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3,261,504

DISPENSING CLOSURE

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FIG. 1.

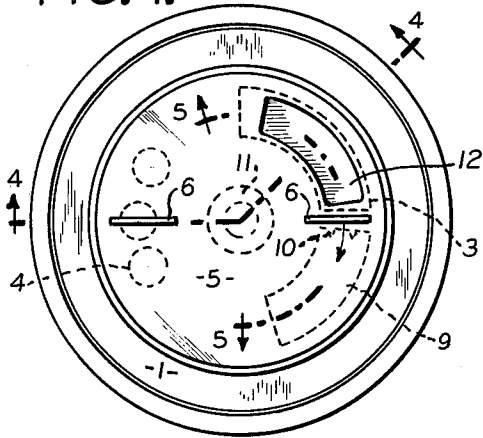


FIG. 3.

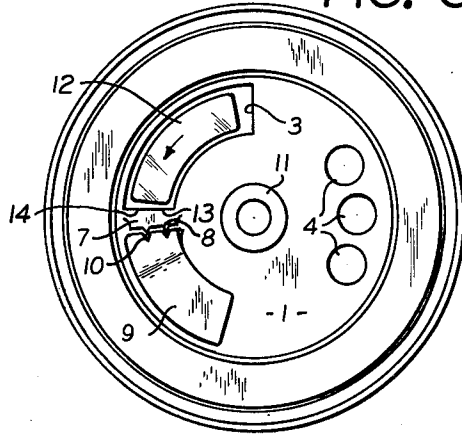


FIG. 2.

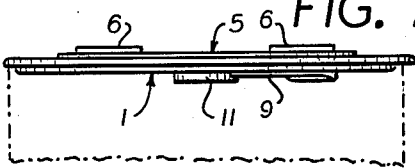


FIG. 4.

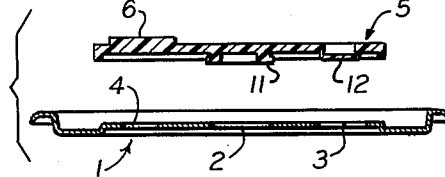


FIG. 5.

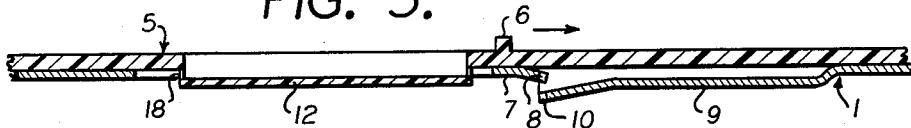


FIG. 6.

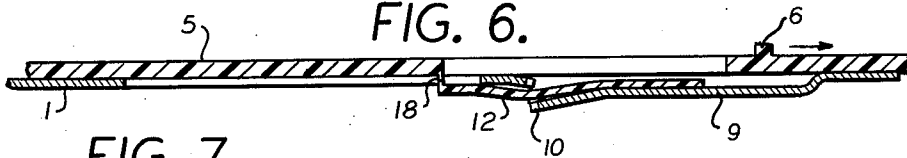


FIG. 7.

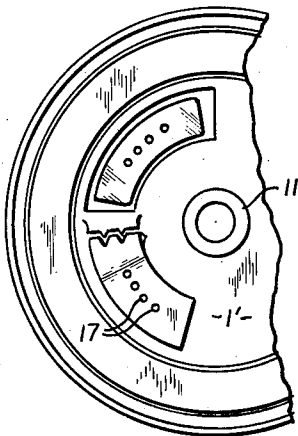
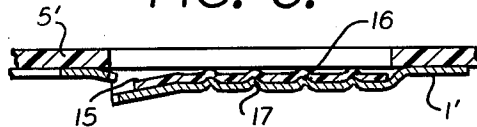


FIG. 8.



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An object of this invention is to provide a sealed dispensing closure rotatable to provide different dispensing openings.

Another object of the invention is to provide a sanitary, sealed, 2-part rotatable closure having a series of dispensing openings of different sizes whereby different quantities of powdered, granular or liquid material may be dispensed through one or more openings.

A further object of the invention is to provide an initially sealed closure in which the frangible portion of the inner element which is cut off is held within a pocket formed in the closure proper without dropping into the liquid or granular goods such as cracker crumbs, salt and so forth.

With the foregoing and other objects in view as will appear from a reading of the following specification and claims, the invention resides in the novel arrangement and combination of parts and in the details of construction and process of manufacture hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention. It will be further understood that the invention is susceptible of embodiments in many and various forms, some of which are illustrated in the accompanying drawings, and that the structural details or particular steps of the method herein set forth may be varied to suit particular purposes and still remain within the inventive concept.

Referring to the drawings, FIG. 1 shows a top view of the closure, and FIG. 2 is a side view.

FIG. 3 is a bottom view of the closure of FIG. 1 with the closure flipped over so that the parts are reversed.

FIG. 4 is an exploded view taken on the line 4-4 of FIG. 1.

FIG. 5 is a cross sectional view taken on the line 5-5 of FIG. 1.

FIG. 6 is a view similar to FIG. 5 but in which the severed strip is shown being seated in the pocket.

FIG. 7 is a view similar to FIG. 3 of a modified construction.

FIG. 8 is a view similar to FIG. 6 of the modified form.

Referring in detail to the invention which pertains to a two-part reclosable dispensing top for containers of general utility, my container can be usable to dispense any liquid or any granular substance which is smaller than the major opening.

The closure comprises a lower portion or base 1 having a central aperture 2 and an enlarged pouring slot 3 and a series of small circular pouring openings 4. The upper cover element of my top or closure comprises a circular plastic sheet 5 having upstanding operating fingers 6 and a depending hub 11.

The lower base element of the closure is stamped out with a cutting bar 7 adjacent to the elongated slot (see FIG. 5) having downwardly and inwardly directed retaining prongs 8 at the rear end thereof. A pocket 9 is formed in the same stamping to receive the cut-out section of the upper cover and prevent it from dropping into the food, condiment, or whatever is to be dispensed. The forward end of the pocket element is also provided with a downwardly directed opening having pointed teeth 10 which correspond with and are formed between the teeth of the cutting bar when the base element is stamped out.

There has been provided a tamperproof container whose contents are completely sealed until the top element has been turned and destruction of the tear strip has been accomplished. The tear strip is connected with the top by a very thin frangible connection. Hence, when the fingers 6 are turned as indicated in FIG. 1, the thin corner of the tear strip 12 will hit the adjacent corner 13 of the cutting bar 7 and initiate the complete severance of the tear strip.

It is an important feature of the invention that just the corner of the tear strip strikes the corner 13 and initiates the tearing before the remainder of the end of the tear strip comes in contact with the remaining straight portion 14 of the cutting bar. As shown in FIG. 3, the end of the tear strip and the cutting bar are not parallel so that tearing of the corner of the tear strip will be initiated by the inner portion of the cutting bar, which once the tear has started will readily peel off throughout the remainder of the tear strip.

With all plastic material, even when very thin as is this connection, it is difficult to start a tear, but once started, the tear spreads very easily. Likewise, in the present case, maximum pressure will be exerted first against the extreme corner of the depressed area so the tearing will start, and then will very easily tear off.

When it is desired to open the container, the fingers 6 are grasped and the upper portion or top turned so that the tear strip will first hit the corner of the bar as mentioned above, and the tear strip will be lodged in the pocket or receptacle 9 as shown in FIGS. 5 and 6. These finger tips must be located directly over the cutting bar to apply pressure at this point and prevent the depression from over-riding the cutting bar.

Even if the top is subsequently reversed in direction it will be impossible for the torn off strip 12 to move from the pocket into the contents of the box because it will be stopped by the downward points 8 on the rear of the cutting bar.

Once the depression is torn off, the user has the choice of the maximum opening slot 3 or one or more smaller openings 4. Therefore, the quantity to be dispensed may be varied at will, and also at all times being able to move the closure to keep the container closed and free from dirt.

FIGS. 7 and 8 show a slightly modified form in which the tear strip 15 of top 5 is provided with indentations 16 on its lower side and the pocket in the base or lower element 1' has corresponding protuberances 17 which engage and hold the tear strip. These matching indentations prevent the torn off strip from leaving the pocket and falling into the contents of the box when the top is turned in a reverse direction.

This invention may take many forms and involve many materials and dimensions but the following is one preferred way of doing it. The base element is aluminum or steel or even plastic and is stamped out forming the openings, cutting bar and retaining teeth and pocket at one stamping.

It is preferred that the top be made of plastic such as polyethylene or its equivalent and that it be injection molded or formed by some other acceptable process. The body of the upper element should be approximately .050 inch thick while the thickness of the tear strip at the bottom could be approximately .030 inch thick and the connection or the frangible corner between the tear strip and the upper element (18, FIG. 5) should be very thin and preferably .002 inch or two mils thick. The central hub 11 which connects the top to the base element should be on the order of 1/8 inch thick or .070".

The fingers or the turning lugs can be any convenient size and might be 1/16 inch high, 1/16 inch wide with a length of 3/4 inch.

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As can be seen, the major feature of my invention is the fact that the cut-out portion disappears and is retained in a pocket in the base, the angle of the cutting bar to the tear strip whereby a corner is first scored and then the rest peels off rapidly and very easily. Thirdly, the position of the turning or pressure finger lugs which are so positioned that they are right above the tear strip so that maximum downward pressure will be applied against the cutting bar preventing overriding, and a tamper proof closure which permits selective degrees of quantity to be poured after it is initially opened.

What is claimed is:

1. A rotatable dispensing closure for a receptacle comprising a base element having a plurality of dispensing openings, a pocket formed from the base element and being closed at one end and open at the opposite end, a cutting bar between one of said dispensing openings and the open end of said pocket, a plastic top rotatably secured to said base by a downwardly extending knob, a depression in the body of said plastic top, the bottom of said depression connected to the body portion of said top, said depression positioned in the opening in said base, finger nubs connected to said plastic top, the cutting edge of said cutting bar adjacent said depression whereby when said finger nubs are moved in order to sever the depression from the plastic top the depression will be cut by said cutting knife and thereby provide an easily torn opening, and said severed portion of said plastic top retained in said pocket.

2. A rotatable dispensing closure for a receptacle comprising a base element having a central aperture, a large dispensing slot, and a plurality of smaller dispensing openings, a pocket stamped out of the base element and being closed at one end and open at the opposite end, a cutting bar between the slot and the open end of said pocket, a plastic top rotatably secured in said central aperture in said base by a downwardly extending knob, a depression in the body of said plastic top, finger nubs on the upper side of said plastic top, the cutting edge of said cutting bar adapted to sever the depression strip from the plastic top, and said severed strip of said plastic top permanently retained in said pocket.

3. A rotatable dispensing closure for a receptacle comprising a base element, a plurality of dispensing openings, a pocket stamped out of the base element and being closed at one end and open at the opposite end, a cutting bar between the slot and the open end of said pocket, a plastic top rotatably secured to said base, a depression in the body of said plastic top, the bottom of said depression connected to the body portion of said top by a frangible connection, said depression and frangible connection positioned in one of said dispensing openings in said base, finger nubs on the upper side of said plastic top, the cutting edge of said cutting bar extending adjacent said depression whereby when said finger nubs are moved in order to sever the depression strip from the plastic top the depression will be cut by said cutting knife and thereby provide an easily torn opening, and said severed portion of said plastic top permanently retained in said pocket by said downwardly directed teeth on said cutter bar irrespective of the rotational direction of said top.

4. A rotatable dispensing closure for a receptacle comprising a base element having a central aperture, a dispensing slot, and a plurality of dispensing openings, a cutting bar adjacent the slot, a plastic top rotatably secured in said central aperture in said base by a downwardly extending knob, a depression in the body of said plastic top, the bottom of said depression connected to the body portion of said top by a very thin frangible connection, said depression and frangible connection positioned in the slot in said base adjacent said cutting bar, finger nubs on the upper side of said plastic top positioned over said cutting bar when said depression is in said slot

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in said base, the cutting edge of said cutting bar extending at a slight angle to the forward end of said depression whereby when said finger nubs are moved in order to sever the depression strip from the plastic top one corner of the depression will be cut initially by said cutting knife before the remaining end of the depression strikes the cutting bar and thereby provides an easily torn opening for dispensing in larger or in definite smaller increments.

5. A dispensing closure for a receptacle comprising a base element, a dispensing slot, and a plurality of smaller dispensing openings, a pocket stamped out of the base element and being closed at one end and open at the opposite end, said pocket having downwardly extending teeth at its opened end, a cutting bar between the slot and the open end of said pocket and having downwardly directed teeth at its rearward portion intermediate said teeth on said pocket, a plastic top secured to said base, a depression in the body of said plastic top, the bottom of said depression connected to the body portion of said top by a frangible connection, said depression and frangible connection positioned in the slot in said base adjacent said cutting bar, finger nubs on the upper side of said plastic top positioned over said cutting bar when said depression is in said slot in said base, the cutting edge of said cutting bar extending at a slight angle to the forward end of said depression whereby when said finger nubs are moved in order to sever the depression strip from the plastic top one corner of the depression will be cut initially by said cutting knife before the remaining end of the depression strikes the cutting bar and thereby provide an easily torn opening, and said severed portion of said plastic top permanently retained in said pocket by said downwardly directed teeth on said cutter bar.

6. A rotatable dispensing closure for a receptacle comprising a base element having a central aperture, a dispensing slot, and a plurality of dispensing openings, a pocket stamped out of the base element and being closed at one end and open at the opposite end, said pocket having downwardly extending teeth at its opened end, a cutting bar between the slot and the open end of said pocket and having downwardly directed teeth at its rearward portion intermediate said teeth on said pocket, a plastic top rotatably secured in said central aperture in said base by a downwardly extending knob, a depression in the body of said plastic top, the bottom of said depression connected to the body portion of said top by a very thin frangible connection, said depression and frangible connection positioned in the slot in said base adjacent said cutting bar, finger nubs on the upper side of said plastic top positioned over said cutting bar when said depression is in said slot in said base, the cutting edge of said cutting bar extending at a slight angle to the forward end of said depression whereby when said finger nubs are moved in order to sever the depression strip from the plastic top one corner of the depression will be cut initially by said cutting knife before the remaining end of the depression strikes the cutting bar and thereby provide an easily torn opening for dispensing in larger or in definite smaller increments, and said severed portion of said plastic top permanently retained in said pocket by said downwardly directed teeth on said cutter bar irrespective of the rotational direction of said top.

7. A rotatable dispensing closure for a receptacle comprising two elements, a base element having a central aperture, a dispensing slot, and a plurality of smaller dispensing openings, a pocket stamped out of the base element and being closed at one end and open at the opposite end, said pocket having downwardly extending teeth at its open end, a cutting bar between the slot and the open end of said pocket and having downwardly directed teeth at its rearward portion intermediate said teeth on said pocket, a plastic top element rotatably secured in said central aperture in said base by a downwardly extending hub, a depressed area in said plastic top, the bottom of said depressed area connected to the main body portion of said

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top element by a thin frangible connection, said depression and frangible connection positioned in the slot in said base element adjacent said cutting bar, fingers on the upper side of said plastic top element positioned over said cutting bar when said depression is in said slot in said base, the cutting edge of said cutting bar extending at a slight angle to the forward end of said depression whereby when said fingers are moved in order to sever the depressed area from the plastic top one corner of the depression will be cut initially by said cutting knife before the remaining end of the depression strikes the cutting bar and thereby provide an easily torn opening for dispensing in larger or in definite smaller increments, and said severed portion of said plastic top permanently retained in said pocket by said downwardly directed teeth on said cutter bar irrespective of the rotational direction of said top.

8. A rotatable, 2-part dispensing closure for a receptacle comprising a base element having a central aperture, a dispensing slot, and three closely spaced, circular dispensing openings, a pocket stamped out of the base element and being completely closed at one end and open at the opposite end, said pocket sloping downwardly and having downwardly extending teeth at its open end, a cutting bar positioned between the dispensing slot and the open end of said pocket and having downwardly directed teeth at its rearward edge intermediate said teeth on said pocket and matching therebetween, a plastic top rotatably secured in said central aperture in said base by a downwardly extending hub, a depression in the body of said plastic top, the bottom of said depression connected to the body portion of said top by a very thin frangible connection, said depression and frangible connection positioned

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in the slot in said base adjacent said cutting bar, finger nubs on the upper side of said plastic top positioned over said cutting bar when said depression is in said slot in said base, the cutting edge of said cutting bar extending at a slight angle to the forward end of said depression whereby when said finger nubs are moved in order to sever the depression strip from the plastic top only one corner of the depression will be cut initially by said cutting bar before the remaining end of the depression strikes the cutting bar and thereby provide an easily torn opening in said plastic top for dispensing in larger or definite and smaller increments, and said severed depression of said plastic top permanently retained in said pocket by said downwardly directed teeth on said cutter bar irrespective of the subsequent rotational direction of said plastic top during its dispensing operation.

9. A dispensing closure as set forth in claim 8 wherein the body of said plastic top is approximately .050", the bottom of the depression .030", and the frangible connection between the body and the depression 2 mils.

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