United States Patent

Smith

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[54] GRAVITY OVERFLOW TUBE FOR AUTOMATIC CLOTHES WASHER

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[52] **U.S. Cl.** **68/208**
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[58] **Field of Search** 68/208, 184; 134/184

[56] **References Cited**

UNITED STATES PATENTS

2,723,550	11/1955	Belaieff	68/184
3,266,274	8/1966	Schwing	68/208 X

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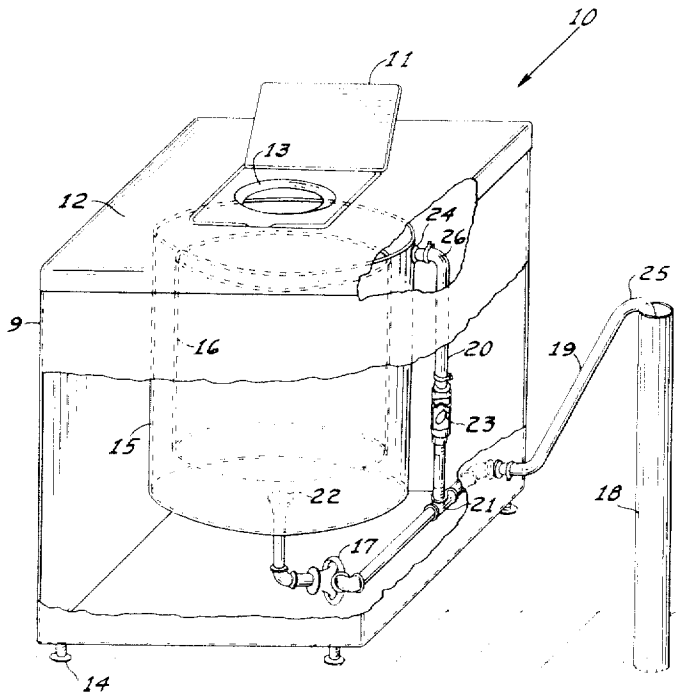
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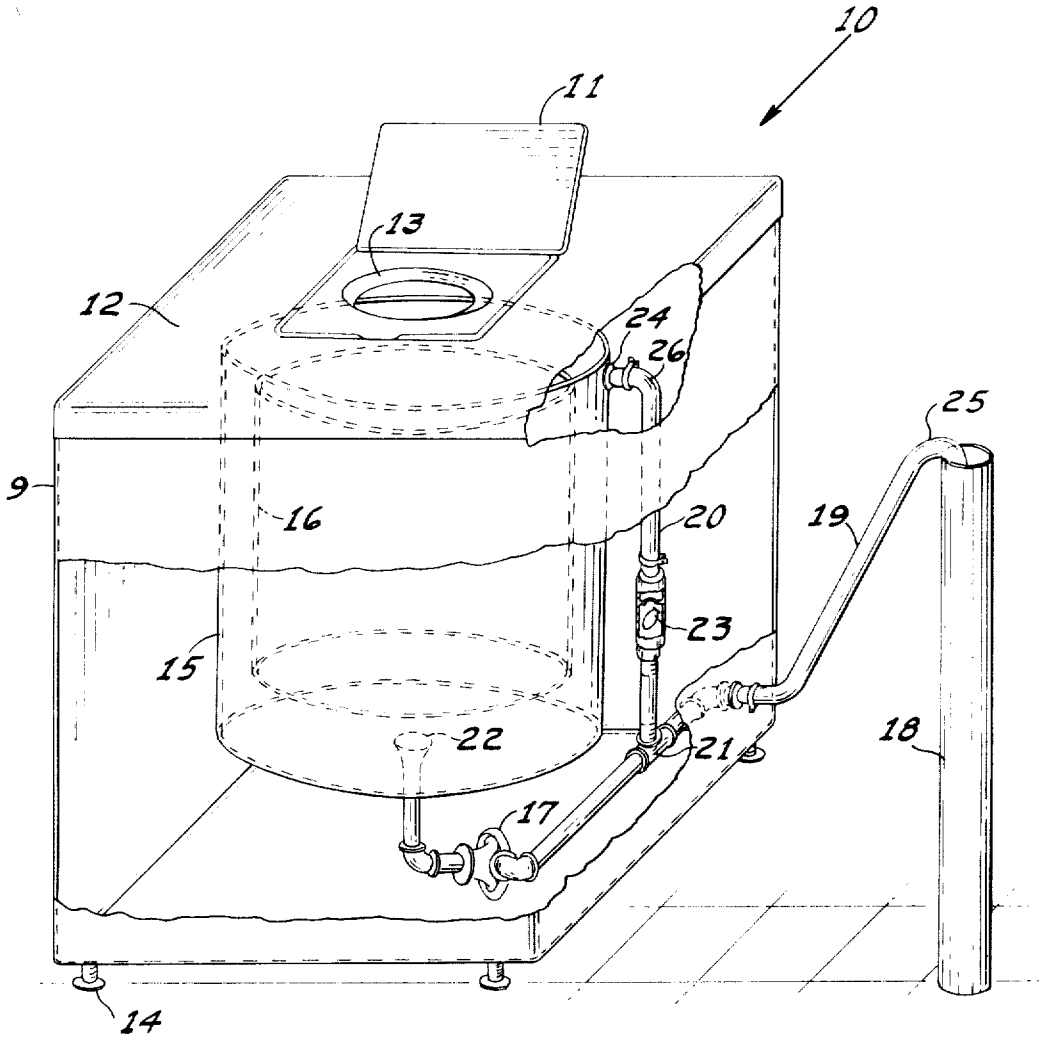
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[57] **ABSTRACT**

A tube for routing excess liquid in an automatic clothes washer to a suitable drain. A clothes washer having an outer tub positioned around an inner tub has a drain connected to an electric pump. A hose is connected to the outlet end of the pump providing for liquid drainage. A gravity overflow tube has a top end mounted to the top portion of the outer tub at a level above the hose. Excess water in the outer tub flows through the overflow tube by the force of gravity.

3 Claims, 1 Drawing Figure





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GRAVITY OVERFLOW TUBE FOR AUTOMATIC CLOTHES WASHER

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention is in the field of automatic clothes washers having overflow devices attached thereto.

2. Description of the Prior Art

Many automatic clothes washers have an outer tub positioned around an inner tub. The inner tub is utilized to hold the clothes washer and soap with an agitator centrally positioned therein for providing the washing action. Upon completion of the washing cycle or rinse cycle, the liquid within the inner tub is emptied into the outer tub at a very fast rate and high volume. An electric pump is then used to empty the liquid within the outer tub through a drain positioned in the bottom of the outer tub. Occasionally, the electric pump is unable to empty the liquid within the outer tub at a sufficient rate to prevent the outer tub from overflowing. Of course, the excess liquid within the outer tub then spills out of the tub onto the floor. The spillage of liquid on the floor may also result from a number of other factors. For example, many automatic washers have control solenoids and timers for controlling the inflow of water. The solenoid/timer may fail resulting in accumulation of excess liquid within the washer. Several devices have been provided to empty the excess liquid within a washer. U.S. Pat. No. 3,106,081 issued to Mitchell discloses a hollow agitator for transferring excess liquid within the inner tub to a drain. U.S. Pat. No. 3,397,716 issued to Anderson discloses an overflow device which activates the discharge pump before the liquid reaches the overflow level.

The present invention solves the above described problem by providing an inexpensive overflow tube which is attached to the top portion of the outer tub to receive the excess liquid within the outer tub. The excess liquid flows through the tube by the force of gravity. The tube may be installed on new or used clothes washers.

SUMMARY OF THE INVENTION

This invention is a gravity overflow tube for receiving excess liquid in the outer tub of an automatic clothes washer. An inner tub is positioned within the outer tub. Upon completion of the cycle, liquid within the inner tub is transferred to the outer tub and drained through a drain in the outer tub. An electric pump connected to the drain of the outer tub forces the liquid through an outlet hose. The overflow tube is sealingly mounted to the top of the outer tub at a level higher than the outlet end of the hose. A check flap valve may be installed in the overflow tube to allow gravity liquid flow in the tube only from the top of the outer tub to the bottom end of the tube. A coupling is provided to connect the overflow tube to the outlet hose.

It is an object of the present invention to provide an overflow tube which empties excess water in the outer tub of an automatic clothes washer by the force of gravity.

It is a further object of the present invention to provide a gravity overflow tube which will prevent spillage of excess water in an automatic clothes washer.

In conjunction with the above objects, it is an object of the present invention to provide an inexpensive gravity overflow tube which may be quickly and easily installed on new or used automatic clothes washers.

Related objects and advantages of the present invention will be apparent from the following description.

BRIEF DESCRIPTION OF THE DRAWING

The FIGURE is a fragmentary perspective view of an automatic clothes washer incorporating the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawing and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated device, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

Referring to the FIGURE, there is shown a fragmentary perspective view of an automatic clothes washer **10** having a front wall **9** with controls (not shown) located thereon. The top wall **12** of washer **10** has a door **11** hingedly mounted thereon for closing hole **13** which receives the clothes placed within the washer. Washer **10** has adjustable feet **14** located on its bottom corners for leveling and supporting the washer. An inner tub **16** is suspendedly mounted within an outer tub **15** also suspendedly mounted within washer **10**. The washing action is accomplished in inner tub **16** and the liquid therein is then emptied into outer tub **15** upon completion of the cycle. An electric pump **17** is mounted at the bottom of washer **10** and is connected to drain hole **22** of outer tub **15**. Connected to the outlet of pump **17** is outlet hose **19** which has an upper curved end **25** received by hollow drain pipe **18**. Pump **17** is operable to empty the liquid and suds within tub **15** through drain **22** and hose **19** emptying into pipe **18**.

A gravity overflow tube **20** has a top end sealingly mounted to and through the top portion of outer tub **15** by a conventional clamp **24**. Clamp **24** is sealingly mounted to tub **16** and sealingly receives overflow tube **20**. The top end **26** of tube **20** is positioned at a level higher than top end **25** of hose **19**. Thus, when the liquid within tubs **15** and **16** rises sufficiently, the liquid will enter top end **26** and flow through tube **20** by the force of gravity. The bottom end of tube **20** may be connected to a suitable drain such as drain pipe **18**. It is also possible as shown in FIG. **1** to connect the bottom end of overflow tube **20** to hose **19** by coupling **21**. For example, a conventional hollow T-shaped coupling **21** may be connected to hose **19** and to tube **20**. Thus, the excess liquid will flow through tube **20** entering coupling **21** and hose **19**. Tube **20** may be produced from a suitable material such as plastic or rubber. A conventional check flap valve **23** may be mounted within tube **20** to prevent liquid flow from coupling **21** to top end **26**. This valve would allow liquid flow in tube **20** only from top end **26** to coupling **21**. Thus, liquid force applied by pump **17** would force all of the liquid out through hose **19**. It is understood that valve **23** is not necessary for the operation of the present invention and is provided only as an added feature.

Overflow tube **20** provides a very dependable device since the liquid flows through the tube only by the force of gravity. It will be obvious from the above description that the present invention provides an overflow tube which empties excess water in the outer tub of an automatic clothes washer by the force of gravity. It will be further obvious from the above description that the present invention provides a gravity overflow tube which would prevent spillage of excess water in an automatic clothes washer. In addition, it will be obvious that the tube is inexpensive and easy to install on new or used automatic clothes washers.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all changes and modifications that come within the spirit of the invention are desired to be protected.

The invention claimed is:

1. The combination of:

a top loading automatic clothes washer having an outer tub and an inner tub, said outer tub having an opened top end and a bottom end and being positioned under and around said inner tub to receive liquid therefrom;

an electric pump connected to said bottom end of said outer tub and operable to force said liquid from said outer tub;

a hose connected to said pump and having an outlet end; and

a gravity overflow tube having a first end connected to said hose and a second end mounted to and sealingly through said outer tub immediately adjacent said top end of said outer tub at a level higher than the level of said outlet end of said hose, said liquid flows through said overflow tube only by the force of gravity.

2. The combination of claim 1 and further comprising:

a coupling connected to said tube and to said hose;

a check flap valve mounted in said tube allowing liquid flow

in said tube only from said second end of said tube to said coupling and said hose; and,

a clamp sealingly embracing said second end of said tube being fixedly and sealingly mounted to said top end of said outer tub.

3. The combination of claim 2 wherein:

said second end of said gravity overflow tube is at a level higher than said inner tub which has an opened top end for said water to overflow into said outer tub and into said gravity overflow tube.

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