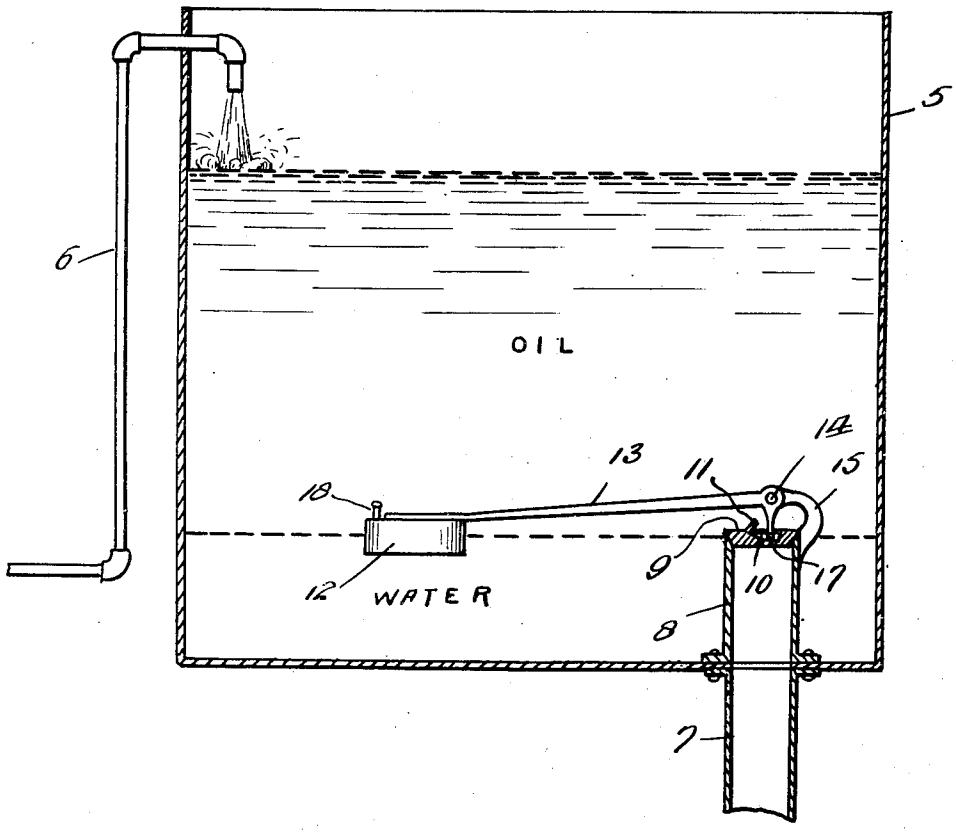
March 17, 1925. 1,529,702

E. HOWELL

AUTOMATIC DRAINING DEVICE

Filed Jan. 31, 1924



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UNITED STATES PATENT OFFICE.

ERNEST HOWELL, OF FITCHBURG, KENTUCKY.

AUTOMATIC DRAINING DEVICE.

Application filed January 31, 1924. Serial No. 689,694.

To all whom it may concern:

Be it known that I, ERNEST HOWELL, a citizen of the United States, residing at Fitchburg, in the county of Estill and State of Kentucky, have invented certain new and useful Improvements in Automatic Draining Devices, of which the following is a specification.

This invention relates to automatic draining devices, and has particular reference to means for automatically draining excess water from the bottom of oil tanks.

The primary object of the invention is to provide a draining device of the above character, which embraces the desired qualities of simplicity and durability of construction, as well as efficiency in operation.

Another object of the invention is to provide a simple and effective means operable upon rising of the water level in an oil tank above the predetermined level, for opening a bottom outlet of said tank and allowing the excess water to flow therefrom.

Other objects will appear as the nature of the invention is better understood, and the same consists in the novel form, combination, and arrangement of parts hereinafter more fully described, shown in the accompanying drawing and claimed.

In the drawing, the view is one partly in side elevation and partly in central vertical section of an oil tank equipped with a water draining device constructed in accordance with the present invention.

Referring more in detail to the drawing, 5 indicates a suitable reservoir or tank into which the oil supply line 6 empties, said oil supply line 6 being extended from a suitable source of supply, such as the oil well. It is well known that this oil that is obtained from oil wells oftentimes contains considerable water and is seldom without some of the same, the presence of which is undesirable.

In accordance with the present invention, the tank 5 is provided with an outlet pipe 7 in the bottom thereof which communicates with a relatively short overflow pipe 8, arranged within and upon the bottom of a tank 5 as shown in the drawings. The overflow pipe is formed with a valve seat upon its upper end which is normally engaged by a disc valve 9 that has an undercut elongated recess in the top thereof, one end of which is overhung by means of an inwardly directed lip 11 on the valve disc 9. A float 12 is fixed upon one end of a float lever 13 that is pivoted at its other end as at 14 to a bracket 15 directly above the valve 9, said bracket being rigid with the overflow pipe as shown. The float lever 13 is provided with a rigid depending arm 16 having a cross bar upon its lower end and arranged within the recess 10 with its ends fixed beneath the overhanging walls of the undercut portion of said recess. The bottom of the recess 10 is formed upon an arc concentric with the pivot 14 so as to permit limited swinging movement of the arm 16 as caused by upward swinging movement of the lever 13 until the cross bars 17 engage the lip 11 whereupon the valve 9 is bodily lifted from its seat.

The float 12 may be partially filled with oil and partially with air introduced through the intake member 18 thereof which is in the nature of a check valve or the like, whereby the float will sink within the oil and float upon the top of the water contained in the tank.

In operation, the oil and water will enter the tank upon the supply line 6 and as the oil is of less specific gravity than water the latter will settle to the bottom of the tank as indicated in the drawings. When the level of the water is not above the upper end of the overflow pipe 8, the float 12 is positioned so that the valve 9 is allowed to tightly seat for preventing the escape of oil through the overflow pipe. However, upon the level of the water rising in the tank above this point, the float 12 will rise and cause the lever 13 to move upwardly for swinging the arm 16 until the cross bar 17 engages the lip and lifts the valve 9 from its seat. When this takes place, the water above the upper end of the overflow pipe will pass outwardly therethrough until the level of the water again lowers to permit the float to lower sufficiently to allow the valve to again seat. As the arm 16 swings away from the lip 11, the cross bar 17 bears upon the arcuate surface of the recess 10 and causes the valve 9 to tightly seat. By means of this construction, the quantity of water within the tank may be maintained to a relatively small amount as the overflow pipe may be made considerably shorter than the exaggerated length thereof as shown in the drawings.

From the above description it is believed that the construction and operation as well as the advantages of the invention will be readily understood and appreciated by those skilled in the art.

Minor changes may be made without departing from the spirit and scope of the invention as claimed.

What I claim as new is:

A water draining device of the character described comprising, in combination with a tank, having an oil supply line emptying thereinto and provided with a bottom outlet, an overflow pipe communicating with said outlet and having a valve seat at the upper end, a float lever pivotally mounted at one end of said valve seat and having a rigid depending arm, a valve associated with said seat and loosely connected to said arm, a float carried by the other end of said float lever and adapted to float upon water but to sink in oil, the loose connections between the arm and the valve permitting rising of the float above the upper end of the overflow pipe a predetermined distance, prior to unseating of the valve under the influence of said arm, the loose connection between the arm and the valve embodying an undercut elongated recess in the top of the valve having one end thereof overhung by a lip rigid with the valve, the bottom of said recess being of arcuate form and concentric with the pivot of the float lever, and said arm having a cross bar upon its lower end engaged in the undercut portion of the recess and bearing upon the bottom of the latter to cause tight seating of the valve when the float is lowered, said lip being in the path of said cross bar for being engaged by the latter to cause lifting unseating movement of the valve.

In testimony whereof I affix my signature.

ERNEST HOWELL