

C. S. GOODING & S. E. TAFT.
 MACHINE FOR BANDING AND CUTTING IN THE SHANKS OF SHOES.
 APPLICATION FILED FEB. 15, 1909.

939,007.

Patented Nov. 2, 1909.

2 SHEETS—SHEET 1.

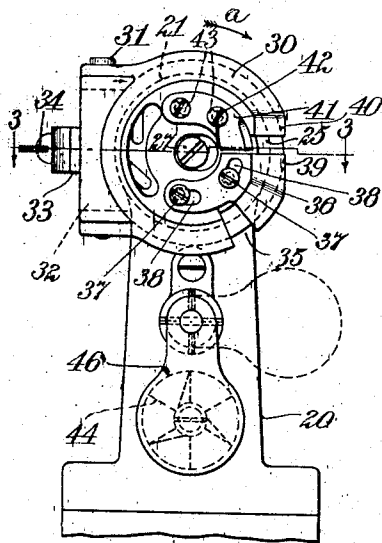


Fig. 1.

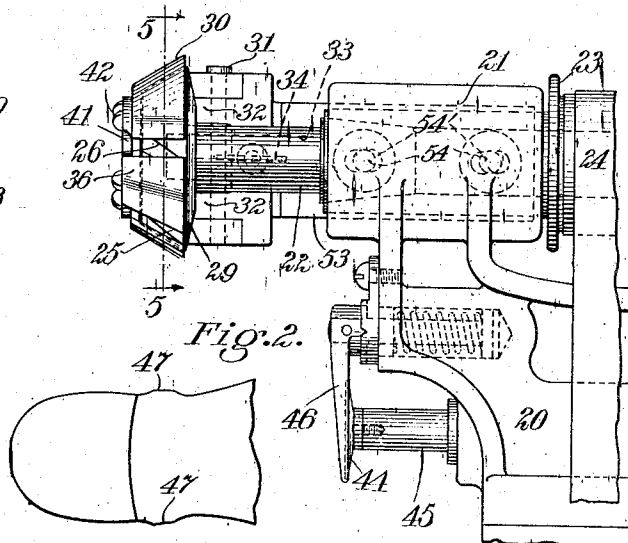


Fig. 2.

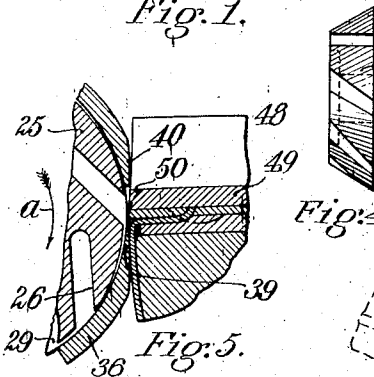


Fig. 3.

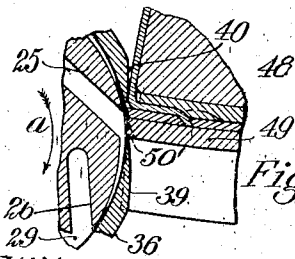


Fig. 4.

Witnesses:
 Franklin E. Low,
 Louis A. Jones.

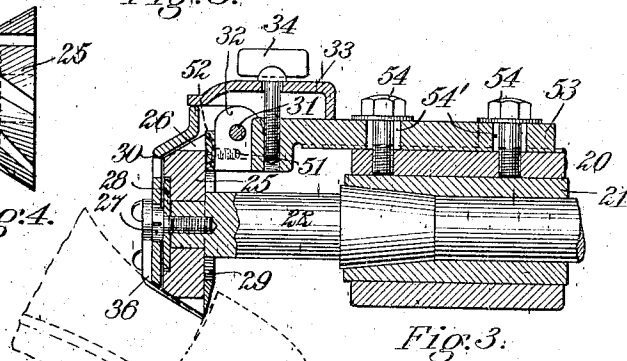


Fig. 5.

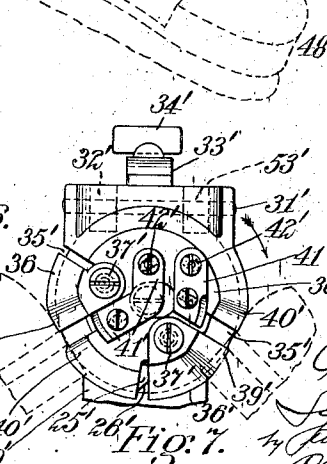


Fig. 6.

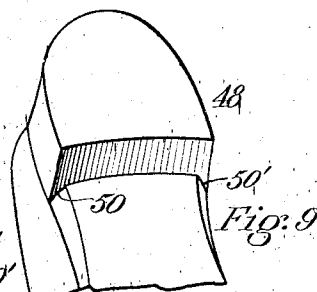


Fig. 7.

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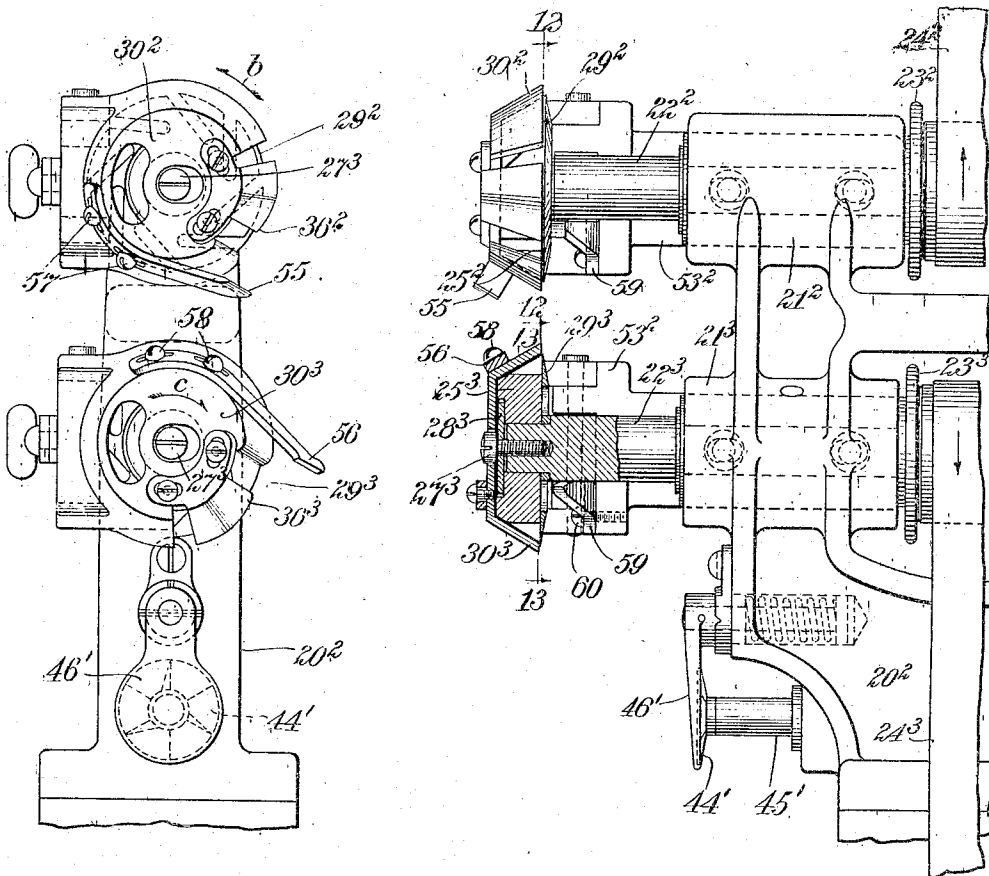


Fig. 10.

Fig. 11.

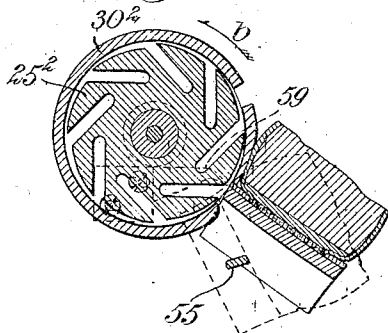


Fig. 12.

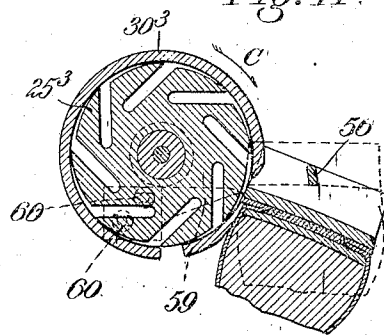


Fig. 13.

Witnesses:

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Sydney E. Taft
By their attorney, Charles S. Gooding.

UNITED STATES PATENT OFFICE.

CHARLES S. GOODING, OF BROOKLINE, AND SYDNEY E. TAFT, OF SOUTH FRAMINGHAM, MASSACHUSETTS; SAID TAFT ASSIGNOR TO SAID GOODING.

MACHINE FOR RANDING AND CUTTING IN THE SHANKS OF SHOES.

939,007.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed February 15, 1909. Serial No. 478,038.

To all whom it may concern:

Be it known that we, CHARLES S. GOODING, a citizen of the United States, residing at Brookline, in the county of Norfolk, and SYDNEY E. TAFT, a citizen of the United States, residing at South Framingham, in the county of Middlesex, State of Massachusetts, have invented new and useful Improvements in Machines for Randing and Cutting In the Shanks of Shoes, of which the following is a specification.

This invention relates to a machine for performing that particular operation upon the edge of the sole of a boot or shoe, known as "cutting in," the machine also being adapted to rand the upper edge of the sole adjacent to the breast of the heel. The "cutting in" operation is at present performed in the different factories by hand and consists in that part of the edge trimming operation which pertains to that portion of the edge of the sole, in the shank portion thereof, immediately adjacent to the breast of the heel.

In trimming the soles and heels of boots and shoes, the shoe is first operated upon by the heel trimming machine, which trims the edge of the heel and rands the upper side of the sole adjacent to the edge of the heel simultaneously. The heel is then breasted. The shoe is then taken to an edge trimmer upon which the edge of the sole is trimmed by a rotary cutter which simultaneously rands the upper side of the sole adjacent to the edge. The shank portion of the sole is then trimmed by a rotary cutter and the upper side of the sole adjacent to the edge is simultaneously randed by a randing cutter. On account of the rotary randing cutter being of curvilinear cross section upon its periphery, for the purpose of giving a curved edge to the sole in the shank portion, the edge of the sole adjacent to the breast of the heel cannot be trimmed by the shank cutter, for the reason that said shank cutter would cut into the breast of the heel. Therefore, a portion of the edge of the sole immediately adjacent to the breast of the heel is left to be trimmed by hand. This is performed by means of a curved knife, the operator cutting up to the breast of the heel, along the edge of the sole, and then cutting

across, in line with the breast of the heel, to sever the piece of leather which has been trimmed to the breast of the heel, as aforesaid. It is this last operation which is called "cutting in" and which it is the object of this invention to perform by machinery instead of by hand. In addition to the "cutting in" operation, there is a portion along the upper side of the sole adjacent to the edge and adjacent to the breast of the heel which is not randed by the heel trimming knife nor by the shank trimming knife and this also has to be randed, and in the machine of our invention, we have provided a rotary shank trimming cutter which performs this operation, preferably after the "cutting in" operation has been performed by the machine of our invention.

Our invention consists in a machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel, said machine having, in combination, a rotary cutter and means to position the shoe properly with relation to said cutter, so that the "cutting in" operation can be performed by a rotary cutter cutting transversely of the edge of the sole and trim the edge of said sole adjacent to and in front of the breast of the heel.

The invention further consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings: Figure 1 is a front elevation of our improved "cutting in" machine. Fig. 2 is a side elevation of the same, partly broken away to save space in the drawings. Fig. 3 is a sectional plan taken on line 3—3 of Fig. 1, with a shoe in position to be operated upon shown in dotted lines in connection therewith. Fig. 4 is a side elevation of the cutter. Fig. 5 is an enlarged sectional elevation taken on line 5—5 of Fig. 2, illustrating a portion of the rotary cutter, one of the gages and the guard for the upper, together with a portion of a shoe in position to be operated upon. Fig. 6 is a view similar to Fig. 5, illustrating the opposite side of the same shoe in position to be operated upon. Fig. 7 is a front elevation of a modified form of our invention. Fig. 8 is a diagrammatic view illustrating the sole of a shoe with the portion

upon the edge thereof which is to be removed by our "cutting in" machine. Fig. 9 is a perspective view of the heel portion of the shoe after the same has been operated upon by our improved "cutting in" machine. Fig. 10 is a front elevation of a modified form of our invention. Fig. 11 is a side elevation, partly in section of the same as viewed from the right of Fig. 10, and broken away. Fig. 12 is a detail section taken on line 12-12 of Fig. 11. Fig. 13 is a detail section taken on line 13-13 of Fig. 11.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, referring to Figs. 1 to 6, inclusive, 20 is the frame of the machine which may be fastened to any suitable support, such as a column or bench. Said frame 20 is provided with bearings 21 in which is journaled a shaft 22. Said shaft is driven by a pulley 23 and a belt 24 in the usual well known manner. 25 is the rotary cutter by means of which the edge of the sole is trimmed adjacent to and in front of the heel of the shoe. It will be noted that the teeth 26 on said cutter 25 are inclined at a greater angle to a horizontal plane than is usual in rotary cutters for edge trimming where the cutter trims the sole longitudinally thereof instead of transversely as in the present invention, the reason of this greater inclination being to prevent the chipping or roughing of the sole by reason of the cutter cutting transversely thereof. The cutter 25 is fastened to the shaft 22 by means of a screw 27 and washer 28 in the usual manner.

The gage 29 is fastened to a bracket 53 by means of screws 51 which extend through slots 52 in said gage, said screws having screw-threaded engagement with said bracket, and the bracket being adjustably fastened to the frame 20 by means of screws 54 which extend through slots 54' in said bracket. The bracket 53 might be cast to the frame 20 and in function is rigidly attached thereto and forms a part of said frame. Said gage 29 bears against the breast of the heel to prevent the cutter 25 from cutting into the breast of the heel. Said gage, if desired, can be made sharp enough upon its periphery to act not only as a gage, but as a cutter to clean up the corner where the sole meets the breast of the heel, or, if desired, the edge of the gage may be sufficiently dull not to cut the edge of the sole, and in that case the cutting edge of the cutter, as seen in Fig. 3, will project beyond the periphery of the gage 29. Thus said gage 29 will act not only as a gage to prevent the cutter 25 from cutting into the breast of the heel, but will also act as a gage which will bear against the edge of the sole in line with the heel and determine the depth to which the cutter 25

can cut into the edge of the sole. It will be evident that whether the gage 29 has a cutting edge or a dull edge, it will, in any event, act as a gage against which the breast of the heel will bear while the "cutting in" operation is being performed.

A guard plate 30 extends over the front and periphery of the cutter 25 and is pivoted upon a pin 31 which extends through an ear 32 on the frame 20. Said guard plate is kept in operative position by means of a clamp-plate 33 which is fastened by a screw 34 to the bracket 53 and bears against the guard plate 30. Said guard plate 30 is cut away at 35 upon its periphery, at the right hand side, Fig. 1, to make a space into which the gage 36 may project. Said gage 36 is fastened by screws 37, 37 to the guard plate 30 and the screws 37, 37 project through enlarged holes or slots 38, 38 in said gage and have screw-threaded engagement with the guard plate 30, thus affording a means whereby the gage 36 may be secured to the guard plate 30 in adjustable relation to the periphery of the cutter 25. The gage 36 is beveled to a comparatively thin edge at 39 (Figs. 1, 5 and 6) and extends across the periphery of the cutter 25, so that when the shoe is being trimmed or "cut in", the upper edge of said gage will bear against one face of the sole adjacent to the edge thereof and thus support the sole against the action or pressure of the rotating cutter adjacent to that portion of the sole which is being trimmed or "cut in." The guard plate 30 is beveled at 40 and forms a guard which is adapted to bear against the upper of the shoe while the same is being trimmed or "cut in," as shown in Fig. 6.

An edge gage 41, adapted to bear upon the edge of the sole of the shoe, adjacent to the front face of the cutter 25, is fastened by screws 42 to the guard plate 30. The screws 42 project through slots 43 in the edge gage 41 and have screw-threaded engagement with the guard plate 30, whereby means are provided to secure said edge gage in adjustable relation to the periphery of said cutter, and by adjusting said edge gage the operator is enabled to move the edge of the sole of the shoe nearer to or farther from the center of the cutter, and thus a greater or less amount may be trimmed from the edge of the sole of a shoe.

It is evident that while we prefer to have the breast gage adjacent the breast of the heel bear against the edge of the sole in front of the breast of the heel, or right in the corner where the sole intersects the breast of the heel, another gage might be utilized to cooperate with said breast gage and placed so as to bear against the edge of the heel a short distance back of the breast of the same without departing from the spirit of our in-

vention, as will be fully described hereinafter in connection with Figs. 10 and 11.

For convenience in randing the shoe sole in the vicinity of the breast of the heel, a rotary randing cutter 44 (Figs. 1 and 2) is provided which is fast to a shaft 45 journaled to rotate in suitable bearings in the frame 20 and driven in the usual manner by a belt and pulley. A guard 46 extends around the periphery of the randing cutter 44 and is adapted to project into the crease between the upper side of the sole and the upper of the shoe.

The manner in which our improved "cutting-in" machine illustrated in Figs. 1 to 6 is operated is as follows: The edge of the sole of the shoe is left by the heel trimmer and the edge trimmer in substantially the condition shown in Fig. 8, with a bunch 47 remaining upon the edge of the sole. The operator places the shoe 48 in the position shown in Fig. 5, when one side of said shoe is desired to be "cut in", with the upper side of the sole 49 bearing against the sole gage 36. The operator rocks the shoe laterally thereof until the cutter 25 has trimmed the desired amount from the edge of the sole adjacent to and in front of the breast of the heel, as indicated by the dotted line 50 in Fig. 5. During the last part of the cutting operation, the edge of the sole in line with the breast of the heel bears against the breast gage 29 and the breast of the heel bears at all times during the "cutting in" operation against the back of said breast gage 29. The edge of the sole also bears against the edge gage 41, so that on the front face of the cutter a very slight amount may be taken from the edge of the sole in order that no line may appear in the cut between the work done by the shank trimming cutter, longitudinally of the sole, and the "cutting in" cutter, transversely of the sole. When the shoe has been "cut in" on one side, the same is reversed and placed in the position shown in Fig. 6 with the under face of the sole resting against the sole gage 36 and with the edge of the sole resting against the gages 29 and 41, and with the breast of the heel resting against the back of the gage 29, as hereinbefore described. The shoe is then tipped laterally thereof by the operator until the cutter has trimmed from the edge of the sole an amount indicated by the dotted line 50' (Fig. 6). The shoe is finally randed adjacent the breast of the heel by means of the randing cutter 44, the operator moving the shoe backwardly and forwardly, with the crease gage 46 inserted between the upper and the sole, until the required amount has been removed from the upper side of the sole adjacent the edge of the sole in the vicinity of the breast of the heel, the shoe then being left in the condition illustrated in Fig. 9, the "cutting in" oper-

ation having been performed at 50 and 50', as shown in said Fig. 9.

In Fig. 7 a modified form of our invention is illustrated in which 25' is the edge trimming cutter having teeth 26' upon its periphery and fastened to the shaft as hereinbefore described in relation to the cutter 25. The breast gage is the same in this form of our invention as in that shown in Fig. 3. The guard plate 30' is pivoted to a pin 31' which projects through ears 32' upon the bracket 53' which is fastened to the frame 20' of the machine. The guard plate 30' is held in operative position by means of a clamp plate 33' and screw 34'.

When it is desired to remove the cutter, either in the form of our invention illustrated in Figs. 1, 2 and 3 or the form of our invention illustrated in Fig. 7, the clamp plate is removed from the guard plate and said guard plate tipped back on its pivotal pin 31 or 31', as the case may be, thus leaving the cutter exposed and free to be removed by removing the screw which holds it to the shaft. Said guard plate 30' is cut out at 35' around the periphery of the cutter to admit the sole gages 36', 36' which extend across opposite sides of said cutter, as viewed from the front (see Fig. 7). These sole gages are adjustably held in position upon the guard plate 30' by screws 37', so that said sole gages may be adjusted relatively to the periphery of the cutter 25'. The sole gages 36' are beveled to a thin edge at 39', 39'. The guard plate 30' is also beveled at 40', 40' in order to form a comparatively thin edge against which the upper is adapted to bear. Edge gages 41', 41' are also provided which are adapted to bear against the edge of the sole adjacent to the front of the cutter 25' and these edge gages are adjustably secured by means of screws 42' to the guard plate 30'.

The shoe, in the form of our invention illustrated in Fig. 7, is held in the position illustrated in said figure, at the right thereof, to trim one side of the sole, and is held in the position illustrated at the left of said figure to trim the opposite side of said sole adjacent to and in front of the breast of the heel, and while in these positions the operator rocks the shoe to give a rounding contour to the edge of the shank portion of the sole adjacent to the breast of the heel and in front thereof.

In Figs. 10 to 13, we have illustrated a modified form of our invention in which two rotary cutters are employed for "cutting in" the edge of the sole adjacent the breast of the heel. In some classes of leather it is found to be preferable to have the cutter which does the trimming of the edge move toward the upper of the shoe on opposite sides thereof, and to secure this result, when the shoe is reversed, it is neces-

sary to reverse the motion of the cutter, as will be seen by inspection of Figs. 12 and 13. To this end, therefore, we have provided a machine which has two rotary cutters, rotated, respectively in opposite directions. Referring, therefore, to Figs. 10 to 13, inclusive, 20² is the frame of the machine provided with suitable bearings 21² and 21³ in which the shafts 22² and 22³ are journaled. The shaft 22² is rotated in the direction of the arrow *b* (Fig. 10) by a pulley 23² and belt 24², while the shaft 22³ is rotated in the direction of the arrow *c* by a pulley 23³ and belt 24³. The cutters 25² and 25³ are fastened to the shafts 22² and 22³, respectively, by screws 27³ and washers 28³, as illustrated in section (Fig. 11). Disk-shaped breast gages 29² and 29³ are clamped to the respective shafts 22² and 22³ between the cutters and the shoulders formed on the shaft. The disk gages 29² and 29³ are preferably smooth upon their periphery and may be made either with a dull edge or with a cutting edge, the breast of the heel when being operated upon bearing against the back of said gages, as hereinbefore described in relation to the breast gage in the form of our invention illustrated in Figs. 1, 2 and 3, and the periphery of each of said disk breast gages bearing against the edge of the sole in the corner adjacent the breast of the heel, this breast gage acting to clean out and make a clear cut corner at the breast of the heel or adjoining the edge of the sole. Aside from the direction of rotation of the respective cutters 25² and 25³, the different parts in the form of our invention illustrated in Figs. 10 and 11 are the same as in the form of our invention illustrated in Figs. 1 and 2, with the exception that stops 55 and 56 are provided which are adjustably fastened by screws 57 and 58, respectively, to the guard plates 30² and 30³, respectively, and the disk gages 29² and 29³ rotate instead of remaining stationary as the gage 29 does. If desired, an additional gage 59 may be employed, as seen in Figs. 11, 12 and 13, this gage 59 being adjustably fastened by screws 60, 60 to the bracket 53². The outer end of said gage 59 is adapted to bear against the edge of the heel, as illustrated in Figs. 12 and 13, and thus regulates the distance to which the shoe can be forced inwardly toward the center of the cutter by the operator, thus regulating the depth of cut of the rotary cutter adjacent to the breast of the heel. The stops 55 and 56 are respectively adapted to be adjusted relatively to the gages 36², 36³ and act as stops to regulate the amount of rocking movement which may be imparted to the shoe laterally thereof by the operator during the "cutting in" operation. A randing cutter 44' fast to a shaft 45' and a crease guard 46' are also provided which are used in the same

manner as hereinbefore described in relation to the randing cutter illustrated in Figs. 1 and 2. The "cutting in" operation is performed in exactly the same manner as hereinbefore described, except that one side of the shoe is trimmed by means of the cutter 25² and the other by means of the cutter 25³. The shoe is placed to trim the right side thereof, as shown in Fig. 12, and tipped from the position shown in full lines to that shown in dotted lines in said figure, whereupon the stop 55 bears against the sole of the shoe in the shank portion thereof at a substantial distance from the edge of the sole, and when the gage 59 is used, the outer end of said gage bears against the outer edge of the heel. When the opposite side of said sole is trimmed or "cut in", the same is placed in the position illustrated in Fig. 13 in full lines and tipped to the position illustrated in dotted lines therein until the stop 56 abuts against the face or tread of the sole at a substantial distance from its edge. As the cutter 25² moves in the direction of the arrow *b* it will be seen that the edge of the sole will be trimmed by the cutter moving toward the upper of the shoe, and as the cutter 25³ moves in the direction of the arrow *c* (Fig. 13), it will be seen that the edge of the sole trimmed by this cutter will also be trimmed by the cutter moving toward the upper and thus tending to lay down the fiber of the sole instead of lifting it up. In both cases the cutters illustrated in Figs. 12 and 13 move in the proper direction to lay the fiber of the leather down, or, in other words, move in a direction substantially with the fiber of the leather instead of against the same, and thus in soles made of a brittle or cheap leather there is less liability of roughing or lifting up the fiber of the leather in this trimming or "cutting in" operation.

Having thus described our invention, what we claim and desire by Letters Patent to secure is:

1. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to extend inwardly in front of the breast of said heel and means to position said shoe, so that said cutter will cut transversely of and trim and remove the trimmed material from the edge of said sole in line with and in front of the breast of said heel.

2. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to extend inwardly in front of the breast of said heel and a gage adapted to bear against the breast of said heel, said cutter adapted to cut transversely of and trim the edge of said sole up to and in front of the breast of said heel.

3. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to extend inwardly in front of the breast of said heel and a gage fast thereto adapted to bear against the breast of said heel, said cutter adapted to cut transversely of and trim the edge of said sole up to and in front of the breast of said heel. 5
4. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel, having, in combination, a rotary cutter in two parts adapted to extend inwardly in front of the breast of said heel, one part having teeth in its periphery, the other part being a disk having a smooth periphery and constituting a gage adapted to bear against the breast of said heel, said cutter adapted to cut transversely of and trim the edge of said sole in line with and in front of the breast of said heel. 10
5. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter in two parts, one part having teeth in its periphery, the other part being a disk having a cutting edge and constituting a gage adapted to bear against the breast of said heel, said cutter adapted to cut transversely of and trim the edge of said sole in line with and in front of the breast of said heel. 15
6. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel, having, in combination a rotary cutter adapted to extend inwardly in front of the breast of said heel, said cutter adapted to cut transversely of and trim the edge of said sole up to and in front of the breast of said heel and a gage adapted to bear against the outer edge of said sole. 20
7. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to extend inwardly in front of the breast of said heel, said cutter adapted to cut transversely of and trim the edge of said sole up to and in front of the breast of said heel and a gage adapted to bear against the outer edge of said sole in line with the breast of said heel. 25
8. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination a rotary cutter adapted to cut transversely of and trim the edge of said sole adjacent to and in front of the breast of said heel, a gage adapted to bear against the outer edge of said sole at the rear side of said cutter in line with the breast of the heel, and another gage adapted to bear against the outer edge of said sole at the front side of said cutter. 30
9. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel, having, in combination a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel and a gage adapted to bear against the upper face of said sole adjacent to the edge thereof. 35
10. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to extend inwardly in front of the breast of said heel, said cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, and a guard adapted to bear against the upper of said shoe and protect the same from injury by said cutter. 40
11. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination a rotary cutter adapted to extend inwardly in front of the breast of said heel, said cutter adapted to cut transversely of and trim the edge of a sole up to and in front of the breast of said heel, and a gage adapted to bear against one face of said sole adjacent to said edge. 45
12. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, and a gage extending across the periphery of said cutter and adapted to bear against one face of said sole adjacent to said edge. 50
13. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage extending across the periphery of said cutter and adapted to bear against one face of said sole adjacent to said edge, and a guard extending across the periphery of said cutter and adapted to bear against the upper of said shoe adjacent to said edge. 55
14. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to said edge, and a stop adapted to be engaged by the other face of said sole at a substantial distance from said edge. 60
15. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to said edge, a gage adapted to bear against the edge of said sole at the rear of said cutter in line with the breast of 65

said heel, and a gage at the front of said cutter adapted to bear against the edge of said sole.

16. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to said edge, a gage adapted to bear against the edge of said sole at the rear of said cutter in line with the breast of said heel, a gage at the front of said cutter adapted to bear against the edge of said sole, and a guard adapted to bear against the upper of said shoe adjacent to the sole.

17. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, and two gages at the rear and front of said cutter, respectively, and adapted to position the shoe properly with relation to said cutter.

18. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, and a gage located at the rear of said cutter adapted to bear against said shoe and position the same properly relatively to said cutter.

19. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a guard plate extending across the front and periphery of said cutter against which the upper of said shoe is adapted to bear, and a gage fast to said guard plate against which the edge of said sole is adapted to bear.

20. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to extend inwardly in front of the breast of said heel, said cutter adapted to cut transversely of and trim the edge of a sole up to and in front of the breast of said heel, and a gage adapted to bear against the edge of the heel of said shoe.

21. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in

front of the breast of said heel, a gage adapted to bear against the edge of the heel of said shoe, and a gage adapted to bear against the breast of said heel.

22. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage adapted to bear against the edge of the heel of said shoe, a gage adapted to bear against the breast of said heel, and a gage adapted to bear against the edge of said sole in front of said cutter.

23. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage adapted to bear against the edge of the heel of said shoe, a gage adapted to bear against the breast of said heel, a gage adapted to bear against the edge of said sole in front of said cutter, and a gage adapted to bear against one face of said sole adjacent the edge.

24. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination, a rotary cutter adapted to cut transversely of and trim the edge of a sole adjacent to and in front of the breast of said heel, a gage adapted to bear against the edge of the heel of said shoe, a gage adapted to bear against the breast of said heel, a gage adapted to bear against the edge of said sole in front of said cutter, and a guard adapted to bear against the upper of said shoe adjacent the sole thereof.

25. A machine for trimming the edge of the sole of a shoe adjacent to the breast of the heel having, in combination a rotary cutter adapted to cut transversely of and trim the edge of a sole up to and in front of the breast of said heel, a gage adapted to bear against one face of said sole adjacent to said edge, a gage adapted to bear against the breast of said heel, and a guard adapted to bear against the upper of said shoe adjacent to the sole.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CHARLES S. GOODING.
 SYDNEY E. TAFT.

Witnesses:

LOUIS A. JONES,
 DANIEL A. ROLLINS.