

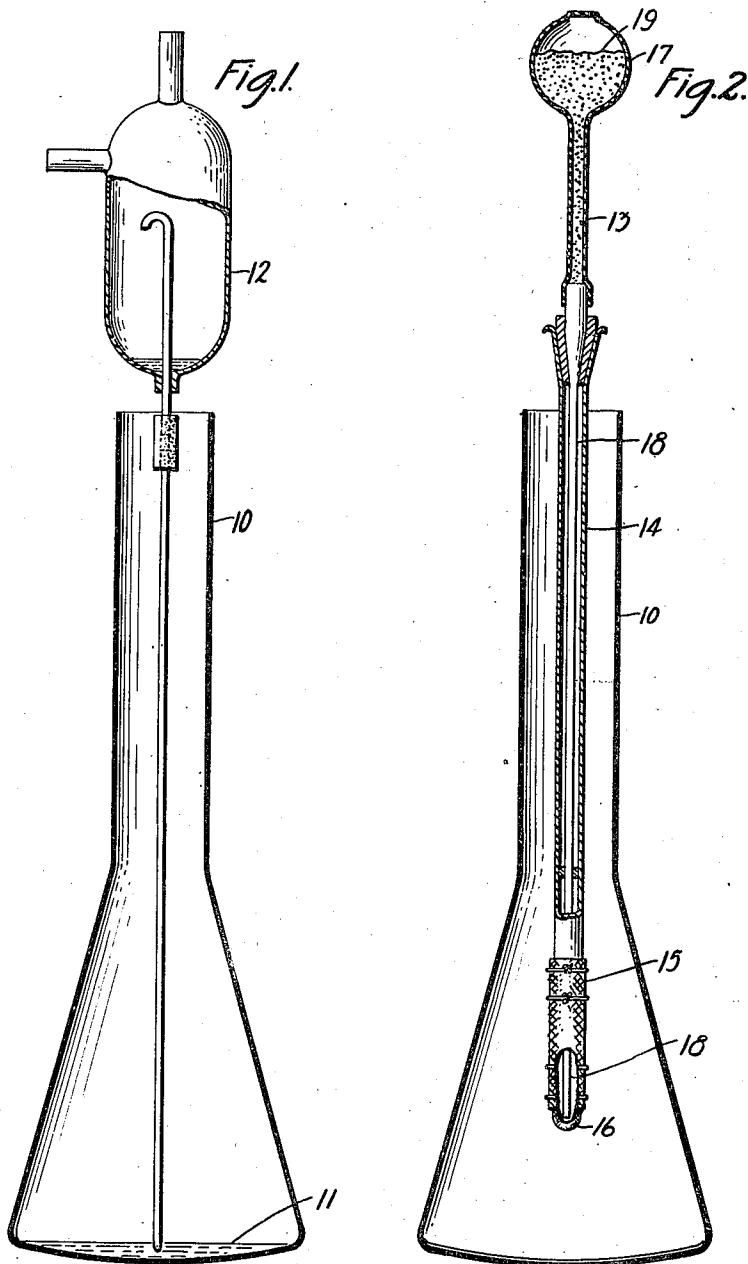
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J. B. JOHNSON

METHOD OF COATING

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UNITED STATES PATENT OFFICE.

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METHOD OF COATING.

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To all whom it may concern:

Be it known that I, JOHN B. JOHNSON, a citizen of the United States, residing at Elmhurst, in the county of Queens, State of New York, have invented certain new and useful Improvements in Methods of Coating, of which the following is a full, clear, concise, and exact description.

This invention relates to the art of coating and has as its object the application of a fluorescent coating to the interior of a glass bulb adapted for use as the envelope of an oscillograph tube.

According to this invention, the bulb is thoroughly dried and that portion of the bulb to be coated is moistened with an adhesive material. The material of the coating is reduced to a very fine powder and is introduced within the bulb in the form of a dust cloud from which the material settles on to the adhesive material to form a coating.

Referring now to the drawings, Fig. 1 discloses the bulb to be coated and one of the tools used in the process, and Fig. 2 discloses the bulb and another tool used in the process.

The bulb 10 is first thoroughly cleansed and dried after which it is placed in the position shown in Fig. 1. A weak, preferably 10% solution of sodium silicate 11 is introduced into the tube in a sufficient quantity to cover only that portion of the tube which is to be coated. The sodium silicate is then removed by means of the tool 12 shown in Fig. 1 into which the liquid is drawn from the bulb by suction from a water aspirator. After the liquid is apparently all withdrawn, the bulb is allowed to stand for a short time to permit all surplus remaining liquid to flow to the center of the bulb after which the suction tool is again utilized to remove any surplus.

The fluorescent powder used for the coating preferably comprises a mixture of equal parts of fluorescent synthetic willemite and fluorescent calcium tungstate ground to a powder of suitable fineness. This powder is introduced into the bulb in the form of a dust cloud by means of the tool 13 shown in Fig. 2 and is allowed to settle on the sodium silicate. The tool used for forming the dust cloud comprises a tubular member 14 having attached to one end a cylinder 15 of fine mesh linen gauze and a cup-shaped

member 16 attached to the other end of the gauze. At the upper end of the tool is provided a rubber bulb 17 adapted to receive the powder and to the bulb is attached a tube 18 of very small diameter which is arranged within the tubular member and extends into the cup-shaped member. A supply 19 of powder is placed in the bulb and is blown against the bottom of the cup by squeezing the bulb. The powder is deflected upward from the bottom of the cup and forced out through the mesh in the gauze to form a dust cloud which is allowed to settle.

Sufficient powder is dusted or sifted into the bulb to produce a white even coating and heavy enough so that the powder, when viewed on the interior of the bulb does not have a wet or glossy appearance. The bulb is then dried for about ten minutes after which it is placed in an oven, the temperature of which is gradually raised to 400 degrees centigrade. The bulb is baked at this temperature for about ten minutes, after which it is cooled to room temperature and the loose surplus powder removed from the bulb by means of a felt swab or the like.

In carrying out this process, care must be taken that the film of sodium silicate left on the bottom of the tube be of uniform thickness and that there be no drops of silicate on the sides of the tube. Furthermore, the thickness of the film should be such that the particles of fluorescent powder are not covered by nor saturated with the sodium silicate.

It is, of course, understood that various materials other than those specifically mentioned may be utilized in this process without in any way departing from the spirit of the invention, as set forth in the following claims.

The invention claimed is:

1. The method of coating a vessel which comprises applying an adhesive to the inner wall of the vessel to be coated, introducing into the vessel a finely powdered material in the form of a cloud, and allowing such material to settle on the adhesive.

2. The method of applying a fluorescent coating to the bulb of an oscillograph tube which comprises applying an adhesive to that portion of the bulb to be coated, introducing the coating material within the bulb in the form of a dust cloud and allowing the coating material to settle on the adhesive.

3. The method of applying fluorescent material to the interior of the bulb of an oscillograph tube which comprises applying an adhesive to that portion of the bulb to be
5 coated, spraying the coating material into the bulb in the form of a dry powder and allowing said powder to settle on the adhesive.

4. The method of applying fluorescent material to the interior of a bulb of an oscillograph tube which comprises applying an adhesive to that portion of the bulb to be
10 coated, spraying a fluorescent powder into the bulb in an upward direction and allowing the powder to settle.

15 5. The method of applying a fluorescent coating to the interior of the bulb of an oscillograph tube which comprises applying

an adhesive to that portion of the tube to be coated and dusting the fluorescent material onto the adhesive in the form of a dry
20 powder.

6. The method of applying a fluorescent coating to the bulb of an oscillograph tube which comprises applying an adhesive to that portion of the tube to be coated, introducing into said tube a supply of powdered
25 fluorescent material in the form of a dust cloud and allowing said material to settle onto the adhesive.

In witness whereof, I hereunto subscribe
30 my name this 26th day of December A. D., 1922.

JOHN BERTRAND JOHNSON.