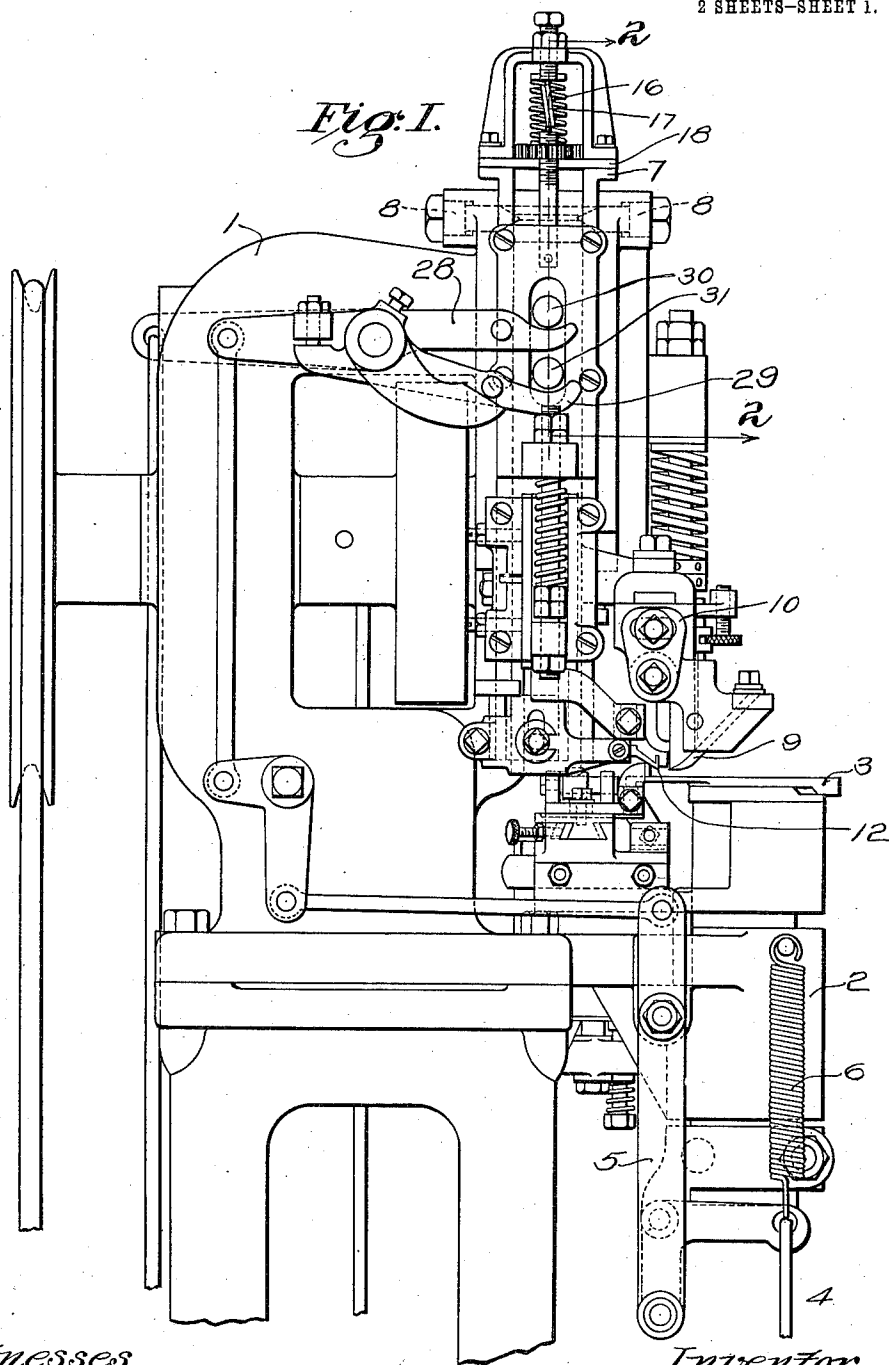


F. E. BERTRAND.
CHANNELING MACHINE.
APPLICATION FILED JULY 17, 1911.

1,030,709.

Patented June 25, 1912.

2 SHEETS—SHEET 1.



Witnesses

Wm. M. Rheum

Roswell F. Hatch

Inventor:

Frederic E. Bertrand
by his attorney
Phillips, Van Orman & Smith

1,030,709.

2 SHEETS—SHEET 2.

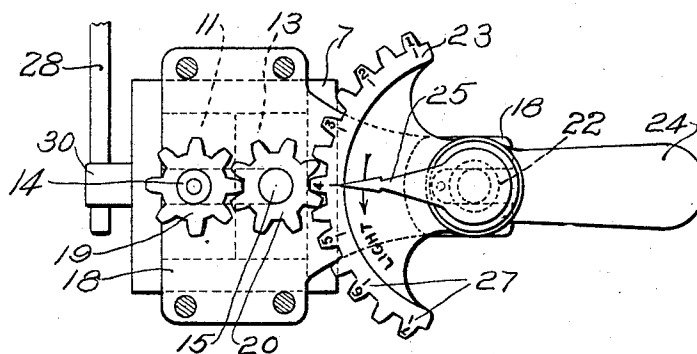
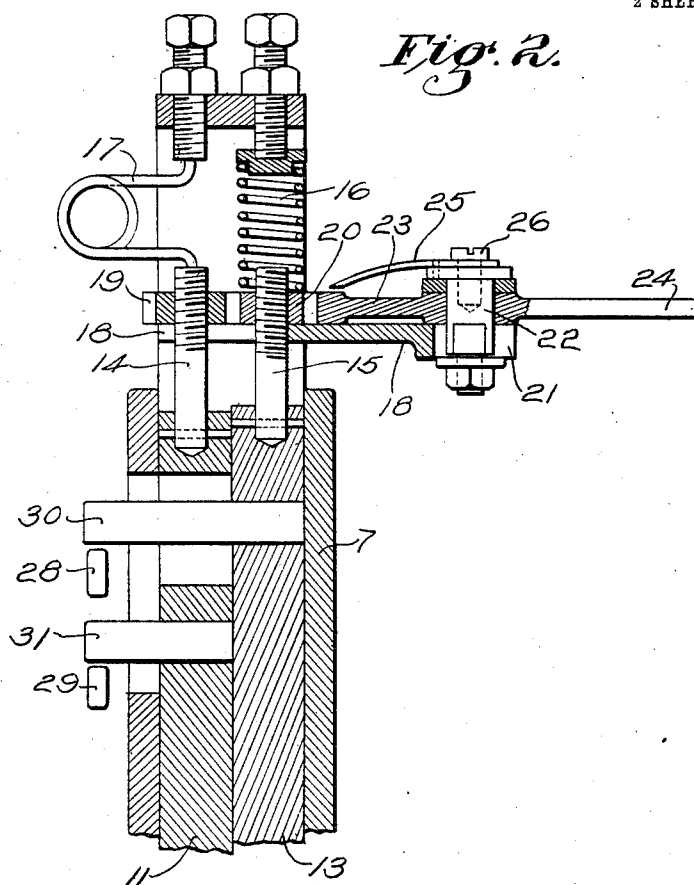


Fig. 3.

Inventor
Frederic E. Bertrand
by his attorneys
Phillips, Van Orner & Fish

UNITED STATES PATENT OFFICE.

FREDERIC E. BERTRAND, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CHANNELING-MACHINE.

1,030,709.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed July 17, 1911. Serial No. 638,896.

To all whom it may concern:

Be it known that I, FREDERIC E. BERTRAND, a citizen of the United States, residing at Swampscott, 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.

This invention relates to channeling machines, and more particularly to that type of channeling machines employed in operating upon turn soles.

As is well known to those skilled in the art, in making soles for turn shoes the edge or shoulder cut is measured from the grain side of the sole, that is, the side which rests upon the work table, so that the sole edge, which is exposed after the upper has been turned, will be of equal thickness throughout the entire periphery of the sole. Turn soles may be made having a shoulder cut producing a feather edge which will give the shoe the appearance of having an extremely light sole, or they may be made having a shoulder cut which will leave substantially the entire thickness of the sole at the edge which gives the sole a heavy appearance in the finished shoe. In order to obtain the edge thickness properly corresponding to the thickness of the sole being operated upon, it is necessary to vary the distance between the work table and the shoulder or edge knife. It is desirable that the depth of the channel shall remain in a fixed relation to the shoulder formed by the edge knife. Therefore, if the edge knife is adjusted to change its distance from the table, the channel knife must also be adjusted so that its distance from the table shall correspond to that of the edge knife. As an example, if a sole being channeled is of a thickness which calls for a five-iron edge, the knives are adjusted to such a position that this edge is obtained, but if the next sole to be channeled calls for a seven-iron edge, each knife must be raised a distance equal to two irons to obtain the greater edge thickness.

One object of the present invention is to provide means in a channeling machine for adjusting the height of the knives above the work table while their relative positions remain constant.

Another object is to provide means in a channeling machine whereby this knife adjusting means may be rapidly positioned to provide any desired thickness of sole edge without repeated trials and measurements by the operative.

In accordance with these objects, the features of the invention comprise the provision, in a channeling machine, having stops for determining the lower or operative positions of the edge and channel knives, of means for simultaneously adjusting said stops whereby the knives can be adjusted for varying thicknesses of sole edge. In the best form of the invention at present known to the inventor, the stops are carried by the edge knife slide and the channel knife slide and are formed by two intermeshing spur gears screw threaded upon studs projecting from the upper ends of each of the slides. A gear segment meshing with one of the gears is provided with a handle in a convenient position for the operative. A fixed pointer is provided above the segment to indicate, by suitable graduations on the segment, for what thickness of sole edge the knives are adjusted.

The preferred form of the invention, as applied to a turn channeling machine of the type illustrated and described in the Letters Patent of Great Britain to Alfred J. Boulton, No. 3986, of 1910, is illustrated in the accompanying drawings, in which—

Figure 1 is a rear elevation of the upper portion of the machine. Fig. 2 is a vertical section on the line 2—2 of Fig. 1; and Fig. 3 is a detail plan of the stops for determining the vertical position of the edge and channel knives and the means for simultaneously adjusting the stops.

The mode of operation and general construction of this machine is identical with that described in the British patent to Boulton to which reference may be had to obtain a more complete description.

As in the aforementioned patent, the frame 1 carries, in a projecting guideway 2, the vertically movable work table 3. The treadle rod 4 is connected to a suitable treadle which, upon depression, will lower the table through a system of toggle levers 5 and, upon release of the treadle, the spring 6 will return the table to a predetermined vertical position. The frame 1 also supports the knife carrier 7 mounted to oscillate

late about pivots 8. The channel knife 9 is mounted in a block 10 secured to an arm projecting from the channel knife slide 11. The shoulder or edge knife 12 is carried upon the lower end of the edge knife slide 13. Each of the slides 11 and 13 have fixed studs 14 and 15 projecting from their upper ends having threaded thereon suitable stops which, when the slides are depressed by the action of the springs 16 and 17, will engage a plate 18 secured to the top of the carrier 7. Provision is thus made for limiting the movement of the edge and channel knives toward the table. The parts thus far described are substantially similar to those in the patent to Boulton hereinbefore referred to.

In the preferred form of the present invention, the stops carried by the studs 14 and 15 consist of two intermeshing spur gears 19 and 20. The plate 18 projects forwardly toward the operative, as shown in Figs. 2 and 3 and is slotted at 21 to receive a stud 22. A gear segment 23 is pivoted on the stud 22 in such a position that the segment is in mesh with the gear 20. A handle 24, integral with the segment, provides means for moving it about the stud. A pointer 25 is secured in the head of the stud 22 by a screw 26 and has its end extended over the rim of the gear segment 23. The gear segment is marked on its upper surface in suitable graduations 27 in proper position to be read with reference to the pointer 25.

It is apparent from Figs. 1 and 2 that one or both the slides 11 and 13 may be lifted a varying amount by means of levers 28 and 29 which engage studs 30 and 31 projecting from each of the slides, the mechanism being similar to that illustrated and described in Letters Patent of Great Britain to A. J. Boulton, No. 16609 of 1909. The difference in the movement of the two slides will never be great enough to disengage the gears 19 and 20, nor will the movement be great enough to disengage the gear 20 from the gear segment 23.

When the operative wishes to change from channeling a sole of a particular thickness, as, for instance, a sole with a five-iron edge, to one of a greater thickness, as a seven-iron edge, he will turn the segment 23 by means of the handle 24 until the graduation marked "7" on the segment, which indicates a seven-iron edge, is below the pointer 25. The oscillation of the segment 23 will rotate the gear 20 which rotation will move the stud 15 longitudinally through the gear, thereby raising the slide 13 and varying the distance between the edge knife 12 and the table 3. An equal amount of adjustment will be imparted to the channel knife 9 through the intermeshing gear 19. As the rotation of these two gears is in opposite directions the studs 14 and 15 are threaded

one with a right hand and the other with a left hand thread in order that the longitudinal motion imparted to the two knife slides may be in the same direction. With this construction it is possible for the operative to instantly adjust the position of the channel and edge knives, while the machine continues in operation, to operate properly on a sole of any desired thickness without the necessity of independently adjusting the two stops and then experimenting until the proper edge thickness of the sole and the corresponding depth of the channel are obtained. It will be noted that the adjustment of the knives does not interfere in any way with the operation of the knife slide springs 16 and 17.

Broadly considered, the invention herein set forth is not limited, except as specifically recited in certain of the claims, to use in the particular type of turn channeling machines hereinbefore described.

It will be clear to those skilled in this class of machines and with the general object of the present invention in view, that changes may be made in the details of structure, the described and illustrated embodiment thereof being intended as an exploitation of its underlying essentials the features whereof are definitely stated in their true scope in the appended claims.

What is claimed as new, is:—

1. A turn channeling machine, having, in combination, a work table, edge and channeling knives, movable toward and from the table, adjustable stops for determining the distance between the work table and the knives when in their operative positions, and means for simultaneously adjusting the stops to vary said distance, substantially as described.

2. A turn channeling machine, having, in combination, a work table, two spring pressed slides, an edge knife carried by one of said slides, a channeling knife carried by the other slide, means on each slide for determining the distance between the work table and the knives when in their operative position, and an adjusting device coöperating with said means for varying said distance, substantially as described.

3. A turn channeling machine, having, in combination, a work table, a movable head, two knife slides movable therein carrying edge and channeling knives, means for raising one of said slides in the head to withdraw its knife from the work, and additional means acting on said slides to raise them in the head simultaneously and vary the distance between the work table and both of said knives when in their operative position, substantially as described.

4. A turn channeling machine, having, in combination, a work table, a movable head, a channeling knife, a slide to carry the chan-

neling knife, an edge knife, a slide to carry the edge knife, said slides being movable in the head, means providing for independent relative movement of the slides in the head
5 toward and from the work table, and means for adjusting the operative position of the knives in the head and with relation to the work table without changing their relative positions, substantially as described.
10 5. A turn channeling machine, having, in combination, a work table, a channeling knife, a slide to carry the channeling knife, an edge knife, a slide to carry the edge knife, studs projecting from the upper ends

of the slides, intermeshing spur gears 15 threaded upon the studs, a gear segment meshing with one of the spur gears, means to turn said segment to rotate the gears and raise the slides from the table simultaneously, and a fixed pointer to indicate by 20 graduations on the gear segment the thickness of the sole edge to which the knives are adjusted, substantially as described.

FREDERIC E. BERTRAND.

Witnesses:

JOHN H. RIGBY,
JOSIAH E. REID.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."