L. A. FRANÇOIS.

METHOD OF IMPREGNATING AND COVERING TEXTILE FABRICS WITH BALATA WITHOUT THE AID OF SOLVENTS.

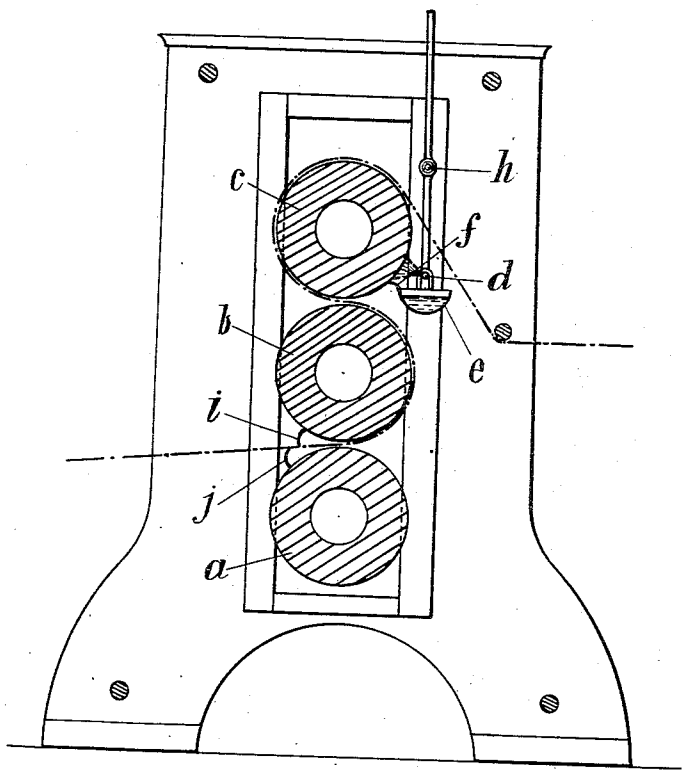
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1,285,105.

Patented Nov. 19, 1918.

2 SHEETS—SHEET 1.

Fig. 1.



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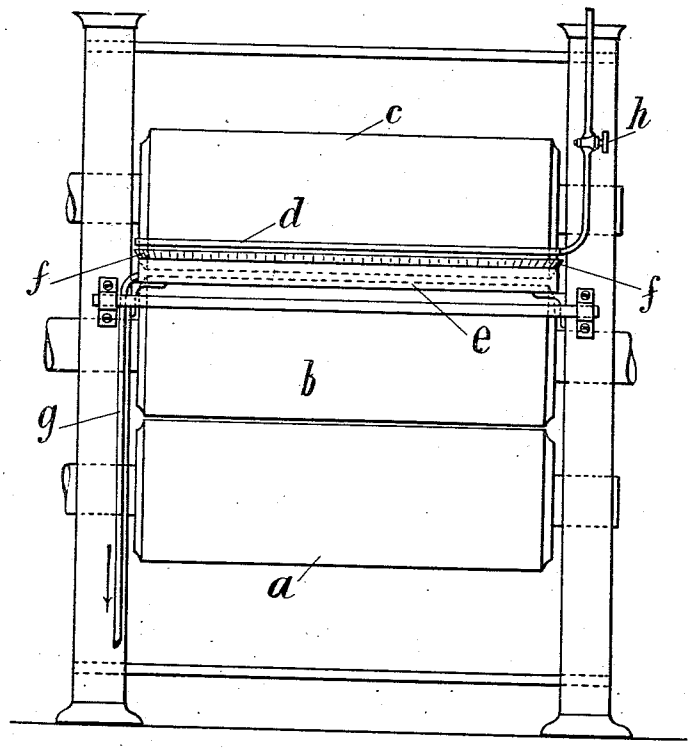
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

LUCIEN ABEL FRANÇOIS, OF PARIS, FRANCE.

METHOD OF IMPREGNATING AND COVERING TEXTILE FABRICS WITH BALATA WITHOUT THE AID OF SOLVENTS.

1,285,105. Specification of Letters Patent. Patented Nov. 19, 1918.

Application filed April 13, 1918. Serial No. 228,506.

To all whom it may concern:

Be it known that I, LUCIEN ABEL FRANÇOIS, citizen of the Republic of France, residing at Paris, France, have invented certain new and useful Improvement in Methods of Impregnating and Covering Textile Fabrics with Balata Without the Aid of Solvents, of which the following is a specification, reference being had therein to the accompanying drawing.

The only method used at present in the industry for impregnating and covering textile fabrics with balata consists in immersing the said fabrics through a bath maintained hot and formed with balata dissolved in benzin or in another solvent.

Heretofore it was not possible to directly impregnate textile fabrics at the same time on both sides with undissolved balata.

The present invention has for its object to attain this result, that is to say to directly impregnate and cover textile fabrics at the same time on both sides with balata without the aid of any solvent.

To this end, the common two-rolled calender and the heater used in india rubber fabrics are utilized in the following manner:—

The balata is heated within the two-rolled heater until the matter becomes softer, plastic and suitably consistent. This result is obtained by strongly heating both of the rolls or cylinders by means of steam flowing within the same. While the balata is heated, both rolls of the calender rotating at the same velocity are very strongly heated by a circulation of steam within the same, then set in motion; the textile fabric arranged at the usual place upon the unwinding spool will be introduced between the two cylinders, the distance between which will be varied according to the thickness of the said fabric to which is added the thickness of the coating of balata which is to be applied on each of the sides. The hot balata, in the condition of a soft paste, is removed from the heater and placed in form of pads on to either side of the textile fabric between the latter and the front of the suitably heated cylinders. By so proceeding, the textile fabric will be impregnated and covered with balata on both sides at once in one operation. The fabric so covered with balata is now to be cooled and wound up while inserting, if necessary, a canvas cover for avoiding any sticking.

The cooling may be obtained by any suitable means, for instance by causing the fabric to go through a sufficient space before winding up, or by arranging parallel with the first two cylinders a third cylinder internally cooled in the usual manner and either externally cooled and moistened by a projection of water on to the surface, or externally cooled and moistened by means of a moistening roll.

The said third cooling cylinder acting as feeder may assume any position parallel with the impregnating rolls and be situated either above or below the said cylinders, so as to constitute a three rolled calender; or the said third roll may be placed at a distance either above or underneath, or may assume any other position more or less distant.

The accompanying drawing has for its object to illustrate, not the calender, but solely a cooling device; in the said drawing, the third roll or cylinder is shown above the first two others, so as to constitute a three rolled apparatus, and the external and moistening cooling device is shown only by way of example.

Figure 1 is a cross section showing the device.

Fig. 2 is a front view.

a and *b* are the two impregnating rolls, which are hollow and internally heated by steam in the usual manner.

c a hollow feeding roll internally cooled by a stream of cold water.

The said external and moistening cooling device comprises: a water-pipe *d* as long as the roll *c* placed parallel with the latter and pierced with small holes opposite the said roll; a trough *e* of the same length situated underneath and bearing upon stands connected with the framework of the apparatus; a small scraper *f* of rubber or any other matter secured upon the flange of the trough and constantly bearing against the roll *c;* and finally, a discharge pipe *g*.

The said pipe *d* communicates with an inlet pipe for water under pressure, provided with a regulating valve or cock *h* and the water which escapes from the latter will

constantly moisten and cool the roll or cylinder *c* during the rotation of the latter. The so projected water will be brought back by the scraper *f* into the trough *e* and thence will be delivered through the pipe *g*.

The textile fabric from the unwinding spool is introduced between the two strongly heated rolls *a* and *b*, the said balata coming from a heater is placed in form of pads at *i* and *j* and covers the textile fabric on both sides; the fabric so covered with balata turns around *b*, then *c*, and is finally led on to the winding up spool.

It is by internally and externally cooling the roll *c* and maintaining the same constantly wet that the sticking of the fabric provided with balata upon its surface will be avoided. If the external cooling and moistening be unexisting or insufficient, the balata which covers the fabric will adhere to the roll at a certain moment by forming small plates or balls, on the following turn a new quantity of balata will be removed from the fabric, stuck close to the roll, and at each revolution a part of the matter will fall making the fabric unavailable, while the roll will be rapidly made sticky, whereby the machine will be caused to stop.

The saving produced by the process is considerable, for the latter avoids the very high expense of solvent, materially reduces the manual labor, and the danger of fire is removed.

Claim:

The method of impregnating and covering textile fabrics with balata, which consists in reducing the balata to the consistency of a soft paste, by passing a mass of balata between heated rolls, removing the balata from the heated rolls, applying the balata while still in a heated and pasty condition to both sides simultaneously of the fabric, passing the fabric with the applied balata between heated calender rolls and then passing the covered fabric around a cooled and externally moistened roll.

In testimony whereof I affix my signature in presence of two witnesses.

FRANÇOIS LUCIEN ABEL.

Witnesses:

CHAS. P. PRESSLY,

R. BOBER.