

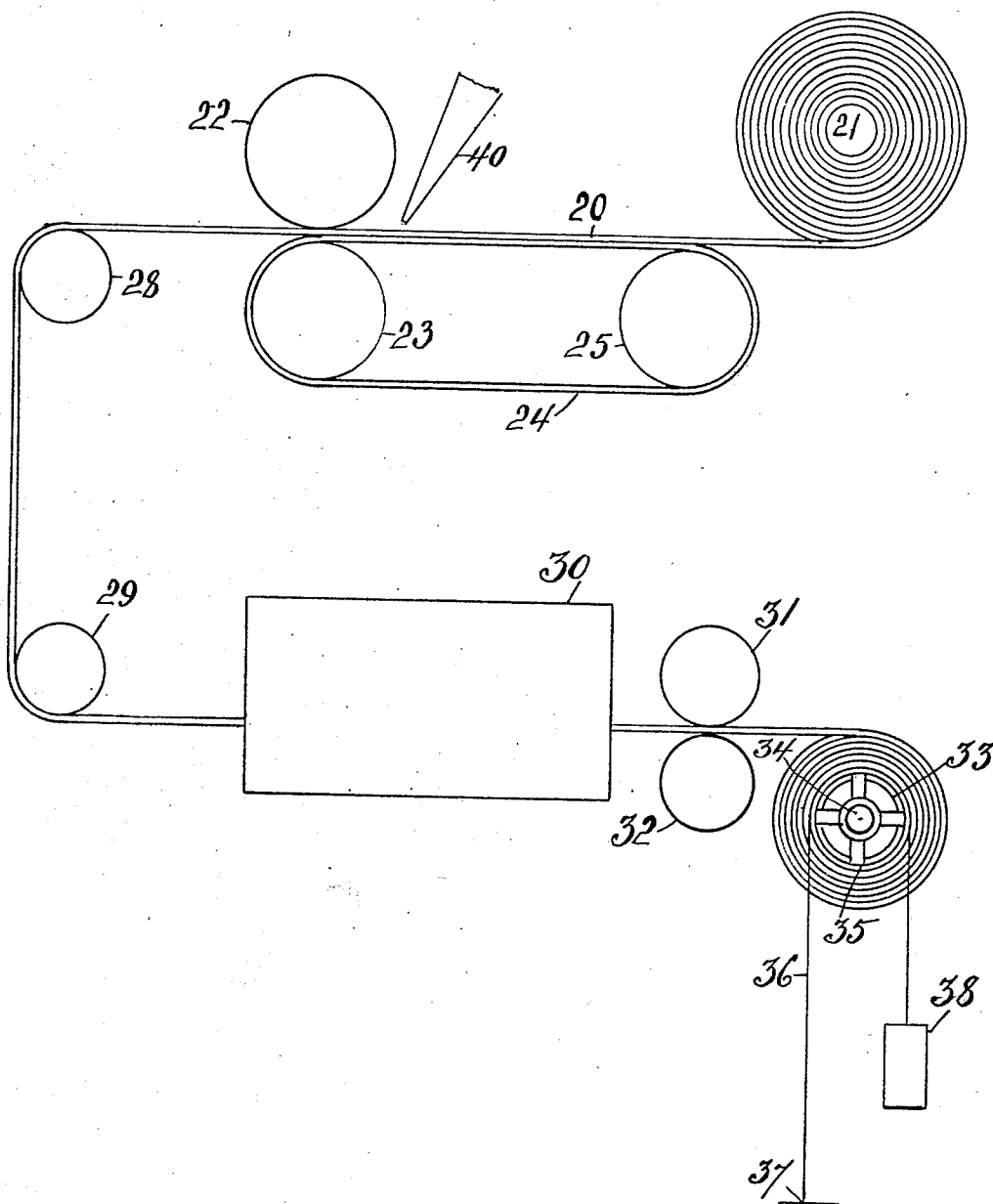
April 14, 1925.

R. B. RESPESS

1,533,273

PROCESS FOR MAKING A LEATHER SUBSTITUTE

Original Filed Feb. 21, 1921



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UNITED STATES PATENT OFFICE.

ROLAND B. RESPESS, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO
RESPRO INC., OF CRANSTON, RHODE ISLAND, A CORPORATION OF RHODE ISLAND.

PROCESS FOR MAKING A LEATHER SUBSTITUTE.

Application filed February 21, 1921, Serial No. 446,976. Renewed February 5, 1925.

To all whom it may concern:

Be it known that I, ROLAND B. RESPESS, a citizen of the United States, and resident of the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Processes for Making A Leather Substitute, of which the following is a specification.

This invention relates to a leather substitute and the process for making same and is an improvement of my invention described in U. S. Patent No. 1,276,113 and bearing date August 20, 1918.

The object of the invention is the production of a leather substitute comprising an untwisted fiber sheet with a binding agent and a leather dressing.

The accompanying drawing shows a side elevation of apparatus to carry out the steps of the invention. In the drawing a sheet of cotton batting 20 is shown wound around the roller 21. A pair of pressure rollers are indicated at 22 and 23. A conveyer belt 24 connects the roller 23 with the roller 25. Guide rollers are shown at 28 and 29. A heater is indicated at 30. Pressure rollers are shown at 31 and 32. A core 33 is supported on a roller 34. A pulley 35 is fastened to the roller 34. A belt 36 bears on the pulley 35 and has one end 37 fastened in place and at its other end is fastened a weight 38.

The process consists first in the preparation of the sheet 20 of cotton or other suitable cotton batting or felt, in the usual manner, or a carding or garnetting machine. The sheet 20 is located on the roller 21 and unwound on the conveying belt 24 between the pressure rollers 22 and 23. Just prior to the sheet coming in between the rollers 22 and 23, an adhesive binding agent is added thereto by means of the nozzle 40. The binding agent preferably comprises a compound of rubber and glue as the chief base, to which may be added silicate of soda and in some cases boiled linseed or other oils in small quantity. As the sheet 20 passes between the rollers 22 and 23 the binding agent is pressed into the sheet. The sheet 20 then passes over the guide rollers 28 and 29 into the drier 30 where the solvent of the adhesive is evaporated.

With this process the cotton is laid by the machines in thin sheets or veiling one upon the other and while in such form the

sheets may be run through rolls or rub belts as in the ordinary felting process to partly mat the fibers and in some cases the sheets may be so treated prior to saturation. In the process of saturation when the fiber is coated with adhesive element, the pressure of the rolls has a tendency to force the ends of the fibers into the adjacent layers of fibers, thereby in a measure matting the fibers or interlocking the same, and when the adhesive is dry the fibers are held firmly in place. The next step is to press the sheet under tension.

When the sheet is dry it will be found to contain numerous wrinkles. If the sheet is then pressed in a flat press and afterward coated with a surface dressing, and when the coated sheet is subjected to tension, the wrinkles have a tendency to pull out and mar the surface of the coating, thereby injuring the commercial value of the product. In the process I press the sheet 20 under tension between the rollers 31 and 32 and wind it on the core 33. The sheet is smoothly pressed between the rollers 31 and 32 and as it leaves said rollers is wound on the core 33, where the belt 36 maintains it under tension.

This dried and pressed unwoven sheet may be used without any further treatment or may be coated with a surface dressing as is ordinarily used for coating leather. It is preferable, however, to subject the sheet, before it is coated, to additional treatment with suitable agents such as tannin and the like so that the adhesive compound, especially if glue be contained therein, is made insoluble, after which the product may be dressed as leather in the usual manner. The leather dressing may consist of cellulose mixed with linseed oil, acetone and naphtha.

Having described my invention, what I desire to secure by Letters Patent and claim, is:

1. The herein described process of making a leather substitute consisting in forming an untwisted fiber sheet, saturating the sheet with an adhesive binding agent composed preferably of glue and rubber by passing the sheet between pressure rolls to force the binding agent into the sheet and to interlock and mat the fibers, drying the sheet and subjecting it to pressure under tension.
2. The herein described process of making a leather substitute consisting in form-

ing an untwisted fiber sheet, saturating
the sheet with an adhesive binding agent
composed chiefly of glue and rubber by pass-
ing it between pressure rolls to force the
5 binding agent into the sheet and further to
interlock and mat the fibers, drying the
sheet, subjecting the sheet to pressure under
tension and finishing the surface on one
side of the sheet with a leather dressing.
10 3. The herein described process of mak-
ing a leather substitute consisting in form-
ing an untwisted fiber sheet, saturating the
sheet with an adhesive binding agent com-

posed chiefly of glue and rubber by passing
it between pressure rolls to force the binding 15
agent into the sheet and further to interlock
and mat the fibers thereof, drying the sheet,
subjecting the sheet to pressure under ten-
sion and finishing the surface on both sides
of the sheet with a leather dressing. 20

Signed at the borough of Manhattan, city
of New York, in the county of New York
and State of New York, this 1st day of
February, A. D. 1921.

ROLAND B. RESPESS.