

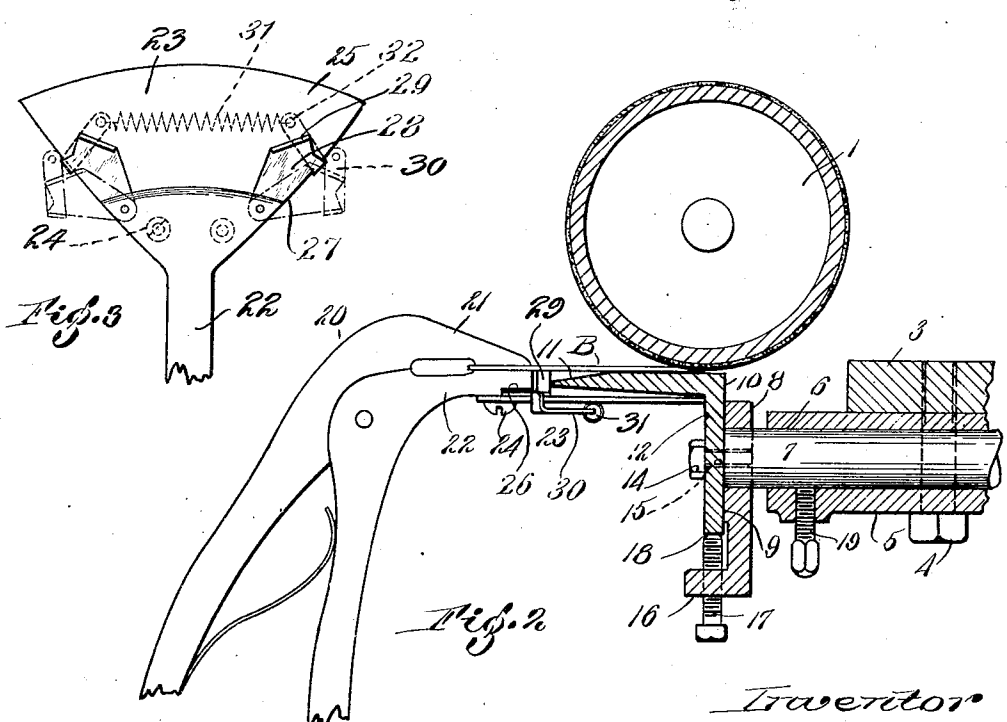
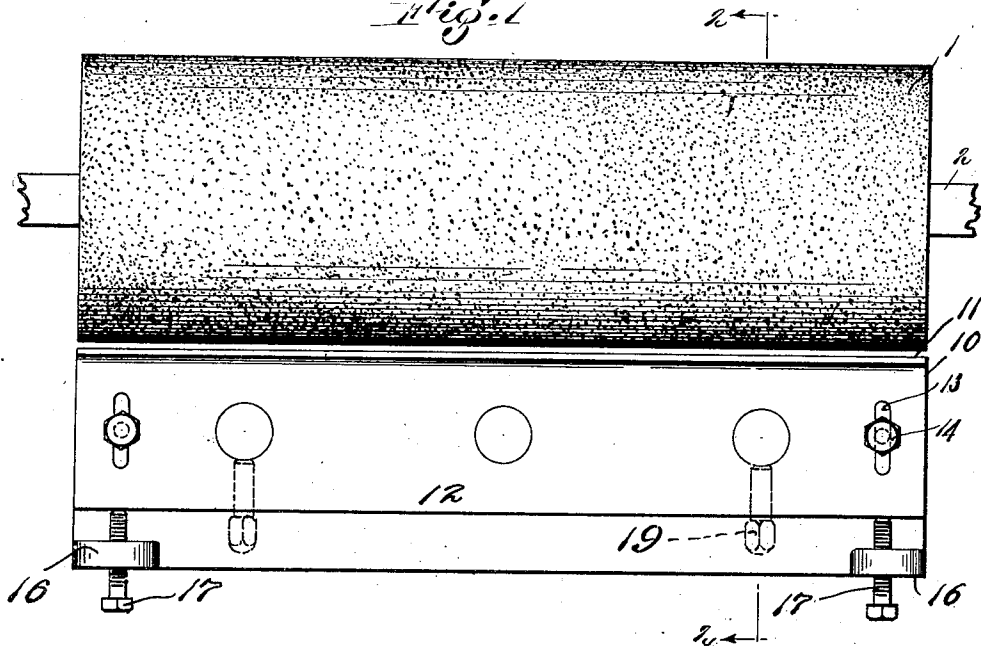
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BEVELING MACHINE

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UNITED STATES PATENT OFFICE.

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BEVELING MACHINE.

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This invention relates to the art of making stiffeners, such as box toes, counters and the like, for boots and shoes and more particularly to an improved manner of beveling the edges thereof. The material from which the stiffeners are made may comprise a layer of fibrous material impregnated with a cellulosic compound deposited in the interstices of the fibrous material, either with or without a sheet of paper bonded to one side of the layer of fibrous material.

The customary way of beveling or skiving counters, box toes, etc. is to pass them through various forms of skiving machines having fixed or movable knives and various feed roll mechanisms. In the case of material of the type specified, which may be very thin, this mode of operation can not be relied upon since the knives are apt to do uneven work on the thin edge and thus many of the stiffeners are thereby rendered unsatisfactory for use.

Among the objects of the present invention are the provision of an improved apparatus for beveling or skiving box toes and other stiffeners for boots and shoes, which will overcome the difficulty attendant upon the other modes of beveling or skiving mentioned and enable the provision of a tapered edge which gradually thins in the desired manner without being cut away excessively at any point.

In a preferred embodiment the invention comprises a sanding roll or wheel, a table adjustably mounted with respect to the roll, and means for holding a blank and moving it relative to said roll and over the surface of said table. Preferably the table serves to guide the travel of the blank and the blank holding and moving means has portions cooperating with the table to control its movements and to facilitate the beveling of the edge of the blank. Preferably also the blank holding means may be provided with portions supporting the relatively thin blank until the support of the latter is taken up by the table and then moved progressively relatively to the holding means to permit movement of the latter relative to the table.

In the accompanying drawings, in which for purposes of illustration one embodiment which the invention may assume in practice is disclosed,

Fig. 1 represents a front view of a simplified form of the invention;

Fig. 2 is a vertical section on the line 2-2 of Fig. 1;

Fig. 3 is a top plan view of a holding means.

Referring to these drawings, in which the invention is for simplicity of disclosure shown in the form of an attachment to an ordinary sanding machine, 1 represents the roll of a sanding machine. This roll is supported upon a shaft 2 and is rotated at a high rate of speed. Suitable supporting means, not shown, maintains the roll in fixed relation to a machine frame 3. To the latter there is secured, as by machine screws 4, a supporting frame 5, which is provided with a series of bores 6. Into the bores 6 project rods 7 supporting and carrying a frame member 8, against whose surface 9 a table member 10 is slidably secured. The table member 10 is provided with a work guiding and supporting surface 11 and with a depending flange portion 12 having slots 13 therein through which cap screws 14 extend into threaded openings 15 in the member 8. Through an angularly deflected flange 16 on the member 8 extend a pair of adjusting screws 17 which engage the lower surface 18 of the member 10. Set screws 19 are threaded into the member 5 and engage the guides 7. By releasing the set screws 19 the work table may be moved back and forth horizontally relative to the vertical plane including the axis of the sanding roll. By unscrewing the cap screws 14 the table is free for vertical adjustment which may be accomplished by manipulation of the screws 17, and when adjustment is completed the table may be locked in position by tightening the screws 14. A simple form of clamping mechanism for supporting and holding the blanks B during operation upon them by the roll 1 is generally designated 20. This mechanism comprises manually operated grasping jaws 21 and 22 between which the blank B may be gripped. The lower jaw carries a template 23 secured thereto by screws 24, the template limiting the distance to which the blank B may be inserted beneath the sanding roll and operating in the form shown by reason of its rounded forward edge 25 to permit a swinging of the blank relative to the roll whereby a convex-

edged blank may be beveled. The contour of the template also guides the operative in placing the blank in the jaws 21, 22. These templates are readily removable for change
5 from one to another, and are convex for convex blanks and concave for concave blanks.

Pivotally mounted in recesses 26 at the forward corners of the lower jaw 22 are
10 members 27. These members have portions 28 slidable upon the upper surface of the template and terminating in upturned flanges 29, whose tops lie in the plane of the surface of the lower jaw 22. The flanges 29
15 are adapted to provide support for the portion of a stiffener blank which lies in front of the jaws. The members 27 also comprise arms 30 bent beneath the template 25 and extending forwardly and connected by a
20 light coil spring 31 engaging in openings 32, whereby the flanges 29 normally occupy the position shown in Fig. 3, but may be moved rearwardly to the position shown in Fig. 2 when the clamp or holding means 20
25 is moved to the position shown in that figure.

The mode of operation of the mechanism described is evident. The work table is adjusted to the desired position, the extent of
30 beveling being determined by the extent to which the blank may be brought beneath the roll, and the vertical adjustment of the table determining the thickness of the thinnest portion of the beveled edge. Assuming that
35 a blank with a convex edge is to be beveled, it is gripped in the grasping jaws 21 and 22 with its forward edge in alignment with the forward edge of the template. In this position, the portion in front of the jaws is supported at spaced points by the flanges 29.
40 The blank will then be slid upon the table surface 11, the members 27 swinging about their pivots as the jaws approach the front edge of the table. The work holder may be
45 oscillated upon the curved surface 25 of the template 23. As a result a convex-edged blank may be provided with a relatively wide gradually tapering beveled portion which at no point penetrates through the material of the blank. In the case of a concave-edged blank, the work holder is not
50 rocked, but instead moved straight towards the sanding roll. As a result the rear line of the bevel is straight and the corners are beveled to a greater extent, a desirable condition both because it gives a straight line across the toe and because it gives the corners a longer bevel.

The template prevents the forward edge of the stiffener blank being advanced too far
60 beneath the sanding roll, and also precludes its being raised above the surface 11 to a harmful extent.

Generally the template employed will be
65 selected to correspond in shape with the edge

of the stiffener to be beveled, though in the case of concave-edged blanks this is unnecessary, though desirable as facilitating accurately placing the stiffener in the clamp or work holder. It will be noted that stiffeners of different depths may be beveled by the same mechanism by simply setting the smaller blanks forward sufficiently in the jaws to bring their edges to be beveled into line with the front of the template.

While there is herein described one form which the invention may assume in practice, it will be understood that this illustrative embodiment may be extensively modified and that the invention may even be embodied in other forms without departing from its spirit or the scope of the appended claims. For example, in beveling the edges of counters the templates may be shaped to correspond to the contours of the edges of the counters.

I claim:

1. Apparatus for beveling stiffener elements and similar articles, which comprises a rotatable cutting element, an adjustable table adjacent to said element adapted to provide a stationary supporting surface for the articles to be beveled, means for adjusting the position of said table relative to said cutting element in directions substantially parallel and perpendicular to said surface, means for holding the article in position on said table in contact with said cutting element during the beveling operation, and means cooperating with said table and holding means for guiding the said holding means in relation to said cutting element so as to form the desired bevel along one edge of the article.

2. Apparatus for holding a boot and shoe stiffener during operation of a beveler thereon comprising a pair of clamping jaws and a template fixed to said jaws in a position parallel to but spaced from the plane of engagement of said jaws to provide a recess between the stiffener and the template adapted to receive the edge of a work table, said template having a forward edge corresponding in shape to the edge of the stiffener, and adapted to be guided by a flange on the under side of the work table.

3. Apparatus for beveling boot and shoe stiffeners and similar articles which comprises a movable cutting member, a work table for holding the work to be beveled having an extending edge providing a supporting surface, means for adjusting the table in position with respect to said cutting member, a pair of clamping jaws for holding the work, a template having its operating edge corresponding in shape to the edge of the work to be beveled, means for connecting the said template to said jaws in a position parallel to but spaced from the plane of engagement of said jaws to pro-

vide a recess between the article and the template adapted to receive said edge of the table, and a flange on the under side of the work table for contacting with the operating surface of said template and thereby guiding the work during the beveling operation.

4. Apparatus for holding a stiffener during the operation thereon of a sanding element comprising a pair of clamping jaws meeting in a plane, a template secured to one of said jaws and projecting forwardly therefrom in parallelism with said plane, and means attached to said jaws movable relative to said template and having portions adapted to support the stiffener element, said portions terminating substantially at said plane.

5. Apparatus for holding a stiffener during the operation thereon of a sanding element comprising a pair of clamping jaws meeting in a plane, and means for supporting a portion of the stiffener projecting from said jaws including at least one element having a portion terminating substantially at the plane of meeting of said jaws, said portion being movable towards and away from said jaws.

6. Apparatus for holding a stiffener element during the operation thereon of a beveling device comprising a pair of clamping jaws meeting substantially in a plane, means for supporting a portion of the stiffener element projecting beyond the said jaws including movable elements and means for resiliently holding said movable elements in position normally in advance of the jaws, said movable elements being adapted to be moved toward said jaws.

7. Apparatus for holding a stiffener element during the operation thereon of a be-

veling device comprising a pair of clamping jaws adapted to meet in a plane, means for supporting the said stiffener element at a portion thereof projecting beyond or in advance of the said jaws including a plurality of elements pivotally connected to one of the said jaws and having portions adapted to support the said stiffener element in advance of the jaws and spring actuated means connecting end portions of said supporting elements for resiliently drawing them toward each other.

8. Apparatus for beveling stiffener elements for boots and shoes comprising a sanding wheel, a table having a flange adjacent the sanding wheel for supporting the work, a clamp for holding the work while it is moved over the surface of the flange adjacent the sanding wheel, and a template device associated with the clamping means adapted to pass on the opposite side of the flange and to be guided by an abutment on the said opposite side of the flange.

9. Apparatus for beveling stiffener elements for boots and shoes comprising a sanding wheel, a table having a flange adjacent the sanding wheel for supporting the work, a clamp for holding the work while it is moved over the surface of the flange adjacent the sanding wheel, a template device associated with the clamping means adapted to pass on the opposite side of the flange and to be guided by an abutment on the said opposite side of the flange, and means for supporting a stiffener element engageable with said flange and yieldably mounted with respect to said clamping means.

Signed by me at Boston, Massachusetts, this 27th day of February, 1925.

HORACE M. EATON.