

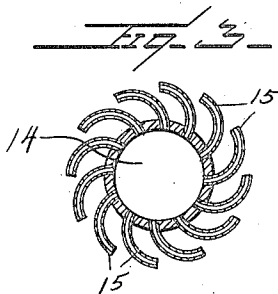
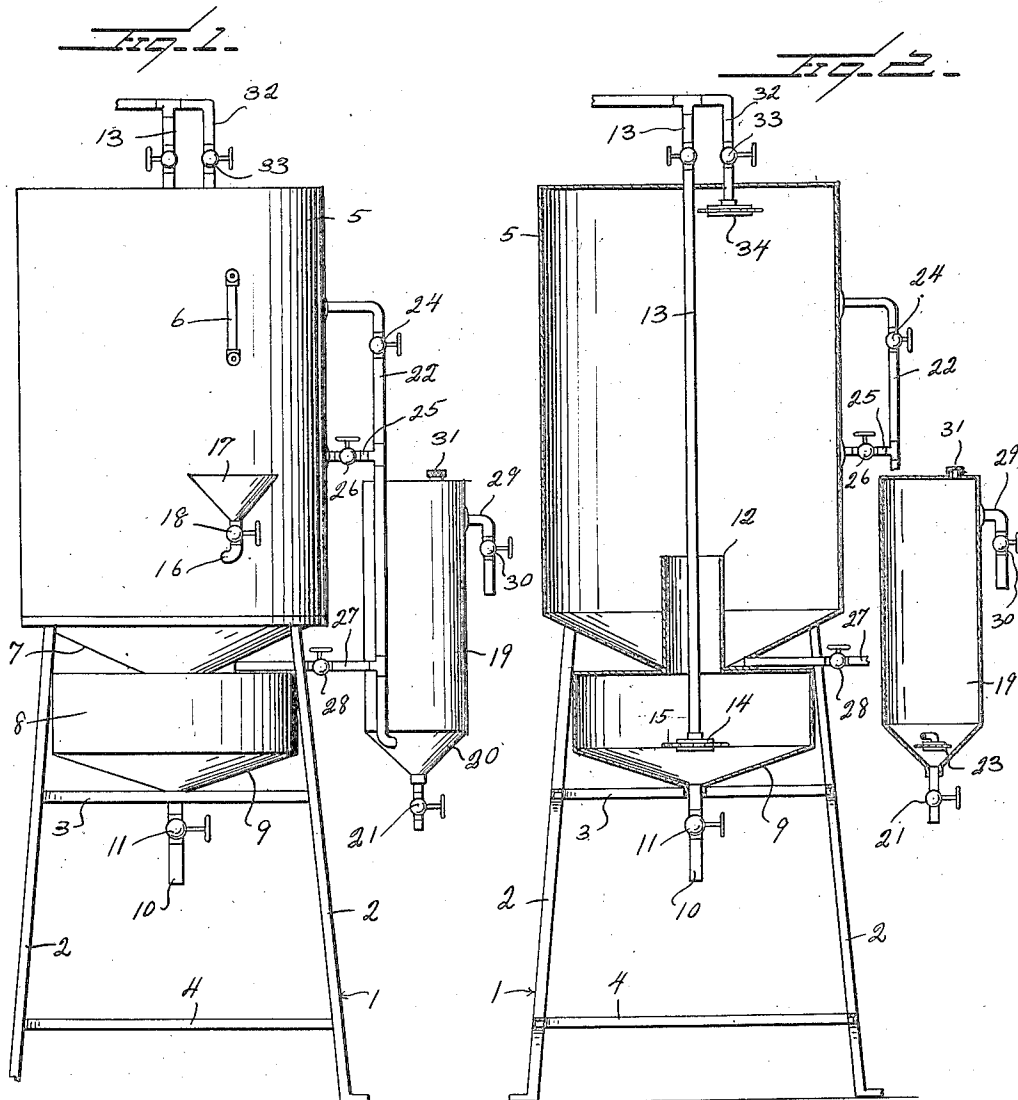
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W. C. GLOVER

GASOLINE PURIFIER

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GASOLINE PURIFIER.

Application filed September 21, 1921. Serial No. 502,104.

To all whom it may concern:

Be it known that I, WILLIAM C. GLOVER, a citizen of the United States, residing at Eldorado, in the county of Butler and State of Kansas, have invented certain new and useful Improvements in Gasoline Purifiers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to gasoline purifiers and has for its object the provision of novel means for purifying gasoline, particularly the gasoline used by dry cleaners and others so as to remove foreign matter and render the gasoline fit for re-use.

In my co-pending application filed July 11, 1921, Serial No. 483,940, I have shown and described a device for purifying gasoline by mixing the gasoline with an alkaline solution such as sal soda or the like whereby to remove the grease and other impurities from the gasoline, the arrangement being such that the dirt and foreign matter will sink to the bottom of the apparatus where it may be removed, while the cleansed gasoline may be removed from the upper portion of the device. In actual practice I have discovered that gasoline after being treated with caustic soda or other similar chemical retains a certain amount of the chemical in suspension and this matter, while small in amount, collects in the valves and connections of the apparatus and may at times remain in the gasoline intended as a cleaning fluid for clothes and the like in such quantity as to cause injury to the garment. It is with this fact in view that the present invention has been designed.

The essential object of the present invention is to provide means for washing the gasoline subsequent to its treatment by the caustic soda or other similar chemical, the invention taking into consideration the fact that the caustic soda or similar material is soluble in water while insoluble in gasoline.

Another object is the provision of a washing apparatus which might be used in conjunction with or as an attachment to the apparatus shown in the above mentioned co-pending application, though for clearness of illustration and explanation I have, in the accompanying drawings, shown the present invention as associated with a chemical

treating apparatus similar to that forming part of the above mentioned application.

In the accompanying drawings,

Figure 1 is a side elevation of my washing apparatus in association with a chemical treating apparatus;

Figure 2 is a longitudinal sectional view thereof; and

Figure 3 is a detail view of one of the spray devices.

Referring more particularly to the drawings, the numeral 1 designates a stand constructed of a plurality of legs 2 and connecting bands or rings 3 and 4. This stand supports a tank 5 which is here shown as cylindrical with a conical bottom, though it should be understood that any other shape might be used if preferred. This tank is entirely closed and is provided in one side with a gauge glass 6 by means of which the level of gasoline within the tank may be ascertained. The conical bottom 7 of this tank 5 is connected with the top of a lower tank 8 which has a conical bottom 9 provided with a discharge pipe 10 having a valve 11 interposed therein. Formed on the top of the lower tank 8 is a tubular extension 12 which extends into and connects with the interior of the tank 5, it being understood that this is the only means of communication between the two tanks.

Extending centrally through the tank 5 and tubular extension 12 downwardly to a point slightly above the conical bottom 9 of the tank 8 is a supply pipe 13 having journaled upon its lower end a spray head 14 from which extend radially curved spray tubes 15, the curvature of which is rearwardly to the direction of travel so that when liquid is ejected from the tubes 15 rotation of the spray head will occur, the speed of rotation depending upon the pressure under which the liquid is fed through the pipe 13. The pipe 13 is of course connected with any suitable source of supply of gasoline which may be pumped through the pipe 13 or which may have merely gravity pressure.

Leading into the lower portion of the tank 5 at a point slightly above the upper end of the tubular extension 12 is a pipe 16 with which connects a feeding funnel 17. A valve 18 is interposed at the juncture of the fun-

nel 17 with the pipe 16 whereby to control the communication therebetween, it being intended that this funnel 17 provide means for feeding a chemical solution such as caustic soda or the like into the tank 5.

In association with the mechanism above described, I employ a tank 19 which is closed and which has a conical bottom 20 provided with a drain valve 21. Leading from the upper portion of the tank 5 is a pipe 22 which extends downwardly along the side of tank 19, terminating within the conical bottom thereof and having its lower end carrying a spray head 23 which may be constructed similarly to the spray head 14 if preferred. A valve 24 is provided in the upper end portion of the pipe 22. Leading from the tank 5 at the intermediate portion thereof is a pipe 25 communicating with the pipe 22 and provided with a cut off valve 26, while leading from the juncture of the conical bottom 7 of the tank 5 with the tank 8 is a pipe 27 connected with the pipe 22 and provided with a valve 28. Leading from the upper end of the tank 19 is a draw off pipe 29 provided with a control valve 30. The tank 19 is furthermore provided with any suitable filling opening, indicated at 31, through which water may be introduced.

Extending into the top of the tank 5 I may prefer to provide a pipe 32 provided with a cut off valve 33 and provided interiorly of the tank with a spray head 34 of any ordinary construction.

In the operation of the device the tank 8 is filled with a chemical solution such as sal soda or caustic soda solution, this solution being introduced through the funnel 17 and pipe 16. The gasoline to be purified is introduced through the pipe 13 and the force of its passage will effect rotation of the spray head 14 which will result in thorough mixing of the gasoline discharging from the spray head arm 15 with the chemical solution whereby the grease and other foreign matter in the gasoline will be saturated with the chemical solution and sink to the bottom of the tank 8 where it may be drawn off through the pipe 10. The gasoline being of less specific gravity than the chemical solution will rise from the solution into the tank 5. The operation of the device thus far is the same as that of the device disclosed in my co-pending application. There is, however, a substantial difference from this point on for the reason that in the present case the gasoline after being thus treated receives additional treatment, as will be described.

The gasoline within the tank 5 may be drawn off either directly into the pipe 22 or through the pipe 25 or pipe 27, depending upon the level of the gasoline within the tank 5. The tank 19 is initially filled with

water to about half its height. Regardless of through which means the previously cleansed gasoline enters the pipe 22, the gasoline will pass out from the spray head 23 which will rotate in exactly the same manner as the spray head 14 and this will cause the gasoline issuing therefrom to be thoroughly agitated with the water in the lower part of the tank 19. Whatever caustic soda might remain in suspension in the gasoline passing from the tank 5 will then dissolve in the water while the absolutely pure gasoline, being of less specific gravity than water will pass upwardly through the water and collect in the top of the tank 19 from whence it may be drawn through the drain pipe 29. After the water within the tank 19 has become more or less saturated with the soda or other similar chemical, the water should be drawn off through the drain valve 21 and the supply replenished.

From the foregoing description and a study of the drawings it will be apparent that I have thus provided a simple and yet highly efficient apparatus by means of which gasoline may be chemically treated for removing grease, dirt and all foreign matter therefrom and additional means for subsequently removing whatever quantity of the chemical solution might remain in the gasoline so that after passing through my complete device the gasoline will be pure and will contain no substances which might unfit it for use in cleaning garments, or in fact for any purpose.

While I have shown and described the preferred embodiment of the invention, it is of course to be readily understood that I reserve the right to make such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the sub-joined claims.

Having thus described my invention, I claim:

1. In an apparatus for purifying gasoline or the like, a tank, a container below said tank, a neck or passage of less diameter than said tank leading from the center of the top of said container to the bottom of said tank and extending upwardly into said tank, and an intake tube leading into the lower part of said container and embodying means intermingling fluid introduced thereby with the contents of the container and directing the same toward the walls of the container.

2. In gasoline purifying apparatus, means for intermingling gasoline with a washing fluid of greater specific gravity and with which the gasoline is not miscible, including a tank having a substantially conical bottom, a container arranged below said tank and having curved side walls, a neck on said container of less diameter than the

container and extending upwardly into said tank, a feed pipe leading into said container and provided with a hollow spray head arranged axially of the container embodying
5 a plurality of similarly curved arms arranged in substantially the same plane, said arms being hollow and directing fluid passing therethrough from the spray head tangentially to the periphery of the arms and against the side walls of the container. 10

In testimony whereof I hereunto affix my signature.

WILLIAM C. GLOVER.