(No Model.) 2 Sheets—Sheet 1.

A. C. WINN.

ROUNDING OUT AND CHANNELING MACHINE FOR BOOT OR SHOE SOLES.

No. 558,007. Patented Apr. 7, 1896.

Fig. 1.

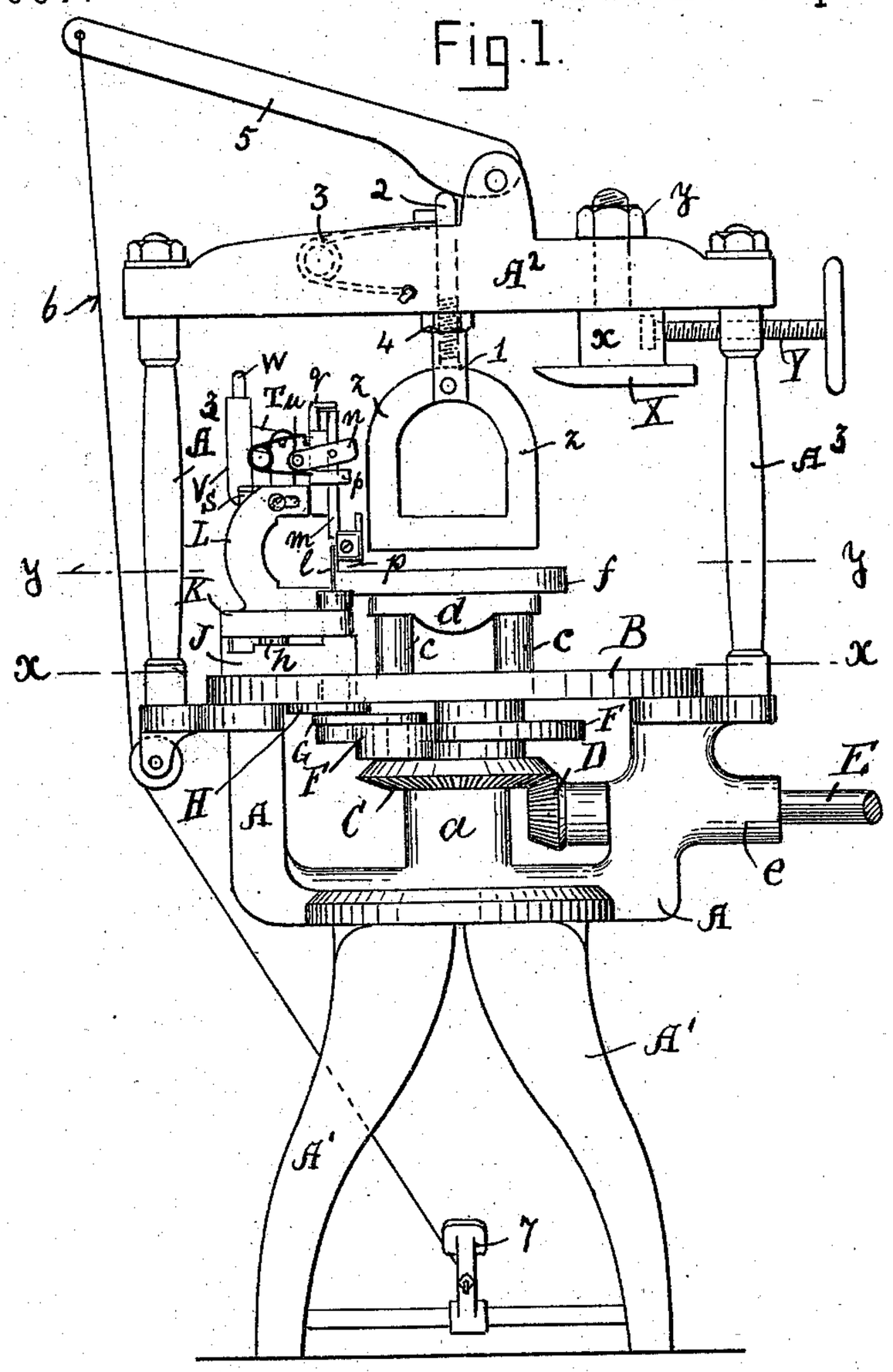
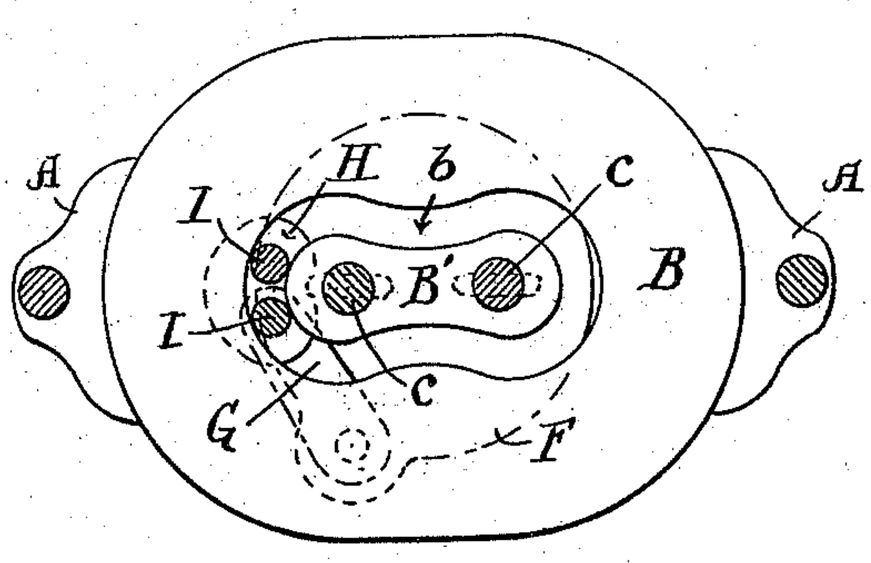


Fig. 2.



Witnesses.
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Edward L. Brown

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(No Model.) 2 Sheets—Sheet 2.

A. C. WINN.

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Fig. 3.

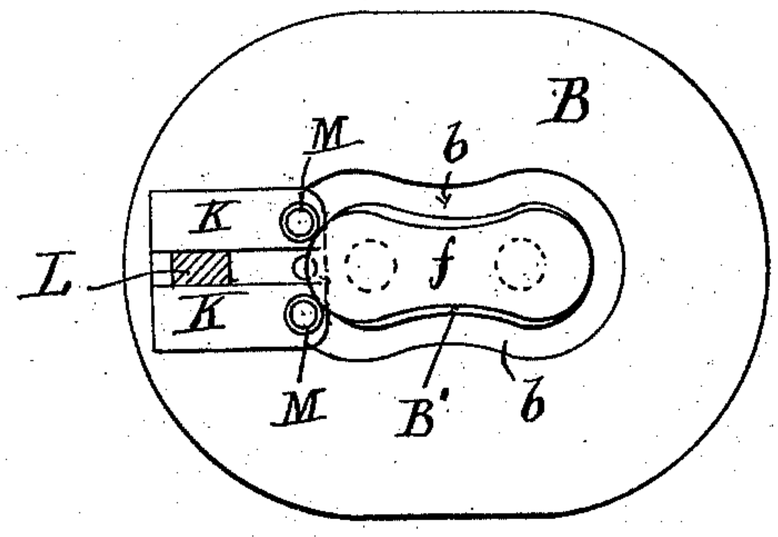


Fig. 4.

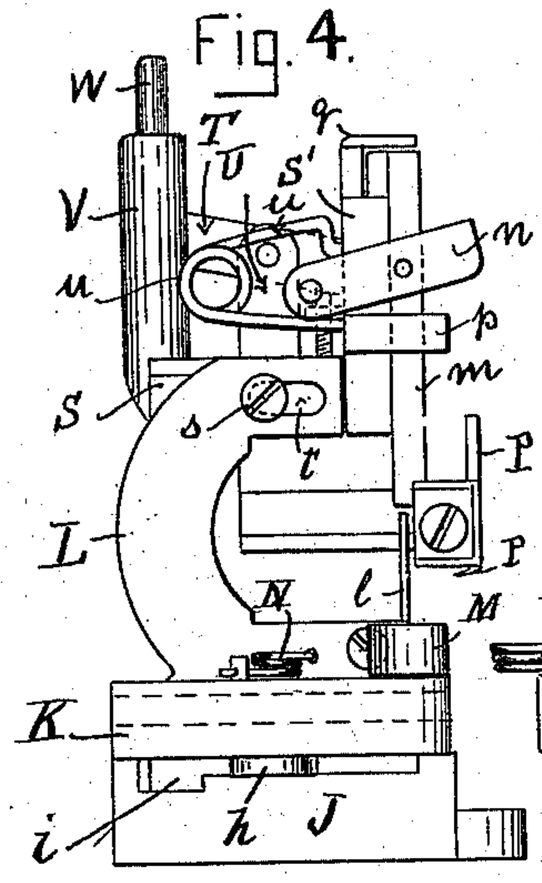


Fig. 6.

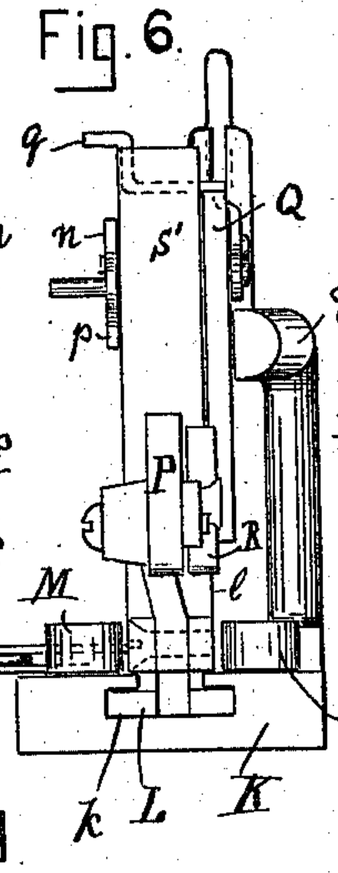


Fig. 7.

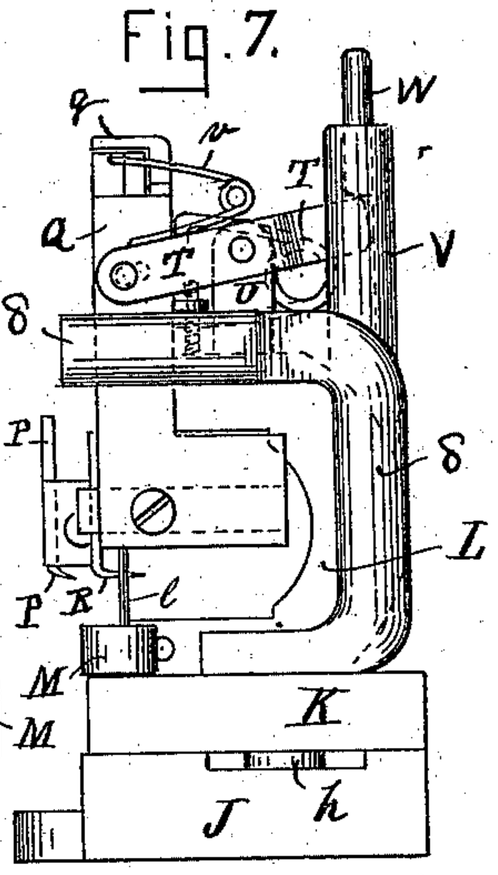


Fig. 5.

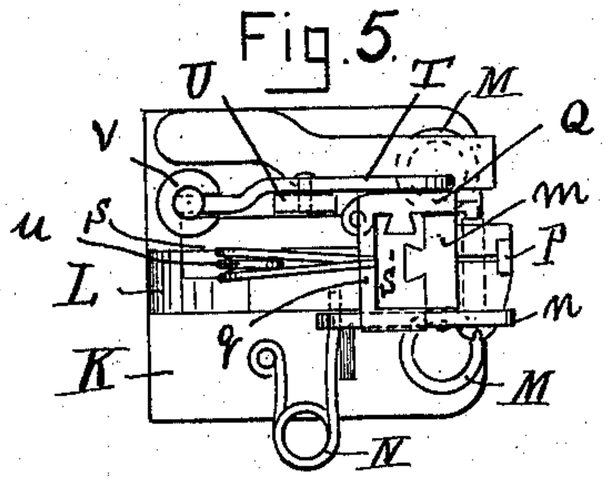


Fig. 8.

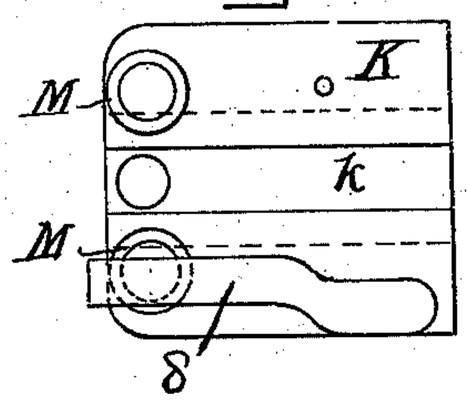


Fig. 10.

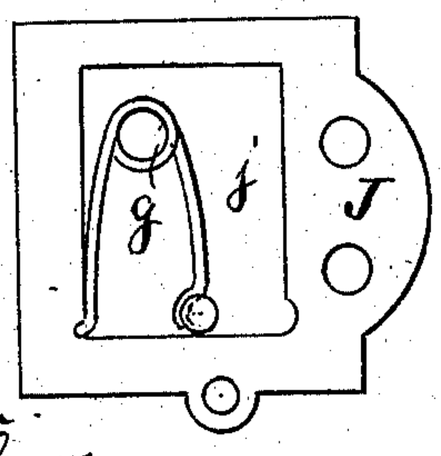
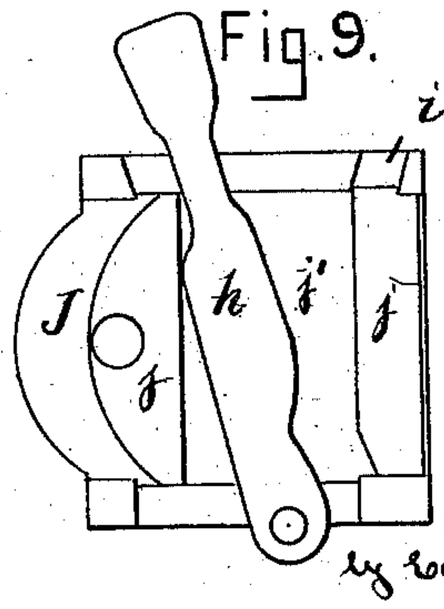


Fig. 9.



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by Edwin Planta
attorney

UNITED STATES PATENT OFFICE.

ALBY C. WINN, OF HAVERHILL, MASSACHUSETTS, ASSIGNOR OF THREE-FOURTHS TO MILAN C. CRAM & CO., MILTON CHASE, AND MATTHEW H. FOSTER, OF SAME PLACE.

ROUNDING-OUT AND CHANNELING MACHINE FOR BOOT OR SHOE SOLES.

SPECIFICATION forming part of Letters Patent No. 558,007, dated April 7, 1896.

Application filed December 28, 1893. Serial No. 494,985. (No model.)

To all whom it may concern:

Be it known that I, ALBY C. WINN, a citizen of the United States, residing at Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Rounding-Out and Channeling Machines for Boot or Shoe Soles, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to produce a machine for rounding out and channeling boot or shoe soles at one and the same time; and the invention consists in certain details of construction, as hereinafter fully described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a side view of a rounding-out and channeling machine embodying my invention. Fig. 2 is a horizontal section taken on line *x x* of Fig. 1. Fig. 3 is a horizontal section taken on line *y y* of Fig. 1. Fig. 4 is an elevation of one side of the carriage and plates carrying same. Fig. 5 is a plan or top view. Fig. 6 is a front view, and Fig. 7 is an elevation, of the other side of same. Fig. 8 is a plan or top view of the plate in which the carriage slides. Fig. 9 is a plan or top view of the under plate to which the carriage-plate is pivoted. Fig. 10 is a view of the under side of same.

A represents a furcated base-plate supported by legs A′. Upon the two prongs of the base-plate is secured a table B. In the center of the base-plate is a boss *a*, in which is secured a short shaft carrying bevel-wheel C in gear with a pinion D, mounted upon a shaft E, carried by a boss *e* on one of the arms of the fork of the base-plate. Motion is communicated to this shaft from any suitable source by friction-pulleys or other convenient means.

To the upper side of the bevel-wheel C is secured a disk-shaped crank F, to which is fulcrumed one end of an arm G, the outer end of which is pivoted to a plate H, that works just under the table B, which plate is fitted with two friction-rollers I, that work in a slot or groove *b*, formed in the table B, the central portion B′ of the table being secured to the boss *a*. Upon this central portion B′ of the table is secured a frame consisting of two standards *c c* and a cross-piece *d*. To the latter the model or pattern *f* for the sole is secured.

To the rollers I on the plate H is secured a plate J, in the upper side of which is mounted a sliding plate *j*, the front edge of which is pressed forward by a spring *g*. *h* is a lever fulcrumed to the plate J and working in a recess *j′* for drawing said plate *j* back, and when drawn back it is held by the lever being depressed into a notch *i*. To the front portion of this sliding plate *j* is pivoted a plate K, formed with a groove *k* on its upper side, in which the lower end of the carriage L slides, and upon the upper surface of this plate K are mounted two antifriction-rollers M, which, when the machine is in operation, run against the edge of the model or pattern *f*. A spring N keeps the carriage L pressed forward, except when held back by the lever *h*.

To the lower portion or arm of the carriage L is secured a knife *l* for cutting or rounding out the sole, which knife works against the model or pattern *f* and is preferably set on an incline, as shown in Fig. 6, so as to produce a drawing cut.

In the upper portion or arm of the carriage is mounted a sliding bar S, formed in one with the head S′. The bar S is held in the required position by a set-screw *s*, passing through a slot *t*, formed in the upper arm.

In the head S′ is mounted a sliding bar *m*, which can be raised and lowered by means of a lever *n*, pivoted to said sliding bar *m*, one end of which lever, when raised, causes the other end to come into contact with the block *p*, and by coaction with the same raise and hold up the sliding bar *m*.

To the lower end of the sliding bar *m* is secured the edge-knife P for cutting a groove on the outer edge of the sole to form a seat for the upper and a guide for the awl or needle. To one side of the head S′ is attached another sliding bar Q, to the lower end of which is adjustably secured a knife R for cutting a channel around the sole a short distance from the edge. This sliding bar Q has an arm *q*, which extends around the head S′,

so that when the lever *n* is operated to raise the bar *m* the upper edge of said lever will come into contact with the arm *q* and raise the bar Q at the same time.

T is a lever fulcrumed to a bar or projection U on the upper arm of the carriage L. One end of the lever is pivoted to the sliding bar Q, and the outer end works in a slot in a standard V on the upper arm of the carriage L.

u is a spring for keeping the sliding bar *m* pressed down, and *v* is a spring for pressing the bar Q down.

The standard V is formed with a central circular aperture, in which is placed a plug W, that rests upon the top of the lever T. This plug is only used when it is desired to produce a heel without a groove cut in its outer edge, in which case the plug is inserted, and as the carriage is carried around the top of the plug will come into contact with a cam X, mounted in the cross-head A^2 of the machine, which head is supported by standards A^3, carried by the base-plate A. When said plug W comes into contact with the said cam, the plug is forced down and causes the bar Q, and with it the knife R, to be raised out of contact with the sole being operated upon.

In the drawings I have shown the cam X, attached to a block *x*, free to slide in a slot formed in the head A^2, said block being adjustable vertically by the nut *y* and longitudinally by a screw Y, passing through one of the standards A^3.

Z is a clamp or holder for retaining the leather operated upon on the pattern *f*. This holder is pivoted to a rod 1, having an internal screw-thread, into which is screwed the end of a rod 2, that passes up through the cross-head A^2 and is held in a raised position by a spring 3, the distance traveled by the holder Z being regulated by a nut 4 on the rod 2.

To the cross-head A^2 is fulcrumed a lever 5, one end of which rests upon the rod 2, and to the outer end of this lever is connected a chain or cord 6, attached at its other end to a treadle 7, so that when the operator presses upon the treadle the holder Z is brought down onto the leather.

8 is an arm for steadying the upper portion of the carrier L.

The operation is as follows: The leather to be rounded out and channeled is laid upon the pattern *f*. The operator then depresses the treadle 7, thus bringing the holder Z down upon the leather, holding it onto the pattern *f*. Motion is then communicated to the shaft E, causing the piston D to rotate, thereby imparting motion to the cog-wheel C and to the disk-shaped crank F, which by the arm G draws upon the plate H, the latter being retained in place by the rollers I working in the groove *b* in the table B, and caused to rotate around the central portion B′ of said table, and as the plate J is attached to the said rollers I it is carried around therewith. The knives *l* P R, carried by the carriage L, having been adjusted as desired, the lever *h* is released and the spring *g* forces the plate *j* toward the pattern *f* until the rollers M are in contact with the edge thereof and travel around the same, the knives cutting the leather to shape, grooving and channeling the same. When the leather has thus been operated upon, the lever *n* is raised, which causes the knives P R to be raised out of contact with the leather, so that it can be removed and a new piece inserted.

Should it be desired to produce a sole having a groove all around except at the heel, then the plug W and cam X is employed, so that when the carriage has traveled around to the heel the plug W will come into contact with the cam X and be forced down, thereby raising the knife R, so that it will not operate upon the leather until it has passed around to the other side of the heel.

Of course in some descriptions of work only the rounding-out and channeling knife would be employed, or any one or more of the knives might be used, if desired.

What I claim is—

1. In a machine of the character described, the combination of a trimming-knife carriage; a grooving and a channeling knife on different slides supported by the carriage and each spring-pressed toward the work independently of the other; and retracting means common to both slides.

2. In a machine of the character described, the combination of a trimming-knife carriage; a grooving and a channeling knife on different vertically-moving slides supported by the carriage and each spring-pressed downwardly independent of the other and one having a lateral arm; and a lifting-lever pivoted to one slide and adapted to coöperate at one end with a fixed support and at the other end with the lateral arm on the other slide, substantially as and for the purpose described.

3. In a machine of the character described, the combination of a trimming-knife carriage, a laterally-adjustable block or head thereon having vertical slideways, a grooving and a channeling knife on slides fitting said ways respectively and each spring-pressed downwardly, and means for retracting said slides, substantially as described.

4. In a machine of the character described, the combination of a knife on a vertically-moving slide spring-pressed downwardly toward the work, a lever pivoted intermediate of its ends to a suitable support and engaged at one end with said knife-slide, a sliding plug or pin engaged with the opposite end of the lever, and a stationary cam arranged to coact with said plug or pin to depress the same and thereby elevate the knife, substantially as and for the purpose described.

5. In a machine for rounding out and channeling boot and shoe soles, a carriage L,

mounted in and free to slide in a plate K, said plate being pivoted at its front end to a plate *j*, free to slide in a plate J, a lever *h*, for drawing the plate *j*, and with it the carriage back, springs *g*, and N, and rollers M, all operated as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 8th day of November, A. D. 1893.

ALBY C. WINN.

Witnesses:
CHAS. STEERE,
EDWIN PLANTA.