April 15, 1924. 1,490,506

R. LOPEZ Y BUTTARI

APPARATUS FOR OBTAINING SAMPLES OF LIQUIDS

Filed Oct. 9, 1922

Fig. 1.

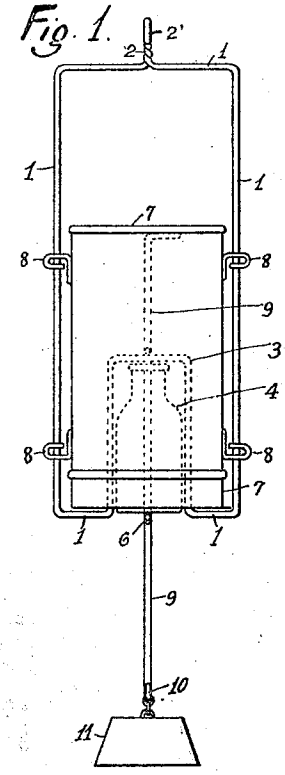


Fig. 2.

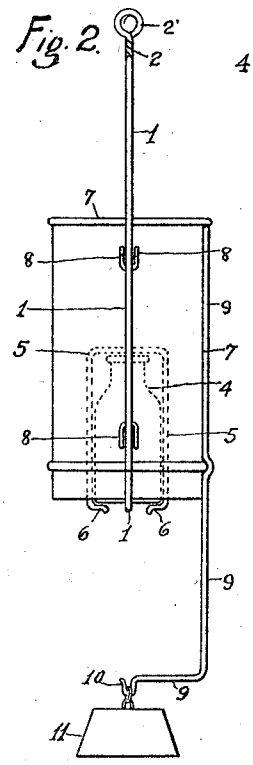


Fig. 3

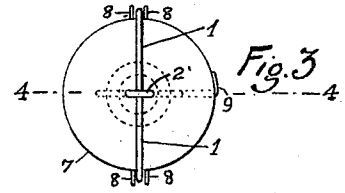


Fig. 4

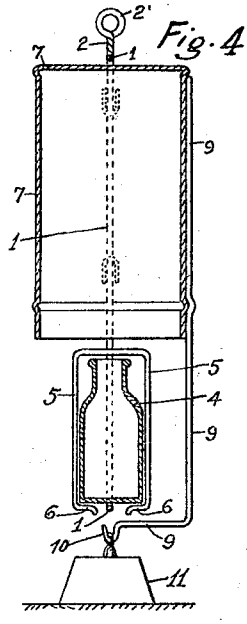


Fig. 5

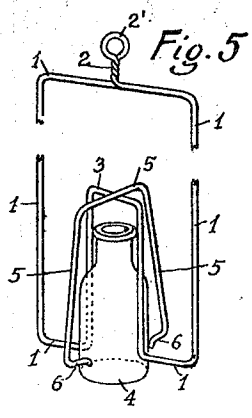


Fig. 6

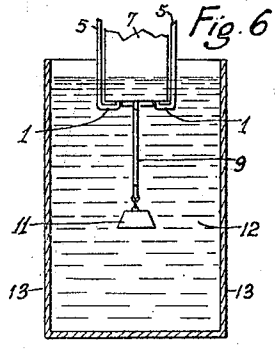
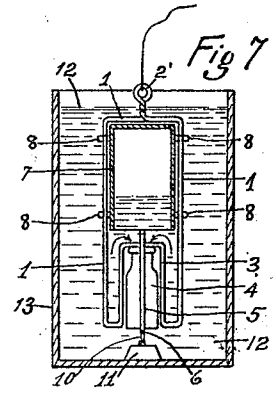


Fig 7



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UNITED STATES PATENT OFFICE.

RAUL LOPEZ Y BUTTARI, OF HABANA, CUBA.

APPARATUS FOR OBTAINING SAMPLES OF LIQUIDS.

Application filed October 9, 1922. Serial No. 593,476.

To all whom it may concern:

Be it known that I, RAUL LOPEZ Y BUTTARI, a citizen of the Republic of Cuba, and resident of Habana, Cuba, whose postal address is No. 8 Third Street, Reparto Batista, Habana, Cuba, have invented certain new and useful Improvements in Apparatus for Obtaining Samples of Liquids.

This invention relates to the obtention of samples of liquids in those cases in which it is necessary to know occasionally the conditions of certain portions thereof which are at various depths in a deposit or tank and which in certain classes of liquids vary largely from the surface to the bottom thereof, and its object is to provide an apparatus of very simple construction which permits the desired sample to be obtained at the convenient depth in order to analyze or examine the conditions of the liquid at such depth, and which offers considerable advantages in the practice, as it is not necessary to pour off or separate any part of the liquid.

The invention is described with reference to the figures of the annexed drawing, in which:

Fig. 1 is a front elevation of the apparatus forming the subject matter of this invention in its proper position to descend into the body of a liquid mass.

Fig. 2 is a profile elevation of the apparatus in the same position.

Fig. 3 is an upper plan view thereof.

Fig. 4 is a diametral vertical section on line 4—4 of Fig. 3.

Fig. 5 is a perspective detail showing the holder of the flask for obtaining the sample.

Fig. 6 is a vertical section of a tank containing a liquid into which is caused to descend the apparatus forming the subject matter of this invention.

And Fig. 7 is a similar vertical section to that of Fig. 6, showing the apparatus in the position of taking a sample of liquid.

The apparatus forming the subject matter of this invention comprises a frame 1 which preferably is wholly arranged in a vertical plane and is made of a wire bent on itself forming a rectangular frame upwardly ending in a straight extension 2 with an eye 2′ for the attachment of a cord and at its lower portion said frame is extended upwards and inwards forming a gibbet-like frame 3 forming part of the holder for the sample receiver which can be a small flask 4 which has its main body inserted into said gibbet 3 and which is secured in points of a plane perpendicular to the plane of the frame by means of another gibbet 5 of flexible sides which is soldered to the first gibbet 3 at its top in a perpendicularly crossed position with the same, having its lower ends terminated in portions inwardly and downwardly turned forming grips 6 acting as catches. The lateral sides of the frame 1 serve as guides to a bell 7 slidably mounted in said frame 1 by means of pairs of opposite catches 8 fixed to the bell and between which pass the sides of said frame 1, and said bell 7 presents rigidly connected to same a rod 9 in a point of its outer surface intermediate between its guides, which rod horizontally bends towards the axial line of the frame at a certain height below the holder of the receiver 3—5, and it terminates in a central hook 10 which serves to suspend directly from same or by means of a cord or chain not shown, a counterweight 11, whose object will be hereinafter explained.

In the normal position and by its proper weight the bell 7 covers the flask holder 3—5 and the flask 4, Figs. 1, 2 and 6 and to the eye 2′ of the extension 2 is tied a suspension string or chain which is not shown.

When with this apparatus it is desired to obtain a sample of a liquid 12 contained in a tank 13, either adjacent to the bottom, to effect which the counterweight 11 is suspended directly from hook 10, or either at any intermediate height, to effect which the counterweight 11 is suspended then from hook 10 by means of a cord or chain of corresponding length, the apparatus is introduced into the liquid mass 12 and is maintained pending by a cord 14 connected to eye 2′, so that by virtue of the gravity it may descend by itself until the counterweight 11 rests on the bottom of tank 13, and in these conditions the liquid will be prevented from entering the flask 4 by the counterpressure in the bell 7, but when the counterweight 11 reaches the bottom of tank 13, the bell 7 while floating remains fixed, and on further lowering the flask-holder 3—5 with the flask 4, the latter is withdrawn from the compressed air in the bell 7, and thereupon the liquid 12 enters the flask 4, filling the same. Then it is pulled out, whereupon the flask-holder 3—5 with the flask 4 provided with the desired

sample reenters the bell 7 and when the lower base of frame 1 strikes the lower edge of bell 7 causes same to ascend with the counter-weight 11.

It should be understood that the various details of construction as well as the form of the frame and of the bell and of the flask-holder and the proper flask can vary without altering the spirit of the invention, which is as pointed out in the appended claims.

What I claim is:—

1. An apparatus for obtaining samples of liquids, comprising a frame, a sample receiver frame supported in said frame, and a bell sliding in said frame which normally covers by gravity said sample receiver frame.

2. An apparatus for obtaining samples of liquids, comprising a frame, a sample receiver frame supported in said frame, a bell sliding in said frame and a counterweight connected to said bell which when actuating freely under the gravity action causes the bell to cover the sample receiver frame.

3. An apparatus for obtaining samples of liquids, comprising a vertical frame, a sample receiver frame formed in the lower part of said frame, a receptacle supported in a detachable manner in said frame, a bell slidably mounted in said frame so that normally and by gravity it may cover said sample receiver frame, and a counterweight pending from said bell.

4. An apparatus for obtaining samples of liquids, comprising a vertical frame provided with means for suspension, a sample receiver frame formed in the lower part of said frame with flexible grips, a receptacle detachably supported between the grips of said frame, a bell slidably mounted on said frame so that normally and by gravity it may cover said sample receiver frame and the receptacle carried thereby, and a counterweight pending in the axial vertical line of the apparatus by means of a downward rod fixed to the bell.

In witness whereof I affix my signature.

RAUL LOPEZ Y BUTTARI.