

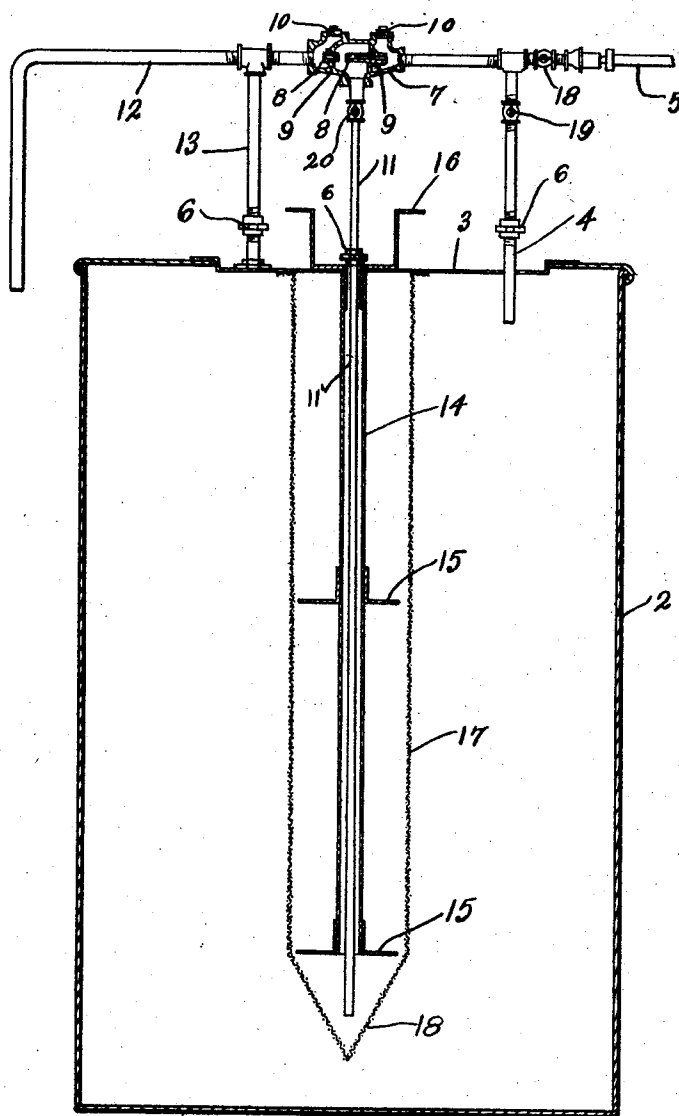
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SOAP SUDSING APPARATUS

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INVENTOR.

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## UNITED STATES PATENT OFFICE

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## SOAP SUDSING APPARATUS

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This invention relates to apparatus for dissolving materials directly in their containers or shipping receptacles, and more particularly the sudsing of soap and the like in a barrel or drum, whereby to run in water and take off the soap solution for any desired purpose. It is among the objects of the invention to provide an apparatus readily adaptable to a container such as to allow convenient removal of dissolved material in intermittent or continuous manner, as may be desired. Another object is the provision of equipment readily adaptable to containers of form such as in general use. Other objects and advantages will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, the invention, then, comprises the features hereinafter fully described, and particularly pointed out in the claims, the following description and the annexed drawing setting forth in detail certain structure embodying the invention, this being illustrative, however, of but one of the various ways in which the principle of the invention may be applied.

In said annexed drawing:—

The sole figure is a vertical sectional view showing an embodiment of the invention.

Referring more particularly to the drawing, there is shown a container 2, which may be of any usual or preferred character, for instance a steel drum or shipping barrel containing soap of soft type. A cover member 3, preferably of dimension to suitably fit the barrel head, or the opening provided therein, is arranged with a pipe connection 4 such as to enter the container. This inlet pipe is in turn connected with a source of water supply, for instance a pipe 5, and advantageously a union 6 may be interposed to afford ready connection and disconnection as desired. Communicating also with the water-pipe 5 is an ejector 7 having a jet or jets 8 of form which may vary somewhat, and which in the instance shown comprises two aligned jets each carried in a partition wall 9 separating off the central and end compartments, the latter having screw plugs 10 for instance, allowing access to the compart-

ments. Depending from the ejector is a suction-tube 11 of length to extend suitably to drain the container, and a discharge pipe 12 leads finally from the ejector to a convenient discharge point.

In order to further the mixing and dissolving action, agitating means is desirably also provided, and in the instance shown this comprises a movable member 14 having agitator blades 15, and preferably being in the form of a tubular member slidably mounted through the lid 3 and concentrically about the ejector suction-tube 11. The agitating blades 15 may take any convenient form, for instance a circular outstanding flange, in which perforations may also be provided if desired. In the form shown, the agitator member 14 carries at its upper end a projection 16 providing operating-handle means for manipulation of the agitator. In some instances, a blank pipe or rod 13 is desirably positioned so as to afford a further stabilizing support, particularly where the discharge pipe is more or less extended beyond the barrel.

In some instances, it is also desirable to enclose the ejection suction-tube and agitator in a shell, which may take the form of a tubular casing 17, perforated, either as a suitable mesh-work screen or perforated sheet metal. Advantageously, such casing may also be pointed with a tapering end 18. The pipe 11 will generally extend close to the bottom of the barrel.

In use, the lid 3 is positioned on the container 2, connections being made with the respective piping by the unions for instance, and the shell 17 being positioned in the contents of the receptacle. Preferably, the lower section 11' of the suction-tube is shipped embedded in the barrel, an outer cap or cover being provided for a protection and the unions 6 being sufficiently close to the head to be covered, and the member 16 being omitted. By now opening the valves 18, 19, valve 20 being closed, water is admitted through pipe 4 into the container to the amount desired, and in the case of soap the valve 18 may be closed and the water then be allowed to stand two or three hours. The

water mixes with the contents, dissolving the same. On now opening valves 19 and 20, and then valve 18, the suction-tube 11 draws the solution out, to discharge through pipe 12. Flow may thus be continued as long as the valve 18 is kept open. By up and down reciprocation of the agitator 16, 14, the blades 15 carried thereby may suitably mix and intermingle the soap and water, and further the solution action. Valve 19 regulates the amount of water introduced and valve 20 regulates the strength of solution. Once set to desired conditions, these require no further attention, and the system is operated or closed by head-valve 18.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the means stated in any of the following claims, or the equivalent of such, be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In apparatus of the character described, a container, a cover-closure therefor, a perforated casing extending from said closure into the container, a suction-pipe extending through said closure and within said perforated casing to near the bottom of the container, a connection on said closure for supplying water in contact with the top of the contents of the container, and a fluid-operated ejector on said closure in communication with said suction-pipe.

2. In apparatus of the character described, a container, a cover-closure therefor, agitating means in said container operable from said closure, a suction-pipe extending through said closure and within said agitating means to near the bottom of the container, a connection on said closure for supplying water in contact with the top of the contents of the container, and a fluid-operated ejector on said closure in communication with said suction-pipe for withdrawing the resultant solution from the bottom of the container.

3. In apparatus of the character described, a container, a cover-closure therefor, a connection on said closure for supplying water in contact with the top of the contents of the container, a suction-pipe extending from said closure to the bottom of the container, agitating means adjacent the suction-pipe, a perforated casing surrounding the suction-pipe and agitating means, and a fluid-operated ejector connected with the upper end of said suction-pipe for withdrawing the resultant solution from the bottom of the container.

Signed by me this 6th day of February, 1931.

PHILIP C. DOYLE.