

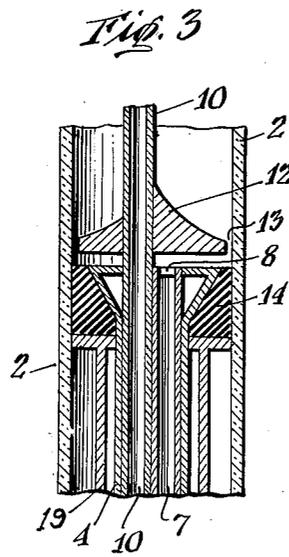
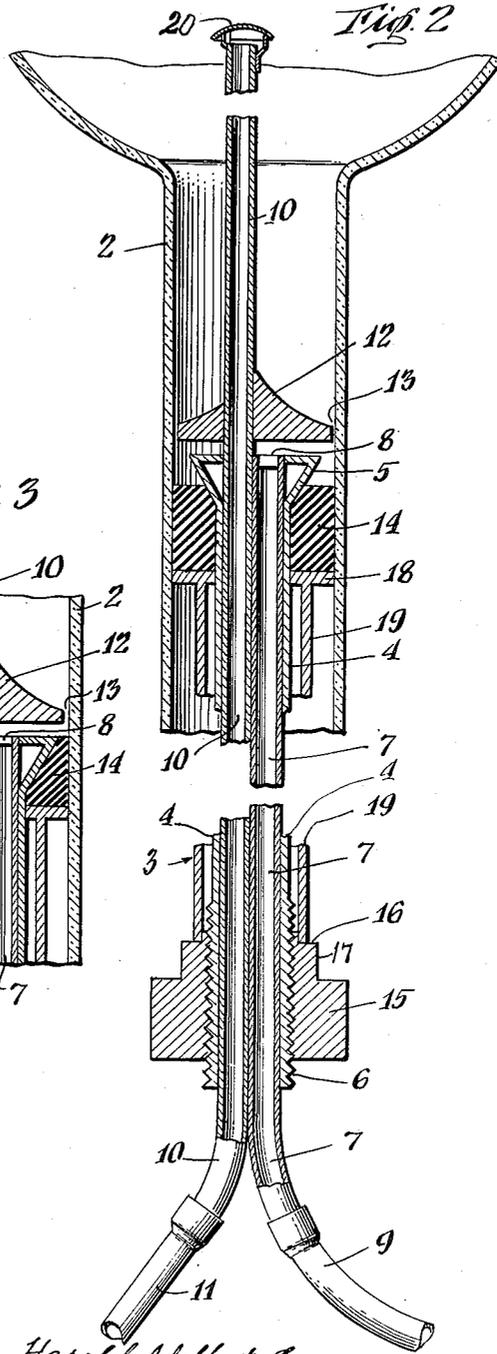
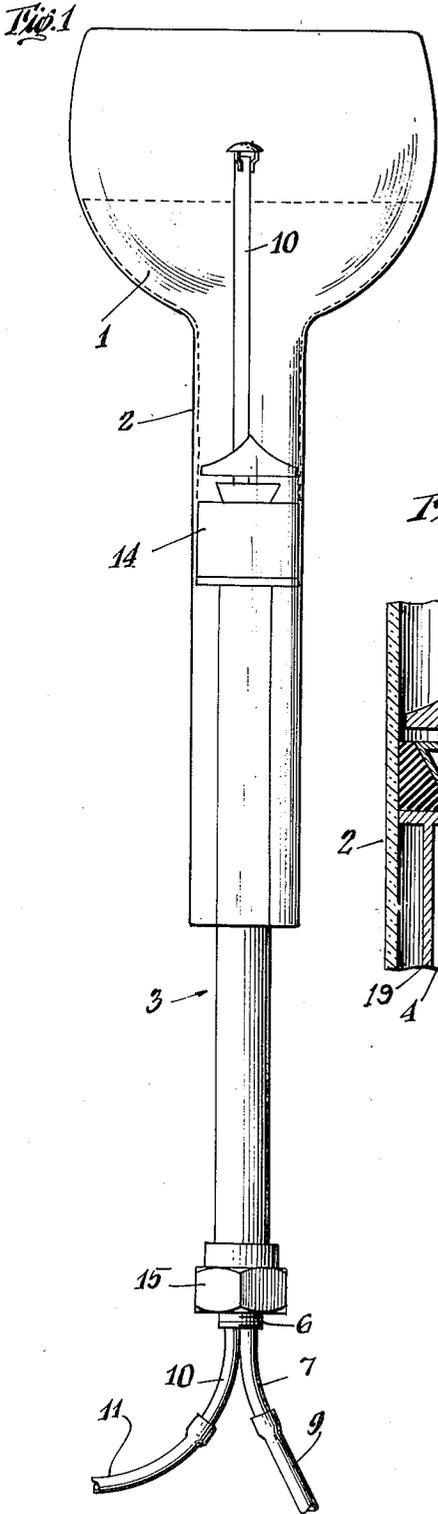
July 6, 1948.

H. A. LEET ET AL

2,444,572

APPARATUS FOR COATING TUBES

Filed Feb. 3, 1945



Harold Adelbert Leet, INVENTORS  
Charles Wasko Slectich  
BY  
Charles W. Mortimer  
ATTORNEY

# UNITED STATES PATENT OFFICE

2,444,572

## APPARATUS FOR COATING TUBES

Harold Adelbert Leet and Charles Wasko Sectish,  
Passaic, N. J., assignors to Allen B. Du Mont  
Laboratories, Inc., Passaic, N. J., a corporation  
of Delaware

Application February 3, 1945, Serial No. 576,012

8 Claims. (Cl. 91—55)

1

This invention relates to a device for coating the inside of tubes along a predetermined surface and to the process of such coating.

The invention is particularly useful for coating the inside surface of cathode-ray tubes and a portion of the neck thereof with electrically conducting material, such as Dixonac, for example, in a thin layer which is a carbon containing liquid that can be dried to leave a layer. After the material has been introduced with the open end of the tube extending in a downward direction, the liquid is drained out and air is introduced to dry the layer.

The invention may be understood from the description in connection with the accompanying drawing, in which:

Fig. 1 is a side view illustrating the invention;

Fig. 2 is a longitudinal section partly broken away showing some of the details; and

Fig. 3 is a similar view showing some of the parts in a different position.

In the drawing, reference character 1 indicates a cathode-ray tube which is to be coated on a portion of the inside and a portion of the neck 2 thereof with a liquid coating of electrically conducting material which hardens as a thin film on the inside of the tube after the major portion of the liquid is drained out.

The device for introducing the coating material and subsequently drying the residual layer of such material is as a whole indicated by the reference character 3.

A comparatively large tube 4 extends into the neck 2, this tube 4 having an outwardly flaring upper end 5 and a threaded lower end 6.

A metal tube 7 is located inside of the tube 4 with its upper end extending in a liquid-tight manner through a hole 8 in the flared end 5 of the tube 4. A liquid hose 9 is connected to the lower end of the tube 7.

Another metal tube 10 extends through the tube 4 and is provided with an air hose 11 at its lower end. A cone-shaped baffle 12 is fixedly attached to the tube 10 and is of such a size as to leave a small annular space 13 between its edge and the inside surface of the neck 2 when the device is in operating position.

A thick walled ring 14 of rubber or the like surrounds the upper portion of the tube 4 and fits the inside of the neck 2. A nut 15 is threaded on the lower end portion 6 of tube 4. This nut has a shoulder 16 and a reduced circular portion 17.

Hollow disc 18 fits the inside of the neck of the tube 2 and the outside of tube 4 and is in-

2

tegral with a tubular extension 19 which is of sufficiently large diameter to clear or surround the thread 6 on tube 4 and contact with the small end of the nut 15.

A baffle 20 is attached to the upper end of the tube 10 to divert the air, that is passed through this tube 10, outwardly and downwardly.

The operation is as follows:

The device is inserted into the neck 2, the nut 15 is then screwed up to push the tube 19 inwardly, thus squeezing the rubber ring 14 into the position shown in Fig. 3. This holds the device in position in the neck of the tube 2. The coating material is introduced through hose 9 and tube 7, while the tube 7 is held in an upright position, until the liquid reaches the desired level which is determined by the extent to which this tube is to be coated. The hose 9 is then disconnected and the liquid is permitted to drain out through tube 7.

Air is then introduced through the hose 11 and tube 10 to dry the coating. As this air passes out through the annular space 13 it sweeps the corner at the top outer edge of rubber ring 14 and prevents a thickened ring of the material from forming there.

When the coating is dried the nut 15 is loosened so that the tube 19 can be returned to the position shown in Fig. 2 so that the device can be removed from the neck 2 and used for coating the next tube.

What is claimed is:

1. A device for coating the inside of cathode-ray tubes, which comprises a liquid inlet and an air inlet extending respectively into the neck and into the bowl of said tube, a seal for the neck of said tube, and a disc shaped baffle in the neck of said tube having an outwardly and downwardly extending upper surface with the rim of said baffle near the inner surface of the neck of said tube.

2. A device for coating the inside of cathode-ray tubes, which comprises a liquid inlet and an air inlet extending respectively into the neck and into the bowl of said tube, a seal for the neck of said tube, and a baffle in the neck of said tube having all portions of its rim spaced from but in close proximity to the inside surface of the neck of said tube.

3. A device for coating the inside of cathode-ray tubes, which comprises a liquid inlet and an air inlet extending respectively into the neck and into the bowl of said tube, a seal for the neck of said tube, and a baffle in the neck of said tube having a rim in close proximity to but spaced

3

from the inside surface of the neck of said tube, said baffle being located close to said seal.

4. In a device of the character described, a seal for the neck of a tube, a tube located away from the wall of said neck for introducing coating material into said tube and withdrawing the same, and a baffle located near the inner end of said coating material tube with its edge in close proximity to the inside wall of the neck of said tube.

5. The device of claim 4, in which said seal is located near said baffle.

6. A device for coating the inside of a cathode-ray tube, which comprises a liquid inlet tube and an air inlet tube terminating respectively in the neck and bowl of said cathode-ray tube, a larger tube surrounding a portion of said liquid inlet and air inlet tubes and having a conically shaped upper end and a threaded lower end, a nut on said lower end, a still larger tube supported on said nut and having a disc at its upper end through which said larger tube and said liquid inlet and air inlet tubes extend, a rubber disc in the neck of said cathode-ray tube between said

4

conically shaped upper end and said first named disc.

7. The device of claim 6 in which a baffle is located in the neck of said cathode-ray tube above said tube that has a conically shaped upper end.

8. The device of claim 6 in which a baffle is supported by said air inlet tube in the neck of said cathode-ray tube.

HAROLD ADELBERT LEET.  
CHARLES WASKO SECTISH.

#### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
2,077,378	Deren -----	Apr. 30, 1937
2,096,416	Weinhart -----	Oct. 19, 1937
2,151,649	Birdseye et al. -----	Mar. 21, 1939
2,303,290	Michael -----	Nov. 24, 1942
2,317,977	Casellini -----	May 4, 1943
2,375,482	Lyle -----	May 8, 1945