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METHOD TO FROST THE INNER SURFACE OF A GLASS BULB FOR ELECTRIC LAMPS

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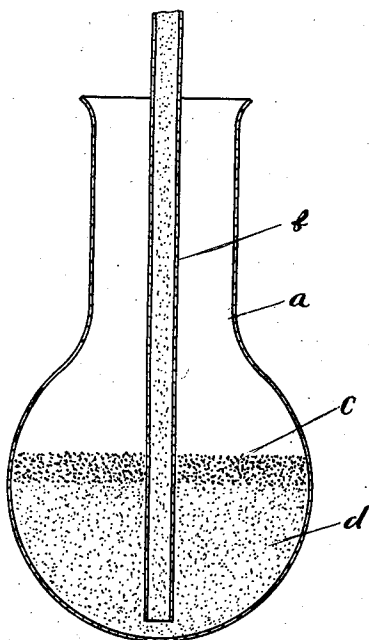


Fig 1

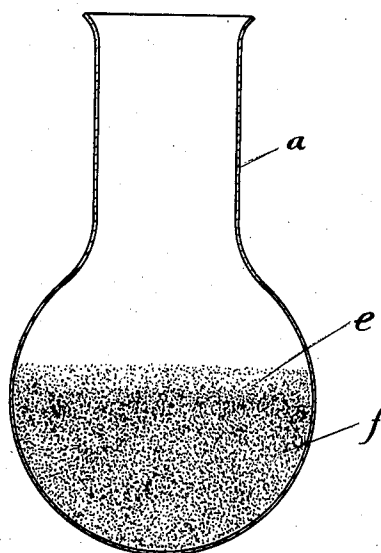


Fig 2

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UNITED STATES PATENT OFFICE

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METHOD TO FROST THE INNER SURFACE
OF A GLASS BULB FOR ELECTRIC LAMPSTomisaburo Naruse, Uchiyamashita-Cho,
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4 Claims. (Cl. 41-42)

This invention relates to a method to frost the inner surface of a glass bulb for electric lamp, characterized by the fact that first injecting and then extracting in the bulb through a narrow tube a corrosive liquid containing some powder having a lower specific gravity than that of any of the other elements of the corrosive liquid.

The purpose of this invention is to obtain the beautiful electric lamp bulbs having a uniformly frosted surface and having the gradually lessened frosted edge, instead of a sharp clear edge.

The accompanying drawing illustrates the method of the present invention.

Fig. 1 shows the state of the corroding liquid in the bulb, when the injecting action is finished.

Fig. 2 shows the frosted inner surface.

The glass bulb (a) is placed with the opening uppermost and through a narrow tube (b) is first injected into the bulb, the corroding liquid containing some powder, for example paraffin powder, wooden powder etc., having a lower specific gravity than that of any other element of the corroding liquid. The corroding mixture is subsequently extracted from the bulb.

In order that the invention may be fully understood, one practical example is given below:

	Percent
Hydrogen fluoride.....	38
Ammonium fluoride.....	38
Sulphuric acid.....	5
Water.....	15

All proportions being by weight.

Now, the desired corrosive liquid can be obtained first by mixing together the above mentioned elements and then by adding thereto fine powder of paraffin in an amount about 20% of the liquid.

By this method, when the liquid is to be injected into the bulb, the liquid is first mixed in a tank continuously with the powder by any suit-

able apparatus, so both the powder and the liquid are injected in the bulb also.

The powder in the bulb floats up from the bottom of the bulb, and this floating motion of the powder mixes it with the liquid in the bulb. Thus, the well mixed powder and liquid frosts the bulb uniformly, as shown in Fig. 2 (f).

Then, when the floating motion of the greater part of the powder is finished, the surface of the liquid is covered with the accumulation of powder (c) to some depth. The corroding action is lessened on the glass surface by said powder accumulation.

Thus, the edge line of the frosted surface is not sharp, but the degree of frosting is gradually lessened upwards as at (e).

Thus, beautiful electric lamp bulbs are obtained by this method.

I claim:

1. A method to frost the inner surface of a 20 glass bulb for electric lamp, consisting of first injecting into the bulb a corrosive liquid containing an admixture of powder having a lower specific gravity than that of any of the other elements of the corrosive liquid and finally ex- 25 tracting said liquid from the bulb.

2. A method according to claim 1, in which said admixture consists of wood powder.

3. A method according to claim 1 in which said corrosive liquid comprises 38% hydrogen fluoride 30 38% ammonium fluoride, 5% sulphuric acid and 15% water, all approximate proportions.

4. A method according to claim 1 in which said corrosive liquid comprises 38% hydrogen fluoride, 38% ammonium fluoride, 5% sulphuric acid 35 and 15% water, all approximate proportions, and the admixture comprises powder of paraffine in the amount of about 20% of the liquid constituent.

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