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DUMP VALVE

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Fig. 1.

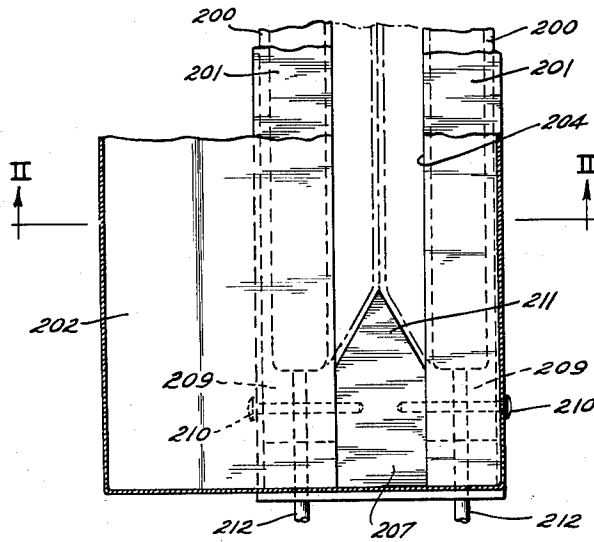
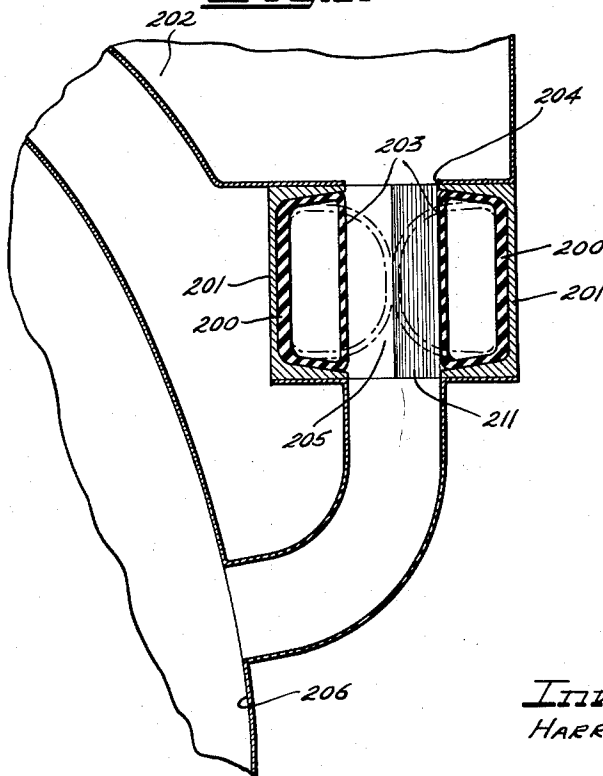


Fig. 2.



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DUMP VALVE

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3 Claims. (Cl. 251—61)

This invention relates to improvements in valves and more particularly relates to a new and improved dump valve particularly adapted for laundry machines and the like.

A principal object of the invention is to provide a novel and improved valve so constructed and arranged as to instantaneously dump the entire contents of a tank or the like upon opening of the valve.

A further object of the invention is to provide an improved form of dump valve in the form of two elongated inflatable tubes confined for a greater portion of the area thereof and having facing unconfined portions, seating on each other when inflated to block the flow of fluid thereby, and contractible when deflated, to instantaneously dump fluid from the tank.

This application is a continuation in part of my application Serial No. 753,235 filed August 5, 1958 and now abandoned.

These and other objects of the invention will appear from time to time as the following specification proceeds and with reference to the accompanying drawings wherein:

Figure 1 is a fragmentary plan view of a tank, with certain parts of the tank shown in horizontal section and certain other parts thereof broken away and looking along the discharge opening from the tank and showing a dump valve constructed in accordance with the invention in association with the discharge opening from the tank; and

Figure 2 is a fragmentary transverse sectional view taken substantially along line II—II of Figure 1.

In the embodiment of the invention illustrated in the drawing, I have shown in Figure 1 a fragment of a tank 202, which may be a tank for discharging a washing formula to a laundry machine or may be a container for the clothes container of a laundry machine or the like, or which may be any form of liquid holding tank in which it is advantageous to rapidly dump liquid therefrom.

In Figures 1 and 2, I have shown for illustrative purposes, an inflatable dump valve in the form of two facing flexible tubes 200, like the flexible tube 109 and generally rectangular in cross-section and extending along and recessed within facing channels 201, depending from the bottom of the tank 202. The flexible tubes 200 are enclosed by the channels 201 on three sides and have facing valve faces 203 extending along opposite sides of a discharge opening 204 along the margins thereof, each face of which forms a valve seat for the other face. The facing valve faces 203 of the flexible tubes 200 form opposite side walls of an elongated passageway 205 when the tubes are deflated. The passageway 205 leads from

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the tank 202, to a tub or shell 206 of a washing machine or the like.

As shown in Figure 6, the channels 201 are spaced apart at their ends by spacer blocks 207, engaging thickened end portions 209 of the flexible tubes 200. The spacer blocks 207 are each of the same construction, one spacer block only being herein shown and described. The spacer blocks 207 are brought into clamping engagement with the thickened end portions 209 by machine screws 210, extending through the webs of the channels 201 and said thickened end portions 209 and threaded within opposite sides of the spacer blocks 207. The spacer blocks 207 on each end of the tube each have an inwardly tapered inner end portion 211, tapered inwardly from opposite sides thereof and forming in effect a wedge engaged by the free walls or valve faces 203 of the inflatable tubes 200 and sealed by said valve faces against the leakage of fluid thereby. Individual air supply lines 212 lead through the thickened end portions 209 of the inflatable tubes, to accommodate inflation and deflation thereof under the control of suitable valve means (not shown), to respectively close and open the discharge opening 204.

It is, of course, understood that the air supply lines 212 only lead through one thickened end portion 209 of each individual inflatable tube, and that the opposite thickened end portion thereof is closed and secured to its associated channel in the same manner the thickened end portion 209 is secured thereto.

It may still further be seen that the valve of my invention effectively closes large area inlets when inflated and instantaneously opens the inlet throughout the entire area thereof when deflated, to accommodate the dumping of the entire fluid contents of a tank or the like in a minimum amount of time.

While I have herein shown and described one form in which my invention may be embodied, it will be understood that various modifications and variations of the invention may be effected without departing from the spirit and scope of the novel concepts thereof.

I claim as my invention:

1. In a dump valve particularly adapted for laundry machines and the like, a casing having an elongated rectangular discharge outlet extending therealong, facing channel-like members extending along opposite sides of said discharge outlet, each having an inflatable tube extending therealong and confined thereby, individual inlets into each tube to accommodate inflation thereof, and, said channel-like members confining a greater portion of the areas of said tubes to the channels of said channel-like members, to accommodate the inflation of said tubes to seat on each other and block the flow of liquid through said outlet.

2. In a dump valve, a valve casing comprising two spaced rigid facing channel-like members, said members forming a fluid passageway therebetween, the inlet of which is at the upper ends of said members and the outlet therefrom is at the lower ends of said members, an elongated flexible tube closed at its ends extending along each of said members and confined thereby for a greater part of the area of the outer surface thereof, and individual inlets into said tubes accommodating inflation thereof to seat on each other and block the flow of liquid through said passageway.

3. In a dump valve, a valve casing comprising two

spaced rigid facing channel-like members, a liquid inlet into the space between said members and an outlet from the lower ends thereof, a flexible tube extending along each of said members and confined thereby for a greater part of the areas of the outer surfaces thereof, individual air inlets into each of said tubes accommodating the inflation of said tubes to seat the free surfaces of tubes on each other, means clamping opposite ends of said tubes to said channel-like members including spacer blocks spacing said tubes and members apart and having wedge-like portions extending between said tubes and confining the end portions of said tubes to seal thereagainst upon inflation of said tubes.

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