Oct. 27, 1953 E. B. LUITWIELER 2,657,161

REINFORCED LEATHER STRIPPING AND METHOD OF MAKING THE SAME

Filed July 27, 1951

Fig. 1

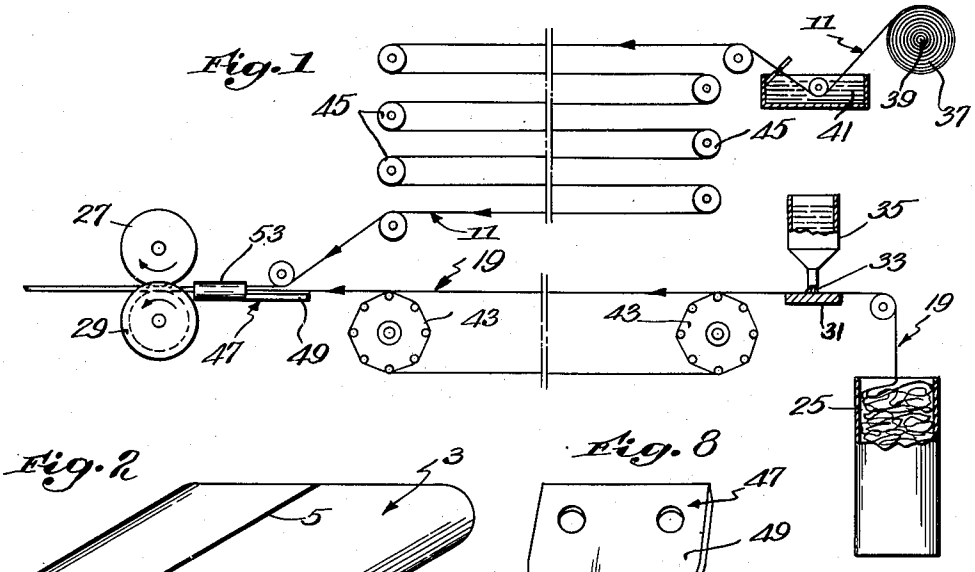


Fig. 2

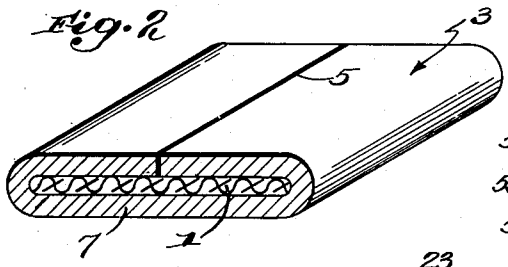


Fig. 8

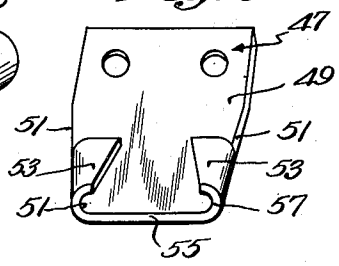


Fig. 3

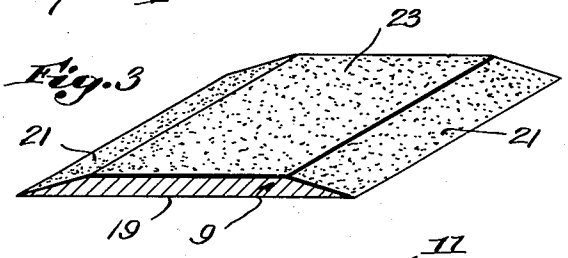


Fig. 6

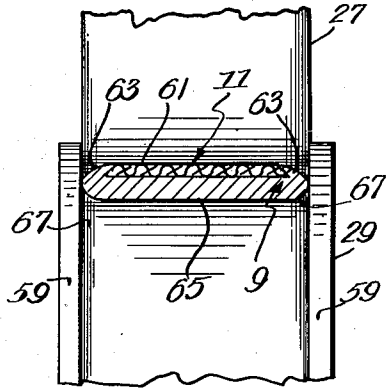


Fig. 4

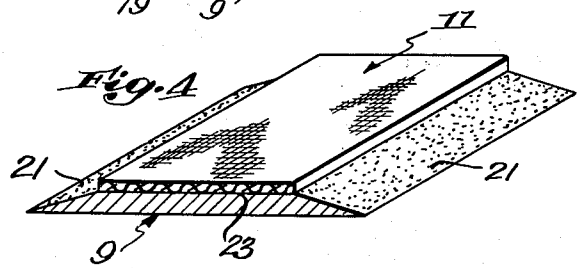


Fig. 5

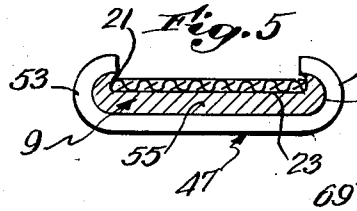
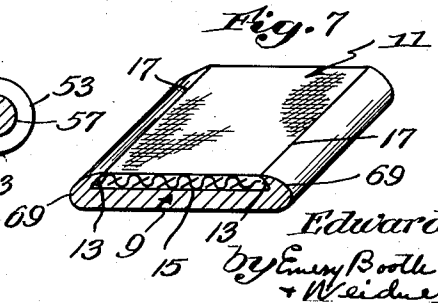


Fig. 7



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Patented Oct. 27, 1953

2,657,161

UNITED STATES PATENT OFFICE

2,657,161

REINFORCED LEATHER STRIPPING AND METHOD OF MAKING THE SAME

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Application July 27, 1951, Serial No. 238,958

14 Claims. (Cl. 154—116)

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My invention relates to reinforced leather stripping and methods of making the same.

The invention has among its objects the provision of improved stripping which for a given width requires the cutting of a narrower strip from the hide and thus in an overall sense requires less leather, and for a given thickness presents a greater thickness of leather at the wearing side of the stripping. These and other objects of the invention will be best understood from the following description when read in the light of the accompanying drawings, while the scope of the invention will be more particularly pointed out in the appended claims.

In the drawings:

Fig. 1 is a schematic view of apparatus employed in the practice of the method for making the improved stripping;

Fig. 2 illustrates a fragment of a length of prior art stripping;

Fig. 3 illustrates a fragment of a strip of leather employed in the stripping according to the present invention;

Fig. 4 illustrates a step in the method of making the stripping according to the present invention;

Fig. 5 illustrates a further step in the method of making the stripping according to the present invention;

Fig. 6 illustrates a still further step in the method of making the stripping according to the present invention;

Fig. 7 illustrates a fragment of a length of the completed stripping according to the present invention; and

Fig. 8 illustrates a detail of the apparatus employed for practising the method according to the present invention.

The stripping of the kind contemplated consists of narrow ribbons, say about ¼" wide but without limitation thereto, commonly used in fabricating and ornamenting women's shoes. Heretofore, such stripping has been made by folding over and cementing to a textile strip or tape 1 (Fig. 2) a strip 3 of leather in such way that the opposite edges of the leather strip abut at one side of the stripping along the line 5, the leather face 7 constituting the exposed side of the stripping when the stripping is applied to a shoe.

According to the present invention, the stripping comprises a leather strip 9 and a reinforcing textile strip or tape 11. In the form of the invention illustrated by Fig. 7 the opposite edges of the textile strip are beveled as indicated at 13, while the leather strip at opposite edges is

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beveled and folded over and molded to form a channel 15 of dovetail cross-section which receives the textile strip, the extreme edges 17 of the leather strip terminating in the plane of the exposed face of the textile strip, the two strips being cemented to each other at their opposed faces and beveled edges.

To make the prior art stripping shown by Fig. 2, when the reinforcing tape is about ¼" wide, requires a leather strip about $\frac{17}{32}$" wide, while to make the improved stripping according to Fig. 7 for the same width of reinforcing tape requires a leather strip but about $\frac{11}{32}$" wide. In other words, as these strips are cut from hides, the improved strip according to Fig. 7 effects a saving of about 35% in respect to the amount of leather in the form of hides necessary to produce it in quantity as compared to the strip according to Fig. 2.

The thickness of the strippings according to Figs. 2 and 7 may vary considerably, but commonly they will be about 0.06" thick, the reinforcing strip or tape commonly being about 0.02" thick, which results in such case in the leather in the stripping according to Fig. 2 being about 0.02" thick and the leather in the stripping according to Fig. 7 being about 0.04" thick. These leather strips are cut from hides to the desired width, and leather is removed from the flesh side of the strip so cut to make such strip of the desired uniform thickness, namely, a thickness of 0.02" for the strip according to Fig. 2 and a thickness of 0.04" for the strip according to Fig. 7 in the examples of these two strips just mentioned. This not only results in its being unnecessary to remove as much leather in the improved strip according to Fig. 7 as in the strip according to Fig. 2, and therefore effecting an economic saving in producing the strip according to Fig. 7, but causes the strip according to Fig. 7 to present at the exposed side of the stripping a thickness of leather about twice the thickness of the leather of the stripping according to Fig. 2, with the result that the stripping according to Fig. 7 is more durable and wear resisting.

In producing the stripping according to Fig. 7 the leather strip of rectangular cross-section, after it is cut from the hide and made the requisite thickness by removing leather from its flesh side so as to leave its grain side 19 untouched, is beveled by a skiving operation at each of its opposite edges at its flesh side to form the oppositely extending beveled surfaces 21, the remaining portion 23 of the beveled face of the strip being approximately the width of the reinforc-

ing textile strip or tape 11 employed. For a tape ¼" wide and 0.02" thick, and a leather strip about 0.04" thick, these beveled surfaces may be at an angle of about 15° to the grain side 19 of the leather strip. The strips cut from the hide may prior to beveling them be joined together in a known manner involving skiving their ends and cementing such skived ends together to produce strips of great length, say strips 1,000 yards long.

The beveled leather strip 9 may be placed in a roving can 25 (Fig. 1) and be drawn therefrom, by passing it between the cooperating presser rolls 27 and 29, over a platen 31 in opposed relation to the brush 33 of a cement fountain 35, for coating the flesh side of the leather strip, including the beveled surfaces 21 thereof, with suitable cement. This cement, for example, may be rubber cement consisting of a solution of natural or synthetic rubber in naphtha such as is commonly employed in shoe making. The textile strip or tape 11, as shown, is drawn, by the same presser rolls 27 and 29, from a roll 37 of the tape mounted on an arbor 39, through a bath 41 of the same character as that employed for coating the leather strip 9, this bath acting preferably to coat both sides of the tape and more or less to impregnate it with the cement.

In its passage from the cement fountain 35 to the rolls 27 and 29 the leather strip 9 is shown as passing several times about the widely spaced rotary reels 43, while the textile strip or tape 11 in its passage from the bath 41 toward the rolls 27 and 29 is shown as passing around the widely spaced roll sets 45, in each case sufficiently to dry the cement to render it tacky to enable the tape and leather strip to be cemented together by a pressing operation.

Just prior to passing between the rolls 27 and 29 the textile and leather strips are received by a guide 47 best illustrated in Fig. 8, the guide being shown on an exaggerated scale in Fig. 1. This guide comprises a sheet metal body 49 the edges of which as they extend toward the rolls 27 and 29 are tapered toward each other as indicated at 51 (Fig. 8), these edges integrally carrying the folded over portions 53. The edge 55 of the guide 47 adjacent the rolls 27 and 29 is placed preferably as close to those rolls as possible, and presents an opening of such shape as will apply the textile strip or tape 11 to the portion 23 of the flesh side of the leather strip, as shown in Figs. 4 and 5, and at the same time fold or bend the beveled portions of the leather strip upwardly in closely adjacent relation to the edges of the textile strip and fold or bend the free edge portions of the bevels slightly inwardly to cause them to lie above the exposed side of the textile strip adjacent its edges as shown in Fig. 5, the opposite edges of the opening through which the two strips pass being preferably rounded, as shown at 57, so as to cause the opposite edges of the leather strip at its grain side to be rounded. On leaving the guide 47 the two strips pass between the presser rolls 27 and 29, the pressure exerted by the rolls on the two strips being regulated in a known manner by mechanism (not shown), and one roll being a driven and the other an idle roll. As shown, the roll 29 is provided with the opposite peripheral end flanges 59, between which flanges the peripheral portion of the roll 27 fits. As shown in Fig. 6, the face 61 of the upper roll 27 is formed at its opposite edges with the filleted corners 63, while the face 65 of the lower roll 29 is formed at its opposite edges with the complementary filleted corners 67, so as to form a roll pass corresponding to the cross-sectional shape of the finished stripping shown by Fig. 7. When entering the roll pass just described the textile and leather strips are disposed with relation to each other as shown in Fig. 5, and in passing through the roll pass the beveled edge portions of the leather strip are forced from their position shown by Fig. 5 to their position shown by Fig. 7, as a result of which the textile strip or tape 11 is deformed by the beveled edge portions of the leather strip to form the beveled edges 13 of the textile strip, and because the textile strip is more or less absorbent with respect to cement and therefore more or less impregnated with such cement the textile strip maintains its beveled edges, while the beveled edge portions of the leather strip being molded by the presser rolls to the shape shown by Fig. 7 maintain that shape, the presser rolls acting to squeeze the two strips together so that they are cemented together, and the exposed faces of the stripping except at its rounded edges are flat. The resulting stripping exteriorly has finished rounded edges 69, and the textile strip fitting a dovetail channel in the leather strip acts to prevent separation of the two strips when the stripping is applied to a shoe.

It will be understood that within the scope of the appended claims wide deviations may be made from the form of the invention described without departing from the spirit of the invention.

I claim:

1. Stripping comprising a leather strip and a reinforcing textile strip, each edge of said textile strip being shaped to present a beveled surface, which surfaces are inclined toward each other as they recede from one face of said textile strip, the leather strip overlying the last mentioned face of said textile strip and being cemented thereto and having edges presenting oppositely beveled surfaces which face the beveled surfaces presented by said textile strip and are cemented thereto, the beveled surfaces of the leather strip joining and extending from that face of said strip which is cemented to the face of the textile strip at and along lines coinciding with those defining the extreme width of the textile strip.

2. Stripping comprising a leather strip and a reinforcing textile strip, each edge of said textile strip being shaped to present a beveled surface, which surfaces are inclined toward each other as they recede from one face of said textile strip, the leather strip overlying the last mentioned face of said textile strip and being cemented thereto and having edges presenting oppositely beveled surfaces which face the beveled surfaces presented by said textile strip and are cemented thereto, the beveled surfaces of the leather strip joining and extending from that face of said strip which is cemented to the face of the textile strip at and along lines coinciding with those defining the extreme width of the textile strip, the edges of the leather strip at opposite sides of the stripping being exteriorly convexly rounded.

3. Stripping comprising a leather strip and a reinforcing textile strip, each edge of said textile strip being shaped to present a beveled surface, which surfaces are inclined toward each other as they recede from one face of said textile strip, the leather strip overlying the last mentioned face of said textile strip and being cemented thereto and having edges presenting

oppositely beveled surfaces which face the beveled surfaces presented by said textile strip and are cemented thereto, the beveled surfaces of the leather strip being confined to substantially the beveled surfaces of the textile strip, the beveled surfaces of the leather strip joining and extending from that face of said strip which is cemented to the face of the textile strip at and along lines coinciding with those defining the extreme width of the textile strip.

4. Stripping comprising a leather strip and a reinforcing textile strip, each edge of said textile strip being shaped to present a beveled surface, which surfaces are inclined toward each other as they recede from one face of said textile strip, the leather strip overlying the last mentioned face of said textile strip and being cemented thereto and having edges presenting oppositely beveled surfaces which face the beveled surfaces presented by said textile strip and are cemented thereto, the beveled surfaces of the leather strip being confined to substantially the beveled surfaces of the textile strip, the beveled surfaces of the leather strip joining and extending from that face of said strip which is cemented to the face of the textile strip at and along lines coinciding with those defining the extreme width of the textile strip, the edges of the leather strip at opposite sides of the stripping being exteriorly convexly rounded.

5. Stripping comprising a leather strip having a flesh side and a grain side, and a reinforcing textile strip, said textile strip having oppositely beveled edges causing one face of that strip to be narrower than its opposite face, said leather strip overlying the wider face of said textile strip and being cemented thereto at its flesh side and having oppositely beveled edge portions at its flesh side overlying said beveled edges of said textile strip and cemented thereto, which beveled edge portions of said leather strip are confined to said beveled edges of said textile strip, the beveled surfaces of the leather strip joining and extending from that face of said strip which is cemented to the face of the textile strip at and along lines coinciding with those defining the extreme width of the textile strip, the leather strip at opposite edges of the stripping being convexly rounded.

6. Stripping comprising a leather strip and a reinforcing textile strip, said textile strip having oppositely beveled edges causing one face of that strip to be narrower than its opposite face, said leather strip overlying the wider face of said textile strip and being cemented thereto and having oppositely beveled edge portions overlying said beveled edges of said textile strip and cemented thereto, the beveled surfaces of said textile and leather strips facing each other and being of the same width so that the leather strip at its extreme edges terminates substantially at the junction of the beveled edges of the textile strip with the narrow face of the textile strip, the beveled surfaces of the leather strip joining and extending from that face of said strip which is cemented to the face of the textile strip at and along lines coinciding with those defining the extreme width of the textile strip, the leather strip at the exposed edges of the stripping being continuously rounded from the extreme edges of said strip to its face opposite said textile strip.

7. Stripping comprising a leather strip and a reinforcing textile strip, said textile strip having oppositely beveled edges causing one face of that strip to be narrower than its opposite face, said leather strip overlying the wider face of said textile strip and being cemented thereto and having oppositely beveled edge portions overlying said beveled edges of said textile strip and cemented thereto, the beveled surfaces of said textile and leather strips facing each other and being of the same width so that the leather strip at its extreme edges terminates substantially at the junction of the beveled edges of the textile strip with the narrow face of the textile strip, the beveled surfaces of the leather strip joining and extending from that face of said strip which is cemented to the face of the textile strip at and along lines coinciding with those defining the extreme width of the textile strip, the leather strip at the exposed edges of the stripping being continuously rounded from the extreme edges of said strip to its face opposite said textile strip, the exposed surface of said leather strip throughout its width being constituted by the grain side of the leather.

8. The method of producing stripping comprising a leather strip reinforced with a textile strip which comprises beveling opposite edges of the leather strip from one of its faces and coating said face and the beveled surfaces with cement, applying to the portion of said face of the leather strip between said beveled surfaces a textile strip of width substantially equal to the width of said portion and folding the beveled edge portions of said leather strip toward said textile strip to position said beveled surfaces of the leather strip in opposed closely adjacent relation to the edges of the textile strip with the outer edges of said beveled surfaces extending beyond and slightly overlying the face of the textile strip opposite the face thereof to which the leather strip is applied, and, while the cement is still tacky and said beveled surfaces are so positioned, subjecting the two strips so applied to each other to a pressing operation for forcing the folded beveled edge portions of the leather strip toward the textile strip for causing them to deform the textile strip to produce thereon beveled edges to which the beveled surfaces of the leather strip adhere.

9. The method of producing stripping comprising a leather strip reinforced with a textile strip which comprises beveling opposite edges of the leather strip from one of its faces and coating said face and the beveled surfaces with cement, applying to the portion of said face of the leather strip between said beveled surfaces a textile strip of width substantially equal to the width of said portion and folding the beveled edge portions of said leather strip toward said textile strip to position said beveled surfaces of the leather strip in opposed closely adjacent relation to the edges of the textile strip with the outer edges of said beveled surfaces extending beyond and slightly overlying the face of the textile strip opposite the face thereof to which the leather strip is applied, and, while the cement is still tacky and said beveled surfaces are so positioned, subjecting the two strips so applied to each other to a pressing operation for forcing the folded beveled edge portions of the leather strip toward the textile strip for causing them to deform the textile strip to produce thereon beveled edges to which the beveled surfaces of the leather strip adhere with the outer surface of the leather strip opposite its beveled surfaces positioned at its edges in the plane of the exposed face of the textile strip.

10. The method of producing stripping comprising a leather strip reinforced with a textile strip which comprises beveling opposite edges of the leather strip from one of its faces and coating said face and the beveled surfaces with cement, applying to the portion of said face of the leather strip between said beveled surfaces a textile strip of width substantially equal to the width of said portion and folding the beveled edge portions of said leather strip toward said textile strip to position said beveled surfaces of the leather strip in opposed closely adjacent relation to the edges of the textile strip with the outer edges of said beveled surfaces extending beyond and slightly overlying the face of the textile strip opposite the face thereof to which the leather strip is applied, and, while the cement is still tacky and said beveled surfaces are so positioned, subjecting the two strips so applied to each other to a pressing and forming operation for forcing the folded beveled edge portions of the leather strip toward the textile strip for causing them to deform the textile strip to produce thereon beveled edges to which the beveled surfaces of the leather strip adhere with the outer surface of the leather strip opposite its beveled surfaces positioned at its edges in the plane of the exposed face of the textile strip and with said outer surface opposite said beveled surfaces continuously rounded.

11. The method of producing stripping comprising a leather strip reinforced with a textile strip which comprises beveling opposite edges of the leather strip from one of its faces and coating said face and the beveled surfaces with cement; impregnating with cement a textile strip the width of which is that of said face of said leather strip between said beveled surfaces and the thickness of which is less than the width of said beveled surfaces; and, while the cement coating on said leather strip and the cement with which said textile strip is impregnated are tacky, applying said textile strip to the portion of said face of the leather strip between said beveled surfaces and folding the beveled edge portions of said leather strip toward said textile strip to position said beveled surfaces of the leather strip in opposed closely adjacent relation to the edges of the textile strip with the outer edges of said beveled surfaces extending beyond and slightly overlying the face of the textile strip opposite the face thereof to which the leather strip is applied, and, while the cement is still tacky and said beveled surfaces are so positioned, subjecting the two strips so applied to each other to a pressing operation for forcing the folded beveled edge portions of the leather strip toward the textile strip for causing them to deform the textile strip to produce thereon beveled edges to which the beveled surfaces of the leather strip adhere.

12. The method of producing stripping comprising a leather strip reinforced with a textile strip which comprises beveling opposite edges of the leather strip from one of its faces and coating said face and the beveled surfaces with cement; impregnating with cement a textile strip the width of which is that of said face of said leather strip between said beveled surfaces and the thickness of which is less than the width of said beveled surfaces; and, while the cement coating on said leather strip and the cement with which said textile strip is impregnated are tacky, applying said textile strip to the portion of said face of the leather strip between said beveled surfaces and folding the beveled edge portions of said leather strip toward said textile strip to position said beveled surfaces of the leather strip in opposed closely adjacent relation to the edges of the textile strip with the outer edges of said beveled surfaces extending beyond and slightly overlying the face of the textile strip opposite the face thereof to which the leather strip is applied, and, while the cement is still tacky and said beveled surfaces are so positioned, subjecting the two strips so applied to each other to a pressing operation for forcing the folded beveled edge portions of the leather strip toward the textile strip for causing them to deform the textile strip to produce thereon beveled edges to which the beveled surfaces of the leather strip adhere with the outer surface of the leather strip opposite its beveled surfaces positioned at its edges in the plane of the exposed face of the textile strip.

13. The method of producing stripping comprising a leather strip reinforced with a textile strip which comprises beveling opposite edges of the leather strip from one of its faces and coating said face and the beveled surfaces with cement; impregnating with cement a textile strip the width of which is that of said face of said leather strip between said beveled surfaces and the thickness of which is less than the width of said beveled surfaces; and, while the cement coating on said leather strip and the cement with which said textile strip is impregnated are tacky, applying said textile strip to the portion of said face of the leather strip between said beveled surfaces and folding the beveled edge portions of said leather strip toward said textile strip to position said beveled surfaces of the leather strip in opposed closely adjacent relation to the edges of the textile strip with the outer edges of said beveled surfaces extending beyond and slightly overlying the face of the textile strip opposite the face thereof to which the leather strip is applied, and, while the cement is still tacky and said beveled surfaces are so positioned, subjecting the two strips so applied to each other to a pressing and forming operation for forcing the folded beveled edge portions of the leather strip toward the textile strip for causing them to deform the textile strip to produce thereon beveled edges to which the beveled surfaces of the leather strip adhere with the outer surface of the leather strip opposite its beveled surfaces positioned at its edges in the plane of the exposed face of the textile strip and with said outer surface opposite said beveled surfaces continuously rounded.

14. The method of producing stripping comprising a leather strip reinforced with a textile strip which comprises beveling opposite edges of the leather strip from one of its faces and coating said face and the beveled surfaces with cement; impregnating with cement a textile strip the width of which is that of said face of said leather strip between said beveled surfaces and the thickness of which is less than the width of said beveled surfaces; and, while the cement coating on said leather strip and the cement with which said textile strip is impregnated are tacky, applying said textile strip to the portion of said face of the leather strip beween said beveled surfaces and folding the beveled edge portions of said leather strip toward said textile strip to position said beveled surfaces of the leather strip in opposed closely adjacent relation to the edges of the textile strip with the outer edges of said beveled surfaces extending beyond and slightly overlying the face of the textile strip opposite the face thereof to which

the leather strip is applied, and, while the cement is still tacky and said beveled surfaces are so positioned, subjecting the two strips so applied to each other to a pressing and forming operation for forcing the folded beveled edge portions of the leather strip toward the textile strip for causing them to deform the textile strip to produce thereon beveled edges to which the beveled surfaces of the leather strip adhere with the outer surface of the leather strip opposite its beveled surfaces positioned at its edges in the plane of the exposed face of the textile strip and with said outer surface opposite said beveled surfaces continuously

rounded, the two strips between said rounded surfaces being flat.

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