M. COOK, Jr.

SOLE CUTTING AND MARKING MACHINE.

APPLICATION FILED MAY 29, 1907.

1,113,544.

Patented Oct. 13, 1914.

4 SHEETS—SHEET 1.

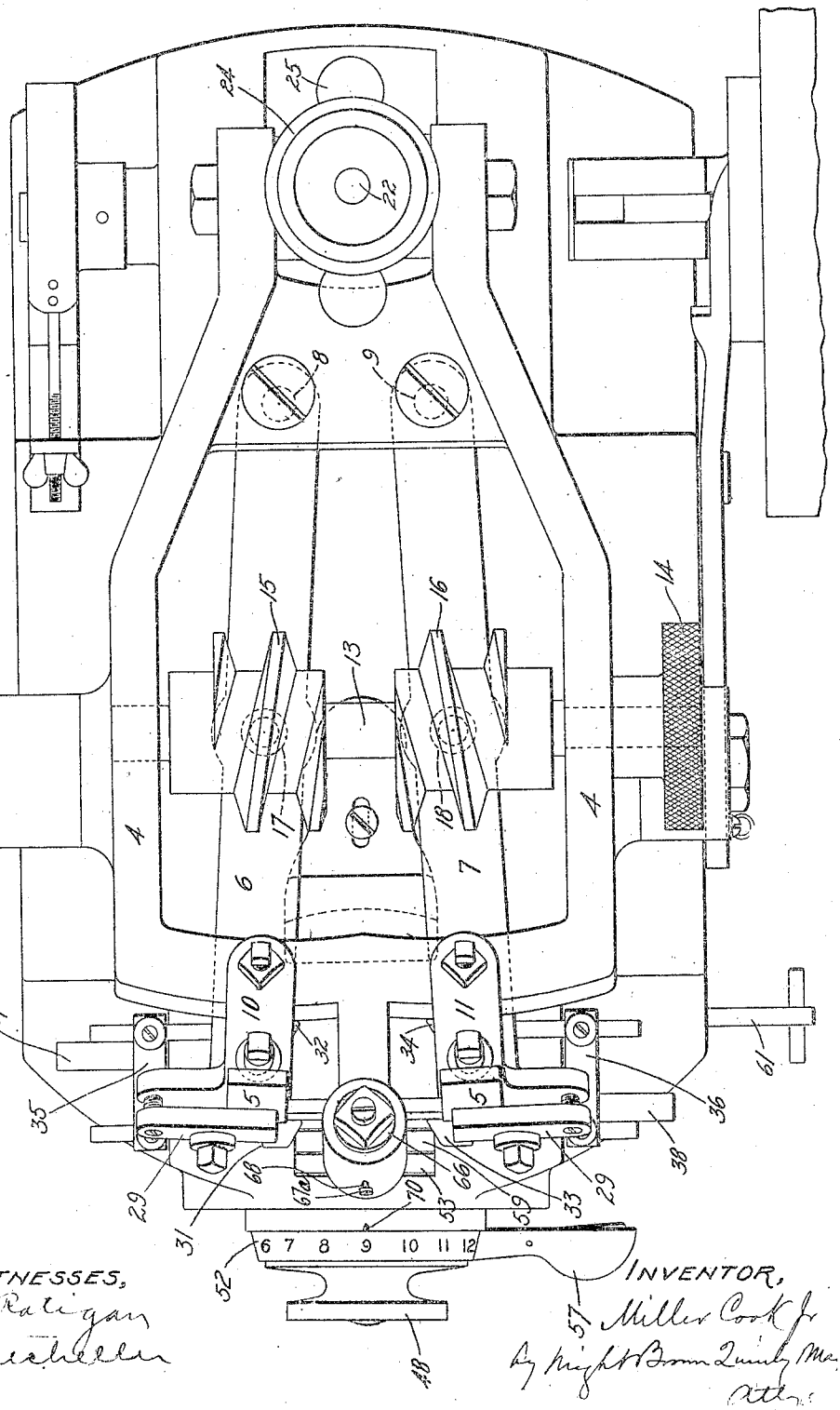


FIG. 1.

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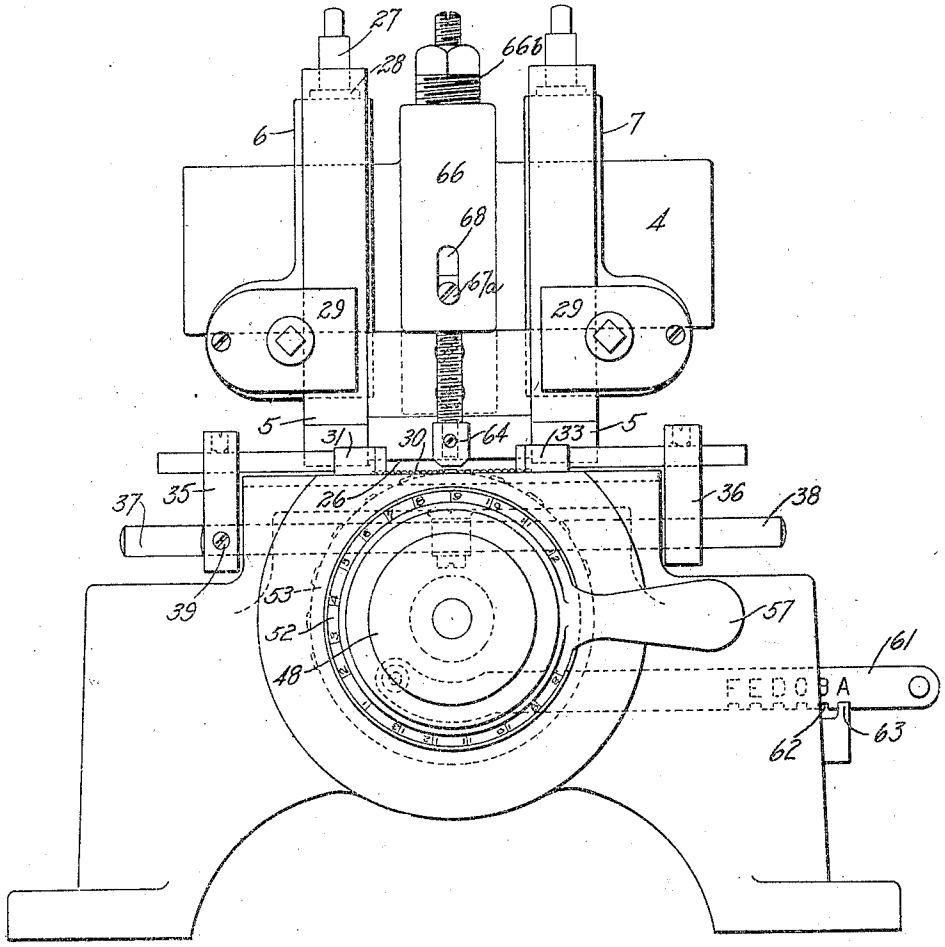
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4 SHEETS—SHEET 2.

FIG. 2



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4 SHEETS—SHEET 3.

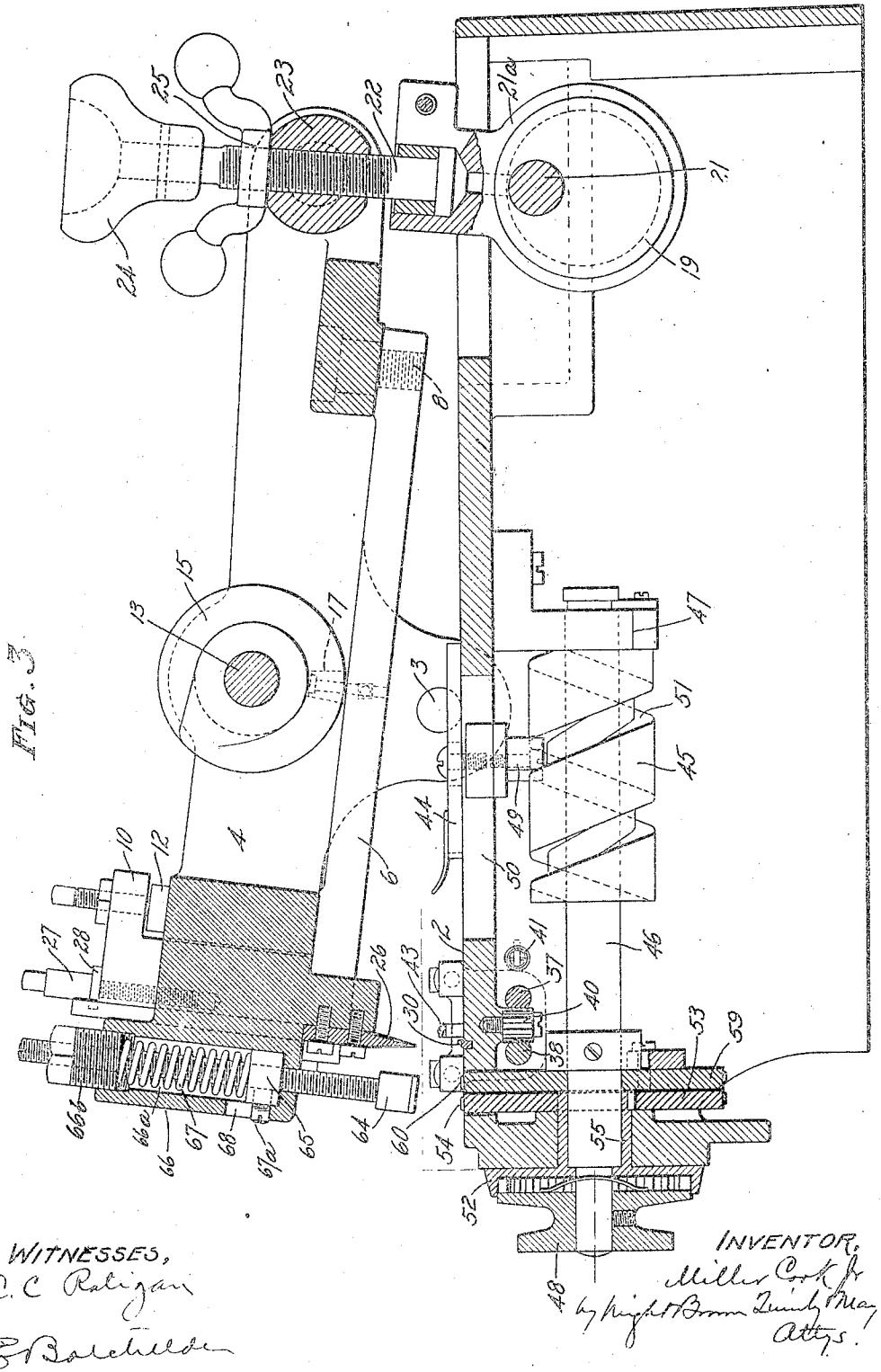


Fig. 3.

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4 SHEETS—SHEET 4.

FIG. 4

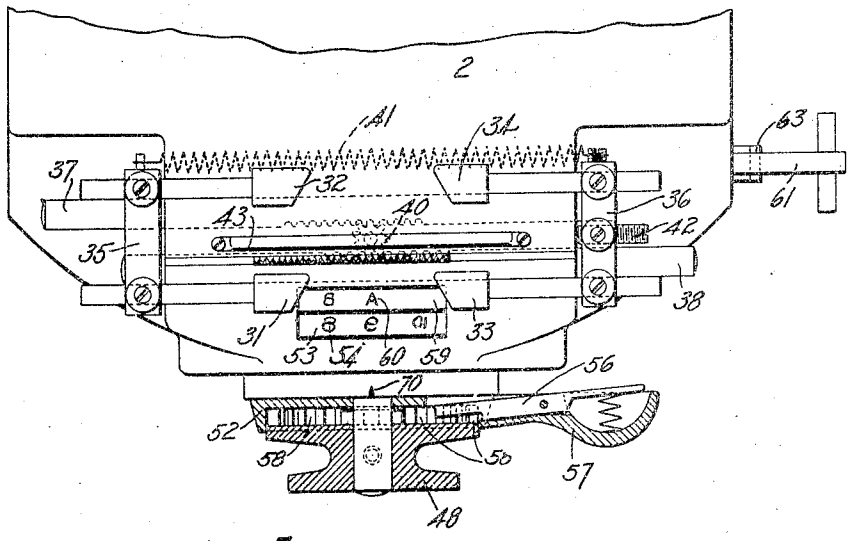
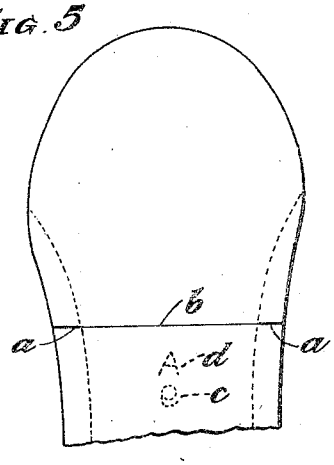


FIG. 5



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UNITED STATES PATENT OFFICE.

MILLER COOK, JR., OF WHITMAN, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SOLE CUTTING AND MARKING MACHINE.

1,113,544. Specification of Letters Patent. Patented Oct. 13, 1914.

Application filed May 29, 1907. Serial No. 376,280.

To all whom it may concern:

Be it known that I, MILLER COOK, Jr., of Whitman, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Sole Cutting and Marking Machines, of which the following is a specification.

This invention relates to machines of the character illustrated and described in my application for patent Serial No. 304,866, dated March 8, 1906, by which channeled inner soles are incised so as to cut off channeled lips or flaps at opposite sides of the sole at the points where the welt is to terminate.

The present invention particularly consists in combining with such a machine, markers for stamping identifying marks representing the sizes and width of the soles upon the latter at the same time that the incisions are made.

It further consists in providing an additional marker for indicating the point at which the canvas covering of certain types of inner soles is to terminate, in providing a retaining device for preventing the soles to be acted upon from rising above and overlying the gages, in an improved construction of side gages for centering the sole with respect to the cutting knives, and in a novel adjusting device for positioning the end gage and simultaneously adjusting the size marker to indicate the size of the sole for which the back gage is adjusted.

In the drawings,—Figure 1 represents a plan view of a machine embodying the improvements forming the subject of the present invention. Fig. 2 represents a front elevation of the machine. Fig. 3 represents a vertical longitudinal section thereof. Fig. 4 represents a detail plan view of the forward end of the support. Fig. 5 represents a plan of the heel end of an inner sole, showing the results that are formed by the machine.

On the drawings, 1 represents a base having a flat upper surface 2 which serves as a table or support for the sole to be acted upon. Pivoted upon studs 3 at the sides of the base, is a frame 4 which constitutes an oscillating or vibrating cutter head and carries two separated incising knives 5. These knives are mounted on brackets 6 and 7 respectively, which are pivoted at 8 and 9 to the frame 4, so that they can be adjusted from and toward each other. They extend beyond the front of the frame and have arms 10 and 11 projecting rearwardly and carrying clamps 12 which can be screwed down against the front bar of the frame to hold the brackets and knives in adjustable position. The means for so adjusting the knives consists of a shaft 13 rotatably mounted in the side bars of the frame 4 and carrying a hand wheel 14 by which it may be turned. This shaft carries oppositely pitched screws or worms 15 and 16, engaging rolls 17 and 18 carried by the brackets 6 and 7 respectively.

The frame is oscillated to bring the knives toward and from the support 2, by means of an eccentric 19 upon a shaft 21 which passes transversely through the base of the machine. About the eccentric passes a strap 21^a to which is attached a rod 22 passing through a block 23 pivoted between the ends of the side bar of the frame 4. This bar is threaded into the block 23 and is rotatably held by the strap, so that when turned by a knob 24 on its end, it may adjust the frame to regulate the distance of the knives from the support 2. A lock nut 25 maintains the adjustment.

On the forward part of the frame between the brackets 6 and 7 is an indenting marker 26 which is in line with the cutting knives and makes a line of indentations extending across the surface of the sole between the incisions. The knives are adjustable to compensate for loss in grinding by means of screws 27, threaded into the brackets and having collars 28 entering grooves in the rear sides of the knives. By turning down the screws, the collars are lowered and with them, the knives. The latter may slide between the ends of the brackets and clamp 29 fastened thereto. After the adjustment of the knives the clamps are tightened up.

Set into the surface of the support directly beneath the marker 26, is a stationary marker 30 which is pressed into the under surface of the sole when the marker 26 and knives bear against the upper surface. The marker 30 forms an indented line or series of indentations which serve as a guide for locating the canvas layer which is cemented to some classes of inner soles, such as are known as the "Gem" inner sole. On op-

posite sides of the central line of the machine, are side gages 31 32 33 and 34. The first two are clamped into a block 35, while the other two are secured similarly in a second block 36. Through these blocks and the intermediate portion of the support extend bars 37 and 38. The block 35 is secured by a set-screw 39 to the bar 38, while the block 36 is similarly secured to the other bar. Each bar is capable of sliding endwise through the sides of the base and when so moved, carries the block which is fastened to it, this block then sliding upon the other bar. Between their ends the bars are formed with teeth, as shown in dotted lines in Fig. 4, and between them is pivoted a pinion 40 in mesh with the teeth, so that when either bar is moved in one direction, the other is simultaneously and equally moved in the opposite direction. A spring 41 attached to the blocks 35 and 36 tends to hold them and the gages in their most closely adjacent position, while a stop screw 42, carried by block 36, limits their approach toward one another by striking a shoulder of the base. In placing a sole upon the support, its heel end is placed between the front gages 31 and 33, and the sole is then moved endwise. This causes the gages to separate sufficiently to admit the sole, but they are always caused by the spring to grip the sides of the sole yieldingly and hold it centrally.

In order to prevent the pressure of the spring, or other cause, from raising the sole and causing either edge to lie over any of the gages, I provide a bridge bar 43 which is secured at its end to the support, and resides at a sufficient distance from the surface of the support to admit the sole beneath it, but to prevent the sole rising above the gages. In order to accomplish this result, it is necessary that the bar be at a less distance from the support than the combined thickness of the sole and either gage.

After being passed between the side gages, the end of the sole is stopped by an end gage 44. This gage is adjustable in the direction of length of the sole so as to cause the incisions to be made at the proper distance from the heel end thereof. For making this adjustment, a cylindrical cam 45 is provided and secured upon a shaft 46 which rotates in bearings in the front end of the frame and in a bracket 47. It is turned by a knob 48 on its front end. A block 49, secured to the gage, passes through a slot 50 in the supporting surface and enters a helical groove 51 in the cam. It will readily be understood how the rotation of the cam will cause the gage to move forward or back.

The heels applied to shoes vary in length in proportion to the sizes of the shoes, and it is necessary that, in all cases the welt should terminate at a given distance from the breast of the heel. Accordingly, the back gage is moved proportionately to the size of each sole acted upon, so that the incisions will come at the necessary distance from the heel end thereof to suit the heel which is afterward applied. It is also an advantage to have the size correctly marked upon the sole at the time the cuts are made. Accordingly, a size index 52, bearing numbers representing sizes, is carried on the shaft 46, and a disk 53, bearing marking dies 54 on its periphery, is also carried on the shaft. The periphery of this disk passes through a slot in the supporting surface so that its raised dies project sufficiently to make an impression when the sole is forced against them. The numbers, or other characters represented by the dies, correspond with the indications on the index and the disk 53 is accordingly keyed to a sleeve 55 projected from the index so that they will always turn together. They are connected with the shaft through the medium of the latch 56 pivoted to an arm 57 that projects from the index disk 52. This latch is spring pressed so as to enter one or another of the notches 58 which are formed near the rim of the knob 48. Thus whenever the latter is turned to adjust the gage, the index is correspondingly turned to show the size for which the gage is set, while the disk 53 is also turned to bring the corresponding impression die uppermost, it being understood that the characters on the disk are reversed in the manner of types so as to make a right impression on the sole. Beside the disk 53 is mounted a second disk 59 carrying marking dies 60 which represent letters or other characters for indicating the widths of the soles. This second disk is mounted loosely on the shaft 46 and is turned by an arm 61 pivoted to it and projecting beyond the side of the base. This arm has notches 62 capable of being placed over a detent 63 fastened to the base, whereby the bar and disk are held adjusted, while index marks, as shown in Fig. 2, are placed on the bar to show which of the dies is uppermost.

When the cutter carrier or head is depressed to make the incisions in the sole, the latter is pressed against the dies by means of a yielding presser 64 carried by the frame 4 at the center of the front bar thereof. This presser has a head of sufficient extent to cover both dies at once, and a threaded shank upon which is screwed a collar 65. The latter is contained in a socket 66 formed on the frame 4 through which passes the shank of the presser and in which is contained a spring 67. The latter presses downwardly on the collar 65 and upward against a block 66[b] screwed into the upper end of the socket and through which

the shank of the presser passes. A set-screw 67ª locks the collar and by passing through a slot 68 prevents the collar from turning. As may be readily understood the spring 67 holds the presser firmly against the sole, while allowing it to yield.

Although the distances of the cuts from the heel end vary by regular intervals for different sizes, yet in certain styles of shoe these distances are not the same for similar sizes. That is, for a number 9 shoe of one style, the ends of the welt and consequently the cuts in the channel lips of the inner sole would be at a certain definitely greater or less distance from the heel end of the shoe than in a number 9 shoe of some other style. Accordingly it is desirable to have the size-marking disk and indicator adjustable relatively to the cam so as to enable them to be shifted without changing the position of the gage. It is for this purpose that the detachable connections between the indicator 52 and knob 48 consisting of the latch 56, before described, are provided. By moving this latch out of the notch with which it is engaged, the indicator and size marker may be turned to designate a different size without shifting the gage. The latch may then be reëngaged in a different notch, and subsequent turning of the cam will correspondingly rotate the marking disk and indicator. An immovable index mark is shown at 70 with reference to which the characters on the indicator 52 are read.

I claim:

1. A sole-cutting and marking machine comprising provisions for locating the heel portion of a sole, an identification marker, and cutting means for making incisions in the sole adjacent the edges thereof, and simultaneously causing pressure between the sole and the identification marker.

2. A sole cutting and marking machine comprising provisions for locating the heel portion of a sole, cutting means for making incisions in the sole adjacent the edges thereof, a non-penetrating indenting marker arranged between said cutting means to produce an indented mark between the incisions made thereby, and a device arranged opposite to said marker for making an indented mark on the opposite side of the sole.

3. A sole cutting and marking machine comprising a support for a sole, an indenting marker held by said support, a cutter head movable toward and from the support, separated cutters and an intermediate indenting marker carried by said head adapted to bear on a sole placed on the support to produce cuts at the edges of the sole and an indented mark in line therewith directly opposite the mark produced by said first marker on the other surface of the sole.

4. A sole cutting and marking machine comprising means adapted to cut transversely the channel lips of a channeled sole, an adjustable gage for positioning the sole to receive said cuts at a distance from the heel end of the sole proportional to the size thereof, and a size marker adjustable simultaneously with said gage to indicate on the sole the size for which the adjustment is made.

5. A sole cutting and marking machine comprising means adapted to cut transversely the channel lips of a channeled sole, an adjustable gage for positioning the sole to receive said cuts at a distance from the heel end of the sole proportional to the size thereof, means for adjusting the gage, and a marker bearing size identification marks, adjustable by said means, for indicating on the sole the size for which the gage adjustment is made.

6. A sole cutting and marking machine comprising a support for a sole, a cutter-carrier, knives carried thereby and movable therewith toward said support to make transverse incisions adjacent the edges of a sole placed on said support, and a marking die bearing a series of identification marks, projecting sufficiently from the surface of the support to impress the mark on the sole when the latter is pressed upon by the cutter-carrier.

7. A sole cutting and marking machine comprising a support for a sole, a cutter-carrier, knives carried thereby and movable therewith toward said support to make transverse incisions adjacent the edges of a sole placed on said support, a marking die bearing a series of identification marks, projecting sufficiently from the surface of the support to impress the mark on the sole, and a presser mounted on the cutter-carrier and arranged to force the sole against said die.

8. A sole cutting and marking machine comprising provisions for locating the heel portion of a sole, cutting means for making incisions in the sole adjacent the edges thereof, a support for the sole, a cutter-head, knives carried thereby and movable therewith toward said support for making separated transverse incisions adjacent the edges of a sole placed on the support, markers having a series of raised impression dies representing identification marks and projecting slightly from the surface of the support, and a presser carried by the cutter-head arranged to bear on the sole when the incisions are made and to press the same against said dies, whereby the proper identification marks are impressed in the sole.

9. A sole cutting and marking machine comprising provisions for locating the heel portion of a sole, cutting means for making incisions in the sole adjacent the edges thereof, a support for the sole, a cutter-head, knives carried thereby and movable therewith toward said support for making sepa-

rated transverse incisions adjacent the edges of a sole placed on the support, disks located beneath the support and projecting at their peripheries to the level of the supporting surface thereof, and having raised impression dies on their peripheries representing size and width indications, and a presser for forcing the sole against said dies while the incisions are being made by the knives.

10. A sole cutting and marking machine comprising provisions for locating the heel portion of a sole, cutting means for making incisions in the sole adjacent the edges thereof, a support for a sole, cutting means for incising the sole transversely adjacent its edges, side gages yieldingly drawn together to grip the sides of the sole and position the same centrally with respect to the cutting means, and a holder for preventing the sole becoming placed above the gages.

11. A sole cutting and marking machine comprising provisions for locating the heel portion of a sole, cutting means for making incisions in the sole adjacent the edges thereof, a support for a sole, cutting means for incising the sole transversely adjacent its edges, side gages yieldingly drawn together to grip the sides of the sole and position the same centrally with respect to the cutting means between which the sole may be passed endwise, and a holder for retaining the sole near the support during its passage between the gages and preventing its edges from overlying either of the gages.

12. A sole cutting and marking machine comprising provisions for locating the heel portion of a sole, cutting means for making incisions in the sole adjacent the edges thereof, a support for a sole, cutting means for incising the sole transversely adjacent its edges, side gages yieldingly drawn together to grip the sides of the sole and position the same centrally with respect to the cutting means between which the sole may be passed endwise, and a bridge bar mounted on said support at a less distance therefrom than the combined thickness of the sole and either gage, whereby the sole is prevented from overlying either gage during or after its passage between them.

13. In a machine of the character described, incising cutters, a back gage for locating the incisions at the required distance from the heel end of the sole, an adjuster for said gage, and a marker operated by said adjuster and carrying dies for impressing on the sole the size thereof for which the adjustment has been made.

14. In a machine of the character described, incising cutters, a back gage for locating the incisions at the required distance from the heel end of the sole, an adjuster for said gage, an external indicator arranged to show the size for which the adjustment has been made, and a marker for impressing on the sole the size mark represented by the indicator.

15. In a machine of the character described, incising cutters, a back gage for locating the incisions at the required distance from the heel end of the sole, an adjuster for said gage, an external indicator arranged to show the size for which the adjustment has been made, and a marker for impressing on the sole the size mark represented by the indicator, said indicator and marker being capable of variation relatively to said adjuster to alter the size indications for soles adapted for shoes of different styles.

16. In a machine of the character described, incising cutters for cutting transversely the channel lips of a channeled sole, an end gage for locating the position of the cuts in the sole at the required distance from the heel end thereof, a cam for adjusting said gage for soles of different sizes, and a size marker mounted and movable coaxially with said cam beneath the position occupied by the soles when being cut, and having impression dies representing size indications arranged to come into marking position in correspondence with the locations of the gage for soles of various sizes.

17. In a machine of the character described, incising cutters for cutting transversely the channel lips of a channeled sole, an end gage for locating the position of the cuts in the sole at the required distance from the heel end thereof, a cam for adjusting said gage for soles of different sizes, a size marker mounted and movable coaxially with said cam beneath the position occupied by the soles when being cut, and having impression dies representing size indications arranged to come into marking position in correspondence with the locations of the gage for soles of various sizes, and an external indicator having marks corresponding to the dies and connected with said marker so as to show the size for which the gage is set and the die which is positioned to impress the same on the sole.

18. In a machine of the character described, incising cutters for cutting transversely the channel lips of a channeled sole, an end gage for locating the position of the cuts in the sole at the required distance from the heel end thereof, a cam for adjusting said gage for soles of different sizes, and a size marker mounted and movable coaxially with said cam beneath the position occupied by the soles when being cut, and having impression dies representing size indications arranged to come into marking position in correspondence with the locations of the gage for soles of various sizes, said marker being adjustable relatively to the cam so as to vary the size indication for different styles.

19. In a machine of the character de-

scribed, a support for a sole, cutters movable toward the same, a marker carrying impression dies in the form of reversed characters representing predetermined indications, and an arm connected with said marker whereby the same may be manually adjusted.

20. In a machine of the character described, a support for a sole, cutters movable toward the same, a marker carrying impression dies in the form of reversed characters located at the surface of said support, and a yielding presser carried adjacent to, and movable simultaneously with, said cutters for forcing the sole against the nearest die.

21. A machine for operating on soles, having, in combination, devices to act on the sole at predetermined points, gaging means arranged to engage the external outline of the sole at its end to determine the position of the sole longitudinally with reference to said devices, a marking device arranged to mark the size number on the sole, and mechanism connecting the gaging means and marking device for setting the marking device.

22. A machine for operating on soles, having, in combination, devices to act on the sole at a predetermined distance from the heel end, a gage arranged to engage the external outline of the sole at its heel end to determine the position of the heel end of the sole longitudinally with relation to said devices, a size marking device, and connected mechanism for adjusting the gage and setting the marking device.

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

MILLER COOK, JUNIOR.

Witnesses:
PETER W. PEZZETTI,
ARTHUR H. BROWN.