

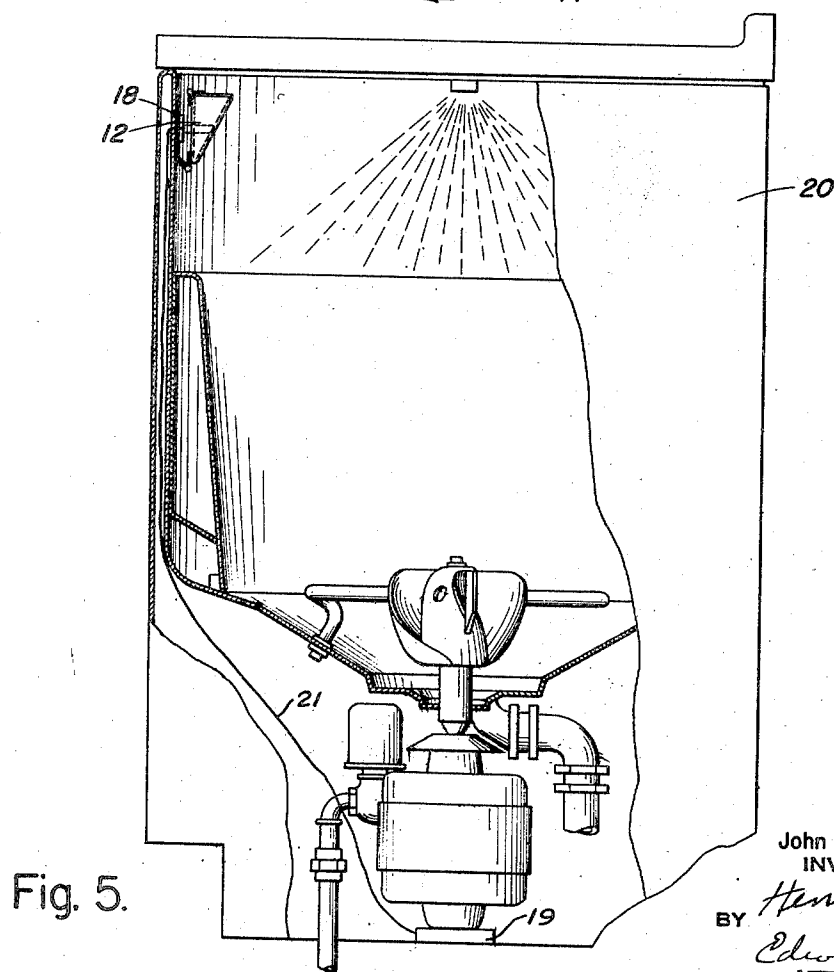
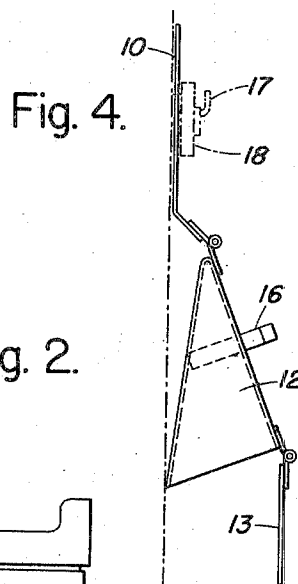
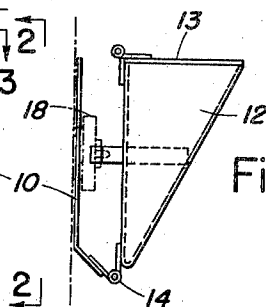
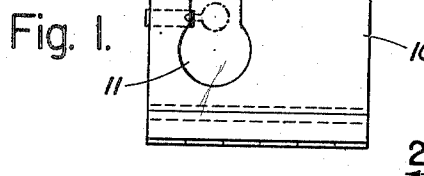
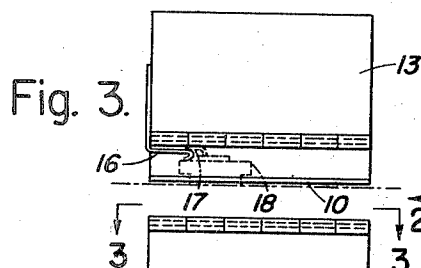
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DETERGENT DISPENSER

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1

2,709,536

DETERGENT DISPENSER

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1 Claim. (Cl. 222—70)

The present invention relates to a device for dispensing both liquid and solid detergents in automatic dishwashing machines.

In automatic dishwashing machines, it is essential that the required amount of detergent be dispensed at the proper time. Some automatic machines have an automatic dispenser which is activated by a cam on the timer mechanism. It is essential that the detergent be retained in the dispenser until the beginning of the washing phase of the cycle. In some machines there is a pre-rinse before washing which removes and flushes some of the loosely held soil down the drain and clears the pipes of cold water. With present dispensers, water can enter and rinse away part or all of the detergent, especially if it is in liquid form, before the washing part of the cycle.

It is, therefore, an object of the present invention to provide a detergent dispenser which retains detergent out of contact with the water until the washing cycle.

It is a further object of the present invention to provide a detergent dispenser capable of holding liquid or solid detergent and dispensing it at the proper time.

These and other objects are attained by the present invention which is directed to a device comprising a closed receptacle held in a vertical position on the inside of a dishwashing machine and capable of being released at a predetermined time in the washing cycle so that the detergent is admitted to the wash water.

A preferred embodiment of the invention is illustrated in the drawings, but variations and substitutions may be made within the scope of the claim.

Figure 1 is a rear plan view of the device showing a plate by which the device is attached to the washing machine.

Figure 2 is a side view of the device of Figure 1 showing the dispenser in position before release.

Figure 3 is a top view of the device.

Figure 4 is a side view of the device in discharge position.

Figure 5 is a side view, partly in section, of an automatic dishwashing machine combined with the detergent dispenser of the present invention.

With reference to Figure 1, there is shown a base plate 10 having a keyway 11 adapted to fit over a slotted key on the automatic washing machine.

It will be seen from the drawings that the detergent dispenser is preferably located on the inside of the washing machine near the top thereof.

Figure 2 discloses a side view of the device showing a bin 12 having a hinged cover 13 and having hinges 14 at the bottom thereof attached to the base plate 10.

2

At Figure 3 there is shown a top view of the device showing a spring clip 16 adapted to hold the bin in its vertical position until the said spring clip is released. In Figures 2 and 3 there is shown in dotted lines a key 18 which is a part of the washing machine. Through this key and rotatable therein is a latch 17 which is adapted to hold the bin in a vertical position by means of the spring clip until the washing cycle is reached. At that time the timing mechanism of the washing machine actuates the latch 18 allowing the bin to drop downwardly and open, as in Figure 4.

Figure 4 shows the bin in released position with the cover 13 open.

In Figure 5 there is shown a combination of the detergent dispenser with one type of automatic washing machine. Not shown in detail is a cam-actuating mechanism passing through the walls of the washing machine and adapted to turn through a portion of an arc when the detergent is to be released. This apparatus is conventional for a number of machines on the market, and is controlled by a timing device, the location of which is shown by 19 acting through cable 21 to effect actuation of the latch 17 through key 18 so as to release the detergent at the proper time in the washing cycle.

It will be seen that my improved dispenser is a completely enclosed liquid-tight bin which is adapted to contain a liquid or powder detergent and to keep it away from the water in the washing machine until the timing mechanism releases it. In operation the bin is placed in its vertical position by hand by forcing the spring clip behind the latch. The cover is then raised, the desired amount of detergent put into the bin, and the cover closed. The dishwasher is started, and when the timer actuates the cam which rotates the latch releasing the spring clip the dispenser bin will invert, the lid will drop open, and the contents will discharge into the wash water. In this inverted position the wash water rinses all of the detergent out of the cup. The dispenser remains inoperative for the remainder of the cycle, and the cup is thus cleaned, dried and prepared for use in the next cycle of the dishwasher.

I claim:

An automatic detergent dispensing device comprising a water-tight wedge shaped receptacle having a hinged cover across the top and attached at its lower apex to a supporting bracket by means of a hinge so that the force of gravity tends to force said receptacle into an inverted position with the cover open, means for releasably holding said receptacle in an upright position at which the cover is held closed by the force of gravity, means controlled by a timing device for releasing said receptacle from said upright position at a predetermined time so that it swings around its hinge support means to the inverted position through the force of gravity and discharges its contents.

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