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H. D. FLEGEL.

LIQUID GAGE.

APPLICATION FILED MAR. 8, 1913.

1,067,477.

Patented July 15, 1913.

Fig. 2.

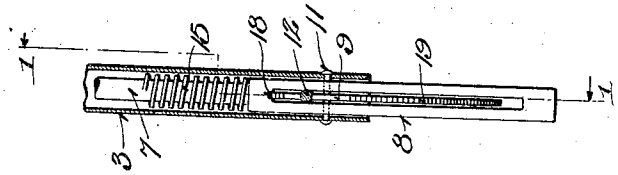
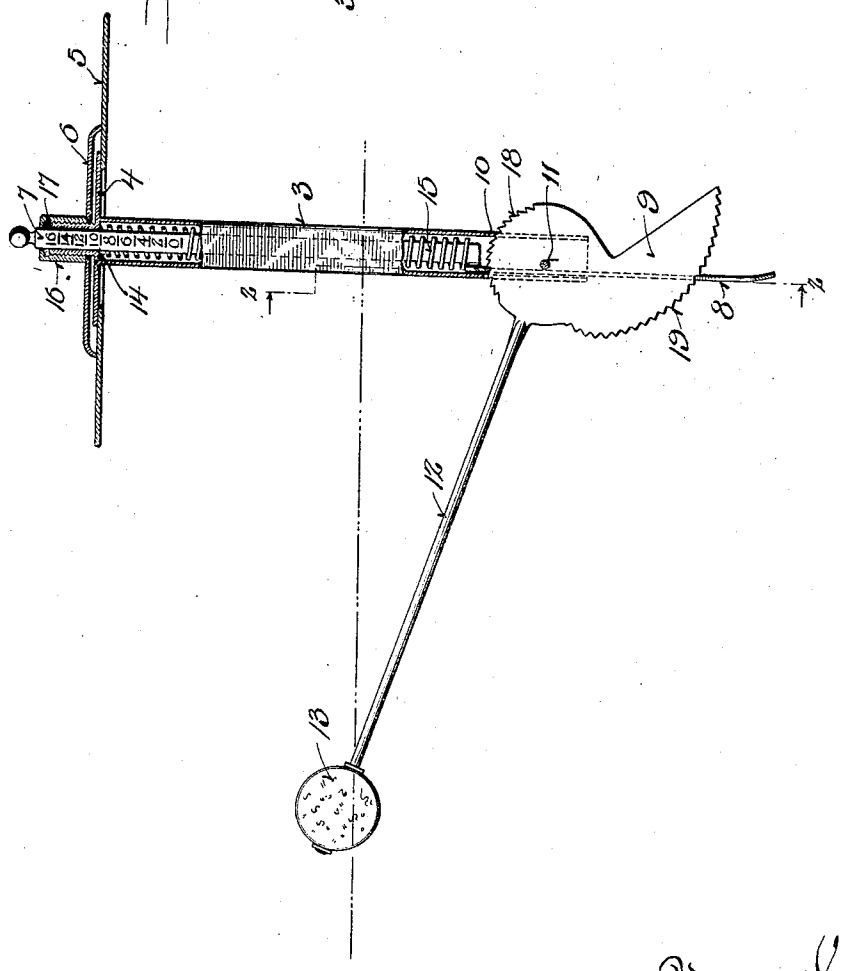


Fig. 1.



Witnesses:
Chauncey Young
May Downey.

Inventor:
Harrison D. Flegel
By Chipman & Young
Attorneys.

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UNITED STATES PATENT OFFICE.

HARRISON D. FLEGEL, OF RACINE, WISCONSIN, ASSIGNOR OF ONE-HALF TO WILLIAM H. LINGSWEILER, OF RACINE, WISCONSIN.

LIQUID-GAGE.

1,067,477. Specification of Letters Patent. Patented July 15, 1913.

Application filed March 8, 1913. Serial No. 752,932. REISSUED.

To all whom it may concern:

Be it known that I, HARRISON D. FLEGEL, a citizen of the United States, and resident of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Liquid-Gages; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention consists in what is herein particularly set forth with reference to the accompanying drawings and pointed out in the claims of this specification, its object being to provide simple, economical and efficient latch-float liquid-gages especially designed for use in connection with hydrocarbon fuel tanks of motor-vehicles to facilitate determination at any time of the quantity of liquid therein. However said gages are applicable for the same purpose in connection with tanks other than those aforesaid.

Figure 1 of the drawings represents a partly sectional side-elevation of a liquid-gage in accordance with my invention, and a fragment of a tank to which the gage is connected, the view being indicated by line 1—1 in the next described illustration. Fig. 2 represents a sectional view of a fragment of the gage and is indicated by line 2—2 in Fig. 1, said gage being adaptable to a tank in which the liquid contents are subjected to pressure.

Referring by numerals to the drawings, 3 indicates a vertical shell of any suitable contour in horizontal section, the same being provided with flange 4, circular or otherwise, below its upper end to serve as a closure for a tank-opening through which said shell extends, the flange being soldered, brazed or otherwise suitably secured in connection with the tank of which a fragment 5 is shown, and a cover-plate 6 may be employed to conceal the joint. Guided in the shell is a scale-slide herein shown in the form of a rod 7 having a longitudinally slotted lower latch-plate extension 8 for engagement with ratchet-toothed curvilinear edges of a plate 9 engaging a longitudinal lower slot 10 of said shell on a pivot 11 extending through the two. Extending from the plate 9 between the curvilinear edges thereof is a rod 12, and secured on the outer end of the rod is a float 13. Surrounding the rod 7, under contraction between the latch-plate extension 8 thereof and an upper inner shoulder 14 of the guide-shell 3, is a spiral-spring 15 designed to compensate for pressure in the tank and thus prevent automatic elevation of the scale-slide as a whole.

The upper outer end of the guide-shell 3 is exteriorly screw-threaded for the engagement of an interiorly screw-threaded sleeve 16 through which the gage-slide extends and packing 17 is interposed between the head of the sleeve and said shell, whereby a stuffing-box is provided in order to prevent leak of pressure-fluid from the tank. However it is within the scope of my invention, as herein claimed, to omit the spring and stuffing-box features aforesaid in gages for tanks in which pressure is not employed.

In practice the scale on the slide will be a matter of arbitrary selection, the one shown being for gallons.

By gravity or the expansive force of the spring above specified, the scale-slide is normally held in engagement with the upper circular ratchet-toothed edge 18 of the pivoted plate 9 to thus latch the float at various elevations against loose play in the tank, this being an advantageous feature of my invention when the gage is applied to the hydrocarbon-fuel tank of a motor-vehicle. To determine the amount of liquid in the tank the scale-slide is lifted to free the float and permit its descent to the level of said liquid, the lower end of said slide being stopped in the lower eccentric-toothed edge 19 of the plate 9 and the scale exposed above the upper end of the guide-shell, the lowermost visible mark of the scale being the index to the quantity of liquid in said tank.

I claim:

1. A liquid-gage attachable to a tank to depend therein, and which comprises a vertical shell, a scale-slide guided in the shell through the upper end thereof, a plate in pivotal connection with the lower portion of said shell and having an upper circular ratchet-toothed edge and a similarly toothed lower eccentric edge with which said slide is alternately engageable, a rod extending from the plate between said edges thereof, and a float attached to the rod.

2. A liquid-gage attachable to a tank to depend therein, and which comprises a vertical shell longitudinally slotted at its lower

end, a scale-slide guided in the shell through the upper end of the same and also longitudinally slotted at its lower end, a pivotally hung plate engaging the shell and slide slots and which has an upper circular ratchet-toothed edge and a similarly toothed lower eccentric edge with which said slide is alternately engageable, a rod extending from the plate between said edges thereof and a float attached to the rod.

3. A liquid-gage attachable to a tank and which comprises a vertical shell provided with an upper flange constituting a closure for an opening in a tank through which the shell depends, a scale-slide guided in said shell through the upper end of the same, a plate in pivotal connection with the lower portion of the aforesaid shell and having an upper circular ratchet-toothed edge and a similarly toothed lower eccentric edge with which said slide is alternately engageable, a rod extending from the plate between said edges thereof and a float attached to the rod.

4. A liquid-gage attachable to a tank to depend therein and which comprises a vertical shell having an upper stuffing-box end, a spring-controlled scale-slide guided in the shell through said upper end thereof, a plate in pivotal connection with the lower portion of said shell and having an upper circular ratchet-toothed edge and a similarly toothed lower eccentric edge with which said slide is alternately engageable, a rod extending from the plate between said edges thereof and a float attached to the rod.

5. A liquid-gage attachable to a tank and which comprises a vertical shell having an upper stuffing-box end and a lower longitudinal slot, a scale-rod guided in the shell through said upper end thereof and having a lower offset longitudinally slotted plate-extension, a pivotally hung plate engaging the slots of the shell and plate extension of the scale-rod, an upper circular edge of the pivotal plate and a lower eccentric edge of the same being ratchet-toothed for alternate engagement of said slide, a rod extending from said plate between the toothed edges thereof, and a float attached to the rod.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

HARRISON D. FLEGEL.

Witnesses:
GEO. W. YOUNG,
M. E. DOWNEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."