

No. 644,571.

Patented Mar. 6, 1900.

F. E. BECKMAN.
CHANNELING MACHINE.

(Application filed Mar. 18, 1897.)

(No Model.)

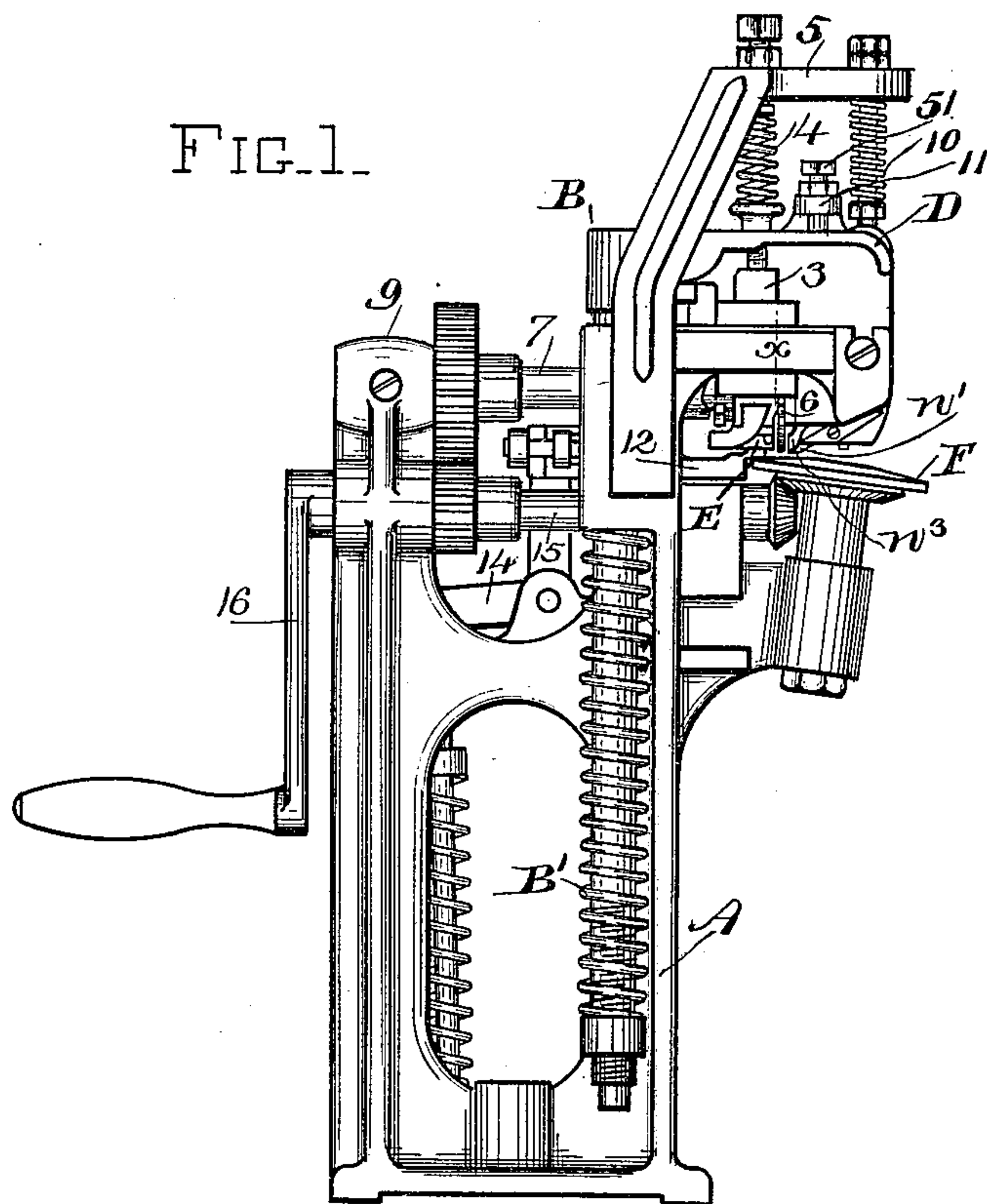


FIG. 2.

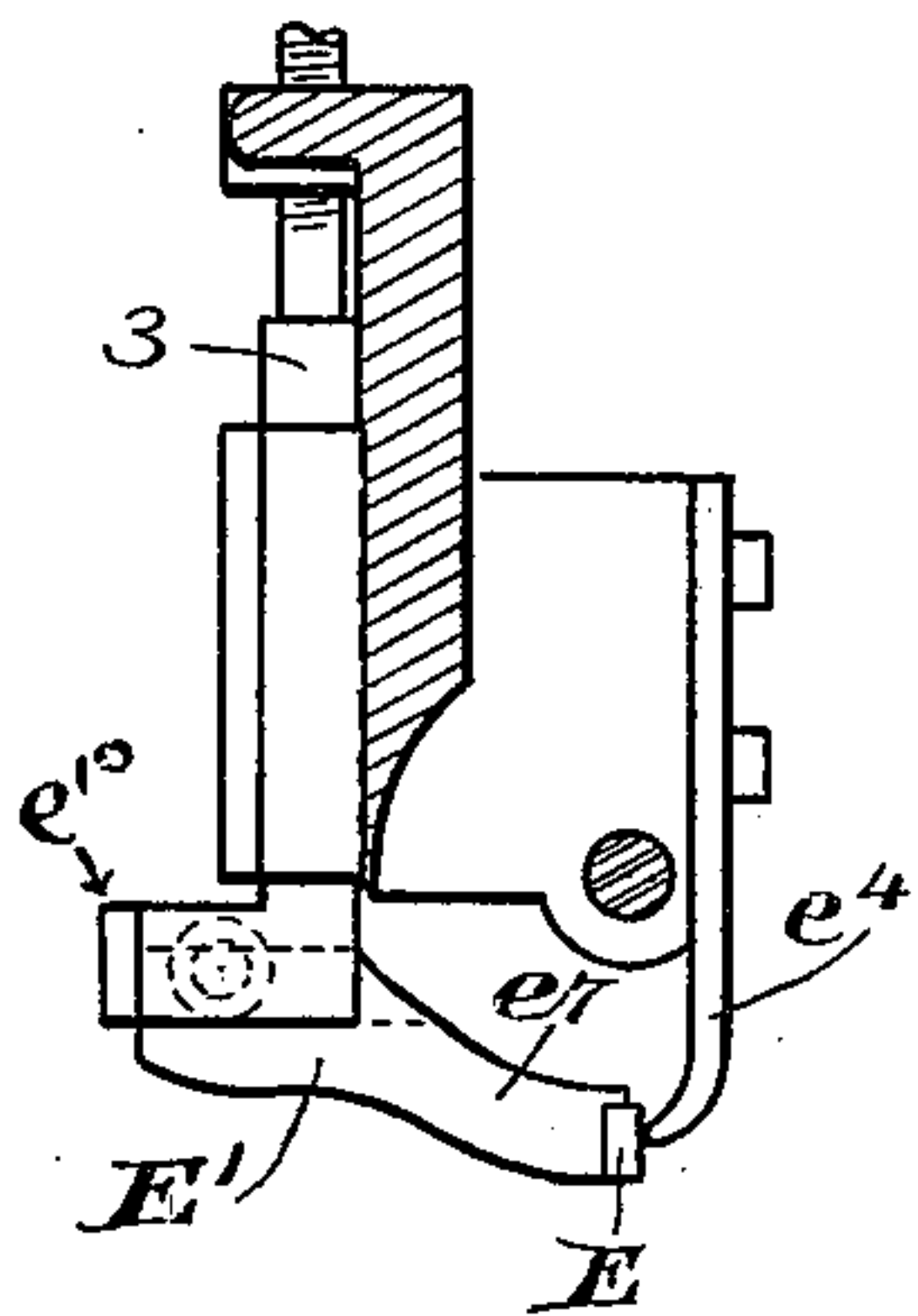
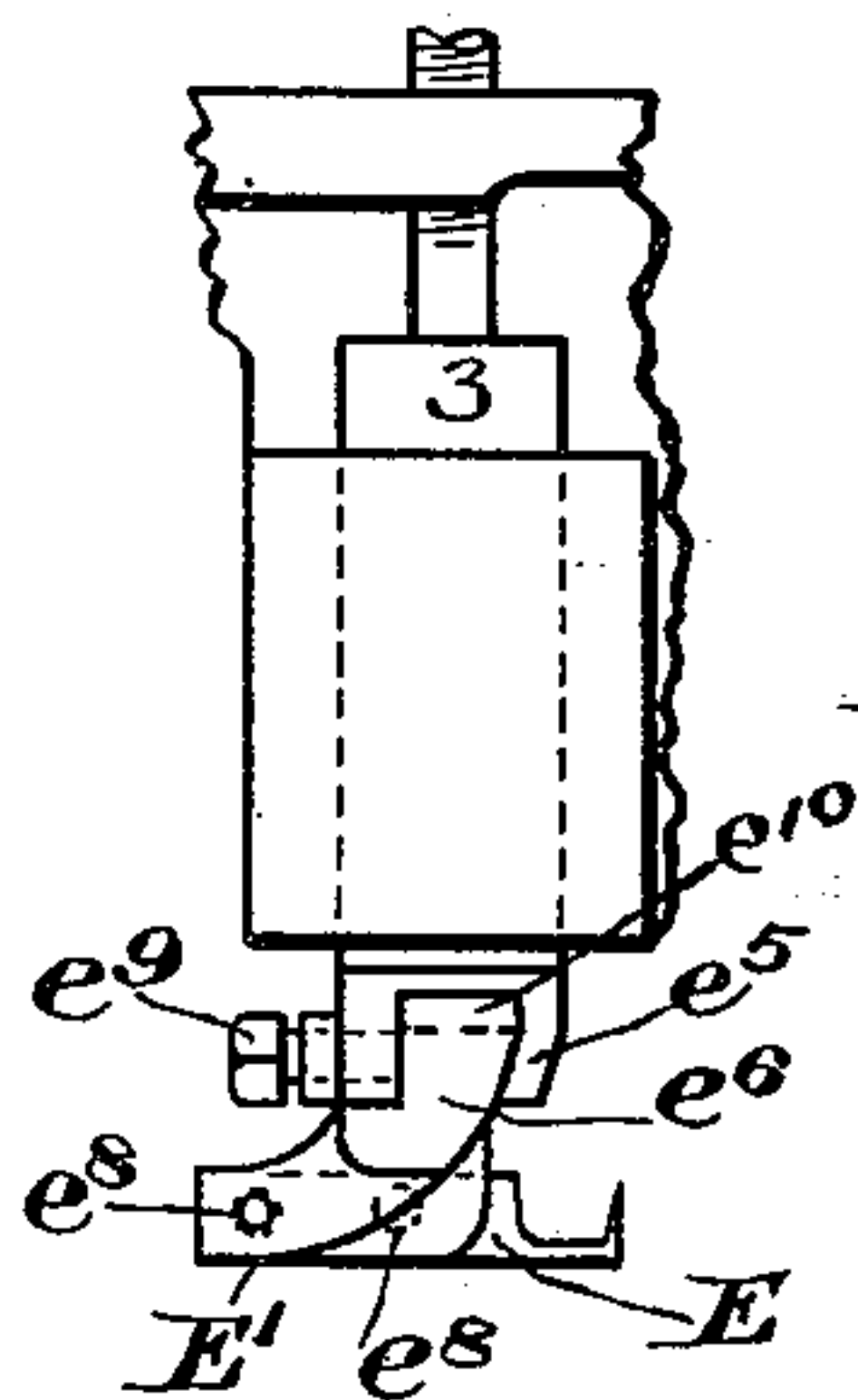


FIG. 3.



WITNESSES_

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UNITED STATES PATENT OFFICE.

FRANK E. BECKMAN, OF LYNN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO FREDERICK L. ALLEY, OF SAME PLACE.

CHANNELING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 644,571, dated March 6, 1900.

Application filed March 18, 1897. Serial No. 628,129. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. BECKMAN, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Channeling-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to channeling-machines, and more particularly to such machines which are designed to cut the channel in a shoe-sole and at the same time cut the edge of said sole to the desired contour for the particular type of shoe for which said sole may be designed. These machines accordingly have a channeling-knife and an edge-cutting knife so arranged that as the sole is fed along past the channeling-knife to form a channel in the face of the sole the edge-cutting knife will cut along the edge of the sole, fashioning the same in the manner desired for any particular style of shoe. The edge cut is different for different types of shoe-soles—as, for instance, in a sole for a “turn” shoe the edge may be beveled or skived off or provided with a rabbet or groove along the shank and fore part, and for a lipped insole the edge-knife is adapted to cut into the edge of the sole parallel with the face thereof for a distance sufficient to permit the under portion of said edge to be turned down to form a lip, while the other portion would be left extended to form a feather.

To produce the different types of soles, as above stated, it is necessary that many different styles of edge-knives be provided, a different edge-knife being employed for each type of sole edge which it is desired to cut. As heretofore constructed it was the practice to either have several machines, each of which was provided with a particular style of edge-knife, or else to remove one knife from the knife-carrier of such machine and substitute therefor another knife shaped to cut the particular sole edge desired. The removal of these knives and the substitution thereof are rendered extremely difficult in the machines as at present constructed, owing to the ne-

cessity of accurately adjusting said knife in the knife clamp or block, said adjustment taking considerable time to secure accurate results and necessitating frequent tests of the machine in order to determine whether the proper adjustment has been secured. The object of the present invention is to construct a channeling-machine of the type described in such manner that the edge-cutting knives can be readily and quickly changed and the proper adjustment of said knives secured in a simple and effective manner.

To the above end the present invention consists of the devices and combination of devices which will be hereinafter described and claimed.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a channeling-machine embodying the same. Fig. 2 is an enlarged sectional view taken on line *x*, Fig. 1, looking toward the left in said figure; and Fig. 3 is an enlarged broken view of the edge-knife carrier.

Similar letters and figures of reference represent similar parts throughout the several views.

Referring to the drawings, A represents a frame suitable to support the working parts of the machine. Upon the frame A is mounted the vertically-movable cross-head B, the vertical movement of which is controlled by a suitably-placed spring B' in the usual manner. Also mounted upon the frame A is the vertical swinging bent lever D, commonly called the “channel-knife” lever. The channel-knife lever D is pivotally secured to a bracket on the frame A (not shown) and extends upward, forward, and downward to bring the channel-knife *n'*, which is supported thereby, into the proper relative position with respect to associated parts. The vertical movement of channel-knife lever D is controlled by a spring 10, arranged to bear upon a bracket 5, rigidly secured to the frame A, and by a lug 11, which projects over the cross-head B and is provided with a set-screw 51, arranged to come in contact therewith.

In the cross-head B is mounted the edge-knife carrier 3, in which is secured the edge-knife E and which has a limited vertical mo-

tion independently of the cross-head B, controlled by the spring 4, which bears upon the bracket 5 on frame A, and by a treadle and suitable connections. (Not shown.)

5 The reference-numeral 6 represents a toothed feed-wheel of the type usually found in machines of this class and which is mounted upon and rotated by the shaft 7, which has a bearing adjacent to the wheel 6 and a bearing remote from the wheel 6, as shown at 9, in the frame A, provision being made in the bearing 9 for a slight vertically-swinging movement of the shaft 7.

10 The edge-guide is shown at 12 and is longitudinally adjustable, being controlled by a suitable foot-treadle by means of the bell-lever 14.

15 The reference-numeral 15 represents the driving-shaft, which is geared to the work-table F and also to the shaft 7, which rotates the feed-wheel 6. The shaft 15 is rotated by the usual operating-lever 16 and is provided with suitable bearings in the frame A.

20 The channel-knife presser-foot is shown at n^3 and is arranged to bear upon the work adjacent to the channel-knife n' , and the edge-knife presser-foot is shown at e^4 and is arranged to bear upon the work adjacent the cutting edge of said knife.

25 The form and arrangement of the parts hereinbefore described are similar to the form and arrangement of similar parts in the machine known in the trade as the "Goodyear Channeler," and the foregoing brief description thereof has been given only for the purpose of enabling a person skilled in the art to fully understand the novel features which embody my invention.

30 In accordance with the present invention I have provided a series of interchangeable edge-knife-carrying slides, upon which different types of edge-knives are secured, and I have provided at the base of the edge-knife carrier securing means for retaining the slides in position thereon, the arrangement being such that when a given slide has been adjusted and secured in position upon the knife-carrier the knife carried thereby is in proper position to operate upon the work.

35 As shown in the drawings, I have formed in the base of the knife-carrier 3 a dovetail groove e^5 , extending laterally along the same and substantially parallel to the line of feed. To the groove e^5 is fitted a correspondingly-shaped block e^6 , which is secured to or forms a part of the knife-carrier slide E'. The slide E' is provided with a laterally-extending arm e^7 , to the end of which is secured the edge-knife E by the screws e^8 or any suitable clamping means. It is designed that the edge-knife E be fixedly secured to the end of the arm e^7 and that when the slide E' is placed in position by sliding the block e^6 into the dovetail groove e^5 the edge-knife will assume its proper position relatively to the associated parts of the machine without the necessity on the part

of the operator to adjust and position said knife. In order that the knife E shall always assume the desired position relative to the associated parts of the machine and to the stock 70 to be operated upon by the operation of placing the slide E' in the knife-carrier 3 and that said position may be secured without any special care or attention on the part of the operator, I provide the slide E' with a suitable stop 75 e^{10} , which projects therefrom in position to engage the end of the knife-carrier 3 and limit the movement of the slide E' thereon, the result being that when the slide E' shall have been connected to the knife-carrier 3 by means 80 of the dovetail block e^6 and is moved laterally until the stop e^{10} engages with the end of the knife-carrier 3 the edge-knife E will be in the desired position relative to the associated parts of the machine to correctly operate upon 85 the edge of the sole. In order to retain the knife-slide E' in its position on the knife-carrier 3, any suitable clamping means may be employed, such as a set-screw e^9 , tapped into the end of the knife-carrier 3, the end of which 90 engages the block e^6 .

From the foregoing description it will be noted that the edge-knife of my machine can be removed and another one substituted therefor and correctly positioned by removing one 95 slide and inserting another and that the position of said knife is accurately adjusted without any special care on the part of the operator and that when it becomes necessary to sharpen said knife it may be removed and 100 sharpened and replaced and caused to assume its original position by simply replacing the slide E'.

The operation of the machine is the same as that of channeling-machines in general, the 105 sole to be operated upon being placed upon the work-support F with its edge bearing against the edge-gage 12 and the feed-wheel 6 bearing upon its upper surface, and the crank 16 being operated to rotate the feed-wheel 6 to 110 feed the sole past the channeling and edge-cutting knives, which respectively cut the channel and fashion the edge as the sole moves along.

It has been proposed in the prior art to se- 115 cure an adjustment of an edge-cutting knife in a channeling-machine by securing said knife in a holder having a cylindrical stem adapted to be received in a circular clamping-bearing; but in such construction much care 120 and skill are required to properly position the holder so as to secure the proper adjustment of the knife because of the liability of the holder to turn in its bearing. By my improved sliding connection between the slide 125 carrying the knife and the knife carrier or support the adjustment of the knife is secured positively and accurately by the act of placing the slide in position, because there can be no relative angular or turning move- 130 ment of the slide and its carrier or support.

Having fully described my invention and

its mode of operation, I claim as new and desire to protect by Letters Patent of the United States—

1. In a channeling-machine, the combination with a knife carrier or support, of a slide having an edge-cutting knife fixedly secured thereto, and a sliding tongue-and-grooved connection between the knife carrier or support and the slide arranged to support the slide and knife in operative position on the knife-carrier and to permit the ready removal of the slide and knife, whereby a series of slides having different edge-cutting knives may be interchangeably used in the machine, substantially as described.

2. In a channeling-machine, the combina-

tion with a knife carrier or support, provided along its lower end with a supporting-groove parallel to the line of the feed of the work, of a slide provided with a rib slidingly fitted in said groove to support the slide, an edge-cutting knife secured to said slide, and a stop to determine the position of the slide in the groove to bring the knife into operative relation to other parts of the machine, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK E. BECKMAN.

Witnesses:

THOMAS H. ANDERSON,
A. E. WHYTE.