June 7, 1932. F. W. MERRICK 1,862,348

APPARATUS FOR SKIVING STRIP MATERIAL

Filed Sept. 22, 1928

Fig. 1.

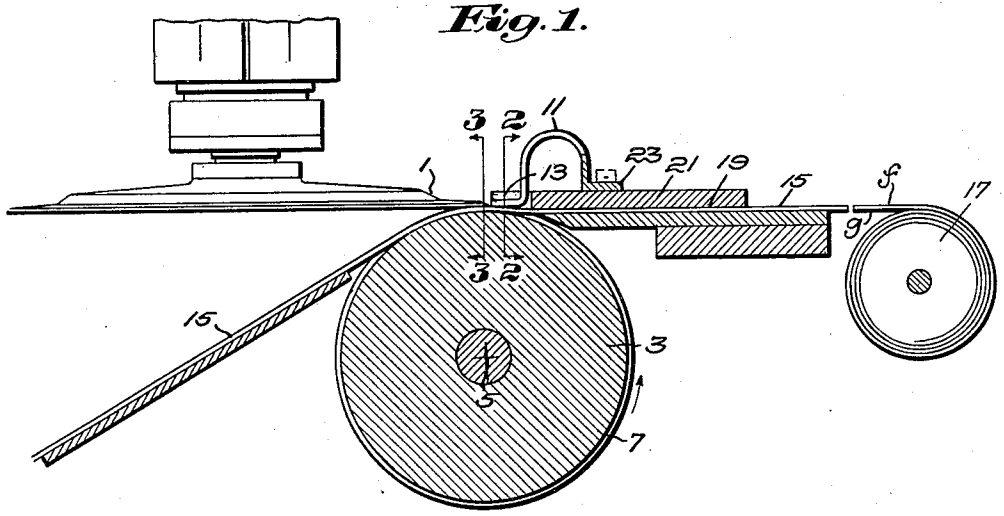


Fig. 4.

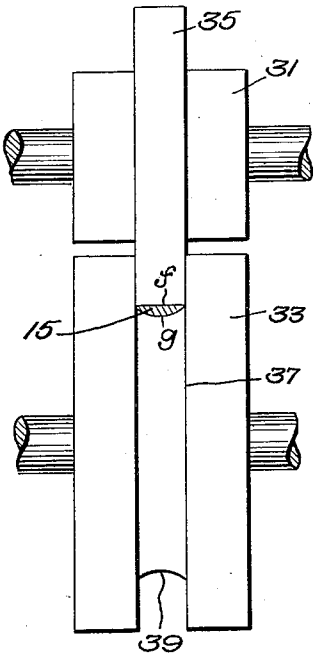


Fig. 2.

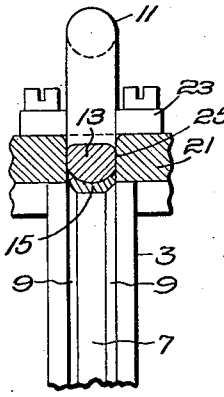


Fig. 3.

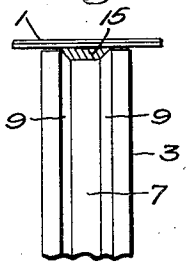


Fig. 5.



Fig. 6.



Fig. 8.

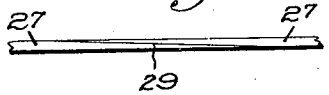


Fig. 7.



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UNITED STATES PATENT OFFICE

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APPARATUS FOR SKIVING STRIP MATERIAL

Application filed September 22, 1928. Serial No. 307,758.

My invention relates to working leather, felt, and similar materials, and more particularly to apparatus for producing articles from such materials.

The invention will be best understood from the following description of one manner of performing the improved method and of examples of articles produced by said method and of apparatus for performing the method, while the scope of the invention will be more particularly pointed out in the appended claims.

In the drawing:—

Fig. 1 is an elevation, with parts in section, of a machine for beveling the edges of strip sheet material;

Figs. 2 and 3 respectively are sections on an enlarged scale on the lines 2—2 and 3—3 of Fig. 1;

Fig. 4 is an elevation of presser roll mechanism particularly adapted for use in forming leather lacing;

Figs. 5, 6 and 7 are cross-sections on an enlarged scale of a leather strip illustrating different stages in the process of forming leather lacing; and

Fig. 8 is a side elevation of a leather strip illustrating the manner of uniting separate short strips cut from the hide.

Referring particularly to Figs. 1, 2 and 3 of the drawing I have shown a rotary disk skiving-knife 1, below the cutting edge of which is mounted a disk shaped member or roller 3, the latter being rotatable about an axis 5 which lies in a horizontal plane parallel to the plane containing the cutting edge of the knife, said cutting edge preferably extending slightly beyond a vertical plane including said axis. As shown the rotary member 3 is provided with a circumferential groove 7 provided with inclined side walls 9, while cooperating with said groove is a presser member adapted to engage with a strip of material 15 and force the body portion of said strip into said groove. This presser member, which preferably is normally stationary in the sense that its geometric relation to the knife 1 and rotary member 3 does not change when the machine is operated, herein comprises a resilient part 11 carrying a foot 13 acting on the strip 15 in the manner described.

As illustrated, the strip of material 15 is fed from a spool 17 through a perforation 19 in a stationary guide plate 21, to which plate the base 23 of the presser member is attached, the end of the plate adjacent the rotary member 3 being slotted as indicated at 25 (Fig. 2) for receiving the foot 13 of the presser.

Any suitable means may be provided for rotating the member 3, the groove 7 of which member is preferably knurled or roughened to cause it to feed the strip through the perforation 19 and against the knife 1. As shown, the parts are so proportioned and disposed relative to the dimensions of the strip 15 that the lateral edge portions of the strip 15 will extend above the circumferential surface of the member 3, so that the skiving-knife, which lies in a plane substantially tangent to the surface of the member 3, will sever said edge portions from the body portion, resulting in the opposite edge portions of a strip having a cross-section such as shown in Fig. 5 being beveled by the knife to produce the strip having the cross-section shown by Fig. 6.

The apparatus above described is adapted for use with various materials such as leather and felt, felt strips, having a cross-section similar to that shown in Fig. 6, being particularly adaptable for use in fabricating "weather strips".

Heretofore in the manufacture of leather lacing, such as is employed for ornamenting and uniting the edges of leather articles such as pocketbooks and the like, the lacing has been made by drawing strips of leather under a gouge-shaped knife to remove narrow strips having a cross-section similar to that shown by Fig. 7. This prior method, besides being wasteful of leather, has the result that only the flattened side of the lacing can consist of the finished grain side of the hide, whereas in the finished pocketbook, or the like, the curved side of the lacing is exposed, the flat side being placed against the sheets of which the article is formed. Further, lacing made by the prior method is deficient in respect to tensile strength, be-

cause the leather adjacent the grain side of the hide is relatively weak compared to the flesh side of the hide, particularly in goat skin, which leather is commonly employed for this purpose. Further, due to the small size of the lacing (say about $\frac{3}{32}$ of an inch wide by .025 of an inch thick), it is impossible to unite the ends of leather strips made according to the prior method, resulting in the product consisting of short lengths of lacing commensurate with the dimensions of the hide.

According to the improved method of making lacing the curved side of the lacing, as viewed in Fig. 7, may be the grain side of the hide, while more of the flesh side may be retained, and lengths of lacing may be formed of any desired length, enabling the same to be wound on spools for convenience in shipping and handling. Further, according to the improved method the lacing may be made with a minimum waste of leather.

As an example of the improved method, but without limitation thereto, a goat hide of about .03 of an inch thick may be split into strips about $1\frac{3}{8}$ inches wide, which strips, indicated at 27 in Fig. 8, may have their ends skived to produce wide bevel surfaces, as indicated at 29 in Fig. 8, after which ends of a series of strips may be united with rubber cement to produce a strip of any desired length. Strips of great lengths thus formed may then be skived from the flesh side to make each of uniform thickness, say about .025 of an inch, after which the strips may be split into a plurality of narrow strips, say about $\frac{3}{32}$ of an inch wide, as indicated in cross-section on an enlarged scale in Fig. 5, in which figure *g* indicates the grain side of the leather and *f* the flesh side of the leather. These narrow strips so formed may then be fed to the apparatus, indicated in Figs. 1, 2 and 3, with the flesh sides of the strips uppermost, resulting in opposite edges of the flesh sides of the strips being skived to produce strips having cross-sections like that shown by Fig. 6. The beveled strips may then be fed between presser rolls, such as indicated in Fig. 4, in which 31 represents an upper presser roll and 33 a lower presser roll. Herein the upper presser roll has a flange 35 fitting into a groove 37 in the lower presser roll 33, the bottom surface 39 of which groove is suitably formed to cause one side of the lacing to be convex, that is to say to be curved or polygonal, as desired. The action of the presser rolls 4 is slightly to compress the material, thus enabling more of the flesh side of the leather to be employed than in the prior method, and to change its shape from that indicated by Fig. 6 to that indicated by Fig. 7 so that the grain side of the leather will be convex.

It will be understood that the particular cross-sectional shape, dimensions, and materials of the articles described above, and the particular apparatus and method described, are given as examples of the invention, and that wide deviations from these may be made without departing from the spirit of the invention.

I claim:

1. Apparatus for skiving strip material comprising, in combination, a rotary disk skiving-knife, a rotary part having its axis in a plane substantially tangent to the cutting edge of said knife, said rotary part provided with a circumferential groove, and a normally stationary presser cooperating with said groove for forcing the body portion of said strip into said groove with the opposite edge portions only of the strip extending above the surface of said rotary part in the path of said knife.

2. Apparatus for skiving strip material comprising, in combination, a roller, a disk skiving-knife the axis of which is at right angles to the axis of said roller, said roller having an annular groove in a plane which contains the axis of said knife, the cutting edge of said knife being in a plane which is substantially tangent to the surface of said roller, said cutting edge passing through a plane which is parallel to the axis of said knife and contains the axis of said roller.

3. Apparatus for skiving strip material comprising, in combination, a roller, a disk skiving-knife the axis of which is at right angles to the axis of said roller, said roller having an annular groove in a plane which contains the axis of said knife, the cutting edge of said knife being in a plane which is substantially tangent to the surface of said roller, said cutting edge passing through a plane which is parallel to the axis of said knife and contains the axis of said roller, and a presser member close to the cutting edge of said knife for pressing the strip into said groove.

4. Apparatus for skiving strip material comprising, in combination, a roller, a disk skiving-knife the axis of which is at right angles to the axis of said roller, said roller having an annular groove in a plane which contains the axis of said knife, the cutting edge of said knife being in a plane which is substantially tangent to the surface of said roller, said cutting edge passing through a plane which is parallel to the axis of said knife and contains the axis of said roller, and a normally stationary presser foot having an end close to the cutting edge of said knife for pressing the strip into said groove.

5. Apparatus for skiving strip material comprising, in combination, a roller, a disk skiving-knife the axis of which is at right angles to the axis of said roller, said roller having an annular groove in a plane which contains the axis of said knife, the cutting edge of said knife being in a plane which is substantially tagent to the surface of said

roller, said cutting edge passing through a plane which is parallel to the axis of said knife and contains the axis of said roller, a guide member for the strip terminating close to the cutting edge of said knife, said guide member adjacent said cutting edge being slotted, and a normally stationary presser member extending into the slot of said slotted guide member for forcing the strip material into said groove.

6. Apparatus for skiving strip material comprising, in combination, a roller, a disk skiving-knife the axis of which is at right angles to the axis of said roller, said roller having an annular groove in a plane which contains the axis of said knife, the cutting edge of said knife being in a plane which is substantially tangent to the surface of said roller, said cutting edge passing through a plane which is parallel to the axis of said knife and contains the axis of said roller, and a presser member close to the cutting edge of said knife for forcing the body of the strip into said groove, said groove and presser member formed for causing the lateral edge portions of the strip to be presented to said cutting edge at an angle.

In testimony whereof, I have signed my name to this specification.

FRANK W. MERRICK.