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E. C. WIESE

COATING FABRIC WITH RUBBER

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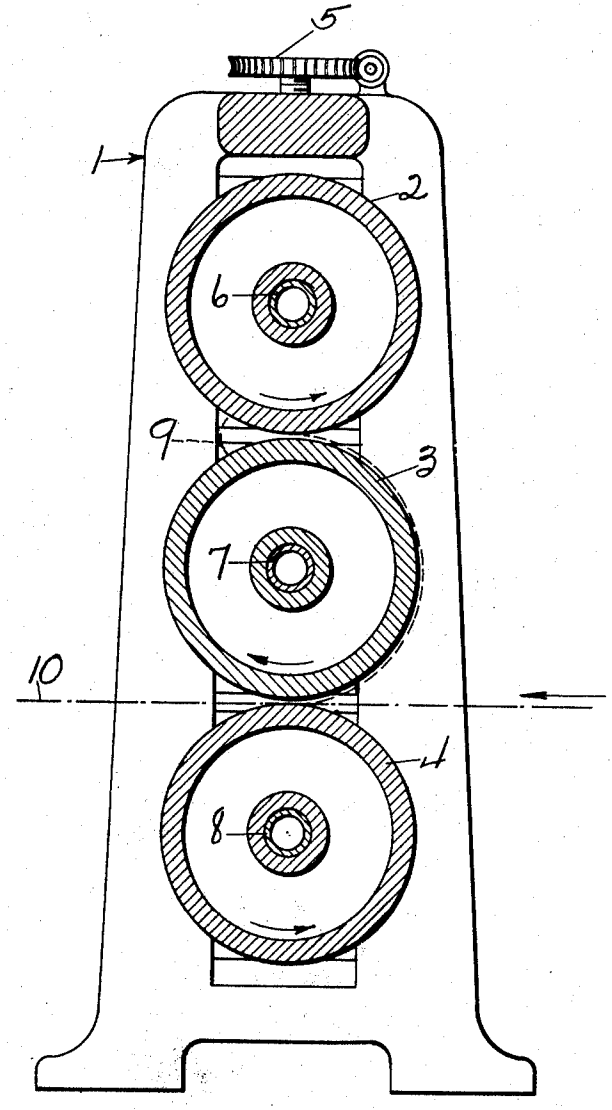

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UNITED STATES PATENT OFFICE.

EDWIN C. WIESE, OF MILWAUKEE, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE FISK RUBBER COMPANY, OF CHICOPEE FALLS, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

COATING FABRIC WITH RUBBER.

Application filed January 29, 1921. Serial No. 440,961.

To all whom it may concern:

Be it known that I, EDWIN C. WIESE, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Coating Fabrics with Rubber, of which the following is a specification.

My invention relates to coating fabric with rubber and the principal object of the invention is to coat with rubber in a more satisfactory manner fabrics which are difficult to coat such as those having short fibres, those having easily shredded fibres, and those having loosely twisted fibres. It is desirable from the standpoint of speed and uniformity to coat such fabrics on a calender such as is used for coating the usual fabrics. Using such a calender in the ordinary manner it has been found that the adhesion of the rubber to the calender and to the fibres on the surface of such fabric is greater than the adhesion of these fibres to the body of the fabric. In consequence of this the rubber will follow around the calender roll and carry with it the surface fibres of such fabric whereas the rubber should separate from the calender roll and be carried away adhering to the fabric.

The single figure of the accompanying drawing shows in vertical section, a conventional type of calender such as is adapted to carry out the method constituting my invention.

In the drawing 1 designates the calender frame which rotatably supports calender rolls 2, 3, and 4. The rolls are driven in the direction of the arrows in any approved manner, the speed of roll 3 being slightly greater than that of the other rolls to produce the desired frictioning effect. Conventional means are indicated at 5 to adjust the pressure of the rolls. The several rolls are internally heated as by steam pipes 6, 7, and 8 entering through the bearings of the rolls. The bank of rubber which is sheeted out on roll 3 is indicated in dotted lines at 9 and the material to be coated is indicated at 10. Since the calender structure is entirely conventional further description thereof is unnecessary.

I have found that by running the calender with a frictioning motion with the rubber quite warm and very thin and with pressure on the fabric as it is calendered that the rubber will work into and adhere to fabric of the type for which this invention is intended without injuring the fabric and that the rubber will not stick to the calender and therefore will not shred off or otherwise disrupt the fabric which is being coated. The frictioning motion is obtained in the usual manner while the thickness of the rubber is controlled by the adjustment of the calender rolls also in the usual manner. I may secure the warm stock by keeping all of the rolls of the calender relatively warm but I prefer to keep the center roll somewhat cooler than the top and bottom rolls so that the rubber while remaining warm will have less tendency to adhere to the center roll than it will to the fabric which has been warmed by the warmer lower roll.

It will be understood that after applying this first coat to one side of the fabric I may apply such further coats as may be found desirable. In impregnating asbestos fabric which is to be used for brake lining I find that a similar coating on the reverse side of the fabric produces all of the rubber needed.

It will be understood that the above description is for the purpose of illustration only and that my invention is not limited thereby.

I claim:

1. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion and with the lower roll warmer than the center roll.

2. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the upper and lower rolls warmer than the center roll.

3. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rolls relatively warm and the lower roll warmer than the center roll.

4. The method of coating fabric with rubber which comprises passing the fabric

through a rubberizing calender under frictioning motion with the rolls relatively warm and the upper and lower rolls warmer than the center roll.

5. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rubber relatively warm and the lower roll warmer than the center roll.

6. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rubber relatively warm and the upper and lower rolls warmer than the center roll.

7. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rolls relatively warm and with the upper and center rolls so set that the coating on the center roll is relatively thin.

8. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rubber relatively warm and with the upper and center rolls so set that the coating on the center roll is relatively thin.

9. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the lower roll warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin.

10. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the upper and lower rolls warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin.

11. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rolls relatively warm and the lower roll warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin.

12. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rolls relatively warm and the upper and lower rolls warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin.

13. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rubber relatively warm and the lower roll warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin.

14. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rubber relatively warm and the upper and lower rolls warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin.

15. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rolls relatively warm and with the upper and center rolls so set that the coating on the center roll is relatively thin, and the center and lower rolls so set that substantially this entire coating is taken off onto the fabric.

16. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rubber relatively warm and with the upper and center rolls so set that the coating on the center roll is relatively thin and the center and lower rolls so set that substantially this entire coating is taken off onto the fabric.

17. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the lower roll warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin and with the center and lower rolls so set that substantially this entire coating is taken off onto the fabric.

18. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the upper and lower rolls warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin and the center and lower rolls so set that substantially this entire coating is taken off onto the fabric.

19. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rolls relatively warm and the lower roll warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin and the center and lower rolls so set that substantially this entire coating is taken off onto the fabric.

20. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rolls relatively warm and the upper and lower rolls warmer than the center roll and with the upper and

center rolls so set that the coating on the center roll is relatively thin and the center and lower rolls so set that substantially this entire coating is taken off onto the fabric.

21. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rubber relatively warm and the lower roll warmer than the center roll and with the upper and center rolls so set that the coating on the center roll is relatively thin and the center and lower rolls so set that substantially this entire coating is taken off onto the fabric.

22. The method of coating fabric with rubber which comprises passing the fabric through a rubberizing calender under frictioning motion with the rubber relatively warm and the upper and lower rolls warmer than the center rolls and with the upper and center rolls so set that the coating on the center roll is relatively thin and the center and lower rolls so set that substantially this entire coating is taken off onto the fabric.

23. A method of coating loosely formed fabric with rubber which comprises passing the fabric through a rubberizing calender with heated rolls under frictioning motion and with heat and pressure sufficient to release the rubber on the carrying roll of the calender, to the said fabric as the latter passes through the calender.

In testimony whereof I have signed my name to the above specification.

EDWIN C. WIESE