March 18, 1958 Y. FRIEDMANN 2,827,413

METHOD OF PRODUCING A NEW MATERIAL FROM WASTE LEATHER

Filed Sept. 20, 1955

FIG. 1.

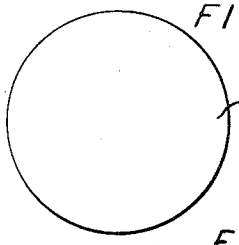


FIG. 4.

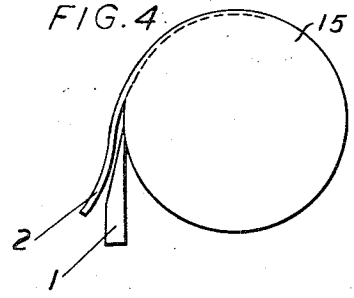


FIG. 2.

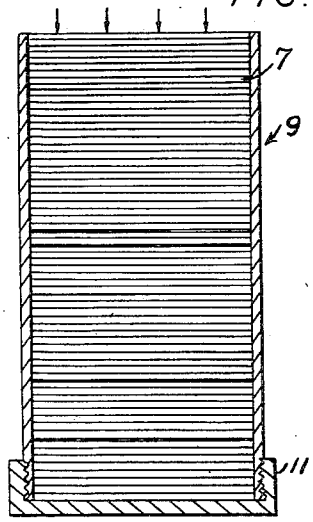


FIG. 5.

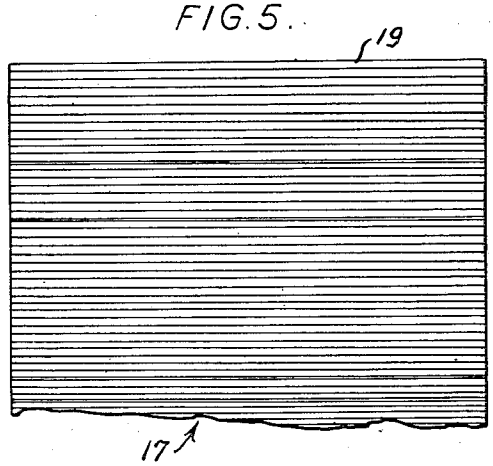


FIG. 3.

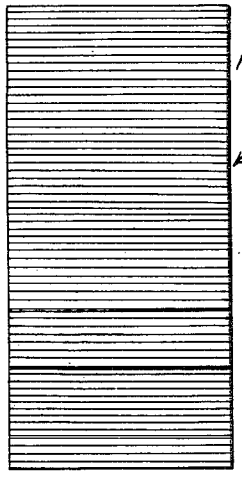
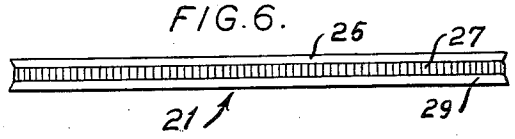


FIG. 6.



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METHOD OF PRODUCING A NEW MATERIAL FROM WASTE LEATHER

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Claims priority, application Israel September 21, 1954

6 Claims. (Cl. 154—125)

The present invention relates to a method of manufacturing a new material from waste leather.

It is known to work up waste leather by means of chemical processes which mostly involve a disintegration of the leather and by which process a so called reconditioned leather is obtained. Apart from the fact that the said process is quite complicated and costly, the so obtained material does not excel by great strength.

It is an object of the present invention to eliminate the the leather waste by transforming it to a new and useful material.

It is a further object of the invention to provide a process which can be employed without costly and complicated installation.

It is yet another object of the invention to produce a new material of high value by means of simple and inexpensive methods.

These and further objects of the invention will become clear from the following description which refers to the annexed drawings Figs. 1 to 6 thereof illustrating the different steps in the manufacturing process, and these drawings forming part of the description.

In the drawings:

Fig. 1 is a top view of a disc-shaped leather blank formed in accordance with the method of the invention;

Fig. 2 is a cross-section of a stack of these blanks and a tube into which these are placed;

Fig. 3 is a cross-section of the stack of blanks glued together to form a rod, and after their removal from the tube;

Fig. 4 is a cross-section of the rod of Fig. 3 and of a knife in the step of slicing the rod;

Fig. 5 is a top view of a portion of leather sheet formed according to the method of the invention; and

Fig. 6 is a section through a multiple-ply piece of leather composed of three of said sheets.

In a first step round discs 7, Fig. 1, are stamped or cut out from the waste leather pieces. After a preparative treatment for the removal of colour and dressing, if any and if desired, discs of identical size (but not necessarily of same thickness) are placed in a bath of glue or an appropriate leather cement, e. g. a casein solution. Subsequently the discs are introduced into a tube 9, see Fig. 2, one side of which is closed by a bottom 11, the diameter of the said tube being equal to that of the discs. In the tube the stack of discs 7 formed therein unite due to the fact that all discs are covered with glue on both their sides. If desired, pressure can be applied to compress the stack. The glue is allowed to dry so as to attain a firm bond between the discs, whereupon the rod formed from leather discs in the tube is withdrawn therefrom. This can be accomplished by removing the screwed-on bottom of the tube, see Fig. 2, and pushing the rod out. The so obtained rod 13 is shown in Fig. 3 and is actually a stack of leather discs glued onto one another. Depending on the quality of the leather and the diameter of the discs it is more or less rigid. From this rod a thin sheet of, say ½ mm. is spirally sliced off by means of e. g. a rotary lathe as commonly employed in the manufacture of rotary cut veneers. The slicing, as in the case of slicing from logs, follows a helical line around the diminishing

leather rod, as indicated in Fig. 4 where 1 designates the slicing knife, 2 a split off part of sheet and the dash-dotted line 15 indicates the path of the cut. It will be seen by such slicing a sheet 17 will be obtained of a width equal to the length of the rod previously made. In this sheet a great number of narrow leather strips 19 of a width equal to the thickness of the original discs will be present. Now a number of such sheets are cemented or glued onto each other with the strips in one sheet running crosswise to those in the next sheet. In Fig. 5 is shown in sheet or ply 17 in a top view, and in Fig. 6 a section through a multiple-layer sheet 21 composed of three plies 25, 27 and 29 arranged in a fashion in which the respective strips 19 of each ply run transversely to the direction of the strips in each adjacent sheet or ply.

A multiple-layer sheet of this kind may be subjected to additional pressure, whereby it becomes more rigid and strong.

Various changes and modifications may be made without departing from the spirit and scope of the present invention and it is intended that such obvious changes and modifications be embraced by the annexed claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. The method of producing a new sheet material from small waste leather pieces, comprising the steps of cutting discs of uniform size from said waste leather pieces, superposing said discs onto one another and into stack formation, bonding said discs to each other while so superposed to thereby form a rod of leather, spirally cutting said rod longitudinally of the latter to form a multi-strip sheet of leather, superposing a plurality of similarly formed sheets on one another with the direction of said strips in each sheet running transversely to the direction of the strips in each adjacent sheet, and bonding said sheets to one another while so superposed to thereby form a composite multiple-sheet material of enhanced strength and workability characteristics.

2. The method according to claim 1, wherein said spiral cutting step is effected over the entire length of said rod, whereby the width of said multi-strip sheet is substantially equal to the length of said rod.

3. The method according to claim 1, comprising the further step of subjecting said composite multiple-sheet material to pressure, to thereby further enhance the strength characteristics of said material.

4. A composite multiple-sheet material produced in accordance with the method of claim 1.

5. A composite multiple-sheet material produced in accordance with the method of claim 3.

6. The method of producing a new sheet material from small waste leather pieces, comprising the steps of cutting discs of uniform size from said waste leather pieces, superposing said discs onto one another and into stack formation, bonding said discs to each other while so superposed to thereby form a rod of leather, and finally spirally cutting said rod longitudinally of the latter to form a multi-strip sheet of leather wherein the width of said multi-strip sheet is substantially equal to the length of said rod.

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