

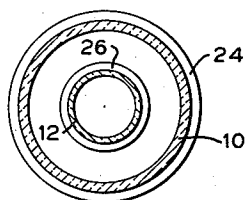
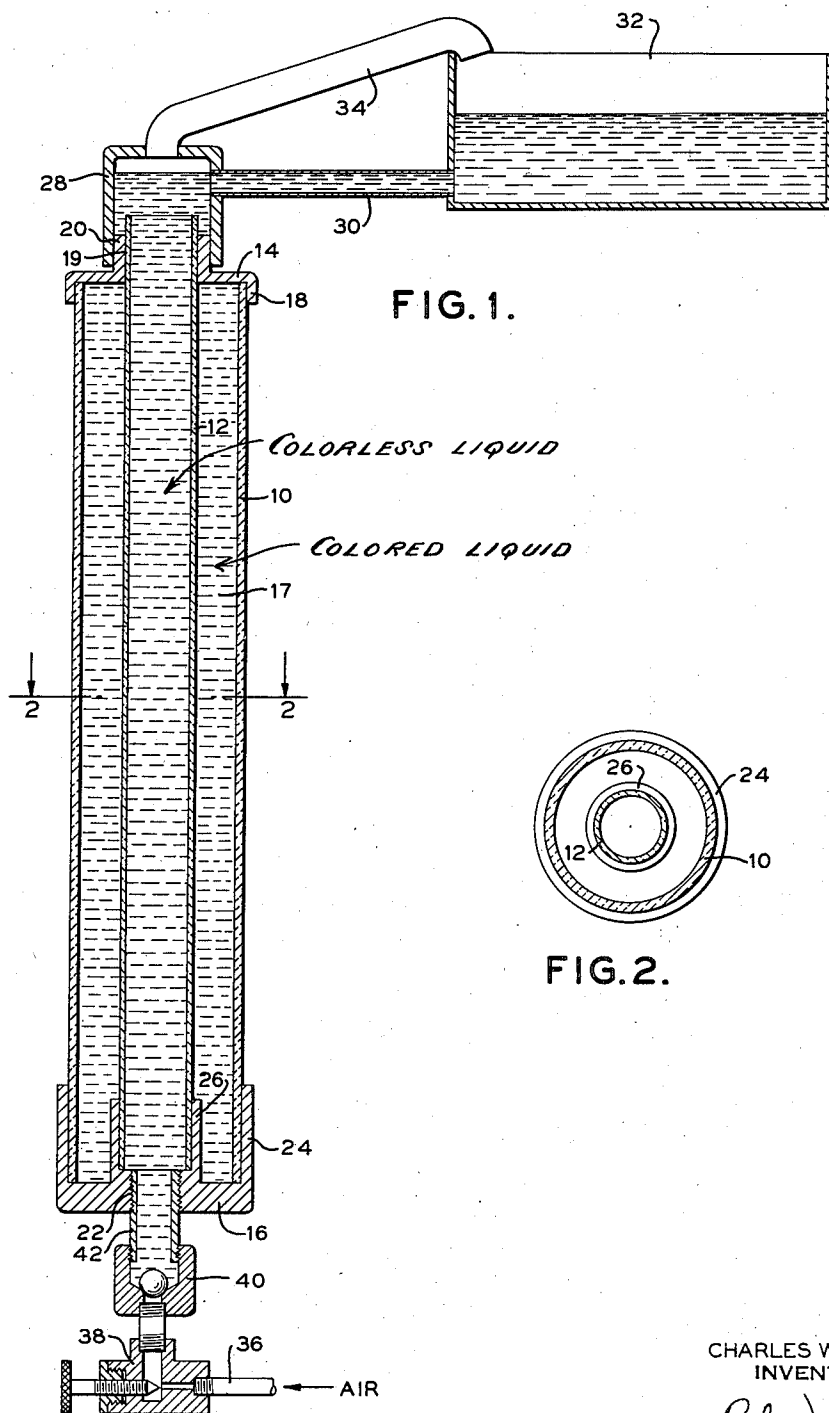
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LIQUID DISPLAY DEVICE

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LIQUID DISPLAY DEVICE

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6 Claims. (Cl. 40—126)

This invention relates to a liquid display device.

It is an object of the present invention to provide a device for visibly demonstrating liquids of any desired type such, for example, as lubricating oils in order to demonstrate certain of their characteristics. In order to make the display interesting and to attract attention to it, means are provided for giving the oil to be demonstrated an appearance of being agitated while the oil is actually maintained in a quiescent state. The oil could itself be agitated by bubbling air through it but the continuous agitation of the oil with air would be apt to produce injurious effects upon the oil, making it appear to be cloudy and possibly even throwing it off color. To avoid injuring the oil on display the present invention proposes to produce the desired agitation in a body of colorless liquid around which the body of quiescent oil on display is arranged in a relatively thick sheet or film through which air bubbles rising in the colorless liquid can readily be seen. In this manner the effect of agitation is produced without actually disturbing the oil on display.

Other objects, features and advantages of the invention will appear as the description thereof progresses, reference being had to the accompanying drawing, in which:

Fig. 1 is a vertical sectional view of a liquid display device embodying the present invention, and

Fig. 2 is a sectional plan view of the same device taken on the line 2—2 of Fig. 1.

Referring to the drawing, it will be seen that a pair of similarly shaped transparent containers such as glass tubes 10 and 12 are supported between an upper supporting member 14 and a lower supporting member 16 in such a manner that a space or chamber 17 of uniform thickness is provided between the two tubes. The upper supporting member 14 has a downwardly depending annular flange 18 which is adapted to receive and support the upper end of tube 10 and a centrally disposed opening 19 surrounded by an upwardly extending annular flange 20 which is adapted to receive and support the upper end of the inner tube 12.

The lower supporting member 16 is provided with a centrally disposed threaded opening 22 and two upwardly extending spaced annular flanges 24 and 26. Flange 24 is adapted to receive and support the lower end of tube 10, while the flange 26 is adapted to receive and support the lower end of tube 12. The tubes are prefer-

ably sealed in position within their respective flanges by any suitable sealing material such as litharge, thereby rendering the chamber 17 liquid tight.

An expansion chamber 28 is secured to flange 20 in such a manner as to enclose the upper extended end of tube 12. From the expansion chamber a pipe or tube 30 extends to a liquid supply tank 32, and an air line 34 is provided to connect the top of the expansion chamber 28 and the top of the liquid tank 32.

Communication with a suitable source of air supply is had through a pipe 36 which connects with an adjusting valve 38 through which air introduced from the pipe 36 can pass in regulated quantities through a check valve 40 and a pipe 42 to the lower end of the inner tube 12, the pipe 42 being screwed into the threaded opening 22 in the lower supporting element 16.

The liquid tank 32 is filled with any desired light colorless liquid such as water, white oil or glycerine, and the liquid flows from the tank through the pipe 30 and expansion chamber 28 into the inner tube 12 until the latter is completely filled. The liquid tight chamber between tubes 10 and 12 has previously been filled with the liquid which it is desired to display so that a relatively thick sheet or film of the liquid to be displayed completely surrounds the body of colorless liquid maintained in the inner tube 12.

For display purposes air is introduced from any suitable source of supply such as a compressor (not shown) through the adjusting valve 36 by means of which the amount of air introduced into the display is readily controlled. The air passes through check valve 40 and pipe 42 and then rises in the form of bubbles through the liquid contained in the inner tube 12. The bubbles of air then pass into the expansion chamber and from that chamber through the air vent 34. In this manner the colorless liquid contained in the tube 12 is maintained in a constant state of agitation while the liquid between the tubes 10 and 12 is maintained in a quiescent state. At the same time the bubbles passing through the colorless liquid can be seen through the sheet or film of colored liquid and give the latter the appearance of being agitated.

In the drawing there is shown a single display device but it will readily be understood that a number of similar devices can readily be arranged for the simultaneous display of oils having different colors or other different physical characteristics, and a very attractive display of a

varied line of lubricating oils can thereby be arranged.

Obviously, many modifications and variations of the invention as herein set forth may be made without departing from the spirit and scope thereof, and therefore only such limitations should be imposed as are indicated in the appended claims.

I claim:

10 1. A liquid display device comprising concentrically arranged and similarly shaped transparent containers, a body of colored liquid adapted to fill the space between the containers, a body of colorless liquid adapted to fill the inner container, 15 and means for causing turbulence of the colorless liquid to give an appearance of agitation to the colored liquid filling the space between the containers.

20 2. A liquid display device comprising concentrically arranged and similarly shaped transparent containers, a body of colored liquid adapted to fill the space between the containers, a body of colorless liquid adapted to fill the inner container, and means for bubbling a gaseous element through the liquid in the inner container. 25

3. A liquid display device comprising concentrically arranged and similarly shaped transparent containers, a body of liquid adapted to fill the space between the containers, a body of colorless liquid adapted to fill the inner container, and means for bubbling air through the liquid in the inner container. 30

4. A liquid display device comprising concentrically arranged and similarly shaped transparent containers, a body of lubricating oil adapted to fill the space between the containers, a body of colorless liquid adapted to fill the inner container, and means for causing turbulence of the color- 35

less liquid to give an appearance of agitation to the lubricating oil filling the space between the containers.

5. A liquid display device comprising concentrically arranged and similarly shaped transparent containers, upper and lower supporting elements for maintaining said containers in position and for sealing the ends of the outer container to form a liquid tight chamber, an expansion chamber in communication with the upper end of the inner container, a liquid supply tank in communication with said expansion chamber, a body of colorless liquid adapted to fill the inner container and to be supplied from said tank, a body of colored liquid adapted to fill the liquid tight chamber between the containers, and means for creating a condition of turbulence in the colorless liquid to give an appearance of agitation to the colored liquid surrounding it. 10 15

6. An oil display device comprising concentrically arranged and similarly shaped transparent containers, upper and lower supporting elements for maintaining said containers in position and for sealing the ends of the outer container to form a liquid tight chamber, an expansion chamber in communication with the upper end of the inner container, a liquid supply tank in communication with said expansion chamber, a body of colorless oil adapted to fill the inner container and to be supplied from said tank, a body of colored oil adapted to fill the liquid tight chamber between the containers, means for continuously bubbling air through the colorless oil, and means for regulating the amount of air introduced in said oil for controlling the degree of turbulence thereof. 20 25 30 35

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