W. F. COAKLEY & J. S. LEVENE.

VACUUM SEPARATING TRAP.

APPLICATION FILED JAN. 10, 1913.

1,079,398. Patented Nov. 25, 1913.

Fig. 2.

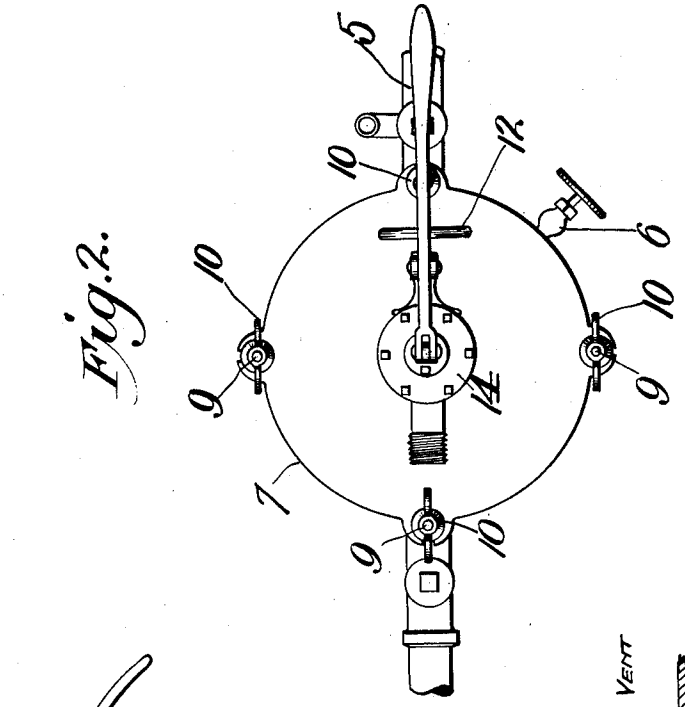
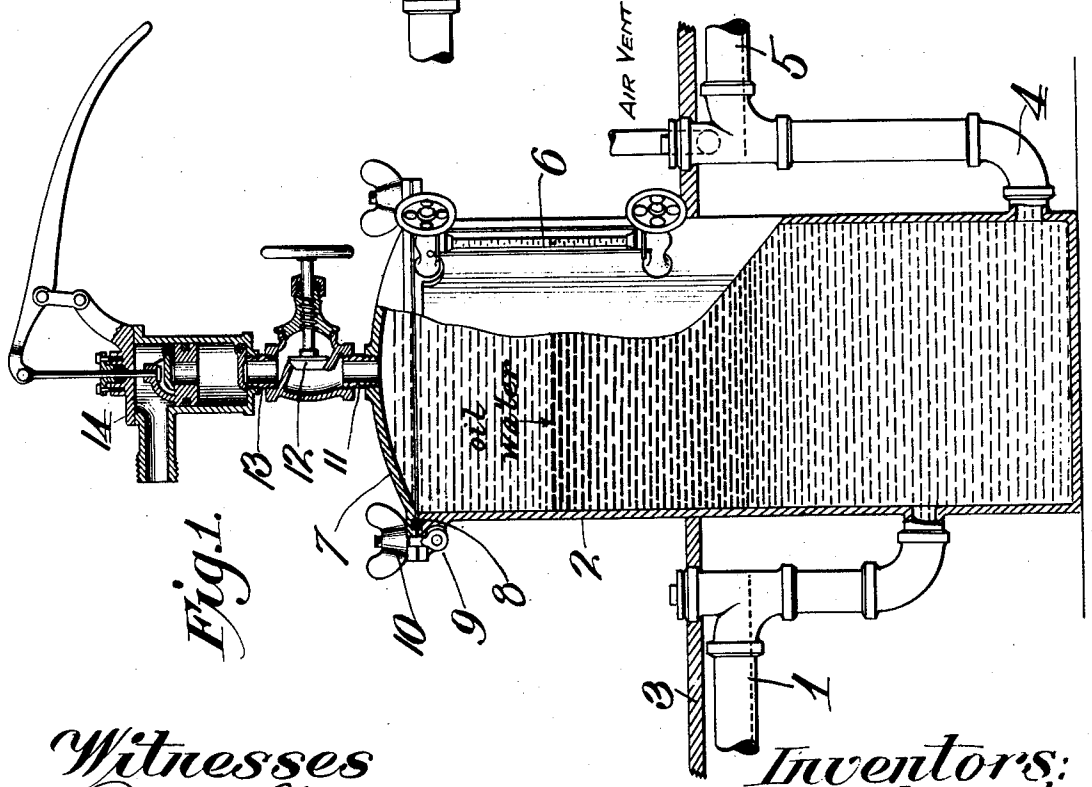


Fig. 1.



Witnesses
Frank R. Glon
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W. F. Coakley and
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By Goepel & Thorpe Atty.

UNITED STATES PATENT OFFICE.

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VACUUM SEPARATING-TRAP.

1,079,398. Specification of Letters Patent. Patented Nov. 25, 1913.

Application filed January 10, 1913. Serial No. 741,212.

To all whom it may concern:

Be it known that we, WILLIAM F. COAKLEY and JOSIAH S. LEVENE, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Vacuum Separating-Traps, of which the following is a specification.

This invention relates to vacuum separating traps, and has for its object to produce means whereby liquids of less specific gravity than water shall be trapped after flowing with the latter through a floor or cellar drain, and means for recovering the trapped liquid.

With this general object in view, the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the acompanying drawing, in which—

Figure 1, is a central vertical section of a vacuum separating trap embodying our invention. Fig. 2, is a top plan view of the same.

As one practical embodiment of the invention especially convenient as a floor or cellar trap, we connect the discharge end of the pipe 1, leading from the drain (not shown) with a cylinder 2, near the lower end of the same, it being noted that the cylinder rises to a considerable height above the floor 3.

4 is a discharge pipe for and connected with the cylinder in a plane below that of the connection therewith of pipe 1, and said pipe 4 extends upward to complete the trap, and terminates in the customary drain pipe 5 leading directly to a sewer, not shown. The cylinder is provided near its upper end with a water gage at 6, and at such end with a removable top 7, there being a gasket 8, interposed between the upper end of the cylinder and the top. Bolts 9 and clamping nuts 10 clamp the gasket firmly between the cylinder and top so as to provide an air-tight joint therebetween.

11 is a valve casing screwed into the top 7, and 12 is the valve thereof and 13 a pipe leading from the casing to a pump of any suitable type. The pump shown is a hand pump, 14, as in most installations a hand pump will be employed.

When water is first run through the trap it will collect in pipes 1 and 4 and in the cylinder to the level of the bottom of drain pipe 5, and then the valve is opened and the pump operated, additional water being supplied to the drain to take the place of that which is raised in the cylinder by the pumping operation. Eventually the cylinder is filled, and then the operation of the pump is stopped and the valve is closed to maintain the head of water in the cylinder through atmospheric pressure on the water in pipes 1 and 4, *i. e.*, through the maintenance of a vacuum above the water in the cylinder. With the cylinder thus standing fully charged with water, the flow of a quantity of gasolene, for instance, from a garage or a cleaning establishment, into the drain will result in the discharge of an equal quantity of water from the trap, the gasolene rising to the top of the water in the cylinder as water escapes from the cylinder by way of pipe 4 and drain pipe 5, to the sewer. The gasolene collects on top of the water and the level of the latter can always be determined by a glance at the gage. Should the gasolene contain foreign matter of greater specific gravity than water, such matter will be precipitated and carried off through pipe 4. In passing up through the water to the top of the cylinder, the gasolene is further clarified, as in such passage it is in effect washed by the water. It will thus be apparent that dirt and other foreign matter which gives the gasolene a brown or black appearance, is separated therefrom within the cylinder, and that the clarified gasolene can be recovered, by starting up the pump and then opening the valve.

A trap of this character will be found serviceable in the recovery of many other liquids. For instance, it may be used as a cream or milk separator, in which case the pipe 5 might lead to a suitable tank instead of to a sewer. It will also be apparent that the principle of construction involved may be utilized in the recovery of oils from a creek or other stream running through oil fields.

A device of this sort possesses another advantage in that it prevents gasolene and other volatile hydrocarbons entering and vaporizing in sewers and making it hazardous to enter the same especially with torches. Furthermore, by keeping gasolene and oil out of the sewers, it eliminates dan-

ger of explosion therein through the throwing of a lighted cigar, cigarette or match into a street sewer as frequently occurs.

We wish it to be understood that we do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

We claim:—

1. A vacuum separating trap, comprising a liquid supply and discharge means, and a receptacle rising above the level of said supply and discharge means and communicating with both, and means for creating a vacuum in the said receptacle to raise liquid therein above the highest level which the liquid attains in its escape through said discharge means.

2. A vacuum separating trap, comprising a liquid supply and discharge means, a receptacle rising above the level of said supply and discharge means and communicating with both, a pump mechanism connected with the top of said receptacle whereby to create a vacuum therein to raise the level of the liquid to the top of the receptacle, and means for controlling communication between the interior of the receptacle and the vacuum-creating means.

3. A vacuum separating trap, comprising a liquid supply and discharge means, a receptacle rising above the level of said supply and discharge means and communicating with both, means for raising the level of liquid in the receptacle above the plane of the supply and discharge means, and means to maintain the liquid in the receptacle at said raised level.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM F. COAKLEY.
JOSIAH S. LEVENE.

Witnesses:
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