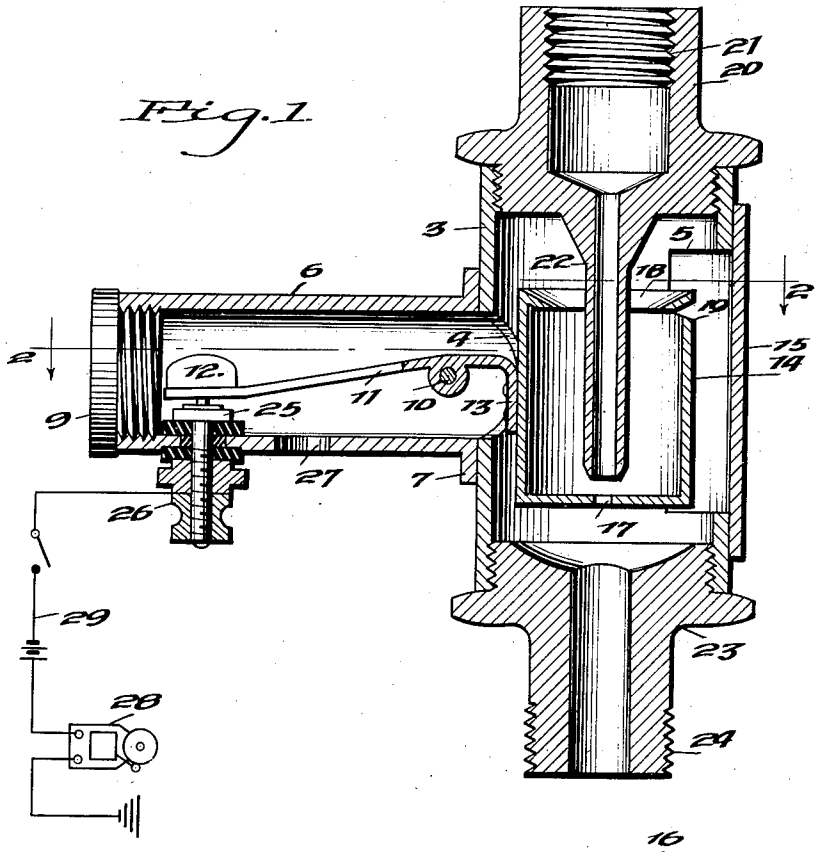
Nov. 17, 1925. 1,561,813

W. T. WILLIAMS

CIRCUIT CONTROLLER FOR FLOW INDICATORS

Filed Nov. 16, 1923

Fig. 1.



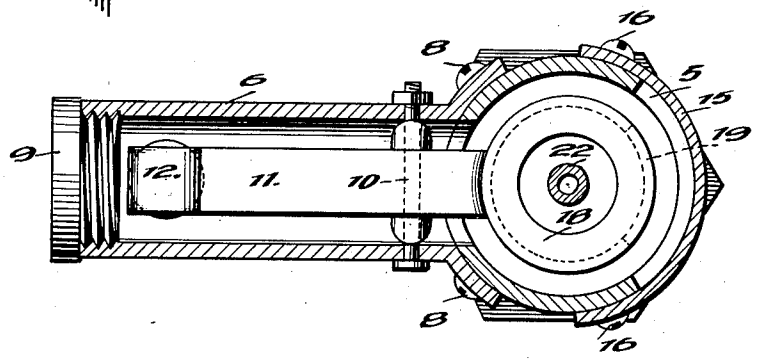


Fig. 2.

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UNITED STATES PATENT OFFICE.

WALTER T. WILLIAMS, OF TOPEKA, KANSAS.

CIRCUIT CONTROLLER FOR FLOW INDICATORS.

Application filed November 16, 1923. Serial No. 675,177.

To all whom it may concern:

Be it known that I, WALTER T. WILLIAMS, a citizen of the United States, residing at Topeka, in the county of Shawnee and State of Kansas, have invented certain new and useful Improvements in Circuit Controllers for Flow Indicators, of which the following is a specification.

The present invention relates to alarm mechanism for oil or other circulatory systems, and the object is to provide a simple and practicable mechanism whereby when the fluid supply fails or becomes dangerously depleted, an indicator will be operated calling attention to the conditions. While the apparatus is particularly useful in connection with engine and like lubricating systems, it may of course be utilized for other purposes of a generally analogous character.

In the accompanying drawings:—

Figure 1 is a vertical longitudinal sectional view through the preferred form of construction,

Figure 2 is a horizontal sectional view on the line 2—2 of Figure 1.

In the embodiment disclosed, a casing is employed, comprising a cylindrical body 3 having an opening 4 through one side and a larger opening 5 through the opposite side. Extending from the side having the opening 4 and covering said opening, is a horizontal tubular arm 6, preferably having a flange 7 that rests against the outer face of the body 3. Fastening screws 8 pass through the flange into said body to secure the arm in place. The outer end of the arm is closed by a screw plug 9.

Fulcrumed between its ends in the inner end of the tubular arm 6, and as shown at 10, is a lever 11 extending longitudinally in said tubular arm and having its outer arm weighted, as illustrated at 12. Its inner end is downturned as shown at 13 and riveted or otherwise secured to the side of a container or cup 14 movably mounted in the casing body 6. This cup and lever are removable and replaceable through the opening 5, which is normally closed by a cover plate 15 secured in place by screws 16, or other suitable fasteners. The cup 14 is provided in its bottom with a bleed port 17 and at its upper end said cup also has an inwardly extending splash-preventing rim 18, and a lateral overflow outlet 19 is formed in the upper outer side of the cup just beneath the rim.

A supply nipple 20 is threaded into the upper end of the body 3 and has an internally threaded portion 21, to which may be attached the conduit for the oil or other material. This nipple has a reduced vertically depending nozzle 22 extending through the upper open end of the cup and nearly to the bottom of the same, being surrounded by the splash-preventing rim 18. An outlet nipple 23, threaded into the lower portion of the body 3, constitutes the bottom of the casing, and is externally threaded, as shown at 24, so that it may be coupled to the pipe or other conduit through which the oil or material flows from the device.

Mounted in the outer end of the tubular arm 6 is a contact element 25, upon which the outer end of the lever 11 is adapted to rest when the cup 14 is empty. The outer end of this contact element is in the form of a binding post 26 mounted externally of the arm 6. Between the contact element and binding post and the inner end of the tubular arm, an outlet port 27 is preferably formed in the bottom of said arm. Any suitable alarm or indicator may be coupled up to the binding post. Thus there is shown diagrammatically a bell 28 included in an electric circuit 29 that also includes the binding post 26, and is suitably grounded on the apparatus.

It will be evident that if this device is included in a fluid circulatory system, as long as the fluid supplied through the nozzle 22 is sufficient to maintain the cup 14 materially filled, notwithstanding the leakage through the bleed port 14, the cup will be in its lowermost position and the lever 11 out of contact with the element 25. As a consequence the electrical circuit 29, which includes the indicator 28, is broken, and the indicator is inactive. Should the supply of fluid fail or become greatly depleted so that the cup 14 empties through the bleed port 14, then the weight 12 will overbalance said cup and cause the lever to contact with the element 25, thereby closing the electrical circuit and effecting the operation of the indicator or alarm. The specific construction of the mechanism is important. It will be evident that it is made up of a relatively

few parts of simple construction that can be easily assembled, the operating parts being readily accessible for cleaning or repair if necessary. The means by which the liquid is delivered into the container or cup 14 is also important, and especially in connection with the structure of the cup. Assuming that the liquid will flow through the nozzle at considerable force, it will be evident that by delivering it near the bottom the agitation at the top is greatly reduced and splashing is not only prevented by the extension of the nozzle into the body of the liquid, but the rim 18 also materially eliminates any danger of its splashing over the interior of the casing. A further advantage is that the nozzle does create agitation over and around the bleed port 17, thereby preventing the sediment or particles collecting on the bottom and closing said bleed port. The outlet 19 from the cup being under the rim and at the outer side insures that the liquid will flow down to the outlet and there is little possibility of the fluid entering the arm 6, but should some pass thereinto, it will find its way through the outlet 27 and not cover the contact elements.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim, is:—

1. A device of the character set forth comprising a movable circuit controlling member, a receptacle mounted thereon and having an open top carrying an inwardly extending splash preventing rim, a bleed port in its lower portion and an overflow outlet in its upper portion below the said rim, and means for delivering fluid into said receptacle.

2. A device of the character set forth comprising a movable circuit controlling member, a receptacle mounted thereon and having an open top carrying an inwardly extending splash preventing rim, a bleed port in its lower portion and an overflow outlet in its upper portion below the said rim, and a fluid supply nozzle extending downwardly through the open top and terminating in the receptacle below said rim.

3. A device of the character described, comprising a chamber and a lateral tubular arm opening thereinto, a lever extending into the arm and the chamber, a circuit closer in the arm having a member operated by the lever, a cup carried by the lever and located in the chamber, said cup having an inturned splash-preventing rim fixed to its upper edge, means for directing liquid into the cup, and said cup having an overflow outlet formed in its side wall below the rim and in the side away from the tubular arm.

In testimony whereof, I affix my signature.

WALTER T. WILLIAMS.