Jan. 15, 1924. 1,480,849

R. G. ADAMS

LUBRICATING OIL DISPENSER

Filed March 22, 1922

Fig. 1.

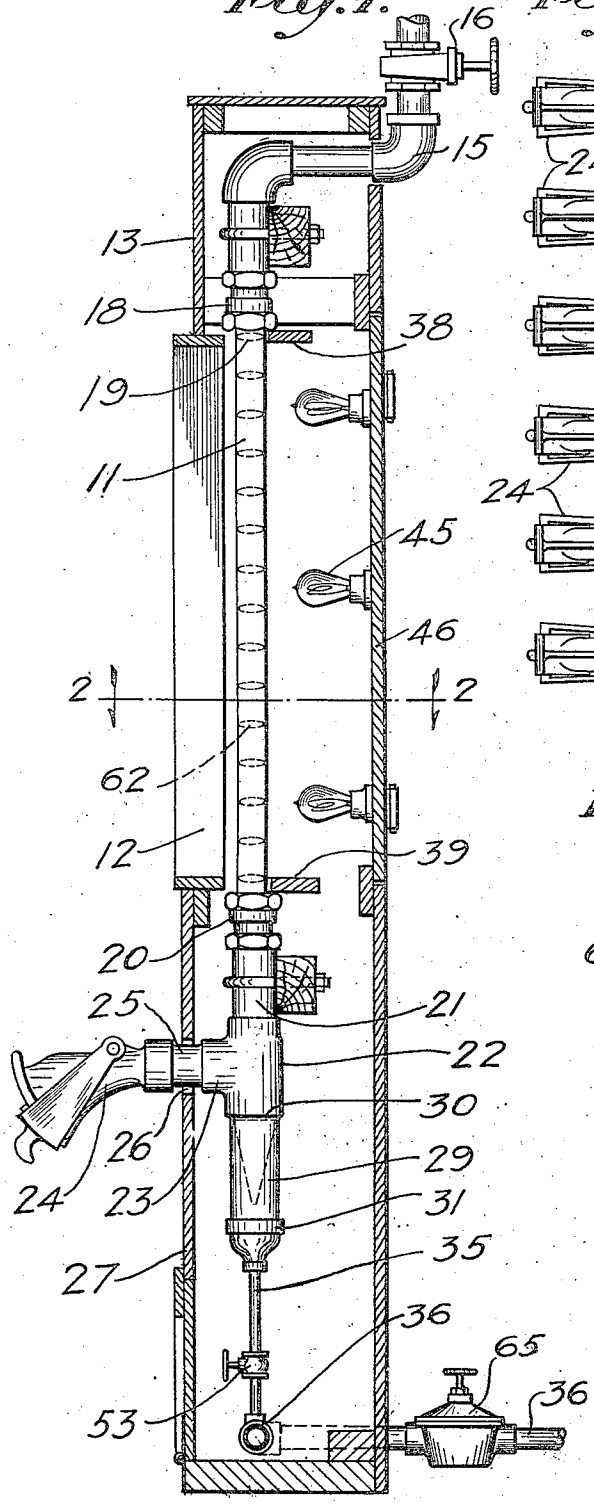


Fig. 2.

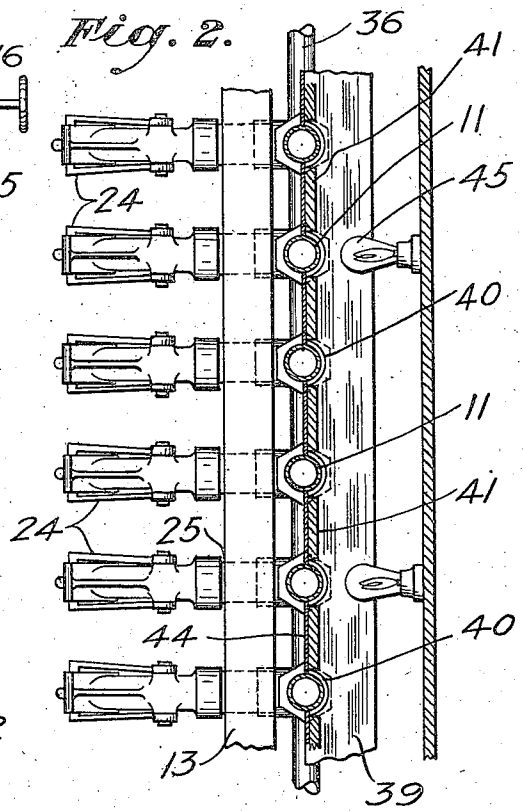
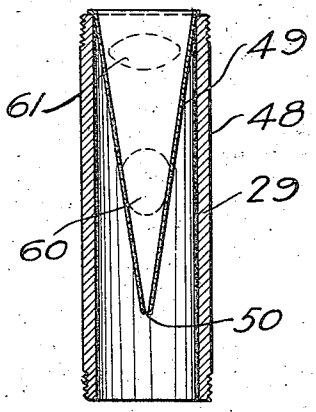


Fig. 3.



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UNITED STATES PATENT OFFICE.

RALPH G. ADAMS, OF FULLERTON, CALIFORNIA.

LUBRICATING-OIL DISPENSER.

Application filed March 22, 1922. Serial No. 545,800.

To all whom it may concern:

Be it known that I, RALPH G. ADAMS, a citizen of the United States, residing at Fullerton, in the county of Orange, State of California, have invented a new and useful Lubricating-Oil Dispenser, of which the following is a specification.

This invention relates to a device for dispensing liquid substances and more particularly to a device for dispensing oils, such as are utilized for the lubrication of automobile motors.

The present practice employed in the majority of service stations of keeping lubricating oils in drums from which the various oils are drawn in small quantities as they are supplied to motors has not proven satisfactory to purchasers of oils, owing to the difficulty of ascertaining whether or not the grade or brand of oil ordered is put in the crank case by the attendant. It is a generally accepted opinion that paraffine base oils are better for crank case lubrication than the oils derived from asphalt bases. Most motorists are aware of the superiority of the paraffine base oil and, no doubt, would make a practice of ordering the higher grade oils were it not for the fact that they do not feel that they can absolutely depend upon receiving the particular oil ordered and paid for; therefore, it has become common practice to order the lower grades of lubricating oils, feeling that in most cases no matter what grade is ordered, they are likely to receive the cheaper grades of oil.

It is the principal object of my invention to provide a dispensing device, which may be placed in a conspicuous place, having sight columns through which the different grades of oil are passed and means associated with each of the sight columns for indicating whether oil is being withdrawn from the desired source, thus enabling the purchaser to satisfy himself as to the oil he is actually receiving.

Other objects and advantages will be made evident hereinafter from the following description and drawings.

Referring to the drawings, which are for illustrative purposes only,

Fig. 1 is a vertical sectional view through an oil dispenser embodying my invention.

Fig. 2 is a horizontal sectional view taken upon a plane represented by the line 2—2 of Fig. 1.

Fig. 3 is an enlarged view of the air injector employed in the device.

In the practice of my invention, I employ, as shown in the drawings, a number of sight columns 11 which are vertically disposed before an opening 12 provided in an enclosing structure 13. These sight columns 11 may conveniently consist of glass tubes of convenient length to extend the full height of the opening 12. Each of the tubes comprising the sight columns is fed with oil from drums, not shown, through a piping system 15 which is made up from standard pipe and fittings and is provided with a shut-off valve 16. A gasketed jamb nut 18 is employed to connect each of the piping systems 15 to the upper end 19 of one of the sight columns 11, and a jamb nut 20 is provided at the lower end of each of the sight columns 11. Leading downwardly from each of the jamb nuts 20 I employ a nipple 21 which connects with a branch fitting 22 having its lateral outlet 23 extending forwardly so that a suitable gate spigot 24 may be installed upon the exterior of the structure 13 and conveniently connected into the lateral outlet 23 by means of a nipple 25 extending through a hole 26 in the front 27 of the enclosing structure. A nipple 29 is threaded into the downwardly projected end 30 of the fitting 22 and a bell reducer 31 is placed upon the lower end thereof so that a flow of air may be introduced through a branch air pipe 35 leading from an air header 36.

Upper and lower cross members 38 and 39 are provided with semi-circular recesses 40, as shown in Fig. 2, and vertical dividing strips 41 are extended from the member 38 to the member 39 between each of the sight columns 11 and a layer of felt 44 is secured upon the front face of each of the vertical strips 41, each of these felt layers being of sufficient width to engage the sides of the sight columns between which it extends so that light from incandescent globes 45, placed behind the sight columns upon a door 46 provided in the structure 13, can pass only through the sight columns themselves.

In each of the nipples 29 I place an air injector or nozzle 48. This nozzle preferably consists of a metallic cone 49 providing an extremely small orifice 50 at the lower end thereof. The sight columns being full of oil, air under compression from a receiver,

not shown, is admitted by opening a valve 53 in each of the pipings 35; this air being forced through the orifice 50, passes through the injector cone 49, the superimposed fittings, and through the sight column 11 from whence it passes out through the piping 15 into the oil drum connected thereto which is properly vented so that the air may pass off into the atmosphere.

A particular feature of my device is the manner in which the air is admitted through the injector 48 in the form of bubbles. A quantity of air enters through the orifice 50 in the form indicated at 60 and as it rises within the cone 49 flattens out into the form indicated at 61, thereafter continuing its upward course through the sight column 11 in the flattened formation shown at 62 in Fig. 1. I have found that the admission of bubbles occurs with persistent regularity so that a continuous flow of evenly spaced large bubbles is maintained as long as the air is turned on. In order to maintain a constant pressure in the air supply pipe 36, I find it desirable to employ a pressure regulator as indicated at 65.

It will be perceived that when a quantity of oil is drawn off through any of the gate spigots 24 that a downward movement of the oil in the particular sight column associated therewith will be accomplished, this downward movement of the oil counteracting the upward travel of the bubbles 62, causing them either to move slowly downward or to remain stationary, and, in some instances, causing a very serious agitation thereof within the sight column. By this disturbance of the flow of bubbles within the sight column, it is possible for the purchaser of oil to see that the oil is being drawn from the designated source, thus furnishing an assurance that just the oil being paid for is delivered.

A further desirable feature of the device is that it furnishes a very attractive display with the various grades and colors of oil placed before the view of persons who might be interested in the purchase of the same.

I claim as my invention:

1. In a device of the class described, the combination of: a sight column; means for introducing a liquid into one end of said sight column; means for drawing off said liquid from the opposite end of said sight column; and means for percolating a flow of air through the liquid contained in said sight column.

2. In a device of the class described, the combination of: a sight column; means for introducing a liquid into said sight column; means for drawing off said liquid from said sight column; and means for percolating a flow of air through the liquid contained in said sight column.

3. In a device of the class described, the combination of: a sight column; means for introducing a liquid into one end of said sight column; means for drawing off said liquid from the opposite end of said sight column; and an injector situated beneath said sight column for percolating a flow of air through the liquid contained in said sight column.

4. In a device of the class described, the combination of: a sight column; means for introducing a liquid into said sight column; means for drawing off said liquid from said sight column; and an injector situated beneath said sight column for percolating a flow of air through the liquid contained in said sight column.

5. In a device of the class described, the combination of: a sight column; means for introducing a liquid into one end of said sight column; means for drawing off said liquid from the opposite end of said sight column; and an injector for percolating a flow of air through the liquid contained in said sight column.

6. In a device of the class described, the combination of: a sight column; means for introducing a liquid into said sight column; means for drawing off said liquid from said sight column; and an injector for percolating a flow of air through the liquid contained in said sight column.

7. In a device of the class described, the combination of: a number of substantially vertical transparent tubes; means for delivering liquids into the tops of said tubes; means for drawing said liquids from the bottoms of said tubes; lights behind said tubes; opaque walls for preventing the passage of light other than through said tubes; and injectors for percolating a flow of air through the liquids in said tubes.

8. In a device of the class described, the combination of: a number of substantially vertical transparent tubes; means for delivering liquids into the tops of said tubes; means for drawing said liquids from the bottoms of said tubes; lights behind said tubes; opaque walls for preventing the passage of light other than through said tubes; and injectors for percolating a flow of air through the liquids in said tubes, said injector providing a conical orifice progressing in diameter from a minute opening to substantially the full diameter of the passage into which it leads.

9. In a device of the class described, the combination of: a sight column; means for introducing a liquid into one end of said sight column; means for drawing off said liquid from the opposite end of said sight column; and an injector situated beneath said sight column for percolating a flow of air through the liquid contained in said sight column, said injector providing a conical orifice progressing in diameter from a mi-

nute opening to substantially the full diameter of the passage into which it leads.

10. In a device of the class described, the combination of: a sight column; means for introducing a liquid into one end of said sight column; means for drawing off said liquid from the opposite end of said sight column; and means for percolating a flow of air through the liquid contained in said sight column to form a succession of upwardly moving bubbles through the sight column.

11. In a device of the character disclosed, the combination of: a sight column; means for introducing a liquid into said sight column; means for admitting air into said sight column to cause bubbles to rise therein at a uniform speed; and means for drawing off the liquid from said column whereby the rising of the bubbles is disturbed.

12. In a device of the character disclosed, the combination of: a sight column; means for introducing a liquid into one end of said sight column; means for drawing off said liquid from the opposite end of said sight column; and means for introducing air through said sight column from the opposite end thereof.

13. In a device of the character disclosed, the combination of: a sight column; means for introducing a liquid into one end of said sight column; means for drawing off said liquid from the opposite end of said sight column; and means for introducing a constant supply of air through said sight column from the opposite end thereof.

14. In a device of the character disclosed, the combination of: a sight column; means for introducing a liquid into said sight column; means for admitting air into said sight column to cause bubbles to rise therein; and means for drawing off the liquid from said column whereby the rising of the bubbles is disturbed.

15. In a device of the character disclosed, the combination of: a sight column; means for introducing a liquid into said sight column; means for introducing a constant supply of air into said sight column to cause bubbles to rise therein; and means for drawing off the liquid from said column whereby the rising of the bubbles is disturbed.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 6th day of March, 1922.

RALPH G. ADAMS.