F. E. BERTRAND.

MACHINE FOR OPERATING UPON SOLES.

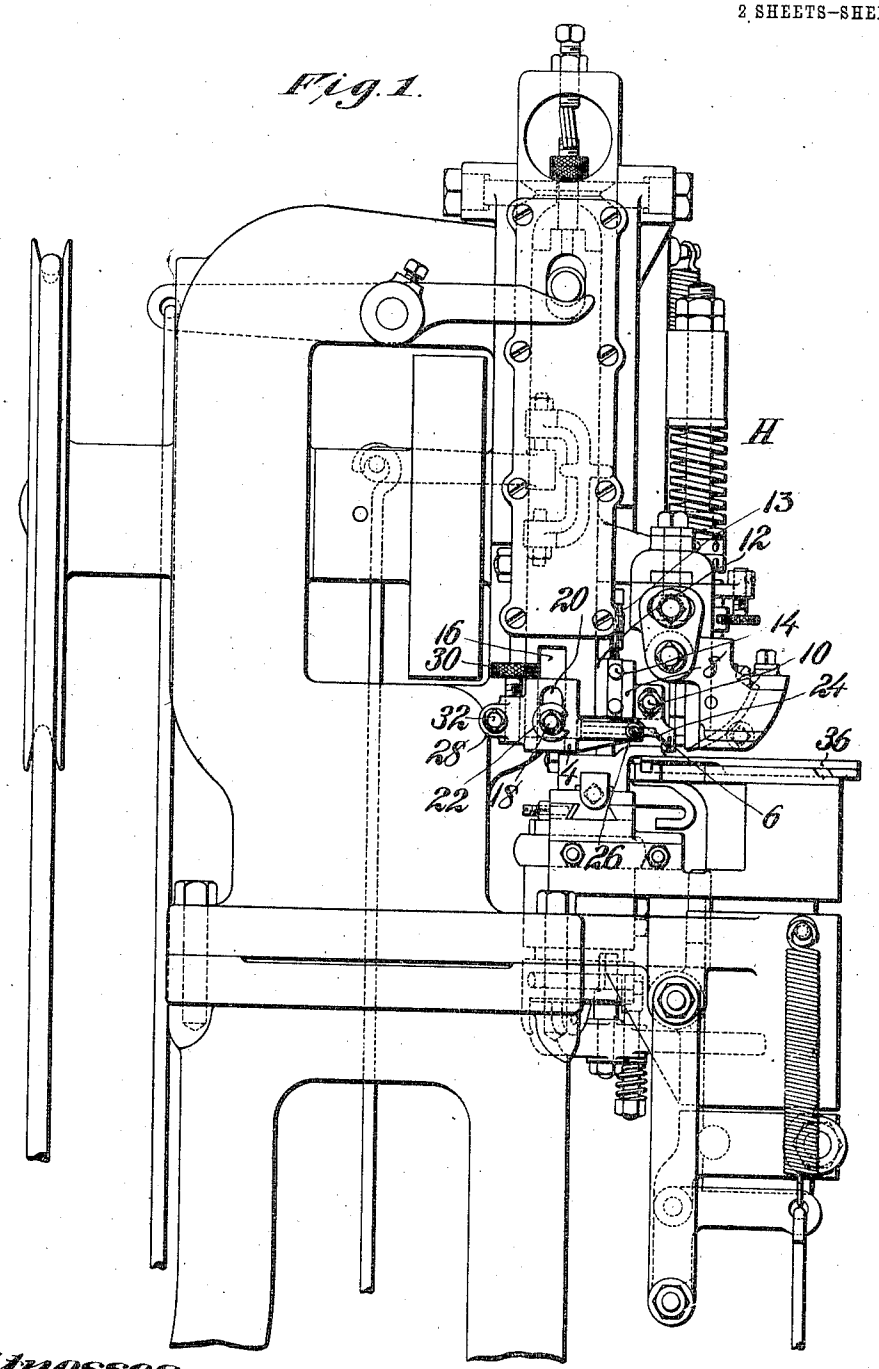
APPLICATION FILED MAR. 24, 1909.

1,030,703.

Patented June 25, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

E. C. Murdeman

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Inventor:

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by his attorneys

Phillips, Van Orden & Fish

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2 SHEETS—SHEET 2.

Fig. 2.

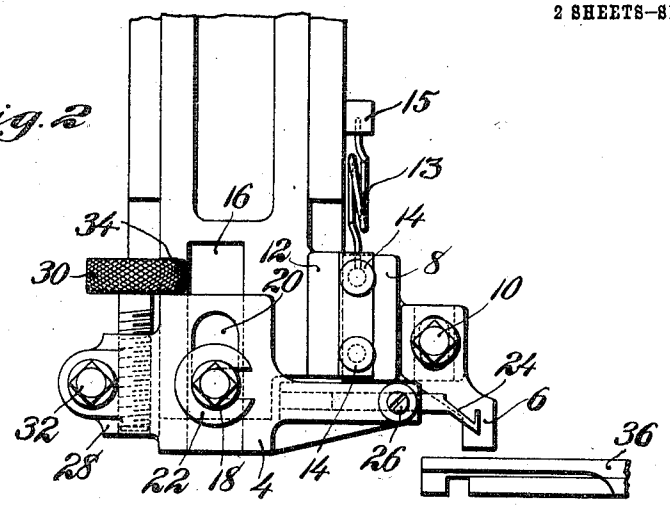


Fig. 3.

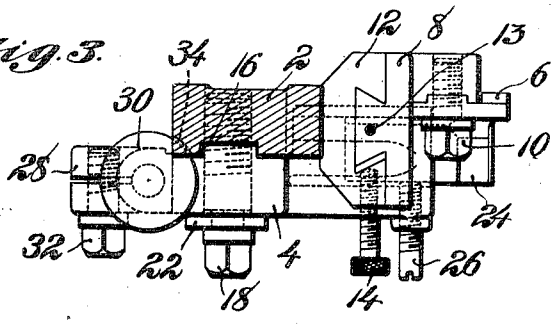
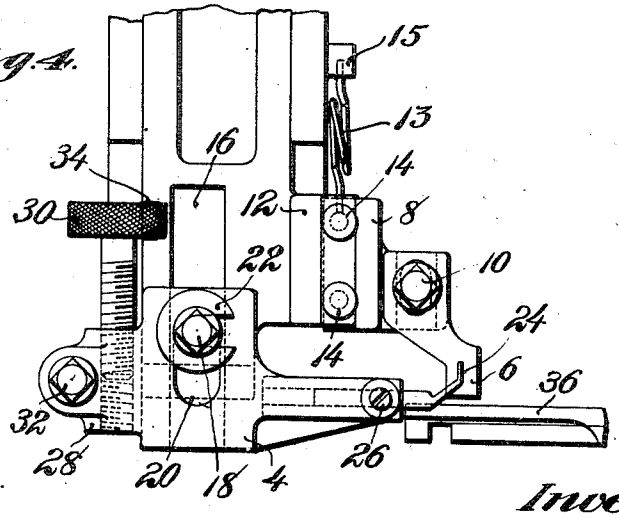


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR OPERATING UPON SOLES.

1,030,703. Specification of Letters Patent. Patented June 25, 1912.

Application filed March 24, 1909. Serial No. 485,486.

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 Machines for Operating upon Soles; 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 machines for operating on the soles of boots and shoes known in the art, broadly, as "channeling machines," and more particularly to such machines for preparing soles to be incorporated into turn shoes, or in preparing insoles for women's work.

In both welt and turn work a channel cut is formed in the surface of the sole. In welt work the edge of the sole is also slit, in addition to the channel cut in the sole face, the lip thus formed being turned up to form a shoulder against which the upper is lasted and the welt is sewed. In turn work no lip is formed at the edge of the sole, the upper portion of the margin of the sole being entirely removed to form a shoulder, or striking surface, for the point of the needle. Insoles for women's work are also prepared in this way.

The same form of shoulder cut in the sole is not desirable in all kinds or styles of shoes, for instance, in cases where an extreme feather edge is desired the feather will be beveled sharply outward from the base of the shoulder, while in cases where it is desired to preserve the thickness of the sole at its outer edge the direction of bevel is reversed sloping from the outer edge of the sole inward to the base of the shoulder. Frequently it is desirable to cut a simple rabbet in the margin of the sole leaving the surface of the feather parallel to the surface of the sole. In order to be able to change the form of the shoulder cut, and thus render a machine capable of accommodating all classes of work in which a shoulder cut is used, the shoulder knife should be made readily removable so that it can be quickly replaced by a knife of different form when the class of work upon which the machine is operating is changed.

It is obvious that in forming each of the different shoulder cuts referred to the knife assumes a different vertical position relative to the surface of the work support thereby necessitating a different vertical position of the knife block each time the form of the knife is changed. Heretofore, when the knife has been changed to obtain different forms of shoulder cut, it has been necessary to readjust the knife block on its carrier in order to place the knife in such vertical relation to the work support that it will properly perform its work. This frequent adjustment is undesirable because of the waste of time entailed, and the loss of time is generally considerable because the means whereby the adjustment of the knife block is effected is often inconveniently located and therefore not readily accessible.

With these considerations in view, the object of the present invention is to provide a shoulder knife block, which is readily removable, with means for instantly locating it on its carrier with the knife which it holds, of whatever form it may be, in the required vertical relation to the work support.

This object of the invention may be attained by providing the knife block with an adjustable member coöperating with the knife block carrier in a manner to determine and maintain a particular vertical relation of the knife to the work support. Preferably the knife carrier will be provided with a conveniently located recess or groove and the knife block will be provided with a vertically adjustable member having a portion adapted to fit in such recess, for instance, a headed screw threaded into the knife block, thus forming a tongue and groove connection between the parts. If the head of the screw is preliminarily adjusted so that when placed in the recess the knife will assume the desired position, it will then be necessary merely to clamp the knife block to its carrier, and the machine is ready to commence operations without any adjustment of the knife whatever after it is in the machine.

It is customary to have at the machine a number of knives of different form ready for use when desired and the present invention contemplates the use of a number of knife blocks, each having its special form of knife clamped therein in proper relation to the edge gage for the width of feather, and

each having an adjustable member, as described, previously adjusted to suit the particular form of knife in the block. As these knife blocks will be frequently handled and moved about the work bench, means should be provided for locking the said member in its adjusted position so that this position cannot be disturbed.

To gain this end the preferred form of the present invention contemplates a split-eared lug on the knife block, into which the headed screw is threaded, and a clamping screw for tightening the split ears after the desired location of the screw in the lug has been determined.

The invention comprises the features and combinations of parts hereinafter described and particularly pointed out in the appended claims.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which:

Figure 1 is a rear elevation of a sole channeling machine having the present invention incorporated therein; Fig. 2 is an elevation of the knife holder shown in detail, the knife holder being provided with one form of shoulder knife; Fig. 3 is a plan of the parts shown in Fig. 2, the knife block carrier being shown in section; and Fig. 4 is a view similar to Fig. 2 but illustrating the invention in use with a different form of shoulder knife.

Referring to the drawings and more particularly to Fig. 1, H designates generally the head of a sole channeling machine of the type illustrated in Letters Patent of Great Britain to Alfred J. Boult, No. 13,052, dated June 18, 1908, with the chamfer knife and the channel knife raising devices removed. The channeling knife, work feeding and positioning devices, their actuating mechanisms and other coöperating parts, are the same as illustrated and described in detail in said British Letters Patent. These portions of a channeling machine, as illustrated in Fig. 1, are shown by way of example only as the present invention is not limited in its application to any particular type of channeling machine. As in the machine of said British Letters Patent, and for the purpose therein explained, the channel knife with its presser foot, and the edge knife with its presser foot, are mounted on carriers comprising independent, yieldingly mounted slides suitably supported in the machine frame.

Referring now more particularly to Figs. 2 to 4, 2 designates the carrier slide which supports at its lower end the edge knife block 4 and the edge presser foot 6. The presser foot is adjustably and removably mounted on a presser foot block 8 by means of a tongue and groove connection (Fig. 3) and a clamping screw 10 passed through a slot in one of the parts. The presser foot block is mounted for movement toward and from the work to accommodate varying thicknesses of stock, in a toe 12 on the knife block carrier 2, by means of a vertical dovetail tongue and groove connection (Fig. 3). A wear plate is held in place by means of set screws 14. The presser foot is held yieldingly in engagement with the work by means of a "grasshopper" spring 13 having one end inserted in the presser foot block and its other end held in a lug 15 on the frame in which the slide 2 moves.

The knife block 4 is provided with a vertical tongue (Fig. 3) which fits in a vertical groove in its carrier 2. The knife block is held to its carrier by means of a collared screw 18 which passes through a vertical slot 20 in the knife block and bears with its head upon a horse-shoe washer 22. The collar of the screw 18 is of such diameter, relatively to the width of the slot 20, that, on loosening the screw and slipping off the washer, the knife block can be removed from its carrier without entirely removing the screw. With this construction the screw and washer are readily accessible (see Fig. 1) and the knife block can be easily and quickly removed. The shoulder knife 24 is adjustably held in a recess, formed for its reception in the knife block, by a set screw 26. The rear end of the knife block is provided with a split lug 28 into which there is threaded vertically a screw having a milled head 30. The split ends of the lug 28 may be drawn together, and the screw held securely in any desired position of adjustment, by means of a clamping screw 32. The rear face of the knife block slide 2 is provided with a horizontal groove 34 (dotted lines Figs. 2 to 4) of sufficient depth to receive the screw head 30. The screw head 30 and groove 34 form a tongue and groove connection of which one element is adjustable on the part which carries it.

Fig. 2 illustrates a shoulder knife for forming a cut which preserves the thickness of the sole at its edge, and Fig. 4 illustrates a shoulder knife which forms a feather edge on the sole. An inspection of these figures shows that the vertical relation of the knife to the surface of the work table 36 is different in each case. The screw having the head 30 forms a device whereby the distance of the knife above the work table, when in operating position, may be correctly determined, for all forms of knives. When a machine is first set up a shoulder knife block is provided for each form of shoulder knife it is desired to use in the machine. These are successively placed, as desired, on the knife block carrier 2 with the screw head 30 in the groove 34. In each case the knife is adjusted for width of feather and then secured in place

by the screw 26, and also for the height of the particular knife in the block above the work support by an adjustment of the screw while its head 30 remains in the groove 34, the screws 18 and 32 at this time being loosened. After this latter adjustment is made the adjusting screw in each case is locked in its adjusted position by the clamping screw 32. After each knife has been adjusted in its block for the particular cut it is to make they are placed beside the machine and it is obvious that any knife of the series can instantly be mounted in correct working position, without any additional adjustment whatever, by simply placing the screw head 30 in the groove in the knife block carrier and then securing the knife block in the position thus determined by tightening its clamping screw 18. This is true because the clamping screw 32 holds the adjusting screw invariably in its adjusted position and, therefore, the knife must, of necessity, assume its correct working position when the screw head 30 and groove 34 are placed in engagement.

While the particulars of construction herein set forth are well suited to one form of the invention, it is not to be understood that these particulars are essential since they may be variously modified within the skill of the artisan without departing from the true scope of the actual invention as defined by the following claims.

What is claimed as new, is:—

1. A machine for operating upon soles, having, in combination, a knife block carrier, a knife block removably mounted thereon, a headed screw threaded into one of said parts, the other of said parts having a groove, the screw head and groove being adapted to engage each other when the knife block is in working position on its carrier, and means for locking the screw in any desired position of adjustment whereby a proper replacement after a temporary separation is insured, substantially as described.

2. A machine for operating upon soles, having, in combination, a knife block carrier having a horizontal groove, a knife block, a screw threaded vertically into the knife block having a head adapted to engage in said groove when the knife block is in working position on its carrier, and means to lock the screw in any desired position of adjustment, substantially as described.

3. A machine for operating upon soles, having, in combination, a knife block carrier, a knife block, a tongue and groove connection between said parts one of the elements of said connection being adjustable on the part which carries it, and means for locking the adjustable element in any desired position of adjustment, substantially as described.

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

FREDERIC E. BERTRAND.

Witnesses:
WARREN G. OGDEN,
FRED O. FISH.