No. 848,898. PATENTED APR. 2, 1907.

W. GREGSON.

TUBULAR TANK INSPECTOR AND GAGE.

APPLICATION FILED MAR. 12, 1906.

Fig. 1

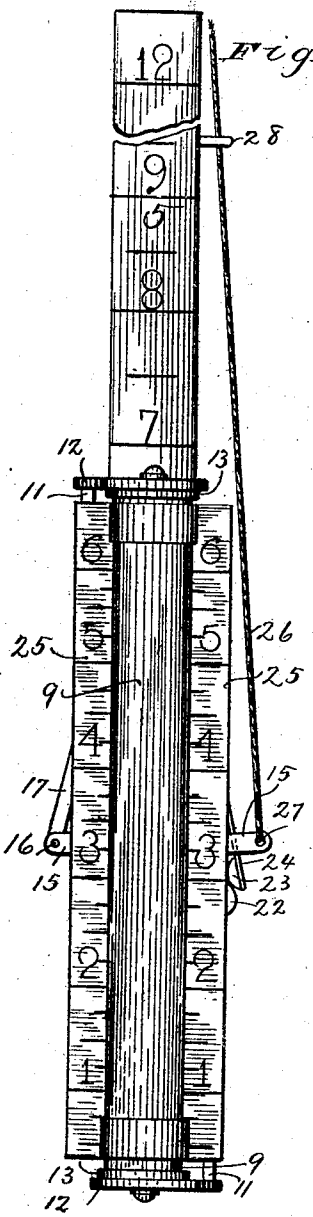


Fig. 4.

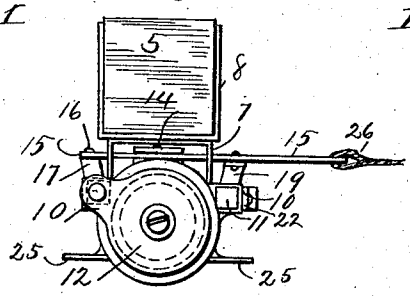


Fig. 3.

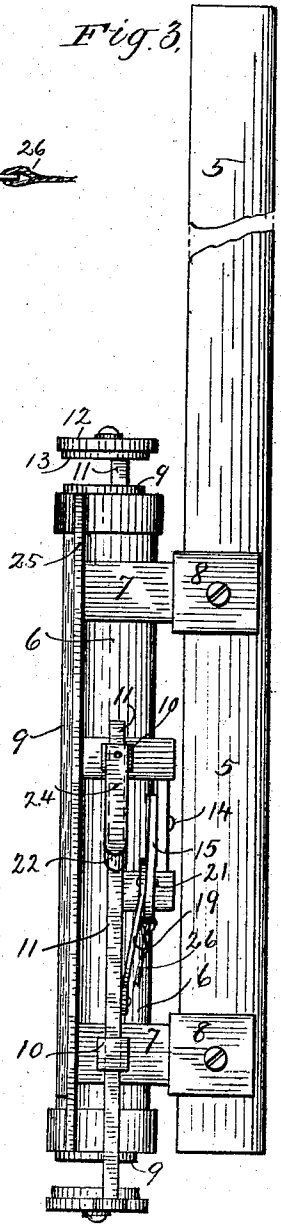
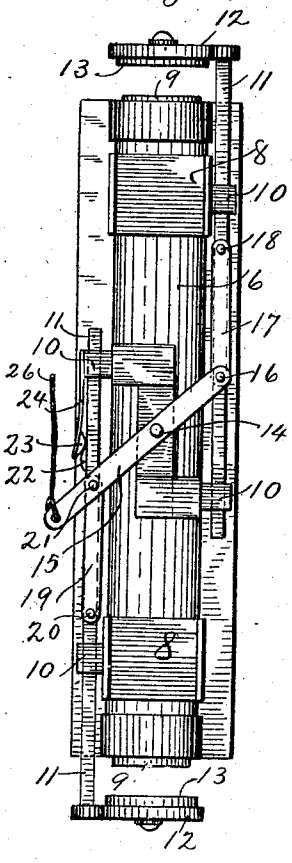


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM GREGSON, OF BEAUMONT, TEXAS.

TUBULAR-TANK INSPECTOR AND GAGE.

No. 848,898. Specification of Letters Patent. Patented April 2, 1907.

Application filed March 12, 1906. Serial No. 305,680.

To all whom it may concern:

Be it known that I, WILLIAM GREGSON, a citizen of the United States, residing at Beaumont, in the county of Jefferson and State of Texas, have invented certain new and useful Improvements in Tubular-Tank Inspectors and Gages, of which the following is a specification.

The present invention relates to improvements in gages, and relates particularly to oil-gages and inspectors.

The object of the invention is the provision of a gage for terminating the depth of fluids contained in a tank or other receptacle, and when used for the purpose of measuring crude oil in vessels it serves to ascertain the quantity of oil and water in the tank and also the quantity of sediment which is usually found floating between the crude oil and water contained in the tank or reservoir.

The invention consists of a gage-tube suitably secured to a pole and provided with stoppers or valves at the top and bottom for preventing the escape of the fluids contained in the tube after the gage has been inserted in and withdrawn from a tank, together with means for actuating said valves by pressure upon the pole or by means of connections controllable from the top of the pole.

Further objects and advantages of the invention will be set forth in the detailed description which now follows.

In the accompanying drawings, Figure 1 is a front elevation of a gage constructed in accordance with the invention. Fig. 2 is a rear elevation of said gage with the gage-pole removed. Fig. 3 is a side elevation illustrating the gage attached to the gage-pole, and Fig. 4 is a plan view of the device.

Like numerals designate corresponding parts in all of the figures of the drawings.

Referring to the drawings, the numeral 5 designates a gage-pole which may be of any desired length and which has secured to its lower end a tubular casing 6, which forms the body of the gage. The tubular casing 6 has secured thereto rearwardly-extending clamping members 7, which are secured to the pole 5 by screws 8. A glass tube 9 is inserted in the tubular casing 6, which is open at its front portion to render visible the contents of said tube. Guide-lugs 10 are secured to the tubular casing 6 and to the clamping members 7 and receive the slidably-disposed valve-rods 11. These valve-rods carry inwardly-extending disks 12, upon the inner faces of which are mounted pads 13, which are preferably formed of leather. These pads constitute valves and serve to close both the upper and lower ends of the glass tube 9.

Pivoted upon the rear face of the tubular casing 6, as at 14, is an arm 15, one end of which is connected, as at 16, to a link 17. The opposite end of said link is connected to one of the valve-rods 11, as at 18. A link 19 is connected at 20 to the other valve-rod 11 and at 21 to the arm 15. A raise-lug 22 coacts with an inclined lug 23, carried by spring-detent 24, to hold the valve-rods at their limit of movement. Plates 25, having suitable numbers thereon, are arranged adjacent the tube 9 and serve as a gage to indicate the height of the various liquids contained in said tube. A cord or other flexible connection 26 is secured, as at 27, to the free end of the lever 15 and passes through an eyelet 28 to the upper end of the pole.

The operation of the device is as follows: Assuming the device to be in the position illustrated in Fig. 1, with the top and bottom orifices of the glass tube open, the gage is inserted in the tank the contents of which it is desired to measure. As the pole, with the glass tube, passes through the different strata of ingredients in the tank a quantity of oil is first encountered and taken into the glass, then a quantity of the sediment which floats between the oil and water, and finally a quantity of water passes into the tube. When the lower disk 12 strikes the bottom of the tank, the upper and lower valves may be closed by pressure upon the pole. When it is desired to thus close the valves, sufficient pressure is applied to the pole to overcome the spring-detent 24. The glass tube then is forced down upon the lower valve-pad 13. This movement of the tube with relation to the lower valve-rod 11 rocks arm 15 upon its pivot and closes the other valve simultaneously with the closure of the lower valve. If it is not desired to lower the gage entirely to the bottom of the tank, but it is desired to close the valves when the gage is but part the way down in said tank, the arm 15 may be rocked upon its pivotal point by tilting upon the cord 26, which movement of the arm 15 will, it is apparent, close the upper and lower valves simultaneously.

From the foregoing description it will be seen that simple and efficient means are herein provided for accurately determining

the condition of the contents of an oil-tank at any point between the surface of the liquid contained in said tank and the bottom of the tank.

While the elements herein shown and described are well adapted to serve the purpose for which they are intended, it is to be understood that my invention is not limited to the precise construction set forth, but includes within its purview such changes as may be made within the scope of the appended claims.

Having described my invention, what I claim is—

1. In a device of the character described, the combination with a pole, of an open-ended tube carried by said pole, a valve located at each end of said tube, means for closing both of said valves when pressure is applied to the pole, and means for actuating said valves from the upper end of the pole.

2. In a device of the character described, the combination with a pole, of an open-ended tube carried by said pole, a valve located at each end of said tube, means for simultaneously closing said valves by pressure upon the pole, means for closing said valves from the upper end of the pole, and a spring-detent for holding said valves at their limit of movement.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM GREGSON.

Witnesses:
J. N. PAYNE,
THOS. BLEKER.