W. B. KEIGHLEY.

SHOE TRIMMING MACHINE.

APPLICATION FILED SEPT. 23, 1909.

959,224. Patented May 24, 1910.

Fig. 2.

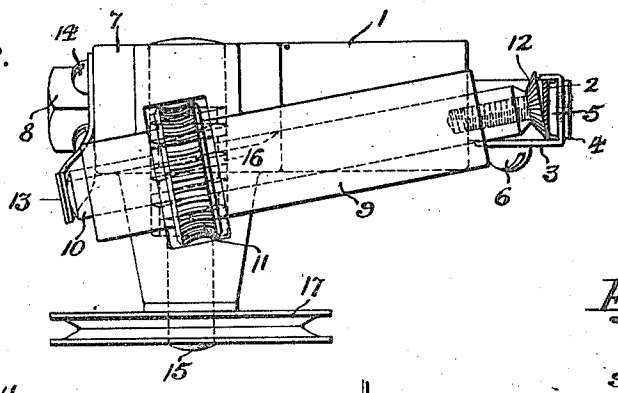


Fig. 3.

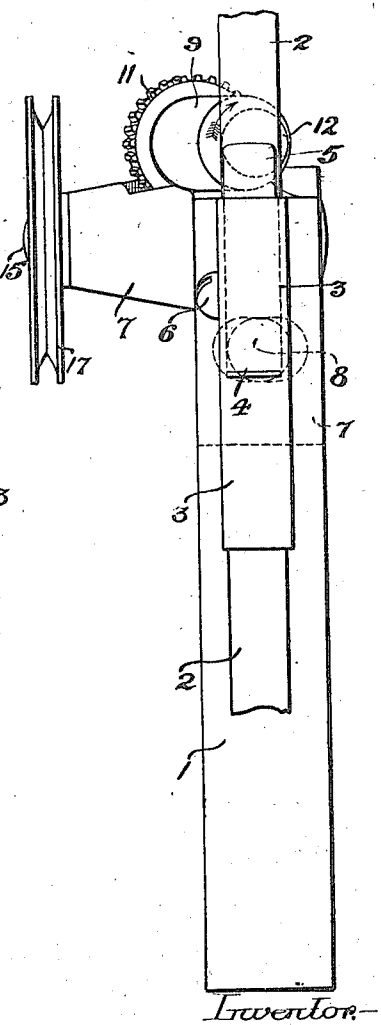
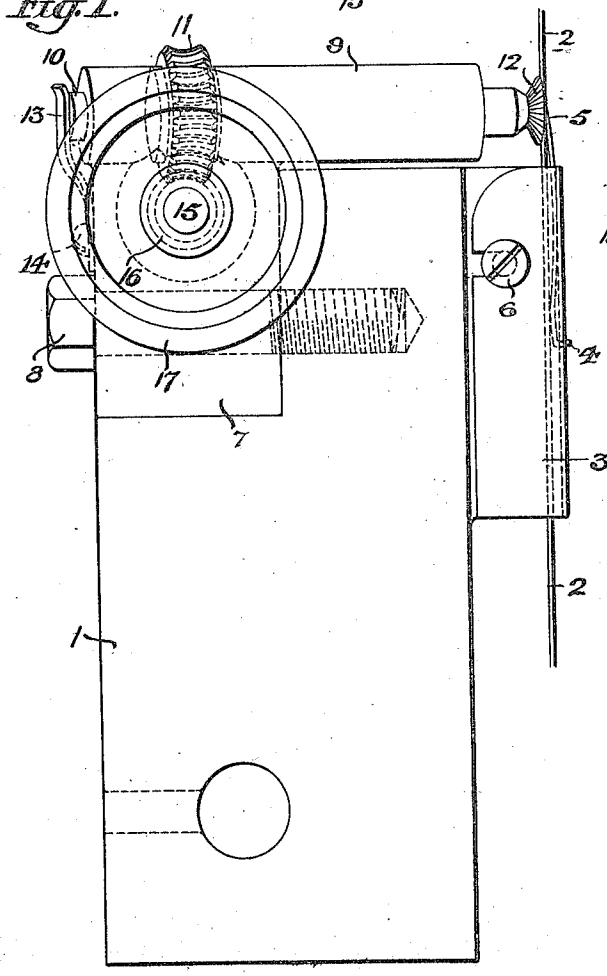


Fig. 1.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM BOTTOMLEY KEIGHLEY, OF VINELAND, NEW JERSEY.

SHOE-TRIMMING MACHINE.

959,224. Specification of Letters Patent. Patented May 24, 1910.

Application filed September 23, 1909. Serial No. 519,270.

To all whom it may concern:

Be it known that I, WILLIAM BOTTOMLEY KEIGHLEY, a citizen of the United States, and a resident of Vineland, New Jersey, have invented certain Improvements in Shoe-Trimming Machines, of which the following is a specification.

This invention relates to machines particularly designed for trimming surplus material from the edges of the welt, lining, etc., during the manufacture of shoes; one object of the invention being to provide mechanism for use in connection with a band knife whereby the work will be properly supported and fed to the same so as to be cleanly cut; the arrangement of parts being such that it will be a practical impossibility for the functions of the machine to be interfered with by the accumulation of fine threads, etc.

I further desire to provide a shoe trimming machine of a simple and substantial construction which shall be capable of automatically maintaining itself in adjustment, which may be easy to operate, and not likely to get out of order.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which:—

Figure 1, is a side elevation of a machine constructed according to my invention; Fig. 2, is a plan; and, Fig. 3, is a front elevation of the machine shown in Fig. 1.

In the above drawings, 1 is a supporting post mounted upon the frame of a band knife machine such as that shown and described in my Patent, #928,133, dated July 13, 1909; the blade of the knife being indicated at 2 and the body of the post being at some distance back of said blade. Its upper part has a forwardly projecting portion which extends immediately adjacent to the rear side of the knife and supports a sheet metal guard 3 which passes around the front of the knife so as to cover the same. Said guard extends to the level of the top of the post 1 and has a transverse slot for the reception of the end 4 of an elongated work supporting plate 5 preferably made of spring material and provided with a relatively sharp edge at its upper end, where it bears against the front side of the knife 2. It is held in place by the guard 3, which in turn is confined to the forwardly projecting portion of the post by a screw 6. The rear half of the upper part of the work supporting post is cut away for the reception of a block 7 having a horizontally extending slot through which passes a clamping bolt 8, whereby it is held to the top of said post in any of a number of positions;—the arrangement being such as to permit of its transverse adjustment relatively to the knife. The block 7 has on its top a bearing 9 for a short shaft or spindle 10 carrying a worm wheel 11 and a conical toothed cutting wheel 12; a limited portion of the base of this cutter lying in engagement with the beveled edge of the knife 2, as best shown in Fig. 2. In order that such an arrangement may be possible, the shaft 10 lies at an angle to the plane of the knife, preferably of about 80°. A spring 13 is held to the lower rear portion of the block 7 by screws 14 and presses against the rear end of the shaft 10 so as to at all times force it toward the knife, thereby maintaining the toothed cutter 12 in engagement therewith. For driving this cutter a second shaft 15 is mounted in the block 7 and has fixed to it a worm 16 meshing with the worm wheel 11; there being also on one end of said shaft a driving pulley 17.

As will be understood by those skilled in the art, the band knife 2, under operating conditions, is moved at a high rate of speed in a vertical line past the front face of the forwardly projecting portion of the post 1, between the work supporting plate 5 and the toothed cutter 12. Said cutter is rotated through the medium of the pulley wheel 17, shaft 15, worm 16, worm wheel 11, and shaft 10, at a relatively lower speed, so that as the projecting edges of the welt, etc., to be trimmed are presented to the knife, they are supported on opposite sides thereof by the plate 5 and by the cutter 12;—although this latter, turning in the direction of the arrow in Fig. 3, serves to feed such work toward and past the knife blade. Said knife thus acts to shear off the surplus material, while the action of the cutter 12 very effectually prevents any accumulation or clogging of cuttings or threads around the knife.

The spring 13 maintains the cutter in engagement with the knife and as the latter wears, the block 7 and with it the cutter, may be adjusted so that the knife and cutter are kept in the desired relative positions.

I claim:—

1. A shoe trimming machine consisting of

a band knife and a rotary cutter forming a work support mounted immediately adjacent thereto.

2. The combination in a shoe trimming machine of a band knife and a rotary cutter in engagement therewith.

3. The combination of a band knife, a rotary cutter mounted on one side of said knife, and a work support on the other side of the knife directly opposite said cutter.

4. The combination in a shoe trimming machine of a band knife, a rotary cutter in engagement with one side of said knife, and a work supporting plate in engagement with the opposite side of the knife directly opposite the cutter.

5. The combination of a band knife and a rotary toothed cutter in engagement with one side of the same.

6. The combination of a band knife, a rotary cutter in engagement therewith, and means for maintaining said cutter pressed against the knife.

7. The combination of a band knife, a shaft, means for driving said shaft, a cutter on the shaft, and a spring acting on the shaft to force the cutter into engagement with the knife.

8. The combination with a band knife of a supporting post, a shaft mounted thereon, means for driving said shaft, a cutter carried by the shaft in engagement with the band knife, and a work supporting plate also carried by the post in engagement with the knife directly opposite the cutter.

9. The combination with a band knife of a work supporting post having a portion extending adjacent to the knife, an elongated plate mounted on said portion and normally pressing against one side of the knife, a rotary cutter engaging the knife directly opposite said plate, and means for driving said cutter.

10. The combination with a beveled band knife of a rotary cutter, and means for supporting said cutter with a portion of one of its faces in engagement with the bevel of the band knife.

11. The combination with a beveled band knife of a supporting post adjacent thereto, a shaft mounted on said post and extending at an angle less than 90° to the plane of the knife, a cutter carried on said shaft with one of its faces in engagement with the beveled edge thereof, and means for driving said cutter.

12. The combination with a beveled band knife of a conical toothed cutter having a portion of its base in engagement with the beveled edge of the knife, a shaft for supporting said cutter, and means for driving said shaft.

13. The combination with a band knife of a supporting post, a block mounted thereon, means for laterally adjusting the position of said block, a shaft mounted on the block, a cutter on said shaft in engagement with the band knife, and means for driving said cutter.

14. The combination with a band knife of a supporting post, a block mounted thereon, means for laterally adjusting the position of said block, a shaft mounted on the block, a cutter on the shaft, and means for driving said cutter, with means carried by the block and placed to act upon the shaft so as to press the cutter into engagement with the knife.

15. The combination with a band knife of a supporting post mounted adjacent thereto, a laterally adjustable block on said post, a driving shaft on the block, a worm thereon, a cutter shaft also mounted on the post and lying at an angle of less than 90° to the line of the driving shaft, a worm wheel on the cutter shaft meshing with the worm of the driving shaft, and a cutter shaft immediately adjacent to the band knife.

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

WILLIAM BOTTOMLEY KEIGHLEY.

Witnesses:
WILLIAM EDWARD HUGHES,
WILBUR LOUDER DUNGAN, Jr.