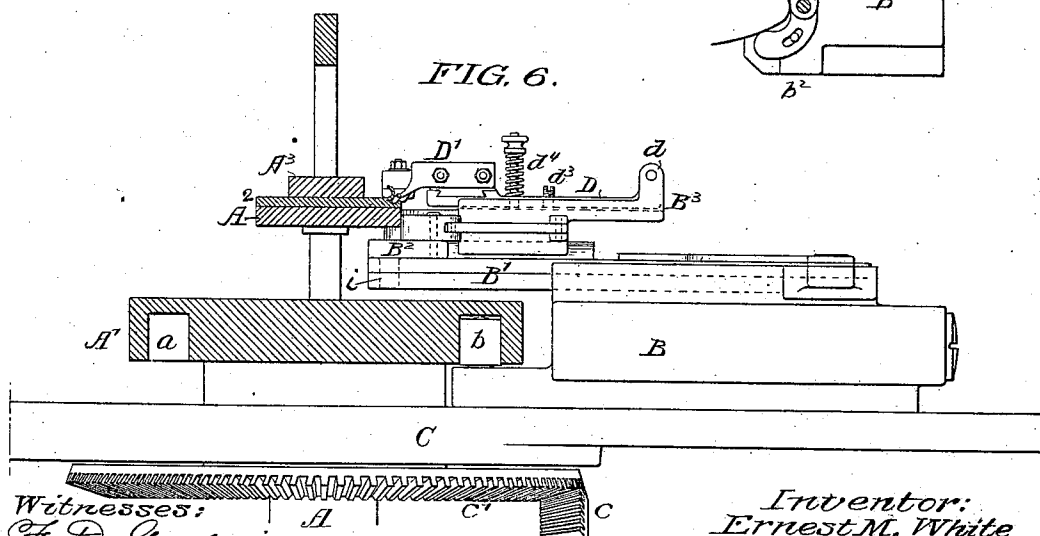


FIG. 6.

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UNITED STATES PATENT OFFICE.

ERNEST M. WHITE, OF PHILADELPHIA, PENNSYLVANIA.

SHOE CHANNELING AND GROOVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 577,498, dated February 23, 1897.

Application filed December 9, 1895. Renewed July 20, 1896. Serial No. 599,911. (No model.)

To all whom it may concern:

Be it known that I, ERNEST M. WHITE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Shoe Channeling and Grooving Machines, of which the following is a specification.

The object of my invention is to construct a channeling-machine in such a manner that the channel and groove cut in the sole will be even and in which the cutter-head will accommodate itself to any form of sole without making the channel uneven.

My invention is based on the applications now on file in the Patent Office, Serial Nos. 561,320 and 567,572.

In the accompanying drawings, Figure 1 is a plan view of my improved channeling-machine. Fig. 2 is a side view of the cutting-head. Fig. 3 is an end view looking in the direction of the arrow, Fig. 2. Fig. 4 is a section on the line 4 4, Fig. 2. Fig. 5 is a sectional plan view of a modification of my invention. Fig. 6 is a transverse sectional view of the modification shown in Fig. 5. Fig. 7 is a view showing the side bearing-levers pivoted directly to the sliding head, and Fig. 8 is a view showing the side slides held to the former by a spring.

A is a standard on which is a fixed cam A', having a cam-groove *a*, in which the rollers or projections *b* of the carriage B travel.

C is a table on which is mounted the carriage B, and this table is driven from the main shaft of the machine through bevel-gearing *c c'*, so that when power is applied the carriage will travel around the cam A', being connected to the table C by a rod *c*².

Mounted above the fixed cam A' is a detachable former A², and directly above this former is a clamp A³ for clamping the sole *x* to the former.

A cam may be shaped on the heel portion of the former to throw the cutting-tool out of engagement with the sole, or a separate cam may be used, as shown in Fig. 5.

Mounted on the carriage B is a plate B'. Pivoted to this plate at *i* is a head B², (clearly shown in Fig. 4,) and adapted to ways in the pivoted head are slides *b'* *b*² *b*³, radiating from a common center *x'*, Fig. 4. In the present instance the central slide *b'* has a flat face and

the side slides have rounded faces. All of these slides rest against the former A². The central slide has a projection which rests under the former.

At the rear of the slides are levers *b*³, pivoted at *b*⁴, the short arms of the levers resting against the side slides and the long arms of the levers resting against the center slide, so that if the side slides are pushed in the center slide is projected, and if the center slide is pushed in the side slides are projected, thus insuring an extended bearing at all times against the former whether the tool is rounding a square or round toe or passing along the side of the former.

The center slide *b'* is connected to the carrier B³, being secured thereto in the present instance by screws *b*⁵, and pivoted to this carrier at *d* is a tool-carrier D, on which is the tool-head D', the head being secured to the carrier by a bolt *d'*, and the head can be adjusted laterally on the carrier by set-screws *d*².

The tool-carrier can be adjusted vertically by means of a set-screw *d*³, and is retained in its adjusted position by a spring *d*⁴ of sufficient tension to keep the tools in proper position in respect to the work, but the carrier may yield to overcome an obstruction.

The channeling-tool *e* and grooving-tool *e'* are secured together by a clamp-screw *e*², and both tools are adapted to an opening in the tool-head D' and may be secured therein by a bolt *e*³. The presser-foot *f* is secured in position by a vertical bolt *f'*, and filling-pieces *f*² may be inserted between the presser-foot and the tool-head when necessary.

The cutting edge of the grooving-tool is preferably on the center line of the pivot *i*.

It will be seen by the above construction that when the sole-blank is placed in the machine and clamped to the former and the tools properly set the carriage will travel around the sole, the three slides resting against the former always keeping the tool rigid in respect to its work, so that a clean channel and groove will be made.

In Fig. 5 I have shown the center slide as a part of the carrier B³, and in place of the side slides *b*² I have shown pivoted levers *b*⁶, connected to the carrier by a link *b*⁷, the levers *b*⁶ moving on the pivot as the carrier is moved.

In Fig. 7 I have shown the levers at each side connected directly to a pin on the carrier B³, so that as the carrier is withdrawn the levers will close upon the former, as, for instance, in going around a pointed toe, and when passing the flat portion of the former the carrier will be projected and the levers will be retracted, the levers in this instance being adapted to slide on their pivots.

10 In some instances the two side slides may be disconnected from the center slide, being controlled by a spring which will tend to keep the carrier rigid to such an extent that the tool will properly do its work.

15 It will be understood that other modifications of this device may be used without departing from my invention, and that the tool-carriage may be stationary and the sole and former may rotate in respect to the tool.

20 My invention may be used in connection with a rounding-machine by simply substituting for the channeling and grooving tools a rounding-tool, and when the machine is used for rounding the former is so shaped that it will shape the entire sole, dispensing with the cams at the heel of the former.

I claim as my invention—

1. The combination in a shoe-channeling machine, of the clamp for the sole, the tool-carriage, a tool-carrier, with movable side bearings on the carriage adapted to rest against the former so that there will be three bearing-points, substantially as described.

2. The combination of the former, mechanism for clamping the sole in respect to the former, a tool-carriage, a central slide carrying the tool, said slide adapted to rest against the former, with movable side bearings con-

nected to the central slide and also resting against the former, substantially as described. 40

3. The combination of the former, mechanism for holding the sole in respect to the former, a tool-carriage, a pivoted head B² thereon, slides b', b² adapted to ways in said carrier, levers connecting the central slide with the side slides, a carrier attached to the center slide, a tool mounted on said carrier, the center and side slides adapted to rest against the former, substantially as described. 45

4. The combination of the former, mechanism for holding the sole in respect to the former, a carriage, a sliding plate thereon, a head pivoted to said plate, a center slide and side slides adapted to ways in the pivoted head, levers resting against the said slides so that when the center slide is pushed back the side slides will be moved forward and vice versa, a carrier attached to said central slide, a tool-carrier D pivoted to the carrier B³ and a tool-head secured to the pivoted tool-carrier, substantially as described. 50 55 60

5. The combination of the former, the clamp for the sole, a carriage adapted to rest against the former, a tool-head clamped thereto by a vertical bolt, a set-screw for adjusting the tool-head laterally, a vertical slot in said tool-head and a clamp-screw for securing the tools therein, substantially as described. 65

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 70

ERNEST M. WHITE.

Witnesses:

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JOS. H. KLEIN.