

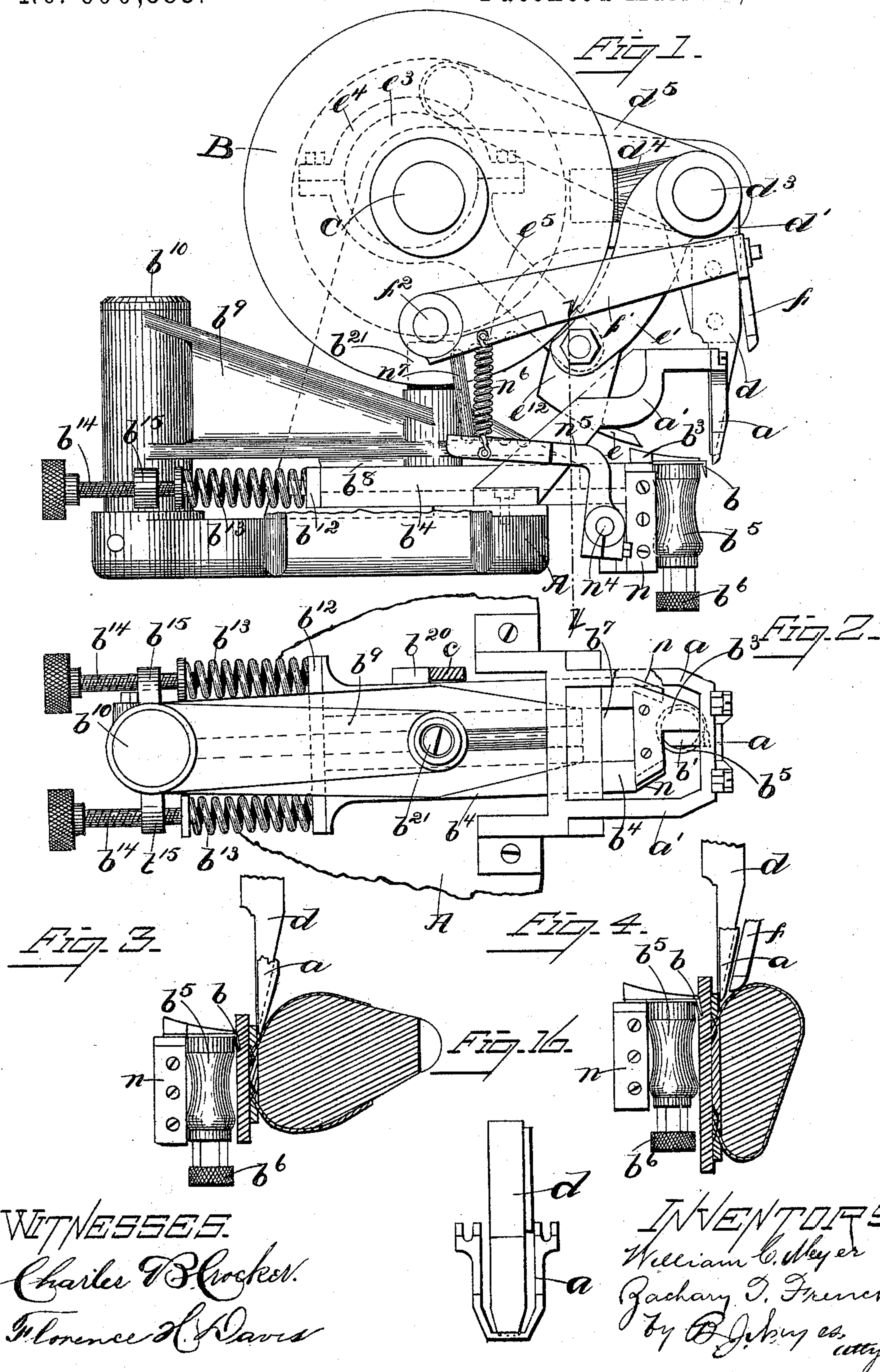
(No Model.)

3 Sheets—Sheet 1.

W. C. MEYER & Z. T. FRENCH.
SOLE CHANNELING AND TRIMMING MACHINE.

No. 600,883.

Patented Mar. 22, 1898.



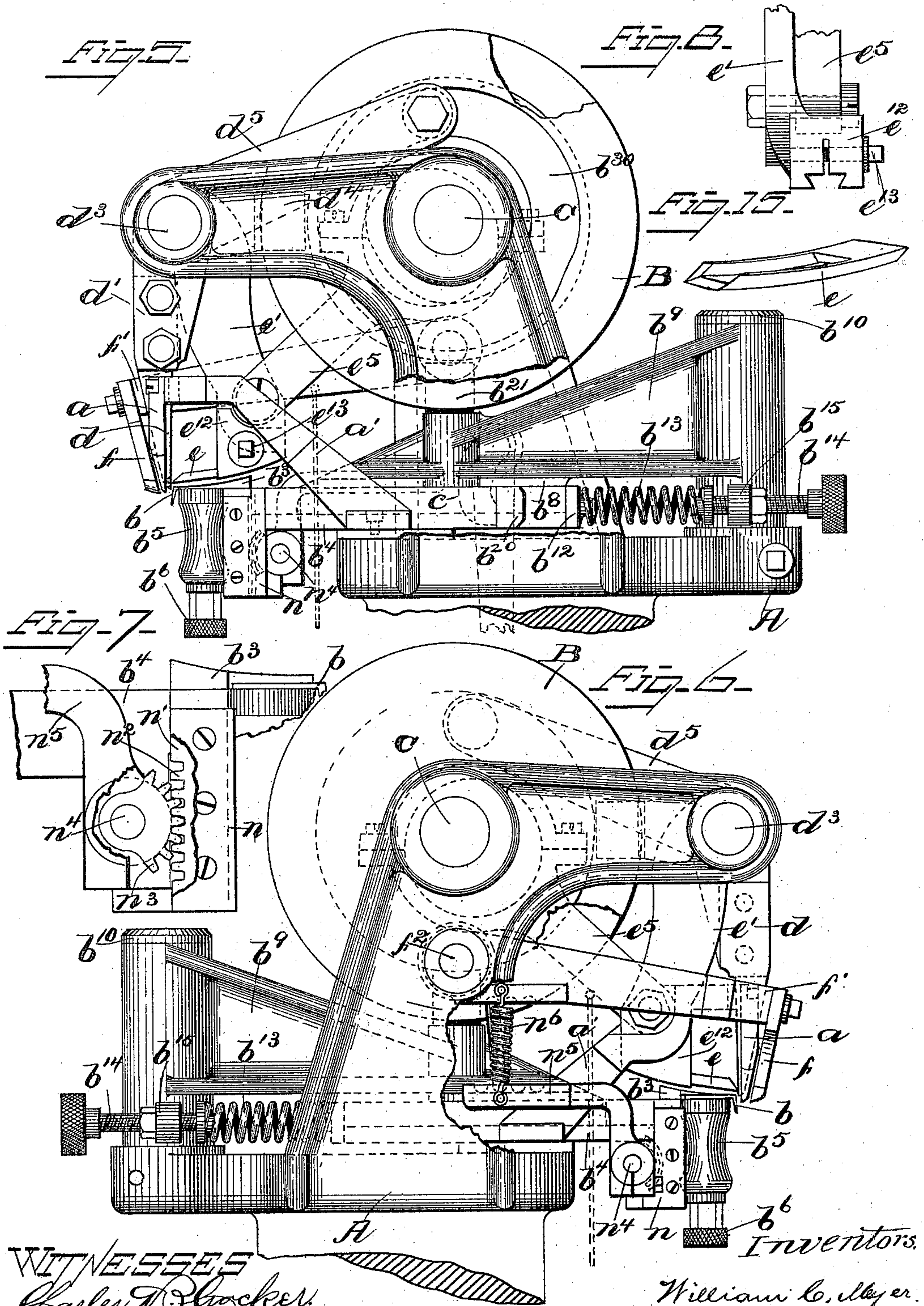
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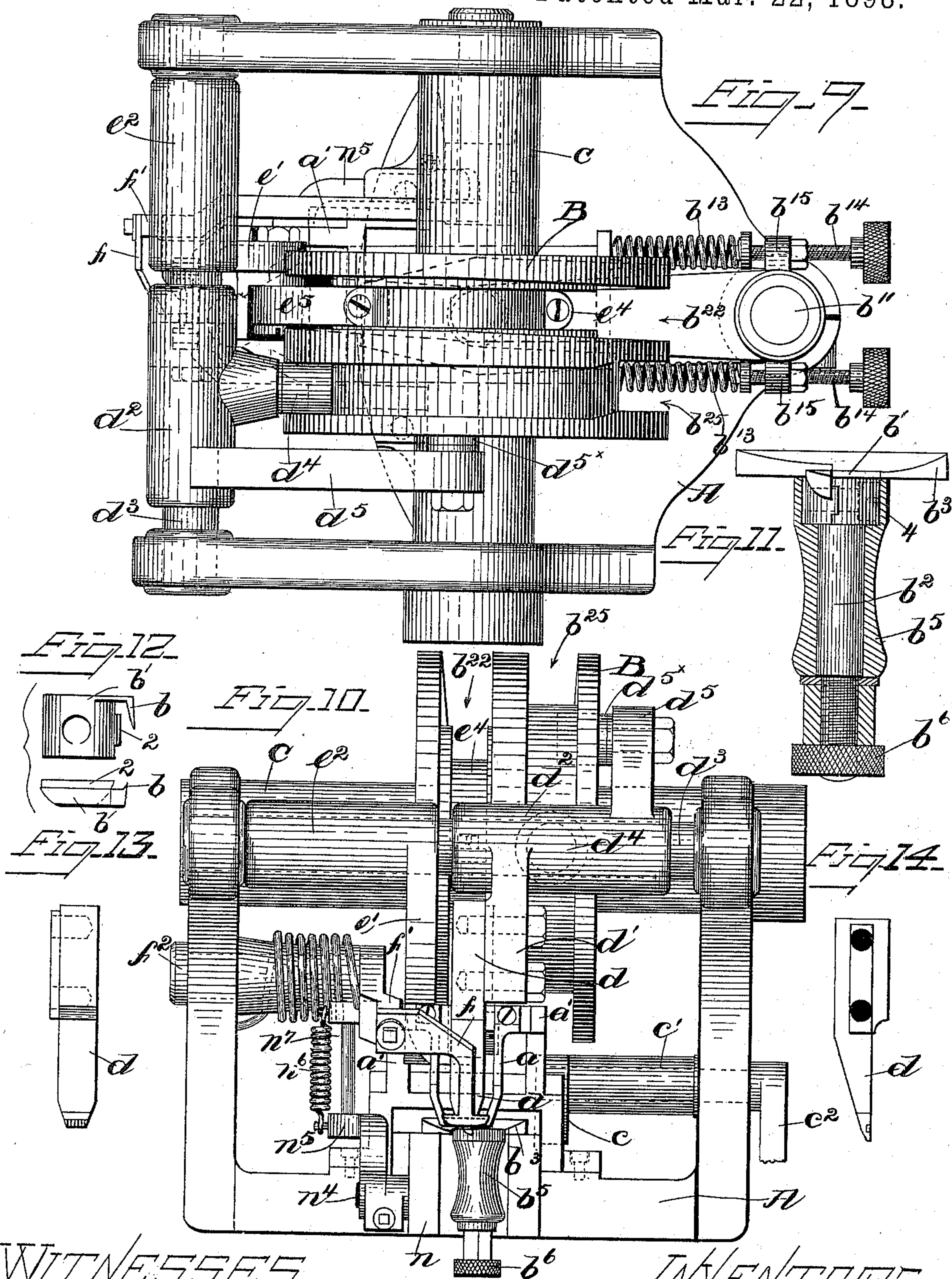
WITNESSES
Charles T. Crocker.
Florence H. Davis

Inventors.
William C. Meyer.
Zachary T. French
by B. J. Hayes, atty.

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UNITED STATES PATENT OFFICE.

WILLIAM C. MEYER AND ZACHARY T. FRENCH, OF BOSTON, MASSACHUSETTS.

SOLE CHANNELING AND TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 600,883, dated March 22, 1898.

Application filed December 5, 1894. Serial No. 530,849. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM C. MEYER and ZACHARY T. FRENCH, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Sole Channeling and Trimming Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to a machine for operating upon the soles of boots and shoes, having more particular reference to machines designed for either trimming or channeling the soles of welted boots and shoes or for both trimming and channeling said soles when upon the last.

One of the essential objects of this invention is to provide means whereby the sole may be trimmed at different distances from the last or inseam, that the sole edge may project a short distance along the shank portions and a greater distance along the fore part, producing what is commonly termed a "scotch" edge, and another essential object is to channel a "scotch-edged" sole. In producing the variation thus required for the projecting edge of the sole we employ two independent guides, one working along the shank portions and the other working along the fore part, they operating successively around the boot or shoe as it is trimmed or channeled, or both.

The shank-guide may be made stationary and the fore-part guide movable, and when so constructed the shank-guide may, if desired, serve as a work-support, while the fore-part guide when brought into use may move the boot or shoe more or less away from the shank-guide, and such movement of the fore-part guide may be gradually performed, so as to avoid any abrupt formations between the shank and fore part.

In the manner in which we have herein seen fit to carry out our invention the shank-guide is shaped to enter the crease or inseam and the fore-part guide is shaped to bear against the upper drawn over the last, near to but not entering the crease, so that the shank-guide acts as a crease-guide and the fore-part guide as a last-guide.

We desire to hold the boot or shoe edge-wise, and therefore the guides are disposed in such manner that this may be done.

Feeding mechanism is provided for feeding along the boot or shoe, and the construction herein described also forms a part of our invention.

The channeling-knife is made to reciprocate or act intermittently in cutting its channel and is also made vertically movable, in order that the channel may be cut more or less distant from the edge of the sole. As such variation is desirable between the shank and fore part of the sole, we preferably connect the means employed for vertically moving the channel-knife with the operating mechanism of the fore-part or last guide that they may act simultaneously.

The trimming-knife is arranged to vibrate or oscillate in a direction toward and from the operator, acting upon the bottom of the sole and in coöperation with or against a cutting-block, which is located upon the other or welt side of the sole, said block being firmly held or supported so as to resist the pressure of the knife, and having a plain face against which the cutting edge of the knife acts to prevent the formation of a ragged edge. This cutting-block is herein represented as forming a coöperative part of the feeding mechanism.

Figure 1 is a left-hand side elevation of a channeling and trimming machine embodying this invention, one of the side walls of the frame being broken away to expose the operating parts, which are in their normal position of rest; Fig. 2, a detail showing in plan view the work-support or shank or crease guide and a coöperative part of the feeding mechanism and adjacent parts; Fig. 3, a detail showing the shank or crease guide in engagement with a shoe; Fig. 4, a detail showing the fore-part or last guide in engagement with the shoe; Fig. 5, a right-hand side elevation of the machine, the fore-part or last guide being depressed; Fig. 6, a left-hand side elevation of the machine, the fore-part or last guide being depressed; Figs. 7 and 8, details to be referred to; Fig. 9, a plan view of the machine, shown in Fig. 2; Fig. 10, a front elevation of the machine, the fore-part or last guide being depressed; Figs. 11 to 16, inclusive, details to be referred to.

The main framework is of suitable construction to support the operating parts.

The boot or shoe to be channeled or trimmed, or both, is held up edgewise against a guide or work-support a , which is made with a tapering end adapted to enter the usual crease or
 5 in seam between the welt and upper, said guide being herein represented as a bail-shaped piece of metal secured to and depending from the extremity of a skeleton or two-armed bracket a' , which is secured to the base-
 10 plate A of the framework. As the function of this part a to serve as a guide is utilized in the shank portion particularly, it may be referred to as a "shank-guide."

The channeling-knife b (see Figs. 11 and
 15 12) is formed upon or projects from a block b' , made substantially semicircular in shape and secured in a recess formed in the upper end of a vertical pin or post b^2 , depending from a plate b^3 , which is screwed or otherwise
 20 secured to a rearwardly sliding or yielding holder b^4 . As a preferable way of securing this block b' in place we have cut away or grooved horizontally the vertical side wall of the recess which is formed in the upper end
 25 of the post b^2 , and have provided the inner or flat face of the block b' with a horizontal projection 2, which enters said groove, and a set-screw (see dotted lines, Fig. 11) passes transversely through the upper end of the post b^2 ,
 30 entering a threaded hole 3, formed in the block b' . An antifriction-roller b^5 is mounted to turn freely upon the vertical post or pin b^2 , it being held thereon by a nut b^6 or otherwise. The upper end of the post b^2 , together
 35 with the block b' , forms a head which is larger in diameter than the lower part or shank of the post, and the upper end 4 of the antifriction-roller b^5 is bored to receive said enlarged head, so that the block b' is inclosed
 40 or concealed by the upper end of the antifriction-roller. This antifriction-roller serves as a support against which the bottom of the sole to be operated upon bears, and therefore may be referred to as a "sole-support."

45 The antifriction-roller is preferably circumferentially concaved below the flat portion 4 to permit the boot or shoe to be tipped a certain degree, if desired.

The antifriction-roller may be omitted, in
 50 which case the post may be formed to serve as the sole-support; but its employment is by far preferable.

The sliding tool-carrying block or holder b^4 has a dovetailed groove b^7 in its upper side,
 55 which receives a dovetailed block b^8 (see dotted lines, Figs. 1 and 2) on an arm b^9 , pivoted at b^{10} to the base-plate and swinging in a horizontal plane. At the rear end of the dovetailed block b^4 a cross-piece b^{12} is secured,
 60 against the rear side of which, at each end, a strong spiral spring b^{13} bears, the opposite or rear ends of said springs being connected with adjusting-screws b^{14} , turning in suitable
 65 ears b^{15} , projecting from each side of the hub of the arm b^9 . The cross-piece b^{12} is pressed forward by the springs b^{13} , so that it bears against the rear end of the block b^4 , thus lim-

iting its forward movement. The springs b^{13} yield as pressure is exerted upon or against the antifriction-roller b^5 , or when the tool-
 70 carrying block b^4 is otherwise moved rearwardly by means to be described. Rearward movement of the tool-carrying block b^4 is necessary for the purpose of introducing the work between it and the work-support or
 75 guide a , and the springs are employed to press said tool-carrying block forward that it may hold the work against the work-support or guide or against any other part that may be brought into engagement with the welt at the
 80 welt side of the sole. Spring-pressure is preferred for the reason that it permits the parts to automatically adjust themselves for different thicknesses of soles.

The sliding tool-carrying block b^4 has on
 85 it a projection b^{20} , which is engaged by a crank-arm c , (see dotted lines, Fig. 5,) projecting from a shaft c' , having its bearings in the framework, said shaft being supplied at its outer end with another crank-arm c^2 ,
 90 which is connected by a chain or otherwise with a treadle, (not shown,) so that by depressing said treadle the slide-block b^4 will be moved rearwardly with its channeling-knife for the insertion of the work to be done.
 95 As this yielding block bears against the bottom of the sole it is designed to utilize it as a coöperative part of the feeding mechanism for the boot or shoe, and as one way of carrying out this result the arm b^9 is vibrated
 100 in a horizontal plane, oscillating on the pivot-pin b^{19} , rising from the base-plate. A pin b^{21} rises vertically from the top of the arm b^9 , which enters a cam-groove b^{22} , formed in the pulley or hub B , secured to the main shaft
 105 C , and as said pulley or hub revolves the pin b^{21} , following the groove, causes the arm b^9 to vibrate on the pivot b^{10} . As the arm b^9 is swung back and forth the sole-support, being spring-pressed, is caused or permitted to move
 110 in a straight line.

To complete the feeding mechanism, a plate d , made tapering toward its lower end and having a substantially flat inner face, is adapted to bear upon or against the welt or
 115 welt side of the sole opposite the antifriction-roller b^5 , said plate being rigidly secured to or formed integral with an arm d' , projecting from a hub or support d^2 , mounted upon a rod or bar d^3 , which has two rearwardly-ex-
 120 tended projections or arms d^4 d^5 . The arm d^4 enters a cam-groove b^{25} in the pulley or hub B , and as the latter is revolved a longitudinal reciprocating movement is imparted to the hub or support d^2 , bearing the feeding-
 125 plate d , and the arm d^5 has a laterally-extended pin d^{5x} , which enters another cam-groove b^{30} in the pulley or hub B , and as the latter revolves said hub or support d^2 , bearing the feeding-plate d , is rocked or oscillated
 130 on the bar d^3 , supporting it or upon which it is mounted. This mechanism or some equivalent mechanism which may be provided in lieu thereof gives to the plate d a lateral and

an "in-and-out" movement, or what is ordinarily termed a "four-motion" movement.

The operation of the feeding devices in feeding along the shoe is as follows: The sole and welt, held edgewise, are introduced, the roller b^5 bearing against the bottom of the sole and the work-support a and plate d being upon the welt side. If the plate d is in its forward position, the work will be held stationary by and between the roller b^5 and work-support a . Suppose the plate d to be at the extreme right. It is then brought into engagement with the welt, so that the work is then clamped between the plate d and roller b^5 . The plate d and roller b^5 are then moved together their full distance toward the left, carrying the work along with them. Then the plate d is moved out of engagement with the welt, leaving the work to be held by and between the roller b^5 and work-support a , and while the work is so held the plate d moves toward the right, and while acting in conjunction with the trimming-knife e , to be described, or other part to hold the work the roller b^5 moves its full distance toward the right, so that when the plate d again engages the welt a new grip is obtained that the operation may be repeated and the work thereby fed along intermittently.

It will be observed that the work-support a and plate d act alternately upon the welt, one being stationary and the other movable; but so far as our invention is concerned we desire it to be understood that we do not limit our invention to which part moves, as it is obvious that the part a could be made movable in the same manner as the part d and the part d made stationary. We prefer a stationary work-support, as it serves as a fixed point against which the operator may hold the work.

To trim the edge of the sole, a vibrating or oscillating knife e is provided, shown as attached to an arm e' , projecting from a hub e^2 , mounted upon the rod or shaft d^3 , and an eccentric disk e^3 on the main shaft C has its strap e^4 connected by a link e^5 with said arm e' , being employed as a means of vibrating said arm to thereby oscillate the knife. The knife e is made trough-shaped, sharpened at the end, and provided with a dovetailed shank (see Fig. 15) which fits a dovetailed groove or recess in a slitted block e^{12} , which is secured to the arm e' , a clamping-screw e^{13} being provided for drawing the slitted portions of said block together to securely bind the knife in place. The knife works against the bottom of the sole and, as herein represented, toward and from the operator, and in order that it may penetrate the material a substantial support is required for the opposite or welt side of the sole, and to provide such a support without increasing the number of parts, and thereby complicating the construction of the machine, we have constructed and arranged the cam which rocks the hub d^2 of the clamping or feeding plate d so that during the re-

turn movement of said plate d from left to right it will be brought into engagement with the welt at the welt side of the sole just opposite the trimming-knife and there held for a short interval of time to thus firmly support the sole at such point while the knife cuts the material. Hence it will be seen that the plate d , in addition to serving as a cooperative part of the feeding mechanism, also serves as a cutting-block or solid foundation to resist the pressure or thrust of the knife. The plate d is made with a plain or smooth face against which the cutting edge of the knife acts, so as to insure a smooth or clean cut, for when the cutting edge of the knife enters a slit a ragged edge is produced.

The operation or movement of the parts in channeling and trimming is as follows: The plate d and roller b^5 , or its equivalent, being operated upon by their respective cams are moved from right to left together, as before stated, the sole and welt being clamped or held between them. Then the plate d is moved out a short distance, disengaging the welt, and at such time the sole and welt are held between the spring-pressed roller and the stationary work-support a , the channeling-knife being seated in the sole. Then the plate d is moved toward the right a short distance, then in again, engaging the sole at a point just opposite the trimming-knife. The trimming-knife is then brought forward, and while it is penetrating the material it, together with the cutting block or plate d , holds the work while the roller b^5 moves its full distance from left to right, the channeling-knife during such time cutting the channel. Then the plate d again recedes and moves another short distance toward the right, the work being again held by the roller b^5 and work-support a , and then said plate d moves again into engagement with the welt. All the movements of the parts having thus been completed the operation is repeated, feeding the boot or shoe along during its movement from right to left.

It will be observed that the channel-knife is borne by a cooperative part of the clamping mechanism and when seated in the sole moves therewith during the feeding operation, and that the channel-slit is cut during the return movement of the part carrying it.

While channeling the boot or shoe in or along the shank portions, the work-support a is used as the guide, it entering the crease or inseam between the welt and upper; but when channeling along the fore part it becomes necessary or very desirable to guide by the last instead of by the inseam, and hence we have provided another guide, which is termed a "fore-part" or "last" guide and is adapted to be brought into operative position at the proper time, it being herein represented as a bent arm f , secured to the outer end of an arm f' , pivoted at f^2 and connected by a rod, cord, or chain with a foot or knee operated

treadle, so that whenever it may be desired the treadle may be depressed and the fore-part or last guide, which is normally in its elevated position, as shown in Fig. 1, thrown into engagement with the fore part of the boot or shoe, as shown in Fig. 4, the lower end of the part *f* at such time bearing upon the upper, drawn taut over the last. This independent fore-part or last guide is very useful in connection with either a channeling or trimming knife, or both, or, in fact, in connection with any tool or tools adapted to operate upon the soles of boots or shoes where a guide of such a character is necessary. Hence we desire to have it understood that our invention is sufficiently broad in scope as to include two separate guides, one acting along the shank and the other along the fore part and operating successively around the boot or shoe; but the specific form of guides shown, whereby the trimming-knife or other tool is guided by the crease along the shank portion and by the last around the fore part, is, we consider, a preferable form to employ. This fore-part or last guide, while very desirable, may be omitted and in such case the work-support *a* used as the crease-guide all around the shoe or the portion which is being trimmed or trimmed and channeled. It is also very desirable to vary the distance from the edge of the sole that the channel shall be cut—as, for instance, it is deemed best to cut the channel nearer the edge along the fore part than along the shank portion, and hence the channel-knife holder is made vertically adjustable. In carrying out this part of our invention the channel-knife holder is coincidentally raised just as the fore-part or last guide is depressed, and hence we have connected the vertical adjusting devices of said channel-knife holder with the operating mechanism of said fore-part or last guide, that they may operate in unison.

Referring to Figs. 1 and 7, a simple way of raising the channel-knife holder is shown. The knife-holder is arranged between vertical side plates *n*, secured to the end of the rearwardly-sliding block *b*⁴, said plates being arranged to present a vertical dovetailed guideway, and the channel-knife holder has a dovetailed block *n'* fitting said guideway, which is provided on its rear side with a series of rack-teeth *n*², engaged by a toothed sector *n*³, secured to a short shaft *n*⁴, having its bearings in the block *b*⁴, and to said short shaft a crank-arm *n*⁵ is secured, extending rearwardly, which is connected to the pivoted arm *f'* by a spring *n*⁶ and also by a link or pin *n*⁷, the latter being connected at both ends by ball-and-socket joints or other loose connections. It will be observed that whenever the arm *f*⁶ is depressed the crank-arm *n*⁵ will be correspondingly moved, thereby rocking the shaft *n*⁴ and raising the channel-knife holder. By means of the loose connections shown, whereby the crank-arm *n*⁵ is connected with the arm *f'*, the block *b*⁴, carrying the

channel-knife holder, may be moved rearwardly as desired.

We do not limit our invention to the particular way herein shown for raising the channel-knife holder or to connecting the adjusting devices thereof with the fore-part guide, as it is obvious that it may be otherwise operated.

Many of the features herein shown and described are as applicable to machines for channeling or trimming soles as for machines having both kinds of tools, and also are applicable to machines having other tools for acting or operating upon the soles of boots and shoes.

It will be observed that an independent clamp-feeding mechanism, which engages, feeds along, and then disengages the work, permits the boot or shoe to be easily moved out and in, encountering no resistance, and that the stock cannot be injured as the boot or shoe is so moved, and that the work can be more accurately and quickly adjusted.

We disclaim the following: in a machine for operating upon the soles of boots and shoes, two independent guides, one working along the shank and the other around the fore part, a fixed guiding device for controlling the location of a shoe while being operated upon by rounding and channeling tools, an adjustable guiding device adapted to interpose, so as to force the shoe farther from said tools, and means for advancing and retracing said adjustable guiding device while the tools are in operation; in a rough-rounding and channeling machine, the combination, with the rough-rounding and channeling knives, of a clamp feed mechanism, a work-gage supported adjacent to the feed-clamp, shaped and held in position to enter the crease between the welt and the upper and movable independently of the feed-clamp transversely to the direction of the feed, and mechanism for actuating the work-gage during the operation of the machine, as these specific combinations of elements are not of our own invention; but the broad idea expressed as follows—to wit, the combination of rounding and channeling knives, feeding mechanism comprising two members which receive between them the work and which are operated to feed along the work, and a guiding device for the work movable freely toward and from the rounding and channeling knives during the rounding and channeling operation to vary the position of the boot or shoe with relation to said knives and thereby vary the width of the projecting edge of the sole, said guide acting upon the work opposite where the rounding is being done, and the combination of rounding and channeling knives and feeding mechanism and a guiding device for the work shaped to enter the crease and movable freely toward and from the rounding and channeling knives during the rounding and channeling operation to vary the position of the boot or shoe with relation to said

knives and thereby vary the width of the projecting edge of the sole—forms the subject-matter of another application filed by us, Serial No. 572,258, and therefore such broad features are not herein claimed.

It will be observed that the roller b^5 and channeling-knife support bear against the bottom of the sole laid onto the welt and directly opposite said welt and that the plate d is intermittently moved toward said roller and channeling-knife support positively by a cam to firmly grasp the sole edge and welt between them, and said parts are then moved together laterally to feed along the work, and in so doing they act as a pair of clamp-feeding jaws; but as the welt is severely compressed by the plate d , thus recurrently closing upon it and positively actuated, in many instances no other means for compressing said welt or beating it out becomes necessary, and hence said clamp-feeding jaws possess the capability of compressing or beating out the welt, the plate d serving as the welt-beating jaw, and also while the plate d is removed from the welt and is returning for a new grip on the work the loop-like work-support a acts, in conjunction with the roller b^5 and channeling-knife support, to firmly grasp the sole edge and welt and in so doing to more or less compress said welt during such time.

We claim—

1. In a machine for operating upon the soles of boots and shoes, the combination of a work-support at the welt side of the sole, a four-motion plate also acting upon the welt side of the sole, a vibrating sole-support acting against the bottom of the sole and cooperating with the four-motioned plate to feed along the shoe while held against the work-support, substantially as described.

2. In a machine for operating upon the soles of boots and shoes, a vibrating sole-support having at its forward end a roller turning on a vertical axis, and a four-motion feeding-plate, acting intermittently upon the welt at the opposite side of the sole.

3. In a machine for operating upon the soles of boots and shoes, reciprocating clamp-feeding mechanism consisting of a sole-support having a roller adapted to bear against one side of the work, and a feeding-plate adapted to bear against the opposite side, and a guide.

4. In a machine for operating upon the soles of boots and shoes, an oscillating arm bearing a sole-support and yielding rearwardly in a direction away from the work, and a four-motion plate acting intermittently upon the welt at the opposite side of the sole.

5. In a machine for operating upon the soles of boots and shoes, a yielding oscillating arm having a roller at its forward end turning on a vertical axis, and a feeding-plate acting intermittently upon the welt at the opposite side of the sole, cooperating with said arm to feed along the material.

6. In a machine for operating upon the soles of boots and shoes, a rearwardly-sliding vibrating sole-support acting upon one side of the sole, and a reciprocating plate acting upon the other side thereof.

7. In a machine for operating upon the soles of lasted boots and shoes, a sole-support, a vibrating arm bearing it, a spring acting upon said arm and thrusting it forward against the work, a work-support or guide, and an intermittently-acting feeding-plate, which cooperates with said spring-pressed sole-support to feed along the work.

8. In a machine for operating upon the soles of boots and shoes, a spring-pressed vibrating sole-support acting upon one side of the sole, and a work-support and a plate movable one with relation to the other, and acting alternately upon the other side to hold and assist in feeding the work.

9. In a sole-channeling machine, means for holding and feeding the boot or shoe, the channeling-knife b , its holder, rack n' secured to the holder, toothed sector n^3 , arm n^5 secured to the shaft of said sector, and means for moving said arm to thereby vertically move the channeling-knife to cut the channel more or less distant from the edge.

10. In a channeling-machine, a channeling-knife, and means for holding and feeding the boot or shoe, a shank-guide and a fore-part guide, adjusting devices for vertically adjusting the channeling-knife connected with the operating devices of said fore-part guide.

11. In a channeling-machine, a rearwardly-sliding channel-knife holder, a channeling-knife, and means for holding and feeding the sole, a shank-guide and a fore-part guide, and means for moving the channeling-knife loosely connected with the means employed for operating the fore-part guide, substantially as described.

12. In a channeling-machine, a channel-knife and a guide movable toward and from each other, and adjusting devices for adjusting said channel-knife toward and from the guide, connected with the means employed for moving said guide toward and from the channel-knife, substantially as described.

13. In a trimming and channeling machine, a trimming-knife, a guide freely movable with relation to the trimming-knife during the trimming operation, and a channel-knife, and adjusting devices therefor connected with the means employed for moving said guide, substantially as described.

14. In a channeling-machine, a combined vibrating sole-support and a channel-knife holder at one side of the work, a work-support or guide, and an intermittently-acting plate at the other side of the work, substantially as described.

15. In a sole-channeling machine, a sole-support consisting of the vertical post b^2 , recessed at its upper end, a roller b^5 thereon inclosing the upper recessed end, and a block

b' fitting said recess and secured to the post, and having a channeling-knife.

16. In a sole-trimming machine, a work-support or guide, a spring-pressed sole-support, an intermittingly-moving cutting-block, and a vibrating trimming-knife.

17. In a machine for operating upon the soles of boots and shoes, a work-support, a movable sole-support, a plate which acts in conjunction with the sole-support to feed along the shoe, and which also serves as a cutting-block, located between the outside bearing-points of the work-support, and a vibrating trimming-knife movable toward and from the cutting-block, substantially as described.

18. In a machine for channeling and trimming the soles of boots and shoes, the combination of a guide against which the work is pressed bearing upon the welt side of the sole, a movable sole-support carrying a channeling-knife, a plate at the welt side of the sole acting in conjunction with said sole-support to feed along the work, which also serves as a cutting-block, and a vibrating trimming-knife acting against said cutting-block.

19. In a machine for channeling and trimming the soles of boots and shoes, the combination of a work-support or guide at the welt side of the sole, a movable sole-support at the opposite side of the sole carrying the channeling-knife, a plate acting upon the welt side of the sole and in conjunction with the sole-support to feed along the shoe, said plate also serving as a cutting-block, a vibrating trimming-knife acting against said cutting-block, the channel being cut upon the return movement of the sole-support and during the trimming operation.

20. In a machine for operating upon the soles of lasted boots and shoes, the combination of a trimming-knife, and a guide, one of which parts is freely movable with relation to the other during the trimming operation, to vary the width of the projecting edge of the sole, a channel-knife and its support, and means for moving it toward and from the trimming-knife during the trimming operation, substantially as described.

21. In a machine for operating upon the soles of boots and shoes, the combination of an intermittingly-acting spring-pressed sole-support at the bottom of the sole, an intermittingly-acting feeding-plate at the welt side of the sole, and a work-support also at the welt side of the sole, against which the work is pressed by the sole-support while the feeding-plate is disengaged from the work and returning, said feeding-plate acting to thrust rearward the sole-support when cooperating therewith to feed along the work, substantially as described.

22. In a machine for operating upon the soles of boots and shoes, clamp-feeding mechanism having an intermittingly-movable feeding-plate at the welt side of the sole, combined

with a work-support crossing the lower end of said feeding-plate and presenting bearing-points beyond the limit of motion of said feeding-plate, substantially as described.

23. In a machine for operating upon the soles of boots and shoes, a work-support, clamp-feeding mechanism acting within the outside bearing-points of said work-support, a sole-trimming knife moving to and fro substantially in line with the center of said work-support, and acting against a cutting-block, which forms a cooperative part of said clamp-feeding mechanism, at a time when said block is substantially in line with the center of said work-support, substantially as described.

24. In a trimming and channeling machine for boots and shoes, a trimming-knife, a channeling-knife, a shank-guide working along the shank portion, and an independent fore-part guide normally held out of engagement with the boot or shoe, and means for moving said fore-part guide into engagement with the boot or shoe around the fore part and for also moving said channeling-knife toward said guide, substantially as described.

25. In a machine for trimming and channeling the soles of lasted boots and shoes and beating out the welts thereof, the combination with sole-trimming and channeling knives, of a clamp-feeding and welt-compressing or beating-out device having as a cooperating part of it a jaw which acts upon the welt, and means for positively actuating said jaw, a guide acting externally upon a lasted boot or shoe, and movable independently of the feeding and welt-compressing device, transversely to the direction of the feed, and means for actuating said guide during the operation of the machine, substantially as described.

26. A pair of jaws adapted to compress or beat out a welt attached to a lasted shoe, one of which jaws acts upon the welt and serves as the welt-beating jaw, a cam to recurrently close it upon and beat out the welt, and means for moving said pair of jaws to feed along the work, substantially as described.

27. Two oscillating or reciprocating jaws adapted to compress or beat out a welt attached to a lasted shoe, one of said jaws being made movable toward and from the other, and arranged to act upon the welt, in combination with an actuating-cam having circumferential and lateral cam-grooves, and arms engaging said grooves and connected with said jaws, whereby said jaws are moved toward each other to close upon the welt, and laterally to feed along the work, substantially as described.

28. A pair of jaws for compressing or beating out a welt attached to a lasted shoe, adapted to reciprocate and move one toward and from the other, a horizontally movable and rocking hub or support connected with one of the jaws, means for rocking said hub or support at recurring intervals to cause the

jaw carried by it to act upon and beat out the welt, and means for reciprocating the two jaws, substantially as described.

29. A pair of jaws for compressing or beating out a welt attached to a lasted shoe, adapted to reciprocate to feed along the work, one of said jaws moving toward and from the other and acting upon the welt, a horizontally movable and rocking hub or support connected with said last-named jaw, an arm projecting from said hub or support, a cam acting on said arm for rocking said hub or support, an arm connected with one of the jaws and a cam acting on said arm to reciprocate the jaw connected therewith, substantially as described.

30. A pair of jaws for compressing or beating out a welt attached to a lasted shoe, one of which acts upon the welt and serves as the welt-beating jaw, said jaws being adapted to reciprocate in unison to feed along the work, and move one toward and from the other to grip the work and beat out the welt, a horizontally movable and rocking hub or support connected to said welt-beating jaw, means for operating it, and a yielding device connected with the other jaw, substantially as described.

31. A pair of jaws adapted to compress or beat out a welt attached to a lasted shoe, one of which jaws acts positively upon the welt and serves as the welt-beating jaw, a cam for operating said welt-beating jaw at recurring intervals to close it upon and beat out the welt, and means for moving said pair of jaws to feed the work along, and a treadle connected with one of said jaws for moving it away from the other jaw to introduce the work, substantially as described.

32. A pair of jaws adapted to compress or beat out a welt attached to a lasted shoe, one of which jaws acts positively upon the welt, and serves as a welt-beating jaw, a cam for operating said welt-beating jaw to recurrently close it upon and beat out the welt, and means for moving said jaws to feed along the work, a trimming-knife and a gage, substantially as described.

33. A pair of jaws adapted to compress or beat out a welt after it is attached to a lasted shoe, one of which jaws acts positively upon the welt and serves as the welt-beating jaw, and means for operating said jaws to recurrently close upon and beat out the welt and feed along the work, and another jaw at one side of the welt which cooperates with one

jaw of said pair to compress the welt while the other jaw of the pair is removed, substantially as described.

34. A pair of jaws adapted to compress or beat out a welt, one of which acts upon the welt and serves as the welt-beating jaw, a cam for operating said welt-beating jaw to recurrently close it upon and beat out the welt, and means for moving said jaws to feed along the work, and a work-support at the face side of the welt, substantially as described.

35. A pair of jaws adapted to compress or beat out a welt, one of which acts upon the welt and serves as the welt-beating jaw, a cam for operating said welt-beating jaw to recurrently close it upon and beat out the welt, and means for moving said jaws to feed along the work, and a trimming-knife, substantially as described.

36. A pair of jaws adapted to compress or beat out a welt, one of which acts upon the welt and serves as the welt-beating jaw, a cam for operating said welt-beating jaw to recurrently close it upon and beat out the welt, and means for moving said jaws to feed along the work, a trimming-knife and means for moving it toward and from one of said jaws which latter serves as a cutting-block, substantially as described.

37. A pair of jaws adapted to compress or beat out a welt, one of which acts upon the welt and serves as the welt-beating jaw, means for operating said welt-beating jaw to recurrently close it upon and beat out the welt, and means for moving said jaws to feed along the work, and a channeling-knife, substantially as described.

38. A pair of jaws adapted to compress or beat out a welt, one of which acts upon the welt and serves as the welt-beating jaw, means for operating said welt-beating jaw to recurrently close it upon the welt, and means for moving said jaws to feed along the work, and a channel-cutting knife, borne by one of said jaws, substantially as described.

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

WM. C. MEYER.
ZACHARY T. FRENCH.

Witnesses:

B. J. NOYES,
FLORENCE H. DAVIS.