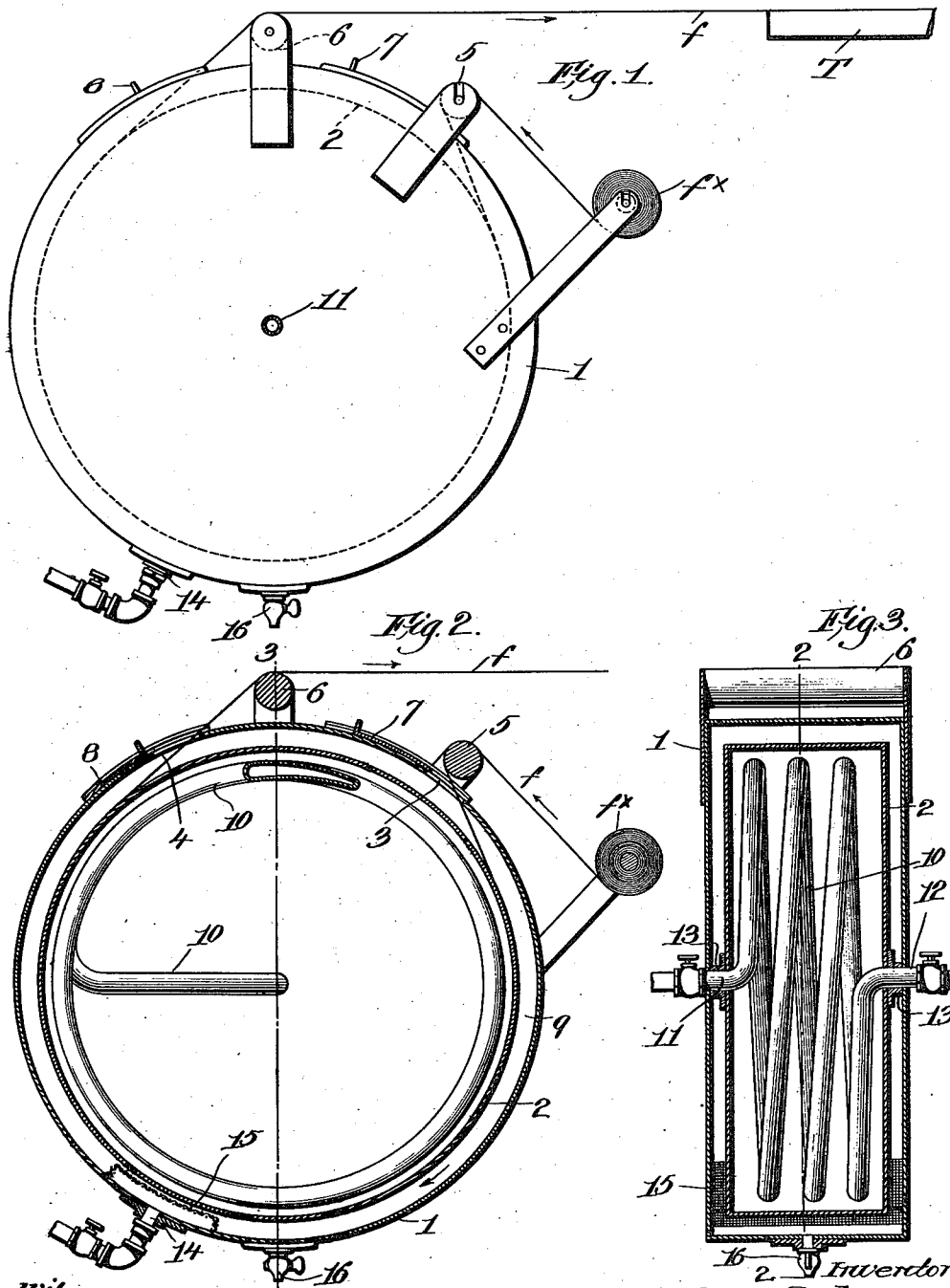


A. SYDEMAN & J. MEADE.
 APPARATUS FOR TREATING COATED TEXTILE FABRIC.
 APPLICATION FILED APR. 11, 1906.

976,231.

Patented Nov. 22, 1910.



Witnesses.
 W.C. Lumsford
 Walter H. Trott

Inventors.
 Abraham Sydeinan,
 James Meade
 By Leroy & Singrey, Attys.

UNITED STATES PATENT OFFICE.

ABRAHAM SYDEMAN, OF BOSTON, AND JAMES MEADE, OF STOUGHTON, MASSACHUSETTS; SAID MEADE ASSIGNOR TO SAID SYDEMAN.

APPARATUS FOR TREATING COATED TEXTILE FABRIC.

976,231.

Specification of Letters Patent. Patented Nov. 22, 1910.

Application filed April 11, 1906. Serial No. 311,052.

To all whom it may concern:

Be it known that we, ABRAHAM SYDEMAN, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, and JAMES MEADE, a citizen of the United States, and a resident of Stoughton, in the county of Norfolk and State of Massachusetts, have invented an Improvement in Apparatus for Treating Coated Textile Fabric, of which the following description, in connection with the accompanying drawing, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of apparatus for rapidly and efficiently treating textile fabric coated with a rubber or gutta-percha compound or composition, to the end that the coating may be temporarily softened or rendered "tacky" in order that the fabric may be readily applied to other objects, such as insoles for boots and shoes, etc.

The insoles of boots and shoes are frequently made of thin leather or other suitable material reinforced by one or more layers of canvas or other strong textile fabric, and cemented in place.

It has been found that a coated fabric of the character hereinbefore referred to can be employed with highly satisfactory results as a reinforce for insoles, etc., it being necessary to temporarily soften or render tacky the coated surface in order that the same may adhere to the article to which the fabric is to be applied.

By means of our present invention the coated fabric is rapidly and efficiently treated so that as the fabric emerges its coated surface is in the desired tacky condition for application to another object.

As will appear hereinafter the apparatus is so constructed and arranged that the textile fabric is not dampened or wetted, to any great extent so that when the treated fabric is applied to some other object, as an insole, the latter is ready for further operations connected with the manufacture of the boot or shoe without requiring any drying operation.

The various novel features of our invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a side elevation of an apparatus embodying one form of our present invention: Fig. 2 is a vertical section thereof on the line 2—2, Fig. 3, and Fig. 3 is a transverse section on the line 3—3, Fig. 2, the heating coil being shown in elevation.

In the present embodiment of our invention the apparatus comprises a casing 1, of sheet iron or other suitable material, shown as cylindrical, and an inclosed heater and support 2 for the fabric to be treated.

The casing is provided with apertures 3, 4, see Fig. 2, for the entrance and exit respectively of the fabric, indicated at *f*, Figs. 1 and 2, the fabric being led from a roll *f*^x up over a guide-roll 5 supported externally on the casing, the fabric passing thence into the casing. A similar guide-roll 6 is provided adjacent the opening 4, the fabric as it leaves the casing with its coated face uppermost being led across the guide-roll 6 and onto a suitable board or table *T*, Fig. 1, when the insoles or other objects are applied to the "tacky" coated surface of the fabric.

We have provided sliding closures or covers 7 and 8 for the apertures 3 and 4 respectively, in order that the same may be adjusted to vary the openings, to close as much as possible the casing. Herein the combined support or carrier and heater is shown as a closed, preferably metallic drum or cylinder 2, coaxial with the casing and leaving an annular space or passageway 9 see Fig. 2, between the curved wall of the casing and the drum or chamber 2.

The temperature of the heater is raised in any suitable manner, and we have found it most satisfactory to heat by steam, the purpose of the drum being to support and guide the fabric in its passage through the casing, and to apply a dry heat to the textile face of such fabric over a large area.

A heating-coil 10, see Figs. 2 and 3, is inclosed within the heater or drum 2, the opposite ends of the coil being extended through the centers of the side walls of the casing, as at 11 and 12, Fig. 3, and provided with suitable valves outside the casing to regulate the passage of the heating medium, steam or other fluid, through the coil.

The inlet and outlet portions of the coil are utilized to form bearings for the hubs 13 of the heater or drum 2, so that the latter can readily revolve as the fabric is drawn

through the casing, and from an inspection of the drawing it will be seen that the major portion of the periphery of the drum is in contact with the uncoated face of the fabric, so that a large area of the latter is subjected to the heating action.

The dry heat acts upon the rubber or gutta-percha coating to soften the same as the fabric is slowly passed through the casing, so that when the fabric emerges and passes to the table or board T, Fig. 1, the coating is sticky or tacky enough to instantly adhere to an object placed thereupon.

As the coated face of the fabric is outward or exposed during its passage through and treatment in the apparatus there is no possibility of the fabric sticking to the heater, and when withdrawn the coated side is uppermost, in the most convenient position for the application of insoles or other objects to the fabric.

When using steam as the heating medium the whole apparatus can be readily supported by connecting the ends 11 and 12 of the coil 10 in a steam circulation system, or cutting them into a steam pipe.

We have found that the treatment of the fabric to soften the coating thereof may be hastened, and with some kinds of coating material improved, by subjecting the exposed or coated face of the fabric to the action of moist heat while the opposite or textile face is subjected to dry heat. To this end we have provided the casing with an inlet 14, Figs. 1 and 2, through which steam can be introduced into the interior of the casing, filling the space between the casing and drum, the moisture of the steam, in connection with the heat, acting to accelerate the softening of the coating material.

In order to prevent the incoming steam from being concentrated upon a relatively small portion of the coated surface of the fabric we prefer to employ a distributor, herein shown as a box-like structure 15 of fine wire gauze located in the annular space 9 and extending from one to the other side of the casing, the inlet 14 opening into such distributor.

The steam is spread and distributed over a comparatively large area as it enters the casing, and acts more effectively upon the coating.

Instead of introducing steam into the casing moisture-laden warm air may be employed in lieu thereof.

A suitable drip-cock 16 is provided at the bottom of the casing to conduct away any water of condensation which may collect therein.

Our invention is not restricted to the precise construction and arrangement herein shown and described, as the same may be modified or varied in different particulars by those skilled in the art without depart-

ing from the spirit and scope of our invention.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. In apparatus of the class described, a casing apertured for the entrance and exit of the fabric to be treated, a rotatable drum within the casing and around which the fabric passes, with its coated face out-turned, and means to heat the drum to soften the coating.

2. In apparatus of the class described, a casing apertured to permit the entrance and exit of the fabric to be treated, a heating chamber within the casing and against which the fabric passes with its coated face exposed, and means to heat the chamber and thereby soften the coating during the passage of the fabric through the casing.

3. In apparatus of the class described, a casing apertured for the entrance and exit of the fabric to be treated, a rotatable, metallic heater within the casing and around which the fabric passes with its coated face exposed, means to internally heat said heater to thereby soften the coating during the passage of the fabric, and means to subject the coated face to the action of moist heat while the fabric is within the casing.

4. In apparatus of the class described, a casing apertured for the entrance and exit of the fabric to be treated, a metallic drum rotatably mounted in the casing and around which the fabric passes with its coated face exposed, and means to internally heat the drum to thereby soften the coating of the fabric as the latter passes around the drum.

5. In apparatus of the class described, a casing having adjustable openings for the entrance and exit of the fabric to be treated, a drum rotatably mounted in the casing and around which the fabric passes with its coated face exposed, means to heat the drum and thereby soften the coating of the fabric, and separate means to introduce moisture into the casing to act upon the exposed coated face of the fabric.

6. In apparatus of the class described, a casing apertured for the entrance and exit of the fabric to be treated, a metallic drum rotatably mounted in the casing and around which the fabric passes, and a heating-coil within the drum and having its inlet and outlet coaxial with the same, to heat the drum and thereby soften the coating on the fabric.

7. In apparatus of the class described, a casing apertured for the entrance and exit of the fabric to be treated, a metallic drum rotatably mounted in the casing and around which the fabric passes with its coated face exposed, a heating-coil within the drum and having its inlet and outlet coaxial with the same, to heat the drum and thereby soften

the coating on the fabric, and means to introduce steam to the casing to act upon the exposed coated face of the fabric.

8. In apparatus of the class described, a casing apertured for the entrance and exit of the fabric to be treated, a metallic drum rotatably mounted in the casing and around which the fabric passes with its coated face exposed, a heating-coil within the drum and having its inlet and outlet coaxial with the same, to heat the drum and thereby soften the coating on the fabric, a steam inlet to introduce steam into the casing to act upon the exposed coated face of the fabric, and a distributor within the casing to prevent concentration of the incoming steam upon a portion of the fabric.

9. In apparatus of the class described, a casing apertured for the entrance and exit of the fabric to be treated, guide-rolls for the fabric, externally mounted on the casing, a rotatable carrier within the casing and around which the fabric passes with its coated face exposed, means to internally heat said carrier to thereby soften the coating, and means to subject the coated face of the fabric to the action of moist heat while within the casing.

10. In apparatus of the class described, a casing through which the coated fabric is

adapted to travel, and means to apply dry heat to the textile face, and moist heat to the coated face, of the fabric in its passage through the casing, to thereby soften and render tacky the coating.

11. In apparatus of the class described, a casing through which the fabric is adapted to travel, means to support and guide the fabric, and means to simultaneously subject the opposite faces of the fabric to the action of moisture and heat respectively, to soften the coating thereof during the passage of the said fabric.

12. In apparatus of the class described, a casing apertured for the exit and entrance of the fabric to be treated, and means within the casing to engage only the uncoated face of and support and guide the fabric during its passage through the casing, and also to apply heat to the fabric through its uncoated face, to soften and render tacky the coating on its opposite face.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

ABRAHAM SYDEMAN.
JAMES MEADE.

Witnesses:

ETHEL M. BRITTON,
RALPH S. BLAKE.