

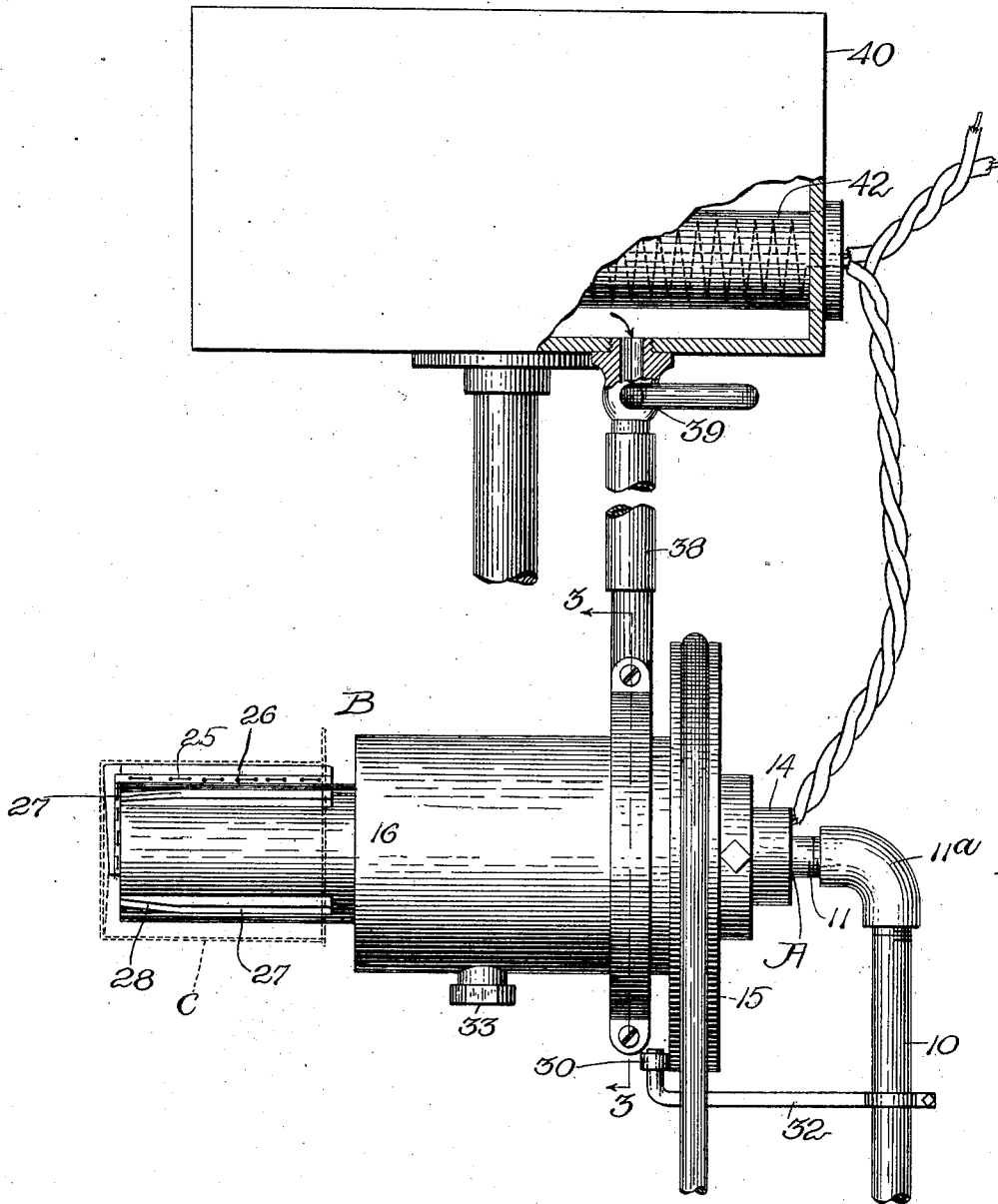
H. J. POTTER.
COATING APPARATUS.
APPLICATION FILED AUG. 20, 1909.

972,239.

Patented Oct. 11, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:

James E. Lynch.
Joseph A. Gately

Inventor

Harry J. Potter.
By *Lawrence W. Cobb*
Atty.

H. J. POTTER.
COATING APPARATUS.
APPLICATION FILED AUG. 20, 1909.

972,239.

Patented Oct. 11, 1910.

2 SHEETS-SHEET 2.

Fig. 2.

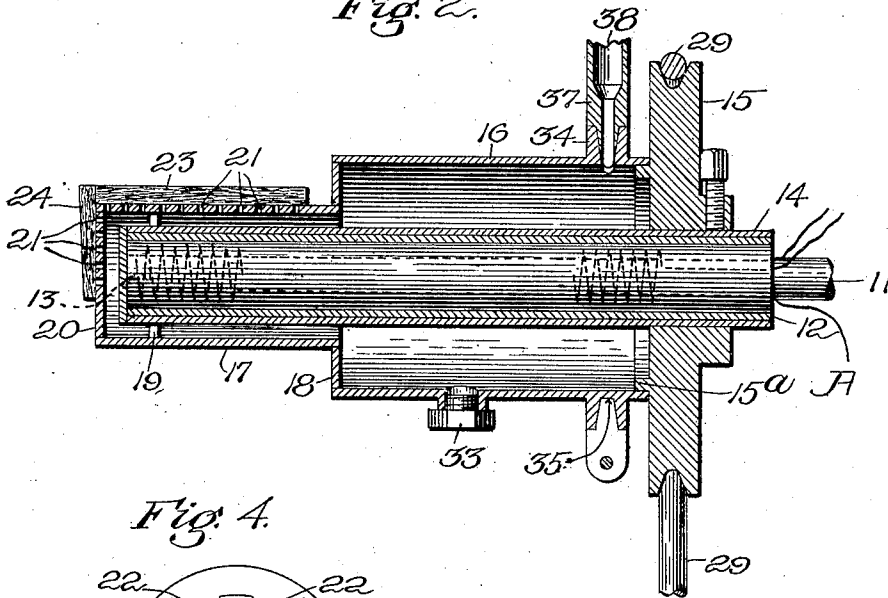


Fig. 4.

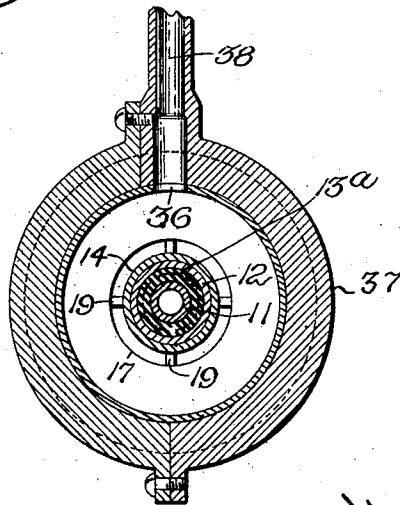
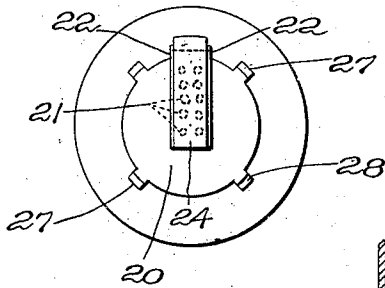


Fig. 5.

Witnesses:
James E. Lynch.
Joseph A. Gately

Inventor
Harry J. Potter.
By Sylvester H. Cobb.
Atty.

UNITED STATES PATENT OFFICE.

HARRY J. POTTER, OF WATERTOWN, MASSACHUSETTS.

COATING APPARATUS.

972,239.

Specification of Letters Patent.

Patented Oct. 11, 1910.

Application filed August 20, 1909. Serial No. 513,830.

To all whom it may concern:

Be it known that I, HARRY J. POTTER, a citizen of the United States, residing at Watertown, in the county of Middlesex and State of Massachusetts, have invented a new and useful Coating Apparatus, of which the following is a specification.

This invention has reference to apparatus for coating objects with fluid substances, it having been especially devised for applying heated paraffin to paper cups for the purpose of rendering them waterproof.

The chief objects of my invention are to provide a coating apparatus of this character, compact in form and with few elements, which will furnish a continuous supply of the fluid to be applied, and which will distribute it quickly, uniformly and without waste.

In the drawings accompanying this specification, Figure 1 is a side elevation of one embodiment of my invention, parts being broken away and with a cup shown in dotted lines in coöperation with the applying members; Fig. 2 is a central, vertical, longitudinal section through the coating apparatus proper; Fig. 3 is a transverse section of the same on the line 3—3 of Fig. 1 and Fig. 4 is an end elevation of the container looking from the left in Fig. 1.

In the various views of the drawings like characters refer to like parts.

Upon a standard or other suitable support 10 is mounted a horizontally extending spindle A about which is rotatable a tubular container B for the coating substance. When this substance is paraffin, or any other which is solid or viscous at normal temperatures, heating means is provided for maintaining its fluid condition, and I prefer that this should be contained within the spindle. To this end said spindle comprises a core 11, which, for the sake of strength and lightness, may consist of a section of pipe threaded into an elbow 11^a carried at the upper extremity of the standard. Surrounding this core is a sleeve 12 of some such wear-resisting metal as steel, and in the annular space between the sleeve and core is located a conductor 13 of electricity, of such material and dimensions that it will generate the proper amount of heat when traversed by a current supplied from a convenient source. This conductor is embedded in enamel or other insulating substance 13^a which is resistive of fusion by heat yet con-

ducts it efficiently to the sleeve, from which, and also from the core, it separates the conductor. The layer 13^a further serves to space the sleeve from the core.

The container B has a central sleeve 14 bearing upon the sleeve 12 and possessing qualities similar thereto. Secured to the sleeve 14 at its end toward the standard is a circular head 15 having at its inner side a flange 15^a concentric with the sleeve, and fixed to the flange in an outer wall 16 furnishing the body of the container, this being preferably cylindrical. From the opposite or outer end of the container projects a reduced portion 17, which may also be cylindrical and which is connected to the wall 16 by an intermediate annular head 18. The outer end of this portion 17 is preferably maintained in its true relation to the sleeve 14 by spacing members 19, of which there may be four uniformly distributed about the circumference of the sleeve. The outer end of the portion 17 is closed by a flat head 20.

The reduced extension of the main container is the applying portion, and along its wall 17 and through the head 20 are series of perforations 21. Adjacent to these perforations, here shown as at each side thereof, are retaining members provided by flanges 22, and between these flanges covering the openings 21 are strips 23 and 24 of felt or other absorbent material, these being respectively located along the wall 17 and upon the head 20. These strips or applying pads are retained in place by means of loops or stitches 25 extending through opposite openings 26 in the flanges. The outline of the two applying pads, taken together, conforms substantially to one half or a little more of the contour of a vertical section of the interior of the object to which the coating is to be applied. To center the object with respect to the applying pads, so that these shall bear uniformly about its entire interior surface, longitudinally extending guide ribs 27 are fixed to the wall 17 at intervals about the circumference, there being in the present instance four of these projecting radially. The outer ends of the ribs are inclined at 28, converging outwardly toward the axis, this enabling the object to be readily slipped over the applying portion.

The container may be rotated upon the spindle by a belt 29 extending from a countershaft or other source of power over a suitable surface upon the periphery of the

head 15 which thus furnishes a pulley. The entire container is retained against outward displacement upon the spindle by a roll 30 journaled upon an arm or bracket 32, this latter being fixed to the standard 10 and extending therefrom beneath the head 15, with the inner side of which the roll contacts.

To permit the introduction of the coating material to the container, and also for the purpose of cleaning it, there is a hand-hole through the wall 16, this being covered by a screw-cap 33, but in regard to the supply of the coating substance, I prefer usually to introduce this automatically through an intermittent feed. For this purpose there encircles the wall 16 an annular member 34, in the exterior of which is a groove 35 having at the bottom an opening 36 into the container. Tightly fitting the groove is a ring 37, and opening through this is a pipe or conduit 38, the end of which within the groove 35 registers once with the opening 36 for each rotation of the container. The pipe 38, which preferably contains a cock 39, leads to a tank 40 above the applying apparatus, this tank being heated by electrical means 42 similar to that within the container or in any other convenient manner.

In the employment of the apparatus for waterproofing cups, the tank and container are supplied with paraffin, which, if not previously rendered fluid, is now liquefied by current flowing in the heating coils and, in any event, is maintained at the proper temperature thereby. It should be noted that the position of the coil within the coating apparatus is such that the heat is applied most effectively and without loss. The container is now set in rotation, and the paraffin being absorbed by the felt strips through the openings 21, the apparatus is ready for use. The operator takes a cup C, preferably slightly warmed, and places it over the applying portion of the container, the tapered ends of the guide-ribs allowing this to be done without difficulty. When the bottom of the cup has reached the pad 24, the parallel portions of the ribs have positioned it so that the pad 23 has just the right contact with its interior. After the cup has thus been in coöperation with the pads for an instant, the length of time depending upon the thickness of the coating desired, it is removed to dry or to be subjected to such after treatment as may be expedient, another being at once supplied in its place. It will be found that the interior of objects so treated receive an even film of the coating substance which is quickly and uniformly absorbed. Obviously, in its operation the apparatus will not spatter, drip and otherwise waste the fluid, nor will it injure the objects to be coated, however frail these may be.

I claim as my invention and desire to secure by Letters Patent:

1. A coating apparatus comprising a rotatable container for the coating substance provided with an opening in its wall, absorbent material secured to the container over the opening, and stationary heating means about which the container rotates.

2. In a coating apparatus, a rotatable container provided with a reduced applying portion, a bearing member for the container extending therethrough and into the applying portion, and heating means carried by the bearing member within the applying portion.

3. In a coating apparatus, a rotatable container provided with a reduced applying portion, a bearing member for the container extending therethrough and into the applying portion to a less distance than its outer extremity, and a spacing member situated between the bearing member and the applying portion.

4. A coating apparatus comprising a tubular container provided in its wall with series of openings, a retaining member carried by the wall of the container extending along each series of openings, and a strip of absorbent material separately covering each series of openings and being secured to the corresponding retaining member.

5. A coating apparatus comprising a tubular container provided in its wall with a series of openings, a retaining member carried by the wall of the container adjacent to the openings, absorbent material secured to the member and covering the openings, and a plurality of guide members mounted upon the wall of the container at opposite sides of the absorbent material.

6. A coating apparatus comprising a tubular container provided with longitudinally extending guide ribs, and means for causing the flow of the coating substance from the container between said guide-ribs.

7. A coating apparatus comprising a tubular container provided with longitudinally extending guide-ribs having their outer or receiving ends tapered.

8. A coating apparatus comprising a cylindrical container for the coating substance having a head extending across one end, there being series of openings in both the cylindrical wall and head, flanges carried by said wall and head at opposite sides of the openings, and strips of absorbent material held between the flanges.

9. The combination with a support having a spindle, of a sleeve rotatable about the spindle, heating means carried by the spindle within the sleeve, a container for fluid surrounding and rotatable with the sleeve, and fluid-applying means mounted upon the exterior of the container.

10. The combination with a support hav-

ing a core projecting therefrom, of a sleeve surrounding the core and being fixed relatively thereto, insulating material interposed between the spindle and sleeve, a conductor of electricity situated within the insulating material, and a fluid-container rotatable about the sleeve and being provided with fluid-applying means.

11. The combination with a support having a core projecting therefrom, of a sleeve surrounding the core and being fixed relatively thereto, insulating material interposed between the spindle and sleeve, a conductor of electricity situated within the insulating material, a rotatable sleeve having a bearing upon the fixed sleeve, a fluid container and applying means carried by the rotatable sleeve.

12. The combination with a rotatable fluid-container having fluid-applying means

and an annular grooved member through which is an opening into the interior of the container, of a fluid-supply tank, a ring fitting the grooved member, and a conduit extending from the tank through the grooved member.

13. A container for a coating substance provided with an opening, a retaining member situated adjacent to the opening, an absorbent pad covering the opening, and stitches securing the pad to the retaining member.

Signed at Boston, in the county of Suffolk and State of Massachusetts, this 18th day of August, 1909.

HARRY J. POTTER.

Witnesses:

SYLVANUS H. COBB,
JAMES E. LYNCH.