

A. McDOWELL.
 COUNTER GUARD FOR HEEL TRIMMING MACHINES.
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1,060,690.

Patented May 6, 1913.

Fig. 1.

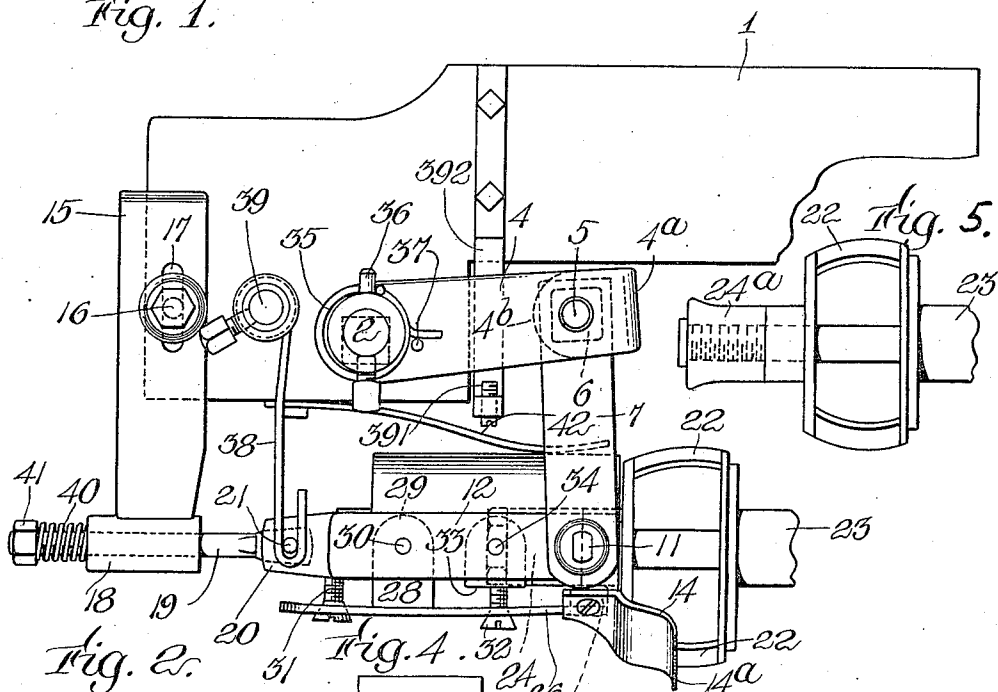


Fig. 2.

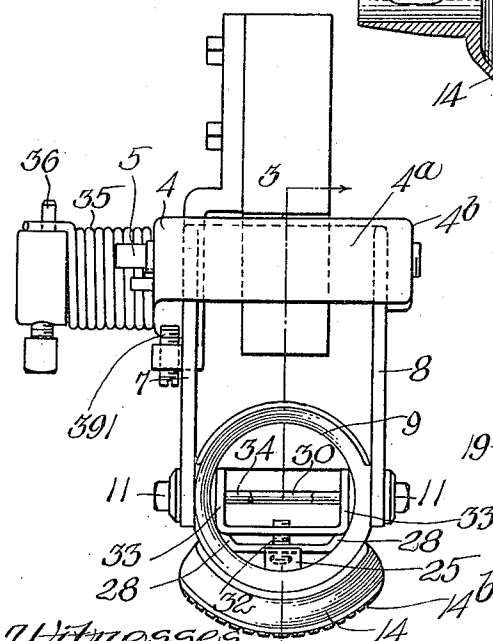


Fig. 4.

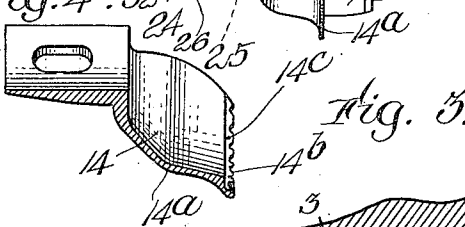
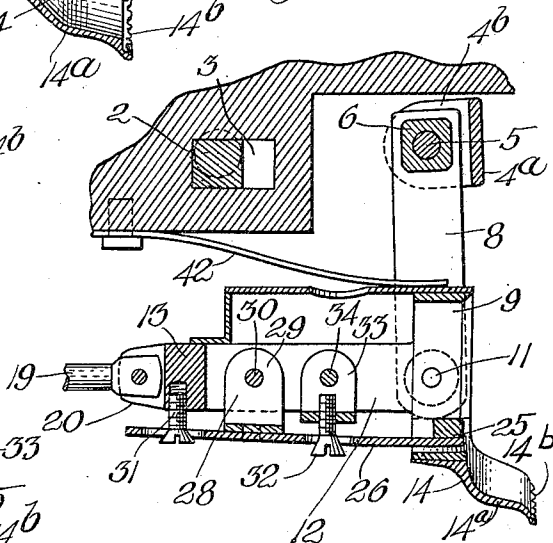


Fig. 5.



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UNITED STATES PATENT OFFICE.

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COUNTER-GUARD FOR HEEL-TRIMMING MACHINES.

1,060,690.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALEXANDER McDOWELL, a citizen of the United States, and resident of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Counter-Guards for Heel-Trimming Machines, of which the following is a specification.

10 This invention relates to an improved guard adapted to be applied to machines used for cutting or shaving the edges of boot and shoe heels.

15 The object of the invention is to produce an improved device of this nature by which the guard is guided in correct relation with the cutter in moving longitudinally thereof, and by which adjustment may be made for the accommodation of heels of different
20 styles.

Referring to the drawings in which I have illustrated one of the mechanisms in which the principles of my invention may be embodied, Figure 1 is a plan view of the guard showing the same in its relation
25 to the counter of a heel trimming machine. Fig. 2 is an end view of the same. Fig. 3 is a sectional view on line 3—3 of Fig. 2. Fig. 4 is a detail section of the guard proper. Fig. 5 is a view showing a modification.

30 The same reference characters indicate the same parts in all the figures.

Referring to the drawings, 1 represents a plate or bracket adapted to be fastened on
35 the bed or frame of a heel trimming machine and forming the support for my improved cutter guide.

2 represents a stud adjustably clamped in a slot 3 in the bracket 1 as shown in Fig. 3.
40 This stud passes through the bracket and has a nut threaded upon one end and adapted to bear on the under side of the bracket, such nut causing a shoulder or sleeve on the stud to be clamped against the top face of the bracket. Pivoted on the stud is an arm 4
45 which is substantially U-shaped having a part 4^a bent down and crossing the plane of the bracket 1, and a short end part 4^b bent back underneath, being shown in Fig. 3.
50 Passing between the upper arm and the end 4^b is a pivot pin 5 whereon is pivoted a frame, consisting of a cross bar 6 and side bars 7, 8, of which the cross bar is bored out to have a bearing on the pin. The frame
55 arms 7, 8 project away from the bracket and between them is contained a counter guard

holder, the same consisting of a ring 9 pivoted at diametrically opposite points on pivots 11 to the arms 7, 8 and having extensions 12 running from the ring near the pivots, parallel to the axis of the ring and being brought together and joined at 13 at a considerable distance from the ring. The counter guard proper is shown at 14, being a shield fastened to the ring 9 and having a longitudinal curvature concentric with the ring and in transverse contour having an offset 14^a where it springs away from the ring, and on its edge the lip 14^b adapted to enter the crease between the heel seat of a shoe and the heel. Also mounted upon the bracket 1 is a slide 15 which is connected adjustably thereto by a bolt 16 passing through a slot 17 in the slide and screwed into the bracket. Said slide has a lip on its outer side which overlies the end of the bracket and so serves as a guide. On the end of the slide 15 is a tubular bearing or guideway 18 through which passes a rod 19 having a flattened end which is contained
60 between two ears 20 projecting from the rear cross bar 13 of the counter guard holder. A pin 21 passes through the ears and the rod, connecting the same together.

The cutter is shown at 22. It is mounted upon a shaft 23 and has such a relation to the counter guard, the latter being placed accordingly, that it is partially covered by the counter guard. The shaft which carries the cutter extends somewhat beyond the same into the counter guard holder and on the extension there is mounted a guide 24 which is conveniently a sleeve or bushing, tightly but preferably removably fitted upon the shaft. The counter guard holder carries a foot 25 arranged to bear on the guide 24, and being carried by an arm or plate 26 which is fastened to a saddle 28 having ears 29 connected by a pivot pin 30 with the extensions 12 of the guard holder. At one side of the saddle an adjusting screw 31 passes through a slot in the arm 26 and into the cross piece 13, while at the other side of the saddle another screw 32 passes through a slot in the arm and into a saddle 33 which has similar ears pivoted at 34 to the respective extensions or side bars 12.
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A spring 35 is coiled about the stud 2 and is engaged with a fixed pin 36 passing through the stud and with a pin 37 on the arm 4. The tendency of this spring is to swing the arm outward, holding the counter
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guard away from the cutter and the foot 25 away from the guide 24. Such outward movement is limited by an adjustable stop 391 mounted on an arm 392 which is secured to the bracket 1, passing under the arm 4, and having an upstanding lug at the front of the arm 4, by which the stop is held. Another spring 38 is mounted on a stud 39 rising from the bracket, and this spring bears on the pin 21, previously mentioned, with a tendency to push the counter guard toward and over the cutter. In other words, the tendency is to move the entire collection of parts which support the counter guard toward the right with respect to Fig. 1. This tendency is checked and movement in this direction stopped yieldingly by means of a buffer spring 40 surrounding the rod 19 between the bearing 18 and a head 41 on the end of the rod.

From the foregoing description of construction, it will be seen that the counter guard may be moved back and forth longitudinally of the cutter, and in so moving it is guided by the engagement of the foot with the guide bushing 24, and by the bearing 18. The frame 7, 8 and arm 4 can swing to permit this movement of the guard. The guide limits the approach of the heel being acted upon toward the cutter and consequently the shape of the guide 24 affects the path in which the guard moves and thereby controls the shape given to the heel. One guide 24 may be substituted for another according to the style of heel operated upon. This governs the transverse shape, that is, the form from top to bottom of the heel, while the amount of uniform extension of the heel is governed by the adjustment of the foot 25 by the screws 31 and 32.

In Fig. 4 I have shown a modified form of guide 24^a which is somewhat flaring at a distance from the cutter, being designed in this manner to leave a bulge or bead in the heel near the seat thereof. This bulge is left so that when the heel seat cutter is used for a final shaving operation, a clean cut may be produced at the upper edge of the heel nearest to the seat, and to avoid any danger of the roughing-cutter removing too much of the stock of the heel and leaving it rough near the seat.

The guard is held at all times, when not pressed toward the cutter by a shoe held in the hands of the operator and pushed against the guard, at a greater distance radially away from the cutter than it lies when in use, such distance being governed by the adjustable stop 391. This allows a large untrimmed heel to be seated against the counter guard without coming into contact with the cutter before the cutting is commenced. A means additional or alternative to the spring 35 for thus holding the guard outward is indicated as a leaf spring 42 con-

nected to the outer edge of the bracket 1 and bearing on a part of the guard holder. Such leaf spring is not always necessary, and may be omitted when the spring 35 is present. A further function of the arm 392, which carries stop 391, is to support the swinging arm 4 and relieve cramping of the hub thereof on the pivot stud 2. Adjustments of said stud 2 are provided for according to the differences in size and shape of the heels to be trimmed, so that the guard may be moved through the full range necessary without causing more than the minimum amount of angular motion of arm 4. Such adjustment approximately in the direction of the axis of the cutter is made by movement of the stud along the slot 3, while adjustments transversely of this one are made by turning the stud about its axis. That part of the stud which is contained in the slot is eccentric to that part on which the arm 4 is mounted; hence, by turning the stud the arm may be moved nearer to or farther from the axis of the cutter. If the part of the stud in the slot is rectangular in section, as here shown, the stud may be thus turned after being first removed from the slot.

Another improvement claimed as a part of this invention resides in the guard proper. Within the lip 14^b of the guard there is a groove 14^c capable of receiving the blades of a rand trimmer when such is used in connection with the cutter, or when the guard is used with a rand trimmer alone; and the guard also has notches in the lip (as shown best in Fig. 4). These notches act as teeth to catch fibers on the rough edge of the heel seat and hold such fibers so that the cutter may sever them, and also to cut and break away any bits of glue adhering to the leather, or other excrescences, leaving the edge of the heel seat smooth.

I claim:

1. The combination with a heel trimming cutter, of a counter guard movable longitudinally of the cutter beside the same, and co-operating adjustable guiding means connected with the cutter and with the guard, respectively, for controlling the path in which said guard thus moves.

2. The combination with a heel trimming cutter of a guide member connected with said cutter, a guard lying beside the cutter, and a movable support for said guard adapted to travel therewith longitudinally of the cutter and having complementary means co-operating with said guide to control the path in which the guard moves.

3. The combination with a heel trimming cutter of a projection at one end of the cutter co-axial therewith, a counter guard lying beside the cutter and supported with provision for moving longitudinally thereof, and guiding means connected with said

guard and engaging with the surface of said projection for controlling the path in which the guard thus moves.

4. A counterguard including a holder, a guard proper secured to said holder, means for supporting said holder with provision for longitudinal movement, an arm movably mounted on said holder extending longitudinally thereof and having a foot, a guide with which said foot coöperates, and means for adjusting said arm transversely of its length to shift the positions of the foot toward or from the longitudinal axis of the holder.

5. In combination with a counter guard, a movable holder therefor, and a foot adjustably connected to said holder, a rotatable cutter having its axis in the line of movement of the guard and partially surrounded by the latter, and a guide element connected to the cutter projecting into the guard holder in position to be engaged by said foot.

6. The combination with a trimming cutter of a counter guard, a holder for said guard arranged to support the same in a position partially surrounding the cutter, means for supporting said holder with provision for movement thereof and of the guard both axially and radially of the cutter, and means constructed and arranged to press the guard radially away from the cutter.

7. The combination with a heel trimming cutter arranged to rotate, of a guide member connected to the cutter and coaxial therewith, a counter guard adapted to extend to some extent around and over the cutter, a holder on which said guard is mounted with provision for moving longitudinally of the cutter axis and also transversely of such axis, a foot adjustably connected to said holder and arranged to bear upon said guide whereby the latter is caused to govern the path in which the guard moves, and means normally acting to hold the guard away from the cutter and the foot away from the guide.

8. In a heel trimming machine, the combination with a heel trimming cutter of a bracket adapted to be mounted on such machine in a definite relation to the cutter, a stud secured on said bracket, an arm pivotally mounted on the stud extending therefrom approximately parallel to the cutter axis, a supporting arm secured to the first named arm and extending therefrom transversely of the cutter axis to a point adjacent to one end of the cutter, a guard holder pivotally connected to said second named arm, a counter guard secured to said holder at the end thereof next to the cutter and so positioned and formed as to extend over the cutter, complemental guiding members connected to the cutter and guard holder, re-

spectively, and arranged to make contact for governing the path in which the guard may move longitudinally of the cutter, a spring connected with the first named arm with the pivot stud arranged to move said arm in the direction to separate the guard from the cutter, and a stop mounted on said bracket in position to engage said first named arm and limit such movement thereof.

9. In a heel trimming machine, the combination with a heel trimming cutter of a bracket adapted to be mounted on such machine in a definite relation to the cutter, a stud secured on said bracket, an arm pivotally mounted on the stud and extending therefrom approximately parallel to the cutter axis, a supporting arm secured to the first named arm and extending therefrom transversely of the cutter axis to a point adjacent to one end of the cutter, a guard holder pivotally connected to said second named arm, a counter guard secured to said holder at the end thereof next to the cutter and so positioned and formed as to extend over the cutter, complemental guiding members connected to the cutter and guard holder, respectively, and arranged to make contact for governing the path in which the guard may move longitudinally of the cutter, a spring connected with the first named arm and with the pivot stud arranged to move said arm in the direction to separate the guard from the cutter, an arm secured to said bracket lying under the first named arm and supporting the same, and a stop adjustably secured to said last named arm in position to engage the first named arm and limit the spring-induced movement thereof.

10. In combination with a counter guard, a holder comprising a ring to which said guard is secured, arms extending from said ring in the direction of the axis thereof, a slide connected to said arms at a point distant from said ring, a guide in which said slide is contained with provision for movement longitudinally, the slide extending in the direction of the axis of said ring, an arm carrying said guide, a bracket to which said arm is connected with provision for movement transversely of the aforesaid axis, a stud mounted on said bracket, a swinging arm pivotally mounted on said stud and extending approximately parallel to the aforesaid axis, a link pivoted to said arm extending transversely of such axis to a point adjacent to the guard-holding ring, a pivot connecting said link to said ring, and a spring connected with the bracket and the guard holder arranged to exert its force so as to remove the guard holder away from the side guide.

11. A counter guard curved to conform with the path of rotation of a rotary cutter, said guard having a lip adapted to lie about

the cutter, and the lip having notches for removing excrescences on the heel seat edge of a shoe.

12. In combination with a rotary heel
5 trimming cutter, a counter guard having a lip formed and mounted to surround a portion of the cutter in close proximity thereto, said lip having means for holding fibers on

the seat edge of a heel so that the cutter may sever such fibers.

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

ALEXANDER McDOWELL.

Witnesses:

**ALBERT L. HOWES,
D. F. MACAULEY.**

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