

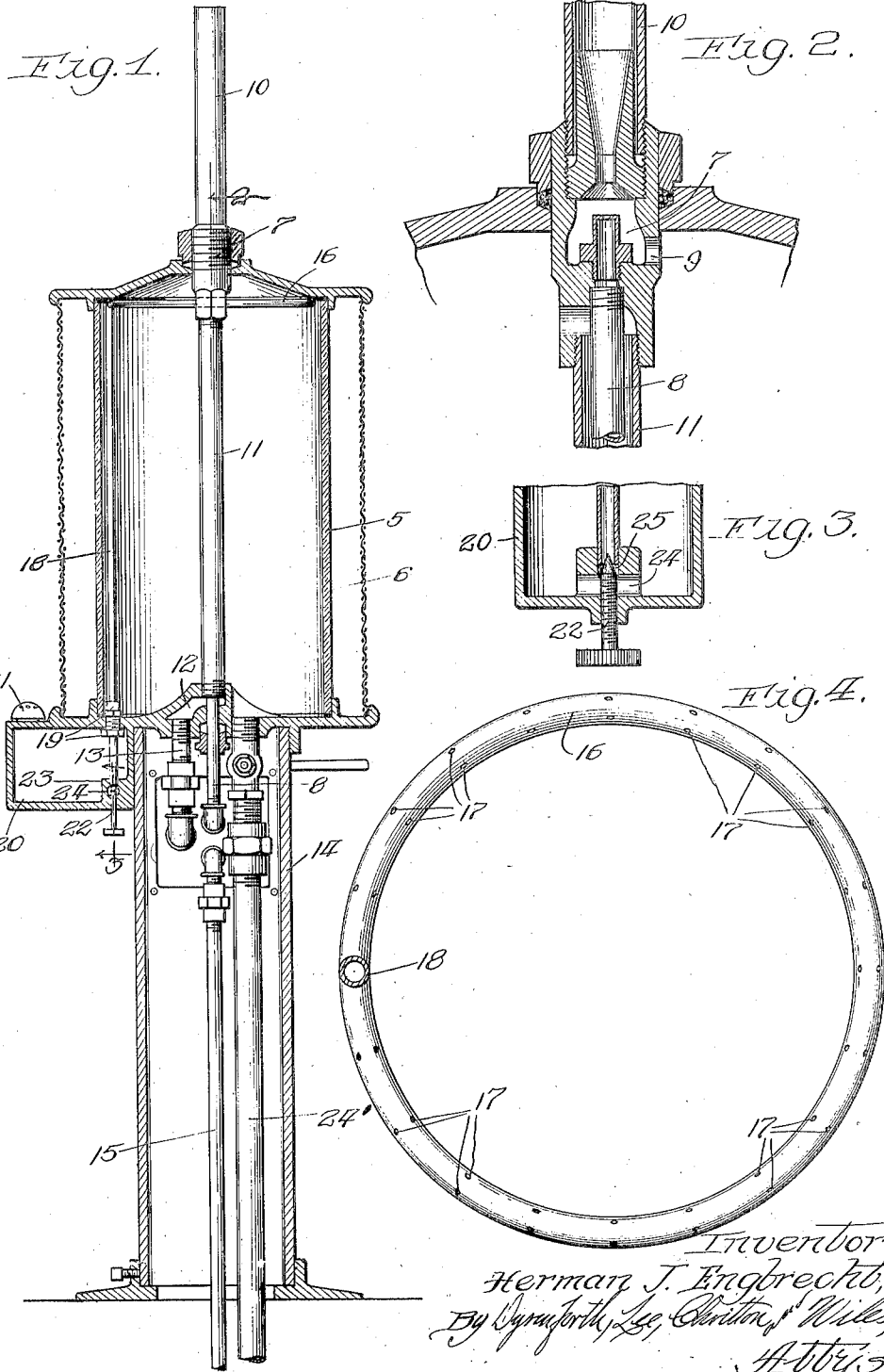
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CLEANSING MEANS FOR LIQUID RECEIVERS

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UNITED STATES PATENT OFFICE.

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CLEANSING MEANS FOR LIQUID RECEIVERS.

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My invention relates to cleansing means for receivers for liquid of such character, or in such condition that the walls of the receivers become fouled and removal of the accumulations is desired, especially in the case of receivers of glass the walls of which it is desired be kept clean to permit of observation of the contents of the receiver, the particular use for which I have devised my invention being in connection with receivers into which the lubricating oil from crank cases of automobiles is discharged in the operation of substituting fresh oil for the used oil, and especially in systems in which the used oil is drawn into the receivers by the exertion of suction therein.

My primary objects are to provide a novel, simple and economical construction of cleansing means for receivers in general; to provide for the ready cleansing of the side walls of the receivers; to provide a structure whereby the cleansing operation may be quickly effected; to provide a structure which will permit of the use of the suction action in the receiver for effecting the desired flow of the cleansing fluid; and other objects as will be manifest from the following description:

Referring to the accompanying drawing in which I have illustrated my invention as incorporated in an apparatus for removing the used oil from crank cases and of the type disclosed in my pending application for U. S. Letters Patent, Serial No. 13,819 filed March 7, 1925, and involving a fluid-pressure operated ejector-device for exerting suction in the receiver to draw the oil into the latter from the crank case, the suction producing means being in the form of a fluid-pressure operated ejector device:—

Figure 1 is a view in vertical sectional elevation of an evacuating apparatus of the type referred to and in which my present improvements are incorporated. Figure 2 is an enlarged broken sectional view taken at the line 2 on Fig. 1 and viewed in the direction of the arrow. Figure 3 is an enlarged broken sectional view taken on the line 3 on Fig. 1 and viewed in the direction of the arrow; and Figure 4, a bottom view of a spray ring through which the cleansing fluid is directed against the side wall of the receiver for effecting the cleansing operation, the pipe for conducting the cleansing fluid to the ring being shown in section.

In explanation of the illustrated apparatus, as regards those features forming the subject of my said application, it may be stated that 5 represents a receiver for receiving the used oil from the crank cases of automobiles, the side wall 6 of this receiver being constructed of glass to permit of the observation of the oil drawn into it. This receiver is provided in its top with a fluid-pressure operated ejector-device 7 supplied with compressed air from any suitable source through a pipe 8, the suction inlet of the ejector being represented at 9 and opening into the upper portion of the receiver 5, it being understood that compressed air discharging upward from the pipe 8 through the ejector-device 7 and out through the exhaust pipe 10, creates suction, through the opening 9, in the receiver 5. The pipe 8 is loosely surrounded by a pipe 11 which opens at its upper end into the upper part of the receiver 5 and at its lower end connects by a passage 12 in the bottom of the receiver 5, with a pipe 13 which leads to a flexible hose-line (not shown) preferably equipped with a fitting, as set forth in said application, to facilitate its connection with the lower drain openings of crank cases to be evacuated of their oil content, and to which the suction created in the receiver 5 is applied through the pipe 11, passage 12 and pipe 13 and the hose-line referred to, to transfer the oil in the crank case to the receiver 5. The air pipe is shown as leading outwardly from the standard 14 supporting the receiver 5, this being in accordance with said application wherein the pipe 8 is connected with a valve (not shown) and located exterior of the standard 14 for controlling the supply of air to the pipe 8, the valve just referred to connecting at its inlet with a pipe 15 which would lead from the source of compressed air for supplying the pipe 8 with the ejector operating pressure. In the continued operation of the apparatus described the used oil flowing into the receiver 5 causes accumulations to be produced on the glass side wall 6 which prevent visibility of the contents of the receiver, which is desired be exposed to view to observe the condition of the oil, my present improvements being provided for the purpose of effecting the cleaning of such accumulations from the side wall 6.

The preferred illustrated means provided

for this purpose comprise a hollow ring 16 located in the upper part of the receiver 5 and shown as provided with downwardly opening outlets 17 through which the cleansing fluid supplied thereto as hereinafter described, and which may be of any desirable character, as for example gasoline, discharges downwardly against the inner surface of the side wall 6 to flow downwardly in a continuous sheet. The ring 16 is shown as connected to, and supported from, the upper end of a pipe 18 which communicates with the interior of this ring and passes downwardly through the bottom of the receiver 5 to which it is rigidly secured as by the fitting represented at 19. The receiver 5 is provided with a receptacle 20 shown as cast integrally with the bottom portion of the receiver, for storing the cleansing fluid to be supplied to the spray ring 16, the top of this receptacle containing a filler opening equipped with a removable, vented, cap 21. The pipe 18 extends at its open, lower, end, in communication with the interior of the receptacle 20, valve means, represented at 22, being provided for controlling the entry of the cleansing fluid from the receptacle 20 into the pipe 18. In the particular arrangement shown the receptacle 20 has cast therewith, to extend into its interior, a boss 23 containing an opening 24 therethrough which communicates with the interior of the receptacle 20, and an opening 25 communicating with the opening 24 and into which the lower end of the pipe 18 extends, the valve 22, shown as a needle valve, screwing in the bottom wall of the receptacle 20 in line with the pipe 18 and cooperating with the lower end of the latter to control communication between this pipe and the receptacle 20.

To use my cleansing means described, the operator would manipulate the valve referred to as controlling the supplying of compressed air to the ejector device 7, to cause air to flow to the latter and produce suction in the receiver 5, the suction thus produced causing the cleansing liquid in the receptacle 20, assuming the valve 22 to be open, to rise through the pipe 18 and into the spray ring 16 from which latter the fluid discharges against the side wall 6 and washes away the accumulations above referred to on this wall. In this connection it may be stated that the receiver 5 would be provided with a valved drain represented at 24' and through which the contents of the receiver 5 would be discharged.

While I have illustrated and described a particular construction of device constructed in accordance with my invention, and have shown it as incorporated in a particular liquid receiver system, I do not wish to be understood as intending to limit it to the

structure shown or to its use in connection with this particular system, as the structure may be variously modified and altered and may be used with other systems, without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is:

1. The method of transferring a befouling liquid from one receptacle to another and cleansing the transfer receptacle which consists in creating a vacuum in the transfer receptacle to draw the befouling liquid thereto, draining the befouling liquid from the transfer receptacle and drawing into said transfer receptacle by the vacuum produced therein a cleansing fluid to cleanse the same.

2. In apparatus of the character set forth, the combination of a receiver for receiving befouling liquid and having a drain, and a single means for effecting, alternately, the transferring of such liquid from a receptacle to said receiver and the supplying of cleansing fluid to the latter.

3. In apparatus of the character set forth, the combination of a receiver for receiving befouling liquid and having a drain, and a single suction means for effecting, alternately, the transfer of such liquid from a receptacle to said receiver and the supplying of cleansing fluid to the latter.

4. In combination, a receiver, means for producing suction in said receiver, a conduit opening into said receiver and adapted for the transfer thereto, by the suction produced in said receiver, of liquid from a source thereof, and a conduit device located in the upper part of said receiver and opening into the latter and subjected to the suction therein, said conduit device being adapted for discharge of cleansing fluid supplied thereto by the suction action to said side wall.

5. In combination, a receiver, a device adapted to flow cleansing fluid supplied thereto to the side wall of said receiver, a supply receptacle of cleansing fluid, and means for exerting suction in said receiver and said device to draw the fluid from said supply receptacle into and through said device for discharge to said side wall.

6. In combination, a receiver, a device adapted to flow cleansing fluid supplied thereto to the side wall of said receiver, a receptacle for cleansing fluid carried by said receiver, a conduit device in the upper part of said receiver and adapted for discharge of cleansing fluid supplied thereto to said side wall, a pipe connecting said device with the lower portion of said receptacle and means for exerting suction in said receiver and device to draw the fluid from said receptacle into and through said device for discharge to said side wall.

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