(No Model.) 2 Sheets--Sheet 1.

H. H. GARRETT.

SEPARATOR FOR MINGLED OIL AND WATER.

No. 322,817. Patented July 21, 1885.

Fig. 1.

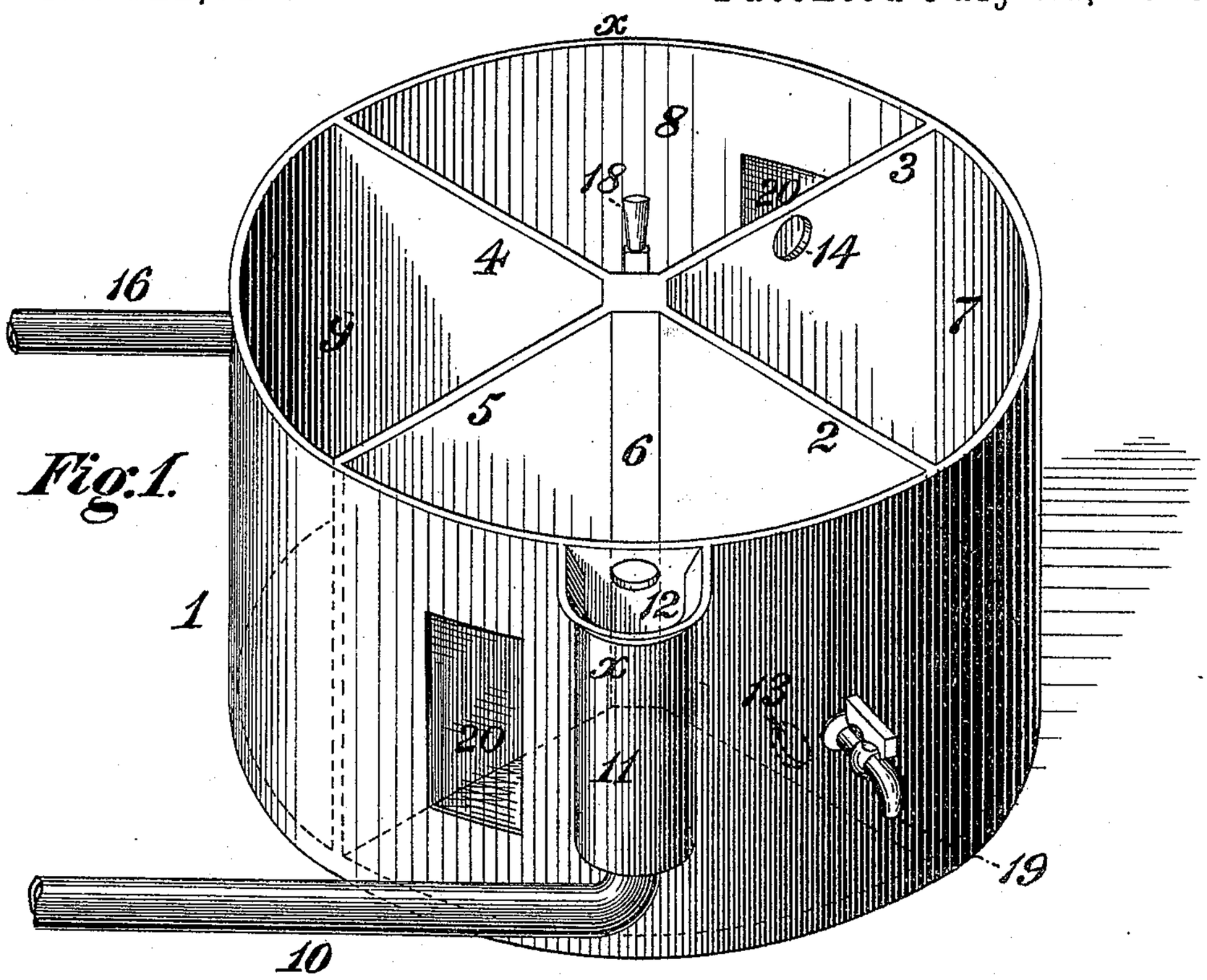
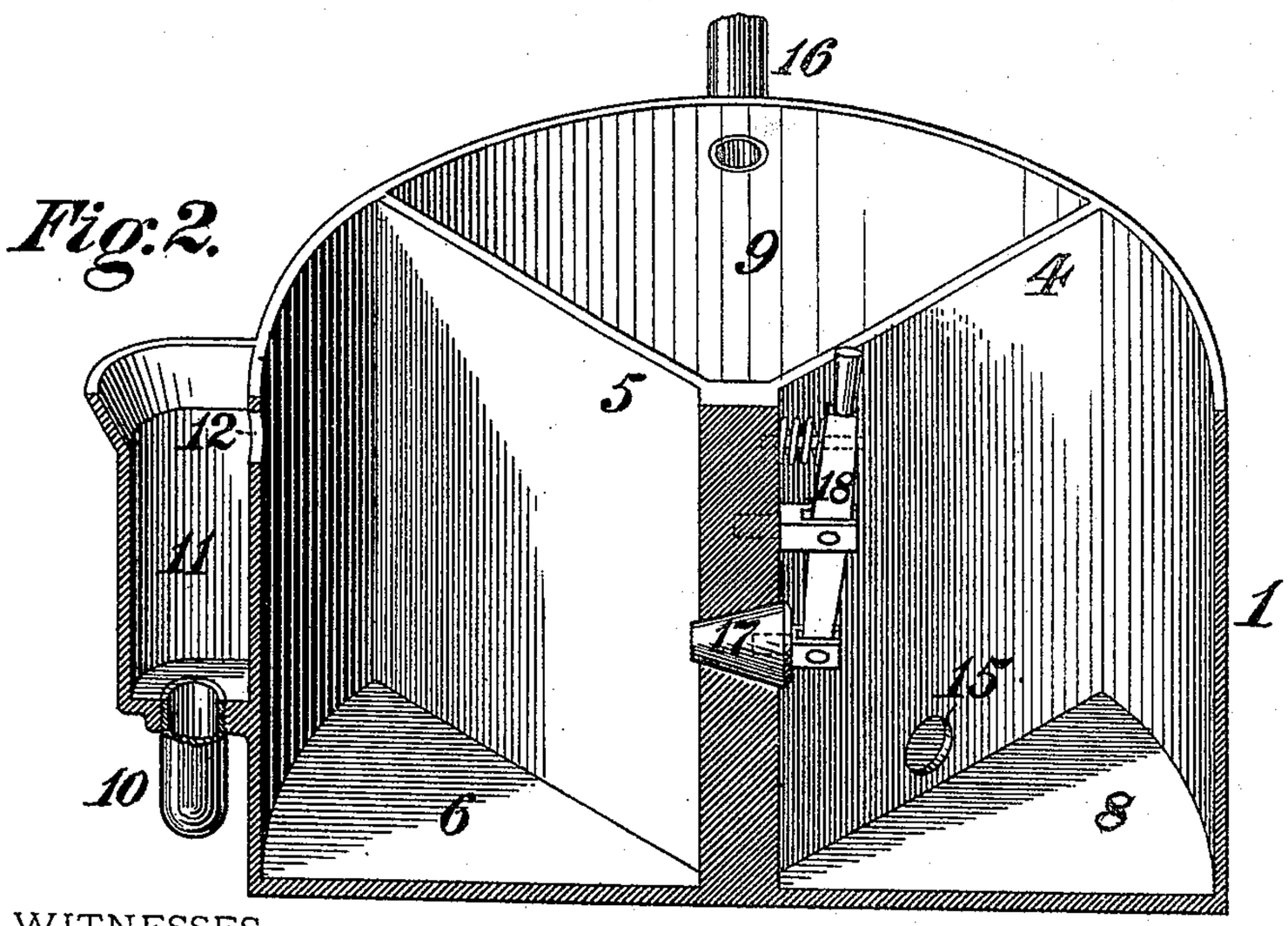


Fig. 2.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

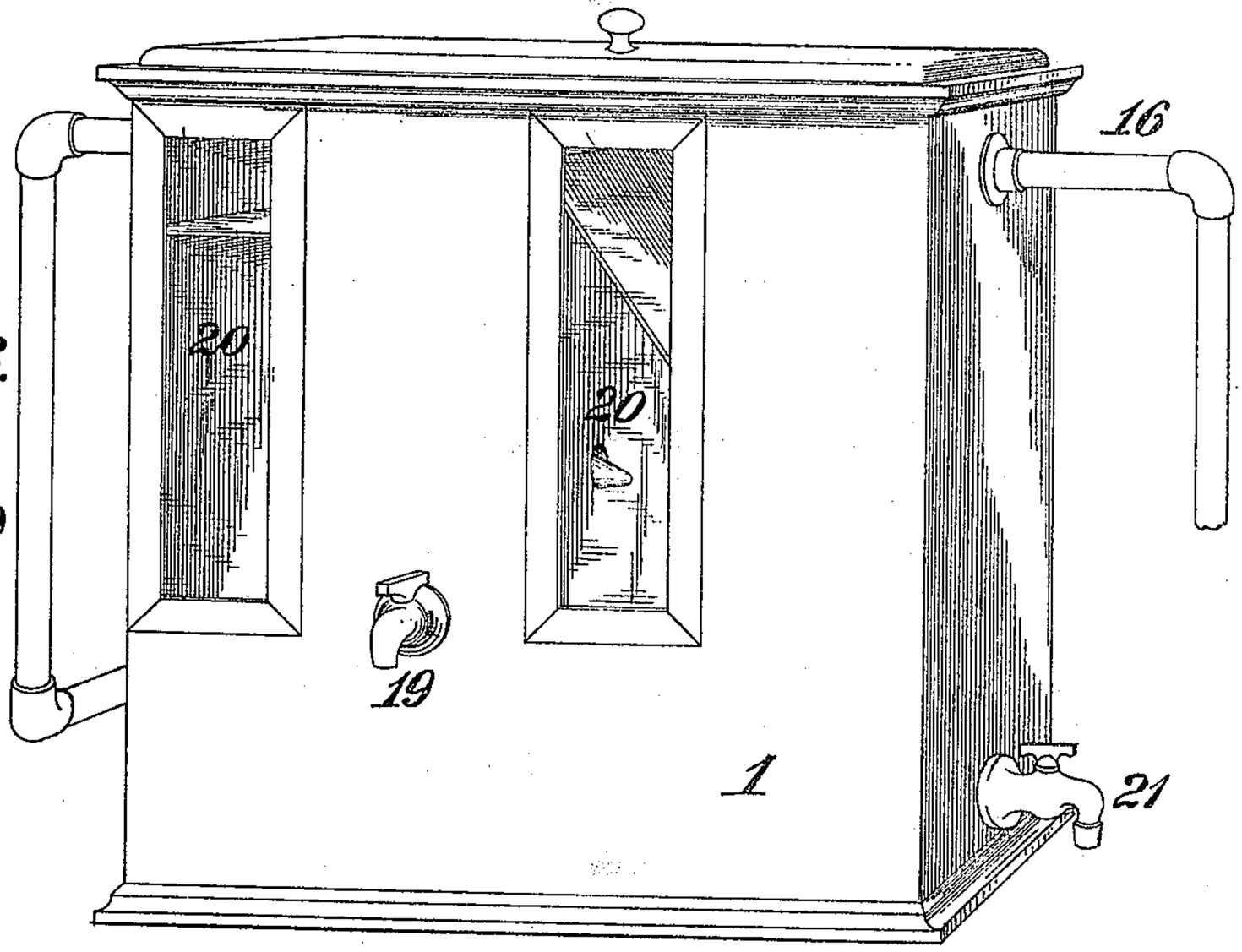
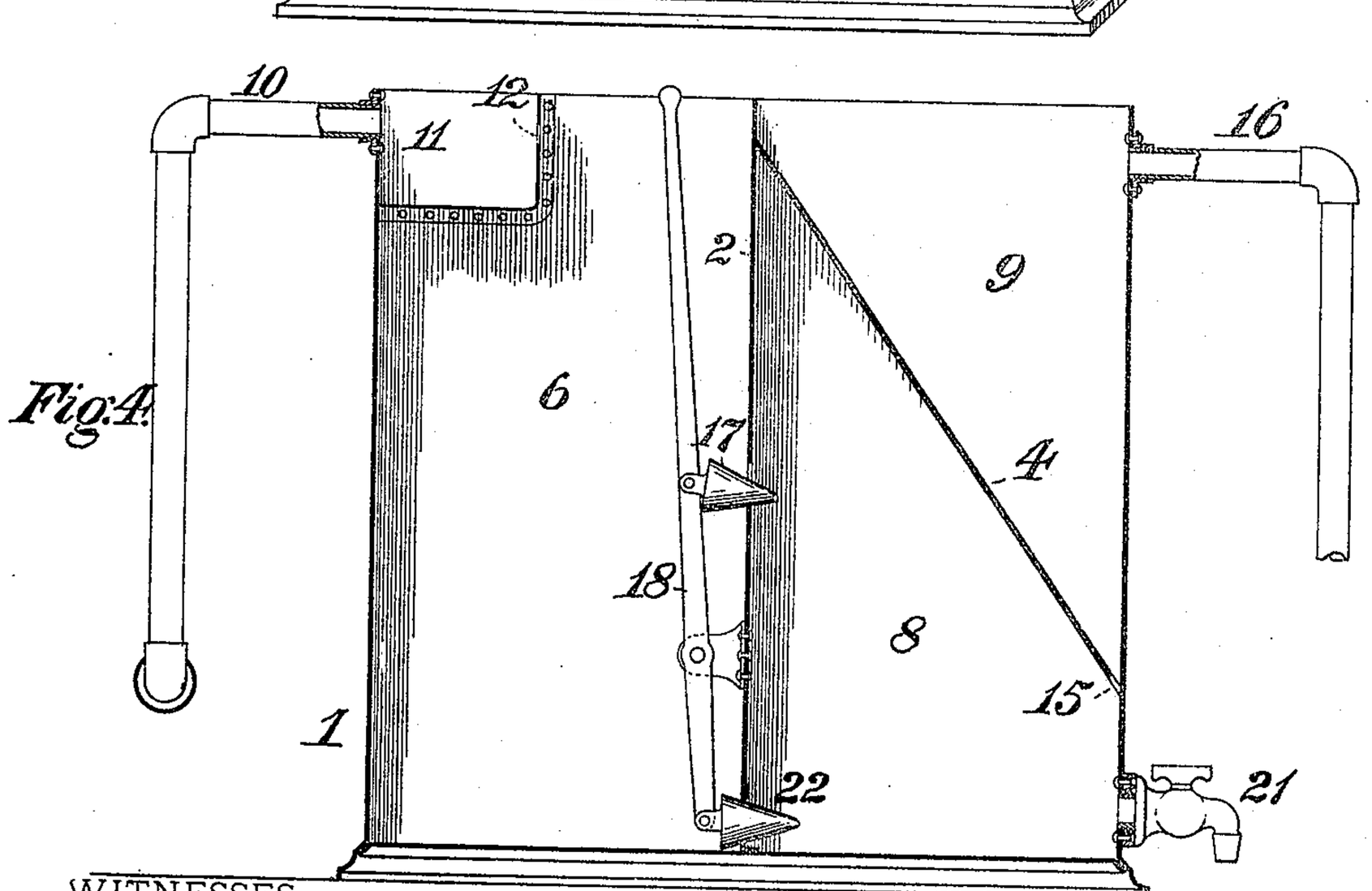


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY H. GARRETT, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE WESTINGHOUSE MACHINE COMPANY, OF SAME PLACE.

SEPARATOR FOR MINGLED OIL AND WATER.

SPECIFICATION forming part of Letters Patent No. 322,817, dated July 21, 1885.

Application filed June 17, 1885. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. GARRETT, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, a citizen of the United States, have invented or discovered certain new and useful Improvements in Separators for Mingled Oil and Water, of which improvements the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1, Sheet 1, is a view in perspective of a separator embodying my invention; Fig. 2, a perspective section through the same at the line *x x* of Fig. 1; Fig. 3, Sheet 2, a view in perspective illustrating a modification, and Fig. 4 a longitudinal central section through the same.

The object of my invention is to provide simple and effective means for separating mingled oil and water, more particularly designed for reclaiming and saving the oil contained in the excess or overflow escaping from the crank-cases of engines in which lubrication of the shaft-bearings and crank-pins is effected by causing the same to rotate in oil and water contained in a closed case or receptacle.

To this end my invention consists in a case or chest divided by partitions into two or more compartments communicating at top with an overflow-pipe and a water-delivery pipe, respectively, and communicating one with another by openings in the partitions.

The improvements claimed are hereinafter fully set forth.

In the practice of my invention I provide a case or chest, 1, which is divided by vertical partitions, as 2 3 4 5, extending from the bottom to or near the top of the case into a series of separate compartments, 6 7 8 9. The overflow-pipe 10, leading from the crank-case of an engine or other source of supply of the mingled oil and water, opens into a receiving-box, 11, which communicates through an opening, 12, near its top with the first oil-collecting compartment, 6, of the case 1. The compartment 6 communicates through an opening, 13, in the partition 2, near the bottom of the latter, with the second compartment, 7, which in turn communicates through an opening, 14, in the partition 3 with the third compartment, 8, which is likewise an oil-collecting compartment, and communicates through an opening, 15, in the partition 4, near its bottom, with the fourth or discharge compartment, 9, from the top of which a waste or discharge pipe, 16, leads the separated water to any suitable point of discharge.

A cock or valve, 19, is connected to the side of the first oil-collecting compartment, 6, for the purpose of drawing off, from time to time, the oil that accumulates therein, and said compartment communicates by an opening governed by a valve, 17, which is opened and closed by a hand-lever, 18, with the second oil-collecting compartment, 8, so as to enable the oil in said compartment to pass into the compartment 6, to be drawn off therefrom by the cock 19. The compartments 6 and 8 may be provided with vertical glass gage-tubes on their outer sides, or glass plates 20 may be fitted over vertical openings in the compartments, in order to indicate the depth of the body of oil therein and enable the attendant to remove it without drawing off at the same time any of the subjacent water.

In operation the mingled oil and water enters the receiving-box 11, in which the proportion of oil contained in the mixture can be estimated by inspection, and thence passes through the opening 12 into the first oil-collecting compartment, 6, which it fills nearly to the top, the surplus passing through the lower opening, 13, of the partition 2 into the compartment 7, which it fills, and passes through the upper opening, 14, of the partition 3 into the second oil-collecting compartment, 8, and after filling said compartment passes through the lower opening, 15, of the partition 4 into the discharge-compartment 9, from which the overflow of water escapes through the upper discharge-pipe, 16. In the passage of the mixture through the several compartments the oil is separated by gravity from the quiescent portions standing therein and rises to the top of the water, increasing in depth until it reaches the level of the cock 19, when it is withdrawn into a proper receptacle for use. The clear water escapes from the discharge-pipe 16 after the separation of the oil pro-

portionately to the supply, and may be entirely drawn off from the discharge-chamber from time to time, as desired, by a cock located near the bottom of said chamber.

In the modification shown in Figs. 3 and 4 the case 1 is rectangular in form, and is divided by a vertical partition, 2, and an inclined partition, 4, into two oil-collecting compartments, 6 and 8, and a discharge-compartment, 9. The overflow-pipe 10 is, as in the former case, led into a receiving-box, 11, having an upper opening, 12, communicating with the first collecting-compartment, 6, and a discharge-pipe, 16, is connected to the top of the discharge-compartment 9. The compartment 8 communicates with the compartment 9 by an opening, 15, at the bottom of the partition 4. Communication may be established either through an upper opening in the partition 2, governed by a valve, 17, or a lower opening governed by a valve, 22, said valves being connected to a hand-lever, 18, on opposite sides of its fulcrum, so that in the movement of said lever the opening of one valve will effect the closure of the other. In operation the lower valve is left open, and when sufficient oil has collected in the compartment 6 to reach to or below the lower side of the opening governed by the cock 19 it is drawn off through the same. When the oil in the compartment 8 reaches to or below the level of the opening governed by the upper valve, 17, said valve is opened and the oil passes into the compartment 6 to be drawn off by the cock 19. The compartments are provided with glass sight-plates 20, to indicate the lower level of the oil, and a waste-cock, 21, is located near the bottom of the discharge-compartments to enable all the water in the compartment to be drawn off from the case.

I claim herein as my invention—

1. The combination of a case or chest, inclosing an oil-collecting compartment having a lower discharge-opening, and a discharge-compartment receiving fluid from the oil-collecting compartment through said opening, a supply-pipe leading into the oil-collecting compartment, a discharge-pipe leading out of the discharge-compartment near its top, and an oil-delivery cock or valve connected to the oil-collecting compartment, substantially as set forth.

2. The combination of a case or chest, partitions forming a primary and a secondary oil-collecting compartment, and a discharge-compartment therein, passages delivering liquid from the lower portion of the primary oil-collecting compartment to the secondary, and from the lower portion of the secondary to the discharge-compartment, a supply-pipe leading into the primary oil-collecting compartment, a discharge-pipe leading out of the discharge-compartment near its top, a valve governing an opening or passage from the secondary to the primary oil-collecting compartment, and an oil-delivery cock or valve connected to the primary oil-collecting compartment, substantially as set forth.

3. The combination of a case or chest, partitions dividing said case into a series of compartments communicating alternately near their upper and their lower ends, a supply-pipe delivering into a compartment which discharges near its lower end, a discharge-pipe leading out of a compartment which receives supply near its lower end, a valve or valves governing openings between the compartments which discharge near their lower ends, and a delivery-cock connected to the compartment into which the supply-pipe delivers, substantially as set forth.

4. The combination of a case or chest, partitions forming a primary and a secondary oil-collecting compartment, and a discharge-compartment therein, a supply-pipe leading into the primary oil-collecting compartment, two valves governing openings in the partition between the primary and secondary compartments, one of said valves being located near the bottom of said partition, and the other at a higher level, a hand-lever connected to said valves on opposite sides of its fulcrum, so as to alternately open one and close the other valve, a passage establishing communication between the secondary oil-collecting compartment and the discharge-compartment near the bottom of their separating-partition, and a discharge-pipe leading out of the discharge-compartment near its top, substantially as set forth.

In testimony whereof I have hereunto set my hand.

HENRY H. GARRETT.

Witnesses:
J. SNOWDEN BELL,
R. H. WHITTLESEY.