A. C. RADER.

PROCESS OF MAKING ARTIFICIAL LEATHER.

APPLICATION FILED JAN. 6, 1914.

1,184,870. Patented May 30, 1916.

Fig. 3.

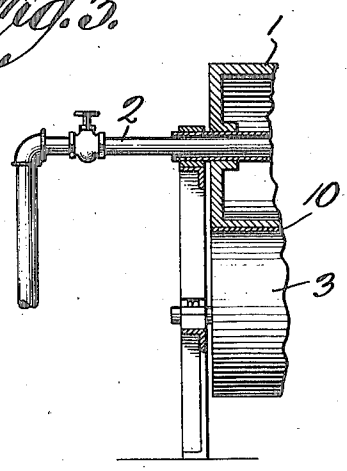


Fig. 1.

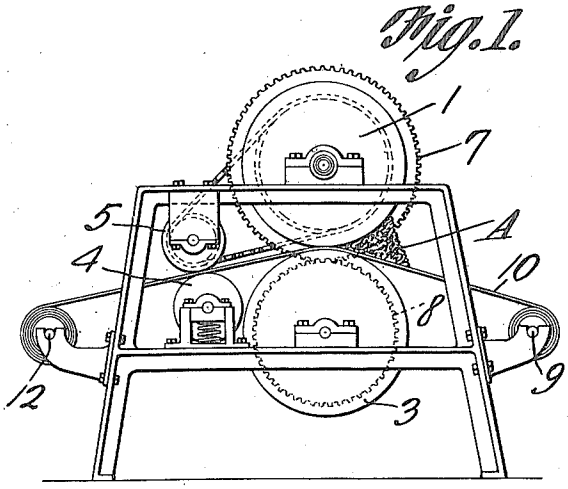
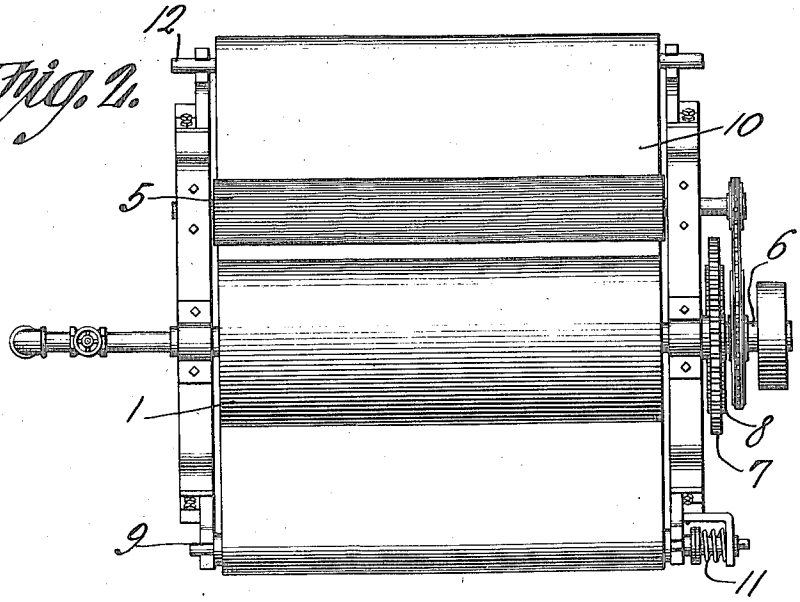


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

AUGUST C. RADER, OF UPPER MONTCLAIR, NEW JERSEY.

PROCESS OF MAKING ARTIFICIAL LEATHER.

1,184,870. Specification of Letters Patent. Patented May 30, 1916.

Application filed January 6, 1914. Serial No. 810,681.

To all whom it may concern:

Be it known that I, AUGUST C. RADER, a citizen of the United States, residing at Upper Montclair, in the county of Essex and State of New Jersey, have invented a new and useful Process of Making Artificial Leather, of which the following is a specification.

This invention relates to a process for making artificial leather such as used, for example, in the manufacture of curtains for car windows. Heretofore material of this kind has been produced by applying a liquid composition to one surface of a fabric and, after the composition has dried through the evaporation of the volatile ingredients, another coating of the composition has been applied. This process has been carried out until several coatings have been applied to the fabric and, obviously, the operation has been a slow and extensive one.

It is an object of the present invention to expedite the production of an artificial leather by applying the coating composition in a paste-like or plastic state and forcing it under pressure into the fabric so that a coating of the desired thickness can be applied in one operation.

A further object is to produce an embossed surface upon the product, thus to enhance the appearance thereof.

With the foregoing and other objects in view the invention consists of certain novel steps in the method of producing artificial leather, which will be hereinafter more fully described and pointed out in the claim, it being understood that various changes may be made within the scope of the claim without departing from the spirit of the invention.

In the accompanying drawings I have illustrated one form of apparatus which may be used in carrying out the present invention.

In said drawings—Figure 1 is a side elevation of the machine. Fig. 2 is a plan view thereof. Fig. 3 is a vertical transverse section through the machine, the upper or applying roll being shown in section, said section being taken only through a portion of the machine.

Referring to the figures by characters of reference 1 designates a hollow applying roll which may be heated in any suitable manner, as by means of a steam pipe 2 extending thereinto. This applying roll is arranged above and coöperates with a supporting roll 3. A smaller supporting roll 4 is arranged adjacent the roll 3 and cooperates with an embossing roll 5 receiving motion in any suitable manner from the shaft 6 to which the applying roll 1 is secured. Roll 5 is preferably held against up and down movements while the roll 4 is preferably yieldingly mounted so that when a fabric is fed between the two rolls 4 and 5 it will be tightly gripped therebetween. In the drawings, a chain and sprocket have been illustrated for the purpose of driving the embossing roll 5. Motion may be transmitted from the applying roll 1 to the supporting roll 3 by gears 7 and 8, these gears being so proportioned that roll 3 will be driven at a higher speed than will the roll 1.

A reel 9 is mounted at one end of the machine and is adapted to support a roll of fabric, the fabric being indicated at 10. This reel may be provided with any suitable means such as a spring 11 for retarding the rotation thereof. A take up reel 12 can be arranged at the other end of the machine, the finished material being adapted to be wound on this take up reel.

In carrying out the process, the fabric to be treated is placed in a roll upon the reel 9 and is fed between the rolls 1 and 3, between the rolls 4 and 5 and is secured to the take-up reel 12. The mechanism is then set in motion and the composition which is to be applied to the fabric is placed, in a plastic or paste-like condition upon the fabric adapted to pass between the two rolls 1 and 3. This material has been indicated generally at A in Fig. 1 and can be any suitable oil compound such as commonly employed in the production of artificial leather. It might be stated, however, that instead of applying the compound in a liquid state, as heretofore, it is evaporated to a plastic or paste-like condition before it is applied. As the rolls 3 and 7 travel at different speeds, the roll 3 will force the fabric through the pass while the slower moving roll 1 will operate to press the composition into the pores of the fabric and will press it back and spread it smoothly over the fabric so that, when the product emerges from between the rolls 1 and 3, it will consist of a layer of fabric having on

one surface a coating of the finishing compound, said compound being forced down into the pores of the fabric so as to become an integral part thereof. As the product passes between the rolls 4 and 5 it will be embossed, and if the roll 5 is formed with small longitudinal corrugations, the finished surface of the product will be correspondingly corrugated. The product can be taken up on the reel 12 in any suitable manner. It will be noted that as the roll 1 moves slower than does the roll 3, said roll 1 will be kept clean of adhering substances and all of the composition will be utilized. As the composition supported between the roll 1 and the fabric 10 is used up, an additional supply can be placed easily on the fabric.

Importance is attached to the fact that the composition is applied in a plastic or paste-like condition and is furthermore applied under pressure and while heated. The heat softens the composition so that it is forced readily into the pores of the fabric when under pressure. After the product issues from between the embossing rolls it is placed in a suitable drier.

What is claimed is:

The herein described process of coating and impregnating fabric with a plastic material, which consists in guiding the fabric, while moving at a fixed speed in one direction, between a supporting roll and a heated roll, and in placing on the fabric a plastic material whicl is supported by the fabric and fed thereby between the rolls, the heated roll rotating at a slower speed than the supporting roll and operating to force the plastic material into the fabric but to drag upon the plastic material while subjected to pressure between the rolls.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

AUGUST C. RADER.

Witnesses:
SELINA WILLSON,
I. E. SIMPSON.