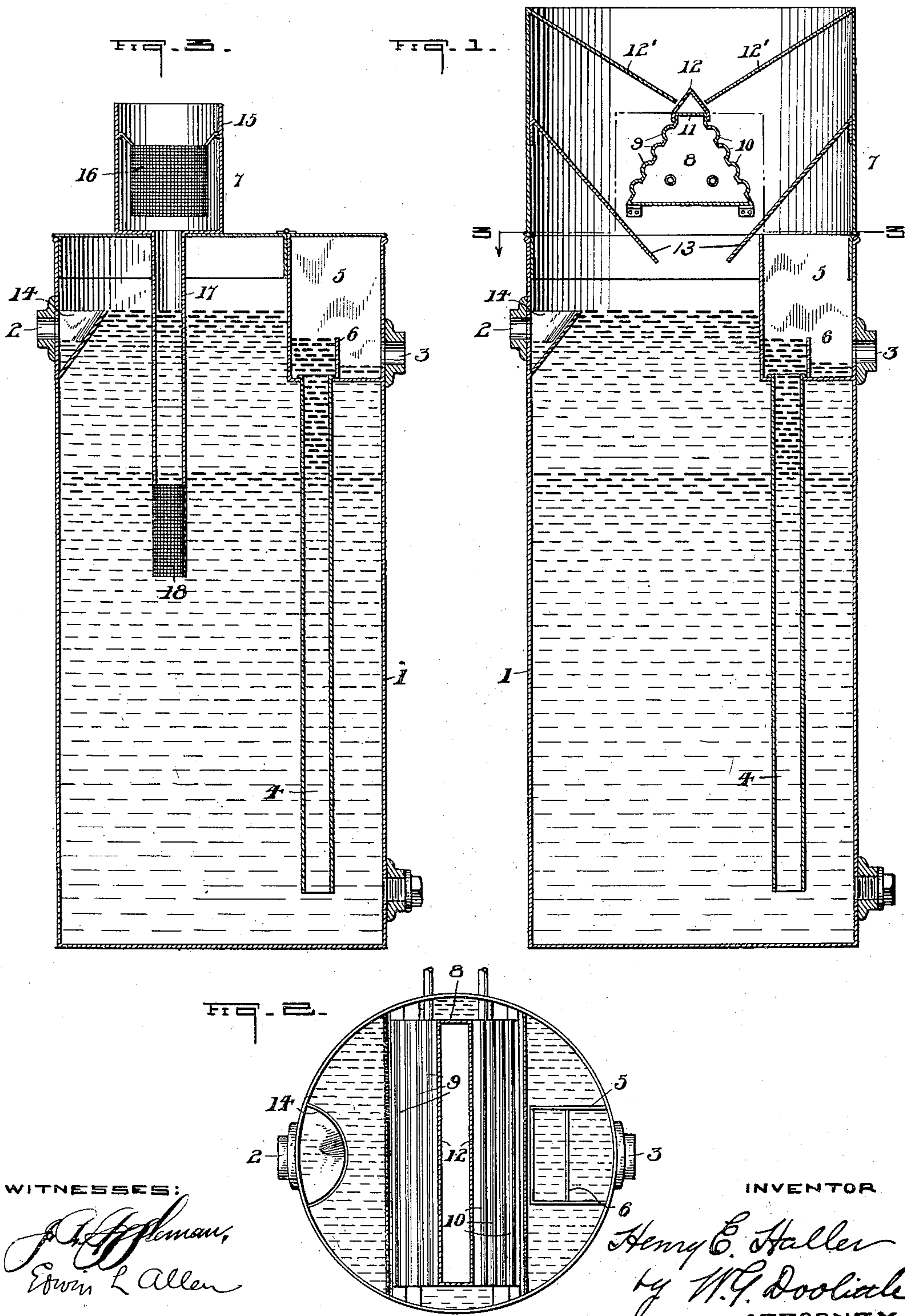


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PATENTED MAY 5, 1908.

H. E. HALLER.
APPARATUS FOR TREATING WASTE OILS.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR TREATING WASTE OILS.

No. 886,696.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed April 11, 1907. Serial No. 367,482.

To all whom it may concern:

Be it known that I, HENRY E. HALLER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Treating Waste Oils, of which the following is a specification.

The object of my invention is to provide new and improved apparatus for treating waste-oils, or oils that have been used in lubricating machinery or for other purposes whereby all foreign moisture and other impurities are extracted from the oils.

To this end the present invention consists of an apparatus for treating waste-oil, in the novel features of construction and in the combination of parts all as fully hereinafter described and claimed.

In the accompanying drawings which illustrate applications of my invention, Figure 1 is a central vertical sectional view of an apparatus embodying my invention; Fig. 2 a horizontal sectional view taken on line 3—3 of Fig. 1; and Fig. 3 a central vertical sectional view of a modified form of my invention.

Referring to the drawing, 1 designates a tank or receptacle of circular form, this tank, however, may be constructed of rectangular form. The tank is provided with an oil-outlet opening 2 and with a water-outlet opening 3.

In practice the tank is partially filled with water and oil, the oil resting upon the surface of the water in the main body of the tank as indicated by the drawing. In operating the apparatus it is very important to maintain constant water and oil levels and for this purpose I provide an automatic overflow comprising a pipe 4 extending upwardly from near the bottom of the tank to a chamber 5 located at or near the top of the tank. As shown, a bridge or partition plate 6 is provided in the chamber. Chamber 5 is in open communication with outlet 3 through which the excess or waste water is passed. If desired the pipe 4 may extend into the chamber 5, said pipe being cut away on one side to form an extended surface over which the water flows which will answer the same purpose as the bridge or partition plate 6.

The tank or receptacle 1 is provided with a removable cover 7 adapted to fit on the upper end of the same. This cover is provided with means for treating the waste-oil prepara-

tory to its introduction to the tank. In the drawing I have shown two methods of treatment and the respective covers or lids 7 provided with different means for treating the waste-oil.

In the form of Fig. 1, the cover is provided with a heating-chamber 8 preferably comprising two corrugated inclined plates 9 and 10 suitably supported by the cover and extending upwardly to a ridge 11. Ridge 11 is surmounted by an angular cap 12 similar in form to the form of the heating-chamber. This construction provides an air-space between the ridge of the heating-chamber and the cap. Chamber 8 is preferably heated by steam passing through a steam-coil located within the chamber. The oil to be treated is passed upon the heating-chamber in thin sheets or films and in order to accomplish this I provide inclined plates 12 extending downwardly to within a short distance from the inclined sides of the cap 12. 13 designate deflectors for directing the oil and water into or towards the center of the tank. By the employment of the form of apparatus shown by Fig. 1, I am enabled by passing the waste-oil onto the heating-chamber in thin sheets or films, to effect a complete separation of the moisture contained in the emulsified waste-oil, from the oil. The separated oil under this treatment will be deposited on the oil in the tank above the water level and the separated moisture or water will pass down through the treated oil into the water of the tank. In this form of apparatus as well as the form of Fig. 3, the oil-outlet opening 2 of the tank is guarded by a wall 14 over which the treated oil must flow before reaching the outlet 2. In practice the upper edge of wall 14 should preferably be slightly higher than the upper part of the outlet. Some waste-oils require a somewhat different treatment from that just described and in the form of Fig. 3, the removable cover 7 is provided with a hopper 15 having a strainer 16. The hopper communicates with the tank by means of a pipe 17 extending down into said tank. Pipe 17 has a second strainer 18 attached to its lower end. The treated oil in this instance after its passage through the means on the removable cover 7 is introduced below the surface of the water in the tank. The oil then passes upwardly through the water and collects on the surface of the same, the separated water and other foreign substances

passing downwardly and then up through the automatic overflow to the water-outlet 3.

What I claim is:

1. An apparatus for treating waste-oil comprising a receptacle adapted to be partially filled with water, an automatic overflow within the receptacle, and a detachable cover for the receptacle provided with means for heating the waste-oil preparatory to its introduction to the receptacle.

2. An apparatus for treating waste-oil comprising a receptacle adapted to be partially filled with water, a removable cover for the receptacle provided with a heating-chamber and means for spreading the waste-oil into a film or sheet preparatory to its passage onto the heating-chamber.

3. An apparatus for treating waste-oil comprising a tank adapted to be partially filled with water having a water-outlet, an oil-outlet, an automatic overflow in communication with the water-outlet, an oil-overflow wall in front of the oil-outlet, and a detachable cover provided with a heating-chamber and means for spreading the waste-oil into a film or sheet preparatory to its passage into the heating-chamber.

4. An apparatus for treating waste-oil

comprising a tank adapted to be partially filled with water having a water-outlet, an oil-outlet, an automatic overflow in communication with the water-outlet, an oil-overflow wall in front of the oil-outlet, and a removable cover for the tank provided with means for heating the waste-oil preparatory to its introduction to the tank.

5. An apparatus for treating waste-oil comprising a receptacle provided with inclined-plates, a heating-chamber located below the plates, and a cap for the heating-chamber interposed between the chamber and the lower edges of the inclined-plates.

6. An apparatus for treating waste-oils comprising a receptacle containing the oil to be treated provided with inclined plates, a heating-chamber having inclined sides, and a cap for the heating-chamber interposed between the chamber and the lower edges of the inclined plates.

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

HENRY E. HALLER.

Witnesses:-

W. G. DOOLITTLE,
MARGARET HUGHES.