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DISPENSING DEVICE FOR GRANULAR MATERIAL

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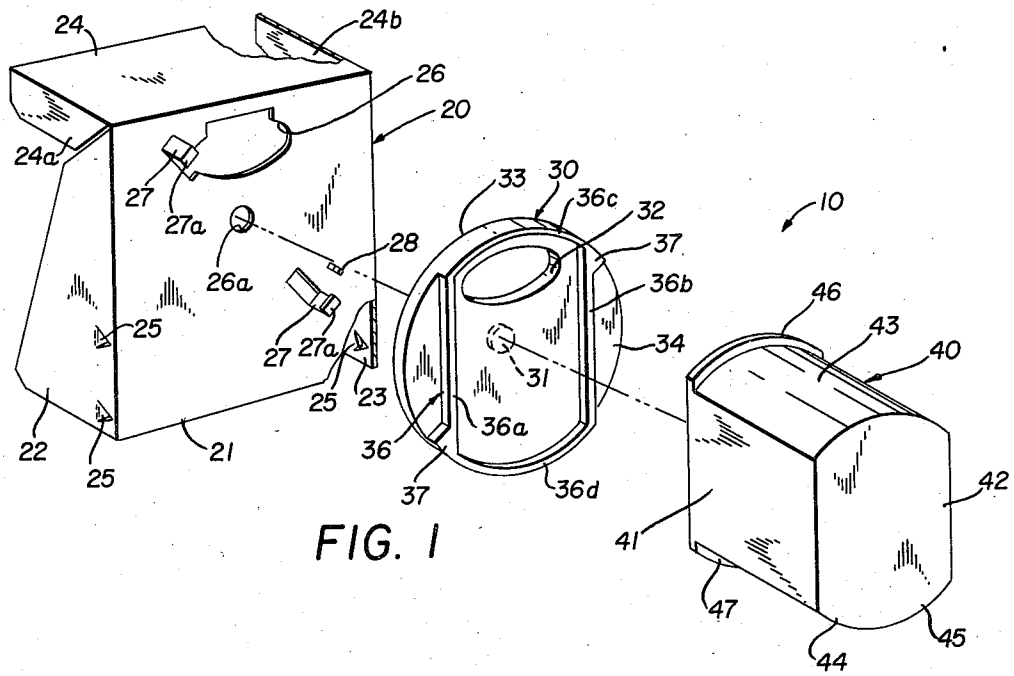


FIG. 1

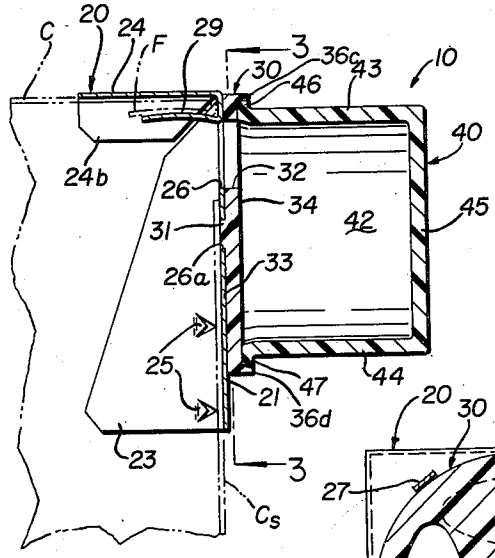


FIG. 2

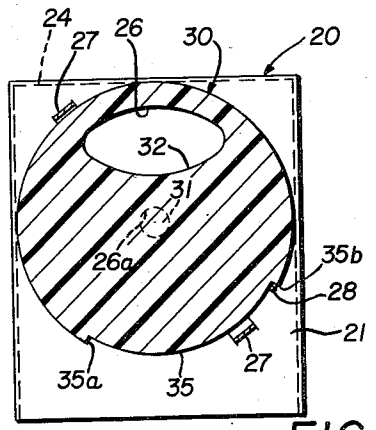


FIG. 3

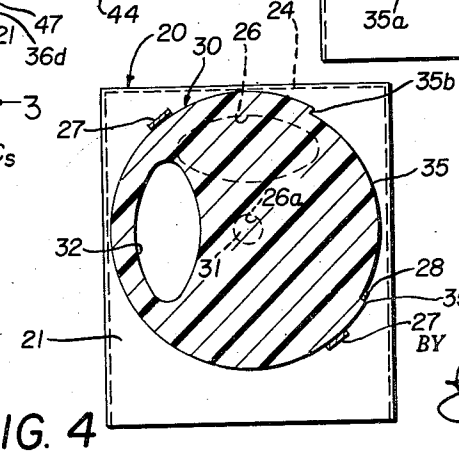


FIG. 4

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DISPENSING DEVICE FOR GRANULAR MATERIAL

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4 Claims. (Cl. 141—321)

This invention relates to dispensing devices, and in particular relates to a dispensing device capable of use in dispensing predetermined amounts of granular material, such as soaps and detergents, from the containers in which the same are normally supplied.

In the marketing of soaps and detergents for home usage, the same are normally provided to the retail buyer in a rectangular carton of cardboard composition. Such cartons usualy include a perforated area along one sidewall portion thereof to facilitate removal of the carton contents upon opening of the perforated area to produce a pouring spout.

While the above construction permits satisfactory removal of the carton contents as just described, it has been discovered that certain modern washing machines require the addition, to the wash water, of certain exact amounts of detergents, with the result that it is presently necessary to first dispense the detergents into a measuring cup and then subsequently pour the cup contents into the washing machine. In addition to involving an extra step or operation, it is apparent that the above practice would result in excessive spillage occurring during the two pouring operations that are required to place an exact amount of detergent in the washing machine. Additional disadvantage is found in the fact that once the carton is opened it is practically impossible to satisfactorily re-seal the same, with the result that accidental tipping of the carton will result in spillage of detergent material.

As an additional disadvantage of the known prior art, it is to be noted that the inability to re-seal cartons after the same are opened as above described operates to permit the entrance of moisture interiorly of the carton, with the result that the remaining contents are disadvantageously affected.

It accordingly becomes an object of this invention to provide a dispensing device that is capable of being readily attached to the usual detergent carton to dispense predetermined amounts of detergent from the carton.

It is a further object of this invention to provide a dispensing device for detergent cartons that obviates spilling of the carton contents at any time.

It is a still further object of this invention to provide a dispensing device for detergent cartons that operates to prevent the entrance of moisture interiorly of the carton during periods of non-use.

These and other objects of the invention will become more apparent upon a reading of the following brief specification, considered and interpreted in the light of the accompanying drawings.

Of the drawings:

Figure 1 is an exploded perspective view of the component parts of the improved detergent dispenser.

Figure 2 is an elevation, partly broken away and in section; and illustrating the improved detergent dispenser positioned in operating condition on a detergent carton that is shown in chain-dotted lines.

Figure 3 is a section taken on the lines 3—3 of Figure 2, and showing the detergent dispenser in one position.

Figure 4 is a view similar to Figure 3, but showing certain component parts of the detergent dispenser disposed in a second position.

Referring now to the drawings, and in particular to Figures 1 and 2 thereof, the improved dispenser, generally designated by the numeral **10** is shown as having the mounting adaptor **20** thereof mounted on the top corner of carton C adjacent perforated flap F thereof, so that detergent material contained interiorly of the carton C may be dispensed through baffle plate **30** for reception in dispensing cup **40**, in a manner to be described.

Considering first the structure of the mounting adaptor **20**, it will be seen that the same includes a rectangular base **21**, defined on opposed sides thereof by rearwardly projecting flanges **22** and **23**, that are designed for abutment with the front and rear wall portions of carton C with base plate **21** abutting against sidewall surface C_s of carton C. Similarly, the upper edge (see Figure 1) of base **21** defines a rearwardly projecting flange **24** that abuts against the top surface of carton C with projecting flanges **24***a*, **24***b* being received against the front and rear wall surfaces of carton C. In this manner, the flanges **22** and **23** are disposed in parallel to flanges **24***a*, **24***b*, respectively, to thus insure firm mounting of mounting adaptor **20** with respect to carton C, with flange **24** preventing downward movement of adaptor **20** when the same is mounted on carton C.

For the purpose of preventing dislodging of adaptor **20** from carton C during usage thereof, the flanges **22** and **23** are shown including a plurality of struck tabs **25**, **25** provided with sharp pointed ends so as to be embedded in the front and rear walls of carton C adjacent the point of juncture with the sidewall C_s (see Figure 2).

In addition to the aforementioned component parts, the adaptor **20** further has the base **21** provided with a pair of apertures **26**, **26***a*, the former being shown as being rather large in elliptic configuration to facilitate the passage of detergent therethrough, while the latter (aperture **26***a*) facilitates reception of the baffle **30** in rotatable relationship with the adaptor **20**, as will be subsequently described in greater detail. To the end of guiding such rotation of baffle **30** when the same is mounted on adapter **20**, there are provided a pair of guide tabs **27**, **27** that are shown spaced at equal dimension from the aperture **26***a* so as to have the inturned radial flanges **27***a*, **27***a* thereof overlying the baffle **30** when the component parts are assembled as shown in Figure 2. Similarly, a guide stop in the form of a struck pin or tab **28** is provided to limit the rotational movement of the baffle **30**; while tab **29**, struck from base **21** adjacent opening **26** thereof (see Figure 2), serves to retain flap F in open position during the period of usage. It will additionally be noted with regard to the construction of the tab **29** that the same is sprung upwardly (see Figure 2) so as to exert a clamping force on both the topwall of carton C and flap F, with the result that additional clamping force, tending to retain the unit **10** with respect to carton C, is provided.

As shown in the drawings, the baffle **30** is disc-shaped in configuration and is provided with central stem **31** that is rotatably received in opening **26***a* in known manner, so as to facilitate rotational mounting of baffle **30** with respect to adaptor **20**. To permit passage through the baffle **30** of detergents being dispensed, the baffle **30** further includes an elliptical opening **32** that communicates between faces **33** and **34** and further approximates the opening **26** in configuration. In this regard, it is to be noted that face **33** has approximately one quadrant portion thereof undercut as at **35** to permit reception within this undercut **35** of pin **28**, with the radial endwalls **35***a*,

35*b* of undercut **35** serving to limit the rotational movement of baffle **30** with respect to adaptor **20**, as a result of respective contact between these endwalls and pin **28**.

By like token, the opposed face **34** of baffle **30** is shown provided with a raised portion generally designated as **36**, that includes straight sections **36***a*, **36***b* that are interconnected by arcuate sections **36***c*, **36***d*; the arrangement being such that these raised segments **36***a*, **36***b*, **36***c* and **36***d* define a seat for cup **40** with arcuate raised extensions **37**, **37** being provided so as to underlie the inturned radial flanges **27***a*, **27***a* of guide tabs **27**, **27** when the component parts are positioned as shown in Figure 4.

As indicated above, the cup **40** is seated against face **34** within the outline of the raised portion **36** as the same is defined by segments **36***a*, **36***b*, **36***c* and **36***d*. Accordingly, the cup **40** is defined in its axial length, by opposed parallel straight wall sections **41** and **42** that are interconnected by opposed arcuate wall sections **43** **44** to define, with closure end **45**, an open end cup. To facilitate mounting of this cup **40** with respect to baffle **30**, the arcuate wall sections **43**, **44** are shown defined at their open ends by arcuate flanges **46** and **47**, respectively; the arrangement being such that the flanges **46**, **47** abut against arcuate segments **36***c*, **36***d*, respectively, while the open end portions of straight wall sections **41** and **42**, respectively, abut against segments **36***a* and **36***b*.

In use or operation of the improved detergent dispenser **10**, it will first be assumed that the same has been assembled with the baffle **30** rotatably secured to mounting adaptor **20** as shown in Figure 2 of the drawings. At this time, the flap F of carton C may be manually perforated and pushed inwardly of carton C and with the carton thus opened, the tab **29** of the adaptor **20** may be inserted throught the flap opening and the adaptor positioned on the top corner of carton C with the flanges **22**, **23** and **24**, respectively engaging the front, rear and top wall surfaces of carton C. At this time, it is manifest that the sharp pointed ends of tabs **25**, **25** will have dug into the front and rear wall portions of carton C to thus prevent accidental disengagement of the dispenser **10** with respect to carton C.

It will be further assumed at this point, that the dispensing cup **40** has been secured with respect to the baffle **30** during the above described positioning of the mounting adaptor **20** on the carton C. In this condition of attachment, as has been previously indicated, the inturned flanges **27***a*, **27***a* of guide tabs **27**, **27** will be overlying the arcuate flanges **46** and **47**, respectively, when the same are seated in abutment with the arcuate segments **36***c*, **36***d* of raised portion **36**. This positioning of the flanges **27***a*, **27***a* in overlying relationship to flanges **46**, **47** will prevent the cup **40** from being removed with respect to the baffle **30**; and during this time that the cup **40** is so positioned, it is believed apparent from Figure 3 of the drawings that the opening **26** will be aligned with the opening **32**. Accordingly, at this point, granular material in the form of a detergent, may be admitted to the interior of the cup **40** from carton C by merely tipping the carton C 90° to the right of Figure 2 of the drawings; at which time the granular detergent will flow, by the force of gravity, through the openings **26** and **32** to thus fill the cup **40**. When sufficient time has elapsed to allow the cup **40** to be filled to the extent desired, it is merely necessary that the user grasp the cup **40** and exert manual pressure to rotate the same about hub **31** in counter-clockwise direction (see Figures 3 and 4) until pin **28**, acting on endwall **35***a*, prevents further rotational movement of the cup **40** after approximately 90° have been passed.

At the completion of the above rotational movement of the cup **40**, two changes have occurred. First, because the cup **40** is seated within the raised portion **36**, the baffle **30** has rotated an equivalent amount, with the result that the opening **32** has been moved out of alignment with

opening **26** of base portion **21** to thus terminate the flow of granular material from the interior of the carton C. Secondly, because the inturned flanges **27***a*, **27***a* are now disposed over the arcuate extensions **37**, **37**, it is apparent that these flanges no longer overlie the arcuate flanges **46** and **47** of cup **40**, and accordingly, the cup **40** may be freely removed from its seated position within the raised portion **36** to permit use of the granular detergent previously entrapped therein.

When the detergent has been removed from the cup **40**, as for example, by placing the same in the washing machine, the cup **40** may be re-seated within the raised portion **36** and rotated clockwise (see Figures 3 and 4) to the position of Figure 3, at which time the same will once again be secured with respect to the baffle **30** as a result of inturned flanges **27***a*, **27***a* now overlying the arcuate flanges **46** and **47** of the cup **40** after such rotation. Once again this clockwise rotational movement will be limited by the contact between the pin **28** and radial end wall **35***b*; is being understood, of course, that the just-described clockwise rotational movement of the cup **40** will once again operate to bring the opening **32** of baffle **30** into registry with opening **26**, whereupon a fresh charge of detergent may be supplied to the cup **40** as previously described, for subsequent usage.

It will be seen from the foregoing that there has been provided a new and novel type of dispensing apparatus, characterized by the fact that the same is capable of being efficiently attached to the standard type of dispensing carton with a minimum amount of difficulty. It has been shown how the improved type of dispensing apparatus operates to eliminate common washday problems that occur as a result of too much detergent being supplied to the wash water. By use of the improved detergent dispenser, a predetermined charge or amount of detergent is always supplied, with the result that a uniform consistency and sudsing is obtained during repetitive washings.

It has also been shown how the improved type of dispensing apparatus is advantageous in that the measuring cup thereof cannot physically be removed from the baffle plate while the contents are being removed from the box, due to the fact that the permanently retained baffle plate thereof has the access opening thereof disposed out of registry with the box opening during the time the cup is capable of being detached from baffle **30**. This structure obviates the possibility of inadvertent spillage occurring, and additionally serves to protect the interior of the box from the entrance of moisture which would be detrimental to the contents thereof. It is also believed apparent that maximum efficiency of operation is achieved as a result of a minimum number of structurally coacting parts being employed.

In making this disclosure, specific reference has been made to certain configurations and compositions in order that the full concept of the invention might be more fully understood. It is to be understood that such specific limitations in the specification are made for this purpose only and are not in any way intended to limit the scope of the inveniton as defined by the appended claims. For example, it is apparent that different sizes of cups, baffle plates, and saddle adaptors could be employed so long as the coaction between these parts continued as above described. Similarly, it is to be understood that the above device is capable of dispensing other material than soap, and also that the device could be used in connection with different sizes and shapes of cartons, including tin containers of known type.

It accordingly follows that other modifications of the invention may be resorted to without departing from the spirit hereof or the scope of the appended claims.

What is claimed is:

1. A dispensing device of the character described, for attachment adjacent the access opening of a closed con-

tainer, comprising; a mounting adaptor having an access opening therein; a baffle, shiftable into and out of covering engagement with said access opening to open and close the same to flow therethrough; a cup detachably secured to said baffle; and means for preventing removal of said cup from said baffle when said access opening is opened; said means including a pair of opposed flanges carried by said mounting adaptor and overlying opposed edge portions of said cup; said baffle, said cup and said adaptor being interlocked when said opening of said adaptor and said baffle are in registry.

2. A dispensing device of the character described, for attachment adjacent the access opening of a closed container, comprising; a mounting adaptor having an access opening therein; a baffle, shiftable into and out of covering engagement with said access opening to open and close the same to flow therethrough; a cup detachably secured to said baffle; and means for preventing removal of said cup from said baffle when said access opening is opened; said means including a raised surface on said baffle defining an undercut seat; at least one radial flange provided on a segment on said open end of said cup and being capable of being seated in said undercut; and at least one flange overlying certain portions of said undercut, whereby said flange may be shifted into and out of underlying relationship with said flange.

3. A dispensing device of the character described, for attachment adjacent the access opening of a closed container, comprising; a mounting adaptor having an access opening therein; a baffle having an opening therein shiftable into and out of covering engagement with said access opening to open and close the same to flow therethrough; a cup detachably secured to said baffle; said baffle, said

cup and said adaptor being interlocked when said opening of said adaptor and said baffle are in registry; said mounting adaptor including a base portion capable of coplanar abutment with the access opening of said container; said access opening of said mounting adaptor being located in said base portion, whereby the same is in proximity with said access opening in said container; said base portion of said mounting adaptor including a projecting flange that extends interiorally of said container upon attachment of said mounting adaptor thereto.

4. A dispensing device of the character described, for attachment adjacent the access opening of a closed container, comprising; a mounting adaptor having an access opening therein; a baffle having an opening therein shiftable into and out of covering engagement with said access opening to open and close the same to flow therethrough; a cup detachably secured to said baffle; said baffle, said cup and said adaptor being interlocked when said opening of said adaptor and said baffle are in registry; said mounting adaptor including a base portion capable of coplanar abutment with the access opening of said container; said access opening of said mounting adaptor being located in said base portion, whereby the same is in proximity with said access opening in said container; said mounting adaptor including inwardly extending tab means for retaining the same in contact with said containers subsequent to the attachment thereof to said container.

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