July 28, 1953 A. A. SPELL 2,646,674

FILTER-AID DISPENSER

Filed May 8, 1951

Fig. 1.

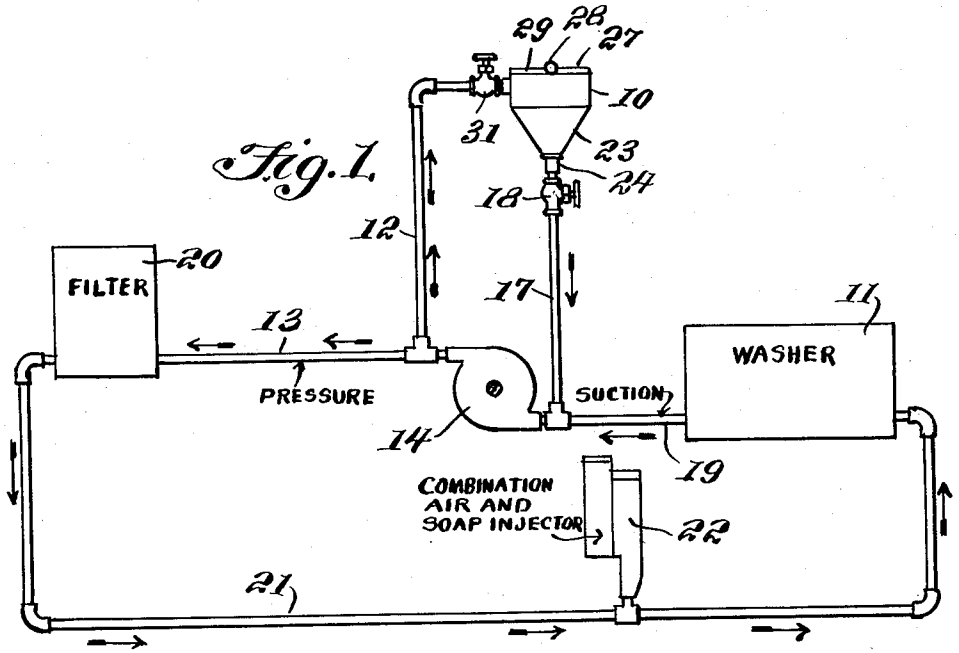


Fig. 2.

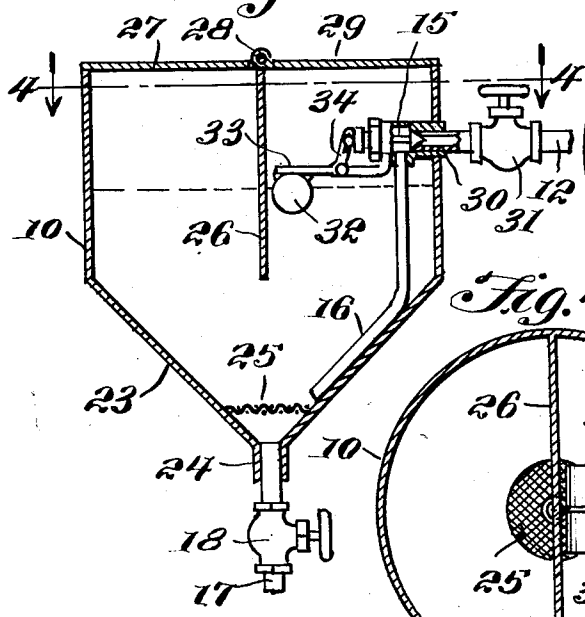


Fig. 3.

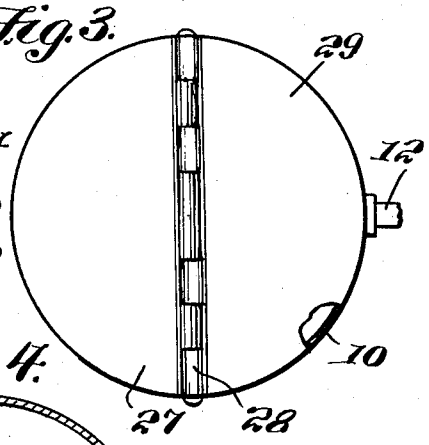
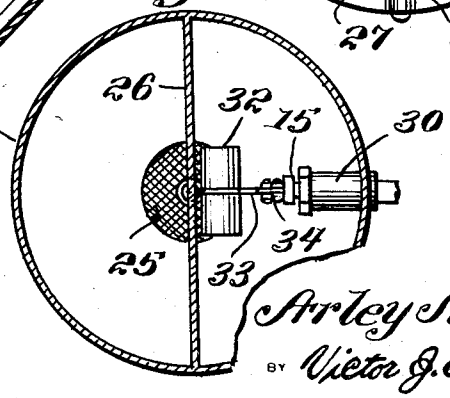


Fig. 4.



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FILTER-AID DISPENSER

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4 Claims. (Cl. 68—18)

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This invention relates to commercial dry cleaning machinery and equipment, and in particular a dispenser for introducing filter aid powder into dirty solvent as the solvent is pumped from a washer to a filter whereby the time required for a washing operation is substantially cut in half.

The purpose of this invention is to provide means for applying filter-aid powder to washing equipment without distributing the powder to the fluid in the washer.

In the conventional method of adding filter-aid powder to the fluid of washing machines and equipment the powder is dipped from a drum with a cup and spread across the washer in which the powder is mixed with the cleaning fluid in the washer. By this method some of the filter-aid powder adheres to clothes in the washer and the time required for mixing the powder with the solution in the washer delays the entire washing cycle. With this thought in mind this invention contemplates a dispenser in which filter-aid powder is thoroughly mixed by a small amount of dirty solution from a pump positioned between the washer and filter and with the dispenser connected in the line between the washer and pump the suction of the pump draws the filter-aid powder solution from the dispenser and discharges the resulting solution into the filter.

The object of this invention is, therefore, to provide means for constructing a filter-aid powder dispenser and also means for connecting a dispenser in the pipe line of a washing machine whereby the filter-aid powder is continuously introduced into the solution entering the filter as the solution is pumped from the washer to the filter.

Another object of the invention is to provide means for introducing filter-aid powder into a dirty solution being pumped from a washer to a filter without changing the parts of the washer, pump, or filter.

A further object of the invention is to provide a filter-aid powder dispenser which is of a comparatively simple and economical construction.

With these and other objects and advantages in view the invention embodies a tank having a conical shaped lower section with a float control inlet connection having a tube extended downwardly substantially to the lower end of the tank and having a screened outlet connection in the lower end of the tank whereby powder agitated by the said inlet connection is thoroughly mixed with the solution and discharged through the said outlet connection.

Other features and advantages of the invention

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will appear from the following description taken in connection with the drawings wherein:

Figure 1 is a diagrammatic view illustrating a washing system of the recirculating type in which solvent from the washer is pumped through a filter through pipes to which the filter-aid powder dispenser is connected, and from the filter a clean solution is returned to the washer, through a pipe having a soap injector therein.

Figure 2 is a vertical section through the filter-aid powder dispenser.

Figure 3 is a plan view of the dispenser.

Figure 4 is a sectional plan through the filter-aid powder dispenser being taken on line 4—4 of Fig. 2.

Referring now to the drawings wherein like reference characters denote corresponding parts the filter-aid introducing apparatus of this invention includes a dispenser 10 which is supplied by a solution from a washer 11 by a pipe 12 that is connected in the discharge line 13 of a pump 14 and from the pipe 12 the solution passes through a float controlled valve 15 and into the dispenser through a discharge line 16.

The solution passes back into the system through a pipe 17 having a flow control valve 18 therein and the pipe 17 extends from the lower end of the dispenser to a pipe 19 which connects the pump 14 to the washer 11.

The pipe 13 extends to a filter 20 and after being filtered the fluid passes back to the washer through a pipe 21, through which soap is injected into the system through a soap injector 22.

The dispenser 10 is formed as illustrated in Figs. 2, 3, and 4 with a cylindrical upper section having a conical shaped lower section 23 and the pipe 17 with the flow control valve 18 therein extends from a nipple 24 on the lower end of the section 23. The lower part of the section 23 is provided with a screen 25 above which the end of the discharge tube 16 is positioned whereby the solution discharged from the tube 16 agitates filter-aid powder in the dispenser.

The upper part of the dispenser is provided with a dividing partition 26 and a door 27 which covers a section of the dispenser on one side of the partition 26 is hinged at the point 28 with a similar section 29 covering the upper end of the dispenser on the opposite side of the partition.

The float controlled valve 15 is mounted in the upper section of the dispenser by a sleeve 30 and the pipe 12, which is provided with a valve 31 extends from the sleeve. The valve 15 is provided with a float 32 that is carried by an arm

33 and the float actuates the valve through a lever 34.

With the parts arranged in this manner the desired amount of filter-aid powder is placed directly in the dispenser and the solution discharged from the nozzle or discharge tube 16 in the dispenser creates turbulent action that rapidly dissolves the powder. The rate of flow of the solvent through the dispenser is adjusted by the flow control valve and the flow of the solvent into the dispenser is regulated by the float controlled valve.

The dispenser 10 may be formed of stainless steel or other suitable material.

It will be noted that by adding the filter-aid powder to the cleaning fluid direct as it flows from the washer to the filter unit a more uniform mixture is obtained, thereby producing a solution that is readily put through the filter and that also produces a clean, clear cleaning solution.

It will be understood that modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A filter-aid dispenser comprising a tank having a vertically disposed cylindrical upper section with a conically shaped lower section and having a nipple extended from the lower end of the said lower section, a vertically positioned transversely disposed baffle extended across the cylindrical upper section of the tank, a horizontally disposed screen positioned in the lower section of the tank, an inlet connection having a float control valve therein and having a depending discharge connection extended downwardly therefrom positioned in the upper end of the tank, an outlet connection extended from the nipple on the lower end of the tank, and a door on the upper end of the tank positioned on the side of the baffle opposite to that from which the inlet connection extends.

2. A filter-aid dispenser comprising a tank having a vertically disposed cylindrical upper section with a conically shaped lower section and having a nipple extended from the lower end of the said lower section, a vertically positioned transversely disposed baffle extended across the cylindrical upper section of the tank, a horizontally disposed screen positioned in the lower section of the tank, an inlet connection having a float control valve therein and having a depending discharge connection extended downwardly therefrom positioned in the upper end of the tank, an outlet connection having a flow control valve therein extended from the nipple on the lower end of the tank, and a door on the upper end of the tank positioned on the side of the baffle opposite to that from which the inlet connection extends.

3. In a filter-aid dispenser, the combination which comprises a tank having a vertically disposed cylindrical upper section with a conically shaped lower section and having a nipple extended from the lower end of the said lower section, a vertically positioned transversely disposed baffle extended across the cylindrical upper section of the tank, a horizontally disposed screen positioned in the lower section of the tank, an inlet connection having a float control valve therein and having a depending discharge connection extended downwardly therefrom positioned in the upper end of the tank, an outlet connection having a flow control valve therein extended from the nipple on the lower end of the tank, and a door on the upper end of the tank positioned on the side of the baffle opposite to that from which the inlet connection extends, said inlet connection extended from the discharge side of a pump in a pipe from a washer to a filter and the outlet connection extended to the suction side of the said pump.

4. In a washing system, the combination which comprises a washer, a filter connected by a pipe having a pump therein to the outlet side of the washer, a pipe having a soap injector therein connecting the filter to the intake side of the washer, a filter-aid dispenser having an inlet connected to the pipe extended from the washer to the filter at a point on the discharge side of the pump and having an outlet connected to the said pipe from the washer to the filter at a point on the suction side of the said pump, a float control valve in the dispenser and mounted in the said inlet connection thereof, a discharge tube in the dispenser extended downwardly from the said float control valve, a screen in the lower part of said dispenser, a door on the upper end of the dispenser, and a transversely disposed partition in the upper part of the dispenser separating the door from the float control valve.

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