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METHOD OF AND MACHINE FOR TREATING THE EDGES OF LEATHER AND LIKE MATERIAL.
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946,844.

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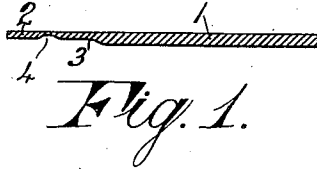


Fig. 1.

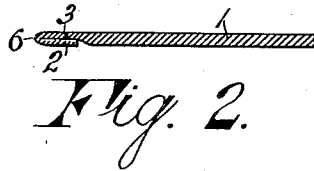


Fig. 2.

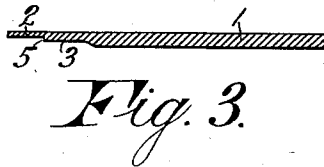


Fig. 3.

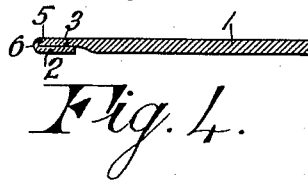


Fig. 4.

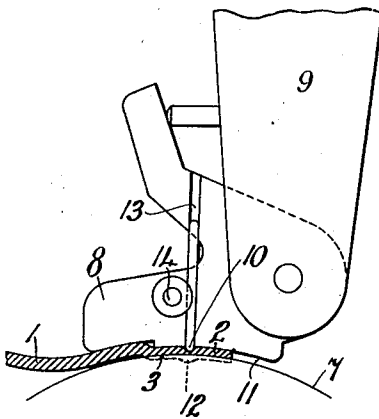


Fig. 5.

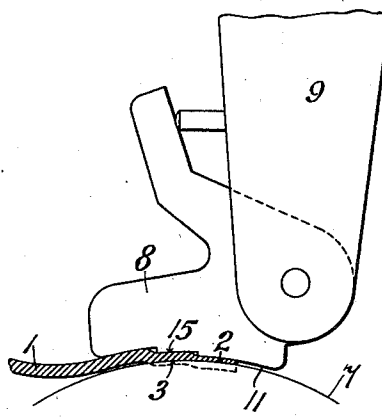


Fig. 6.

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UNITED STATES PATENT OFFICE.

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METHOD OF AND MACHINE FOR TREATING THE EDGES OF LEATHER AND LIKE MATERIAL.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SOCRATES KEATS, a subject of the King of Great Britain, citizen of Leicester, England, residing at Deacon street, Leicester, in the county of Leicester, England, have invented new and useful improvements in or Relating to the Method of and Machines for Treating the Edges of Leather and Like Material, of which the following is a specification.

This invention relates to the method of and machines or apparatus for treating the edges of leather and like material used in the manufacture of boots and shoes.

The invention has particular reference to the treatment of the edges of material for boot and shoe uppers and is concerned with the skiving and folding of the edges of the various sections such as leg quarters, vamps, back quarters, and like parts.

As is well known, it is customary when making boot and shoe uppers, and especially the uppers for women's boots, to skive the edges of the material and afterward fold or turn over the skived edge previous to its being sewn to another part so that the folded edge appears smooth and finished.

According to the method at present in vogue, the edges of the sections are first skived in a machine and afterward turned or folded over either by a special machine or by hand. This folding over of the skived edge, whether performed by a machine or hand, requires skilful operation in order to turn the edge over equally all along and produce the desired even and perfectly folded edge.

The object of the present invention is to render this folding operation capable of being performed without a machine if desired and such a simple matter that it may be effected in a perfect manner by unskilled labor. In addition, a much neater and more evenly folded edge may be produced according to this invention, and if desired, the thickness of the folded edge may be reduced to a minimum while its smoothness and even appearance is preserved.

The invention is carried into effect by an improved means for skiving and method of folding the edge of upper material.

According to this invention the edges of the material are skived so that a shoulder, ridge, groove or similar limiting mark is produced along the material at the part

which is to be folded, said limiting mark forming a guide along which the material may be subsequently folded, the contour of the said mark forming the contour of the folded edge.

The preferred manner of carrying the invention into effect is to produce a channel or groove along the inside of the material so that in the subsequent folding operation the material will bend easily along the groove and fold over evenly along the line of said groove.

The formation of a groove on the inside of the material reduces the thickness at that part so that when the material is folded or turned over along the groove, the outer folded edge will be of reduced thickness. When a shoulder or ridge is formed on the inside of the material the thinned skived edge is folded or turned over around the shoulder or projection. The groove, shoulder or limiting mark is formed in the material during the skiving operation by the employment of a suitably shaped presser foot.

In order that the invention may be clearly and readily understood reference will be made in the following further description to the accompanying drawing, in which:—

Figure 1 is a section of a piece of leather or like material the edge of which is skived and grooved according to this invention, preparatory to being folded. Fig. 2 is a similar view showing the same piece of material having its edge turned or folded over. Fig. 3 shows in section a piece of material having its edge skived and formed with a shoulder thereon according to this invention preparatory to being folded. Fig. 4 illustrates the same piece of material after its edge has been turned or folded over. Fig. 5 is an elevation showing a presser foot of a skiving machine adapted to produce a groove or channel in the material during the skiving operation. Fig. 6 is a similar view to Fig. 5 showing a presser foot adapted to produce a shoulder or ridge on the material during the skiving operation.

In the sections of material 1 shown in the accompanying drawing the edge to be turned over or folded is represented by 2. This edge 2 is usually skived on the inside *i. e.* on the underside of the material at 3 to reduce the thickness of the part to be folded. In addition to this reduction in the thick-

ness of the edge to be folded there is produced, according to this invention, and as previously stated, a limiting mark which facilitates the folding operation and also enables a neater and better folded edge to be obtained than has heretofore been possible. This limiting mark may be of any suitable formation examples of which are illustrated in the accompanying drawing where, in Fig. 1, a groove or channel 4 is produced in the skived underside 3 of the edge 2, while in Fig. 3 the limiting mark is in the form of a shoulder or ridge 5 on the underside of the material.

The preferred method is to produce a channel or groove 4 as shown in Fig. 1, said channel extending along the inside 3 of the material so that in the subsequent folding operation the material 1 will bend easily along the groove 4 and fold over evenly along the line of said groove. In the formation of a channel or groove, such as 4, on the inside of the material, the thickness of the said material at that part where the channel is located will obviously be reduced and when the edge 2 is folded or turned over along said groove the outer folded edge 6 at such part will be of a reduced thickness as shown in Fig. 2. When the edge 2 is folded in the manner just described it will not be bulky but may be made as thin and neat as desired by making a channel or groove of a corresponding depth to reduce the thickness of the material at that part which is to form the folded edge 6.

When it is not desired to produce a thin folded edge, such as the edge 6 in Fig. 2, a shoulder, ridge, or similar projection 5, Fig. 3, instead of a groove, may be formed along the skived face or underside 3 of the material 1 and in the subsequent folding operation the skived edge 2 is folded or turned over up to and around the shoulder or ridge 5, as shown in Fig. 4. The thinner extremity of the skived edge 2 beyond the shoulder or ridge 5 *i. e.* the part between the said shoulder and the raw edge of the material, is easily bent or folded around the thickened part as shown in Fig. 4, the shoulder 5 limiting the extent to which the edge is folded or turned over and thus facilitating the production of an evenly folded edge.

It is obvious that when the material is prepared as just described for the folding operation, this latter may be readily accomplished by hand without requiring skill to turn the edge over along the predetermined and marked lines, and that as the said material will bend more readily along the channeled or shouldered lines than it will at the other unprepared parts the result is that an evenly folded edge is produced.

The formation of the limiting mark *i. e.* the channel, groove, shoulder or the like is preferably formed during the skiving oper-

ation and for this purpose the presser foot of a skiving machine may be furnished on its under side with a projection or recess which corresponds to the shape of the desired limiting or folding mark on the material. For the production of a groove or channel, the presser foot is furnished with a projection which presses a ridge of the material out toward the knife, which latter, in skiving the underside of the material flat, skives the ridge off and results in the production of a part of reduced thickness thus forming the channel. To produce a shoulder on the material the presser foot is recessed and produces a thicker instead of a thinner part.

In the examples illustrated in Figs. 5 and 6 the invention is shown as being carried into effect on a skiving machine of the type having a rotary cylindrical knife, the cutting edge of which is represented by the line 7. The presser foot 8 and its supporting arm 9 are of the usual construction and arrangement except that the presser foot is furnished with means to bring about the production of the limiting mark on the material.

The presser foot in Fig. 5 is adapted to produce a channel or groove such as 4 (Fig. 1) and for this purpose is furnished with a projection 10 on its operative face or underside 11 which projection presses the material down to the cutting edge 7 of the knife in the form of a ridge 12 so that when the underface of the edge 2 is skived flat the material is made thinner at that part which is pressed by the projection 10 and thus a channel is produced on the inside of the material when the latter is straightened or flattened out as shown in Fig. 1.

The projection 10 is preferably in the form of a strip adjustably mounted in a groove 13 in the presser foot and held in place therein by a suitable screw 14. In the example shown in Fig. 6 the underside 11 of the presser foot 8 is recessed at 15 so that the material is left thicker at that part and produces a ridge or shoulder such as 5 (Fig. 3) when the skived edge is flattened out.

The invention is not confined to the employment of any particular type of skiving machine, neither is it restricted to the particular forms of limiting marks herein described as it will be obvious that any desired form of limiting mark may be produced on the inside of the material by shaping the underface of the presser foot of the skiving machine to correspond to the shape or form of limiting mark required.

What I claim then is:—

1. In a skiving machine for treating the edges of leather and like material, a presser foot having an irregular pressing surface for producing a limiting mark along the

edges of material, such mark facilitating the folding of the edges.

2. In a machine for treating the edges of leather and like material, means for simultaneously skiving and producing along said edges a limiting mark to facilitate the folding of said edges and the production of evenly folded edges and comprising a presser foot having a projecting portion on its pressing surface and a skiving knife.

3. In a machine for treating the edges of leather and like material means for simultaneously skiving and producing along said edges a limiting mark to facilitate the folding of said edges and the production of evenly folded edges of reduced thickness, said means comprising a rotary skiving knife and a presser foot having a projection on its pressing surface.

4. In a skiving machine for treating the edges of leather and like material, the combination with the knife or cutter, of a presser foot having a projecting portion on its pressing surface to press the edges of material to the cutting edge of said knife so that a limiting mark is formed along said

edges, substantially as and for the purpose described.

5. In a machine for treating the edges of leather or like material, the combination with the knife or cutter, of a presser foot having a pressing surface of different contour to that of the knife or cutter, to press the edges of material to the cutting edge of said knife so that simultaneously with the skiving operation on said edges a limiting mark is formed along the skived edges, substantially as and for the purpose described.

6. A presser foot for skiving machines having on the operative face a shouldered bearing surface to press the material to be skived into contact with the knife or cutter so that a limiting mark is produced on said material, substantially in the manner as and for the purpose described.

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

SOCRATES KEATS.

Witnesses:

J. W. C. TAYLOR,
GEORGE LESTER.