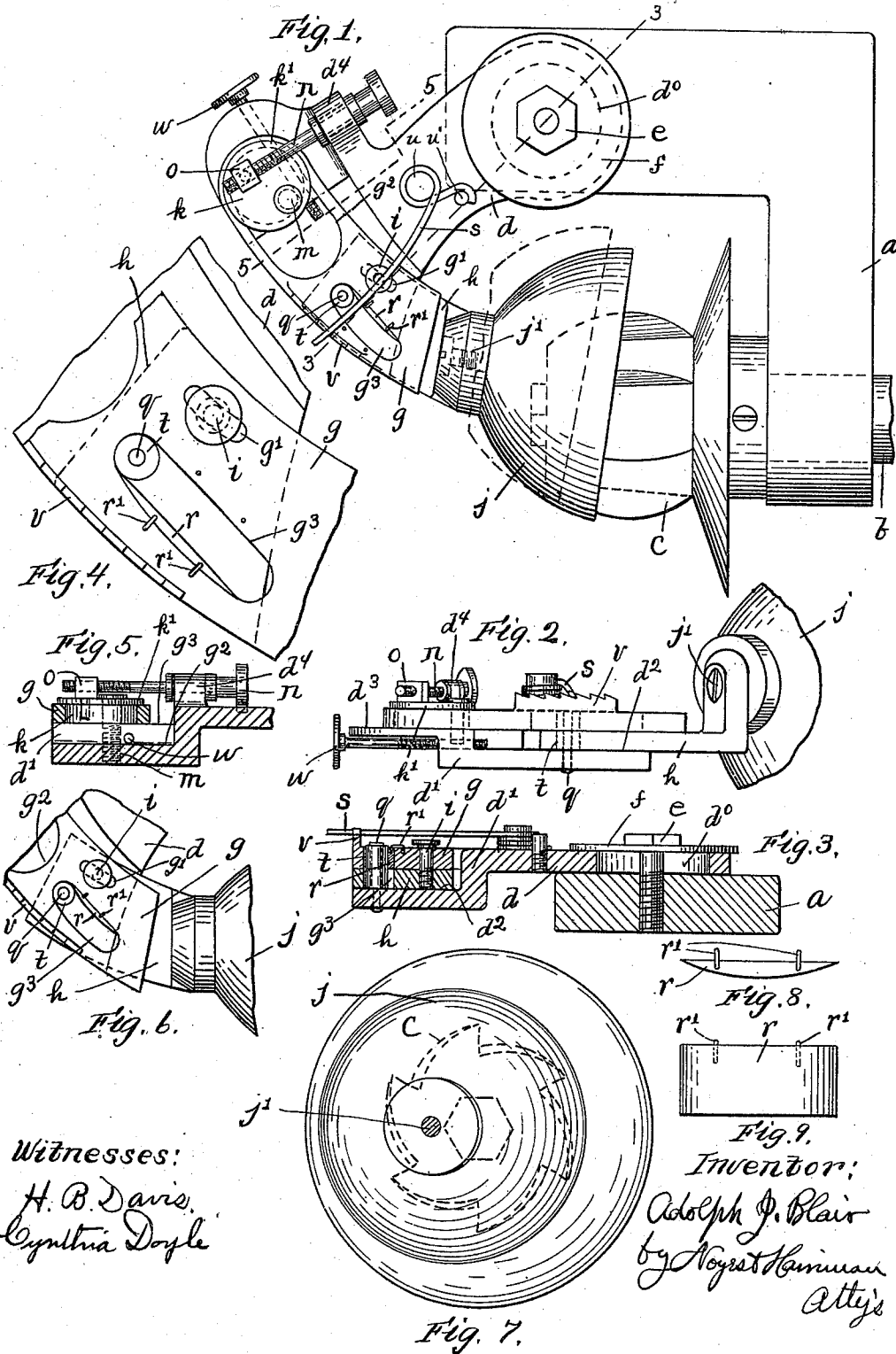


A. J. BLAIR.
 COUNTER GUARD FOR HEEL TRIMMING MACHINES.
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984,883.

Patented Feb. 21, 1911.



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UNITED STATES PATENT OFFICE.

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COUNTER-GUARD FOR HEEL-TRIMMING MACHINES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ADOLPH J. BLAIR, of Groveland, county of Essex, State of Massachusetts, have invented an Improvement in Counter-Guards for Heel-Trimming Machines, of which the following is a specification.

This invention relates to that class of machines which are employed in trimming the sides of heels and are commonly known as heel shaving machines.

In heels known as "French heels" or high heels, which are ordinarily used on women's shoes and slippers, the distance from the edge of the top lift to the counter is usually much greater at the middle of the back of the heel than it is at the front of the side, this distance gradually decreasing from one point to the other. As the same cutter is frequently used to trim heels of different heights, it is customary to provide a counter guard which is adapted to cover the portions of the blades which are not engaged by the knives to prevent the blades from striking the counter portion of the shoe. When counter guards of this construction are provided with fixed supports in trimming a heel of the character above referred to, it is necessary to set the guard for the longest distance from top lift to counter which was to be trimmed, with the result that, in trimming the heel adjacent the breast, the counter portion of the shoe is liable to be struck by the cutter and damaged.

The object of my invention is to provide a means for supporting a counter guard, so that it may be set for the shortest distance which is to be trimmed, in trimming about a heel, and may yield so as to uncover an increased portion of the blade as the longer side portions of the heel are trimmed.

A further object of my invention is to provide a means for guiding the counter guard holder so that the guard may be caused to follow the exact curvature of the blade and thus be held at all times in close proximity to the path of the blades, and in which the direction in which the guard may be carried may be varied for blades of different curvatures.

I accomplish these objects by the means shown in the accompanying drawing, in which,

Figure 1 is a plan view of a heel-trimming machine provided with my invention.

Fig. 2 is a detail side view of the counter guard holder. Fig. 3 is a sectional view on the line 3—3 Fig. 1. Fig. 4 is an enlarged detail plan view showing a different adjustment of the parts. Fig. 5 is a cross section on the line 5—5 of Fig. 1. Fig. 6 is a detail plan view showing a different adjustment. Fig. 7 is a detail view showing the relation in which the counter guard and cutter are held. Figs. 8 and 9 are detail views of the slot changing device.

As shown in the drawing, *a* indicates the frame of a heel trimming machine, in which a cutter shaft *b* is journaled, said shaft having a heel shaving cutter *c* mounted on the end thereof. A bracket *d* having a large hole *d*⁰ therein is arranged to rest at its base end on a horizontal portion of the frame, so that said arm will be supported in a horizontal position, and a bolt *e* of much smaller diameter than said hole *d*⁰ passes through the same, said bolt being adapted to be screwed into the frame at its lower end and having a large washer *f* on its upper end which is adapted to be clamped against said arm to hold the arm securely upon the frame. Said arm may be universally adjusted in the horizontal plane of the axis of the cutter by loosening the bolt *e*, in a manner which will be obvious.

According to my invention I provide the arm *d* with a T-head *d'* at its end, said head being provided with two horizontally disposed bearing faces *d*² and *d*³, the face *d*³ being disposed at a somewhat higher elevation than the face *d*². A holder *g* is provided having a bracket *h* adjustably connected thereto by a clamping bolt *i* which passes through a slot *g'* in said holder, and is mounted to slide on said faces *d*², and *d*³, the holder *g* bearing directly on the face *d*³, and the bracket *h* bearing on the face *d*², and each of said parts having flat bearing surfaces to permit the same to slide easily on said faces. The counter guard *j*, which is of the ordinary bell-shaped form generally employed, is adapted to be secured to the bracket *h* by means of a centrally disposed screw *j'*, the parts being so arranged that the axis of the cutter will lie in the central horizontal plane of the cup *j*, and, when said holder is moved on said bearing faces *d*², *d*³, the guard *j* will be held in the same position with relation to said plane in all positions to which it may be moved. Said holder *g* is provided with a longitudinal

slot g^2 in the rear end portion thereof, said slot being shown as slightly curved, although it will serve my purpose practically as well, if it is straight. A guiding and
 5 adjusting cam k is arranged in said slot g^2 , said cam being pivoted on a bolt m which is threaded in the head d' and acts to secure said cam thereto. Said cam is provided with a flanged edge portion k' which
 10 is adapted to bear on the upper surface of the holder g and to hold the same in place, so that said holder is guided to move between said flange and the face d^3 of the head d' . An adjusting bolt n is swiveled in a
 15 lug d^4 on the head d' , said bolt passing loosely through an aperture in said lug, so that it will be permitted to have a certain amount of side play. Said bolt n is threaded in a nut o , which is pivotally
 20 mounted on the cam k at a point approximately diametrically opposite the pin m , so that by rotating said bolt n said cam may be swung to different positions about the bolt m as a pivot.

25 A guide roll t is rotatably mounted on a pin q on the head d' and is located in a slot g^3 in the holder g . Said slot g^3 is curved at one side and straight at the other, and a gib r is provided having one side thereof
 30 curved to correspond with the curved side of said slot g^3 , and its other side straight to correspond to the straight side of said slot, said gib being of such thickness that, when it is inserted in said slot g^3 , so that its
 35 flat side is against the flat side of said slot, a curved slot is provided, the width of which is approximately the same as the diameter of the roll q , and when the gib is placed in the opposite side of said slot, so that its
 40 curved side bears against the curved side of the slot, then a slot having straight sides is provided, the width of which is also approximately the same as the diameter of the roll q . Hooks r' are provided on said gib,
 45 which are adapted to engage holes in the holder g to hold said gib in place.

A spring s is provided which extends about a pin u , on the arm d and, at one end, engages a pin u' , also mounted on said arm.
 50 The opposite end of said spring extends across the holder g in position to engage any one of a series of teeth v on the upper side of said holder, so that said spring will act constantly to press the guard toward the
 55 cutter, and the force with which the guard is forced toward the cutter may be varied by adjusting the spring to engage the different teeth. A stop screw w is provided in the head d' which is adapted to engage
 60 the rear end of the bracket h and limit the movement thereof from the cutter.

In operation the device will be adjusted, for example, as shown in Fig. 1, and, when thus adjusted, if the holder g is pressed
 65 back from the cutter, it will be guided by

roll q and cam k which engage it in its slots g^3 and g^2 . The slot g^3 is so arranged and curved, when the gib is in the position of Fig. 1, that the holder will be swung rear-
 70 wardly or transversely toward the cutter's axis, as it is moved longitudinally of said axis away from the cutter and the guard j , the inner side of which has been previously
 75 adjusted close to the path of the blades, will be caused to follow the curve of the path of the cutter blades, and its inner sides will be held at the same distance from
 80 said path in all positions thereof. If it is desired to adjust the guard either toward or from the cutter, it may be readily accomplished by turning the adjusting bolt n so
 85 as to swing the adjacent end of the holder either inwardly or outwardly, as may be desired, and by this means also, the curvature of the path of the guard may be varied
 90 according to variations in the curve of the edges of the cutter blades. The adjustment of the guard to the cutter may thus be made accurately and, if desired, while the
 95 cutter is rotating, without danger of having the guard strike the cutter blades.

If the portion of the blade over which the guard is to yield is nearly straight, the gib r may be changed to the opposite side of the
 100 slot g^3 , as shown in Fig. 4, so that said slot will then be straight, and as its sides are then nearly parallel to the sides of the slot g^2 and the movement of the guard is principally controlled by the front slot g^3 , said
 105 guard will be caused to yield in a nearly straight line. The angular position of the bracket h with relation to the holder g may be adjusted by means of the bolt and slot connection i and g' . The spring s acts normally to hold the guard in the full line
 110 position of Fig. 1, in which the ends of the slots g^3 and g^2 will be carried into engagement with the roll q and cam k respectively, whereby the latter will thereby be enabled
 115 to act as stops to limit said movement.

With the above described device, especially when mounted on an arm which is universally adjustable in a horizontal plane, movement of the counter-guard may be
 120 caused to follow closely the curve of the path of the blade of almost any heel shaving cutter which, in practice, is likely to be employed.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In combination with a heel-trimming machine having a rotary cutter, a counter-guard holder movable toward and from said
 125 cutter is a curved path, and means for varying the curvature of said path, substantially as described.

2. In combination with a heel-trimming machine having a rotary cutter, a support, a counter-guard holder movably mounted on
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said support and having a pair of guiding slots at different longitudinal points therein, engaging-devices on said support for entering said slots, and means permitting transverse adjustment of one of said engaging-devices to vary the movement of said holder, substantially as described.

3. In combination with a heel-trimming machine having a rotary cutter, a support, a counter-guard holder movably mounted on said support and having a longitudinally extending curved slot therein, and an engaging-device on said support adapted to enter said slot to cause transverse movement of said holder as it is moved longitudinally, substantially as described.

4. In combination with a heel-trimming machine having a rotary cutter, a support, a counter-guard holder movably mounted on said support and having a guiding slot therein, said slot being concavely curved at one side and straight at the other, a gib adapted to be inserted in said slot at either side thereof, one side of said gib being straight and the other convexly curved to correspond to said curved side of said slot, and an engaging device on said support adapted to fit in said slot, when said gib is in either position therein, substantially as described.

5. In combination with a heel-trimming machine having a rotary cutter, a support, a counter-guard holder movably mounted on said support and having a pair of guiding slots at different longitudinal points therein, engaging-devices on said support for entering said slots, and means permitting transverse adjustment of one of said engaging devices to vary the longitudinal movement of said holder, substantially as described.

6. In combination with a heel-trimming machine having a rotary cutter, a support, a counter-guard holder movably mounted on said support and having a pair of guiding slots at different longitudinal points therein, engaging-devices on said support for entering said slots, one of said devices comprising a cylindrical pivot eccentrically mounted on said support, and means for adjusting said pivot about the point at which it is journaled to adjust said holder transversely and thereby vary the longitudinal movement thereof, substantially as described.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ADOLPH J. BLAIR.

Witnesses:

H. B. DAVIS,
CYNTHIA DOYLE.