(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 410 069 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **90101017.3**

(51) Int. Cl.5: **B67B 7/86**, B65D 5/74

(22) Date of filing: **18.01.90**

(30) Priority: **26.07.89 US 385069**

(43) Date of publication of application:
30.01.91 Bulletin 91/05

(84) Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE

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(54) Pourer for particulate material.

(57) A pourer (10) for particulate material, such as soap powder includes a generally horizontal guide wall (12) and a generally vertical stop wall (16). A conduit (18) having a pointed piercing end (22) and sharp edged side walls is mounted to the stop wall (16) for being inserted in a carton by piercing the conduit into the carton with the guide wall (12) resting on the outer top surface (42) of the carton. The piercing action continues until the stop wall (16) contacts the vertical side wall (44) of the carton. The piercing end of the conduit is located remote from the guide wall. A spout (20) is connected outwardly of the stop wall (16) to assist in pouring the contents of the carton. Holes (26) are located in the conduit within the carton so as to facilitate flow of the contents to the spout (20). Projections (30) squeeze into the flap (46) of opened side wall (44) and assure that flap (46) remains against top wall (42) so that it does not impede flow from the carton.

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BACKGROUND OF INVENTION

The present invention is directed to the problem resulting from the difficulty in opening boxes from which particulate material, such as soap powder, can be poured. The conventional approach with such cartons used for soap powder and the like is to tear a cardboard tab to some extent by means of perforations or indentations partially extending through the cardboard carton. Many people are simply not able to effectively accomplish this tearing action in a satisfactory way, or have difficulty in properly tearing the carton.

One form of pourer illustrated in Australian design patent 95,946, has recently been introduced which includes a generally horizontal guide wall extending from a generally vertical stop wall. A conduit having a sharply pointed end extends from the stop wall. The conduit has a sharp cutting edge to assist in cutting an opening in the carton. The contents would then be poured from the conduit through an opening in the stop wall. In this arrangement, the piercing end of the conduit is located adjacent to the guide wall. It has been found that the arrangement is not entirely satisfactory because the cardboard flap produced from the carton when the conduit pierces the carton acts to impede the flow of contents from the carton.

Summary of Invention

An object of this invention is to provide a pourer for particulate materail which overcomes the above disadvantages.

A further object of this invention is to provide such a pourer which can be mass produced at low cost.

A still further object of this invention is to provide such a pourer which can be easily used without impairing its effectiveness.

In accordance with this invention the wall of the conduit having the piercing end is located remote from the guide wall so that when the conduit is pierced through the wall of the carton the flap created from the carton wall is moved upwardly against the inner surface of the top wall of the carton and is maintained locked against the top wall of the carton so as to not interfere with the discharge of the contents from the carton. The conduit also contains enlarged openings to facilitate the flow of powder through the pourer. In a preferred practice of this invention a spout is connected to the stop wall externally of the carton so as to help in directing the flow of the powder.

The Drawings:

Figure 1 is a side elevation view of a pourer in accordance with this invention;

Figure 2 is a front elevation view of the pourer shown in Figure 1;

Figure 3 is a top plan view of the pourer shown in Figures 1-2;

Figure 4 is a bottom plan view of the pourer shown in Figures 1-3;

Figure 5 is a rear elevation view of the pourer shown in Figures 1-4;

Figure 6 is a cross-sectional view taken through Figure 3 along the line 6-6 showing the pourer attached to a carton but in its non-dispensing condition;

Figure 7 is a view similar to Figure 6 showing the pourer in its dispensing condition; and

Figure 8 is a front elevation view of the pourer shown in Figure 7.

Detailed Description

Figures 1-5 illustrate the details of the pourer 10. As shown therein pourer 10 includes a generally horizontal guide wall 12 having a rounded tip 14 at one end thereof. A generally perpendicular stop wall 16 is connected to guide wall 12. One side of stop wall 16 has a conduit 18 extending therefrom while the other side has a spout 20 extending therefrom. Conduit 18 and spout 20 are in effect a single tubular member having inwardly tapered end walls as illustrated.

As best shown in Figures 1 and 4, conduit 18 includes a pointed piercing end or tip 22 and the side wall of conduit 18 is formed with a sharp edge 24 extending upwardly away from piercing tip 22. The piercing tip 22 and sharp edged side walls 24 provide the capability for cutting through a carton having the particulate material such as soap powder therein. A significant feature of the invention is that the piercing tip 22 is located along a surface of conduit 18 which is remote from guide wall 12. A further distinctive feature is that conduit 18 includes enlarged holes or openings 26 for purposes later described.

As also illustrated a portion 28 of conduit 18 is located juxtaposed guide wall 12 where stop wall

16 is offset as indicated by reference numeral 17. Wedge shaped locking member 30 in a form of an upward projection is located at the end of portion 28 for purposes later described. Conduit 18 also includes wedge shaped projection 32 as later described.

Outwardly of stop wall 16 is the spout 20 which as previously noted is an integral extension of conduit 18. Spout 20 has a curved or non-planar irregularly shaped outer end 33 which is selectively closed by lid 34 detachably hinged to stop wall 16. The preferred manner of accomplishing this hinge is by means of brackets 36 having eyes or openings for receiving posts 38 which extend inwardly from lid 34 (see also Figs. 6-7). Pourer 10 and its various components are preferably made from an injection molded plastic material having a slight degree of springiness. Thus, the hinge formed by brackets 36 and posts 38 is such that a spring loading effect results for the lid or cap 34 whereby the cap or lid 34 would be maintained in either its completely closed position, such as shown in Figures 1 and 6 or its completely open position, such as shown in Figure 7 without requiring the user to otherwise hold the lid either open or closed. The remote end of lid 34 includes a flange or locking lip 40 which snaps into indent 41 in spout 20 to maintain lid 34 locked in its closed condition during periods of non use. When in this closed condition, because of the complementary shape of lid 34 with respect to the end of spout 20, because of the springy nature of the material and because of the positive lock from lip 40 in indent 41, the spout is completely closed whereby powder from within carton C would not inadvertenly be spilled.

Figure 6 illustrates the pourer 10 in position after it has been attached to carton C but in its non-dispensing condition. To mount pourer 10 to carton C, guide wall 12 would first be placed directly against the upper wall 42 of carton C. The rounded end 14 of guide wall 12 could act as a camming surface. As guide wall 12 is slid over top wall 42, pointed end 22 strikes the side wall 44 of carton C and in cooperation with the sharped edge side wall 24 begins to cut through carton wall 44. The user continues to penetrate pourer 10 into carton C until vertical stop wall 16 contacts side wall 44. As a result of this piercing action a flap 46 is formed hinged to side 44 at hinge line 47 which results from the portion of side wall 44 being cut by conduit 18. The side walls or sharp edges 24 during their inward movement cause flap 46 to be lifted at hinge 47 into contact with the two layer top wall 42 of carton C. Flap 46 is locked against top wall 42 by being trapped above portion 28 of conduit 18 with projections 30 acting as lock members to urge flap 46 against top wall 42. The offset 17 permits the carton wall 44 to deform outwardly and be wedged in the channel formed by guide wall 12, offset 17 and portion or surface 28. Wedge or projection 30 squeezes into flap 46, to assure that flap 46 remains against top wall 42 and does not interfere with the flow of powder P through dispensing opening 54 in stop wall 16. In this manner, communication between the interior of carton C and spout 20 is maintained.

As also shown in Figure 6 during the cutting of flap 46 a portion 48 of side wall 44 is bent or rolled downward and rests between flange or lower extension 50 of stop wall 16 and projection or wedge 32. Thus pourer 10 is securely mounted to carton C.

When it is desired to dispense the contents, such as powder P from carton C, the user grasps the end of lid 34 which may include surface irregularities 52 and flips the lid to the upward position shown in Figure 7. Because of the special spring hinge, lid 34 remains in the completely open position of Figure 7 without requiring the user to hold lid 34 in that position. The user then tilts carton C and the powder P flows into conduit 18 through the open end of the conduit as well as through the enlarged holes 26. Holes 26 may comprise the major portion of conduit 18. Conduit 18 may thus be skeletal in form as long as it is rigid enough to pierce carton C and remain firmly attached to carton C. The powder P continues to flow through dispensing opening 54 into spout 20 which directs the powder to the desired location as shown in Figure 7.

After a sufficient amount of powder P has been dispensed from carton C the user presses lid 34 downward, back to its sealed or closed condition which is illustrated in Figure 6 where lip 40 snaps into indent 41. Pourer 10 may remain attached to carton C as long as some powder P remains in carton C. When carton C is empty pourer 10 could be removed by simply pulling it outwardly away from carton C. As illustrated guide wall 12 has a set of ridges 56. Additionally a set of four ridges 58 is provided on each side of spout 20. These ridges, particularly ridges 58 on spout 20 facilitate the user pulling pourer 10 from carton C after the carton is empty. Ridges 56 would help in the insertion or removal of pourer 10. If desired, because of its low cost pourer 10 could be completely discarded along with the empty carton.

It is to be understood that although the operation of pourer 10 has been described in connection with a cardboard carton containing for example, soap powder, the invention may be practiced with other types of containers and with other types of materials as long as the container is made from a material which can be penetrated by piercing point 22 and sharp edge 24 so as to be able to mount pourer 10 to the container and to permit the contents to be dispensed from pourer 10. It is also

noted that pourer 10 can be constructed of one piece material, except for lid 34. In this respect, pourer 10 could be injection molded from a suitable plastic and lid 34 could also be injection molded and then connected to hinge 36 as previously described.

INVENTION IS SUMMARIZED AS FOLLOWS:

A pourer for particulate material comprising a guide wall, a stop wall connected to and generally perpendicular to said guide wall, a conduit connected to said stop wall, said conduit terminating in a piercing tip merging into sharp edged side walls extending toward said guide wall with said piercing tip being remote from said guide wall, and a dispensing opening in said stop wall whereby said pourer may be mounted to a carton by said conduit penetrating a side wall of the carton to create a flap in the side wall which is disposed against the inner surface of the top wall of the carton when said guide wall is disposed against the outer surface of the top wall and said stop wall is against the side wall.

The pourer including enlarged openings in said conduit to facilitate the particulate material flowing therethrough.

The pourer including lock means on said conduit for holding the flap away from said conduit.

The pourer including a spout mounted to said stop wall on the side thereof opposite said conduit.

The pourer including a lid selectively opening and closing said spout.

The pourer wherein said lid maintains said spout sealed when said lid is in its closed position.

The pourer including spring hinge means for maintaining said lid selectively opened or closed.

The pourer including a sealing lip at the tip of said lid disposed in an indent in said spout when said lid is in said closed position.

The pourer wherein said spout terminates in an end wall extending toward said guide wall.

The pourer wherein said end wall is non-planar.

The pourer wherein said conduit and said spout comprise an integral tubular member.

The pourer wherein said lid is detachably mounted to said stop wall, and the remainder of said pourer is an injection molded one piece unit.

The pourer wherein said lock means comprises a wall portion of said conduit generally parallel and juxtaposed to said guide wall, and a projection on said wall portion remote from said stop wall and extending toward said guide wall.

The pourer wherein said stop wall has an offset portion at said wall portion.

The pourer wherein said stop wall includes a portion extending beyond said conduit in a direction away from said guide wall, and a wedge on said conduit juxtaposed said portion of said stop wall whereby a portion of the side wall of the carton would be disposed therebetween.

The pourer wherein a major portion of said conduit is cut-out to comprise said openings.

The pourer including ridges on said spout to facilitate removal of said pourer from the carton.

The pourer including ridges on said guide wall.

The pourer in combination therewith, a carton containing particulate material and having a top wall and a side wall, said guide wall be disposed against said top wall, and said stop wall being disposed against said side wall.

Claims

1. A pourer for particulate material comprising a guide wall, a stop wall connected to and generally perpendicular to said guide wall, a conduit connected to said stop wall, said conduit terminating in a piercing tip merging into sharp edged side walls extending toward said guide wall with said piercing tip being remote from said guide wall, and a dispensing opening in said stop wall whereby said pourer may be mounted to a carton by said conduit penetrating a side wall of the carton to create a flap in the side wall which is disposed against the inner surface of the top wall of the carton when said guide wall is disposed against the outer surface of the top wall and said stop wall is against the side wall.

2. The pourer of claim 1 including enlarged openings in said conduit to facilitate the particulate material flowing therethrough.

3. The pourer of claim 2 including lock means on said conduit for holding the flap away from said conduit.

4. The pourer of claim 3 including a spout mounted to said stop wall on the side thereof opposite said conduit.

5. The pourer of claim 4 including a lid selectively opening and closing said spout.

6. The pourer of claim 5 wherein said lid maintains said spout sealed when said lid is in its closed position.

7. The pourer of claims 6 including spring hinge means for maintaining said lid selectively opened or closed.

8. The pourer of claim 7 including a sealing lip at the tip of said lid disposed in an indent in said spout when said lid is in said closed position.

9. The pourer of claim 8 wherein said spout terminates in an end wall extending toward said guide wall.

10. The pourer of claim 9 wherein said end wall is

non-planar.

Fig.3.

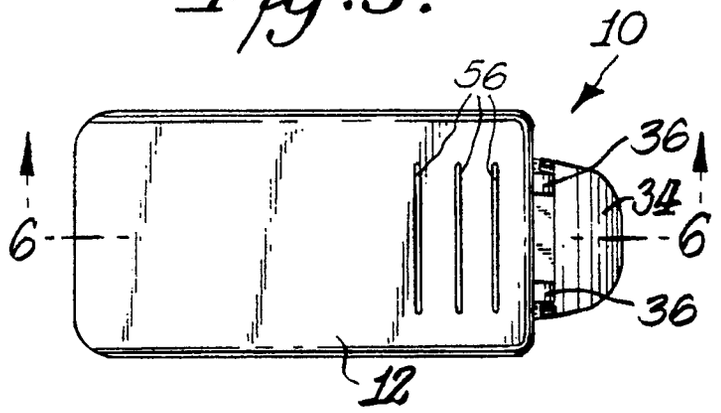


Fig.1.

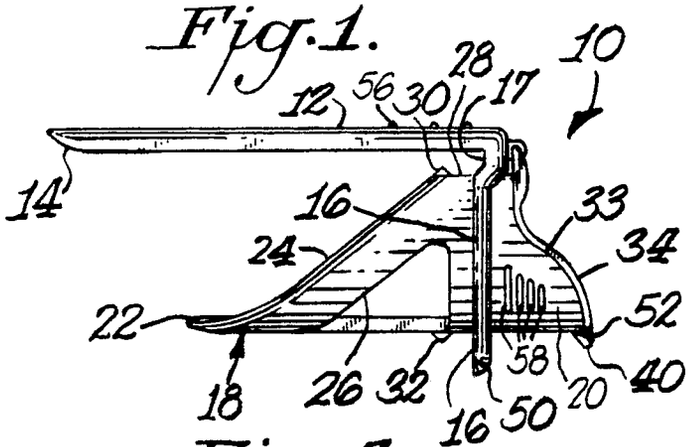


Fig.2.

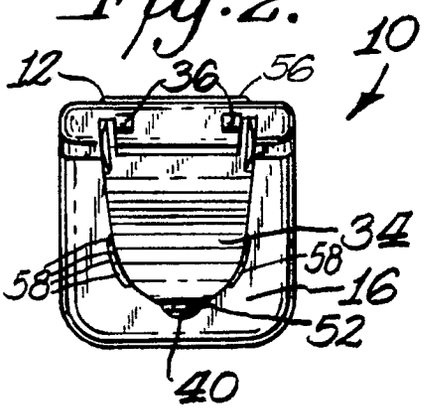


Fig.4.

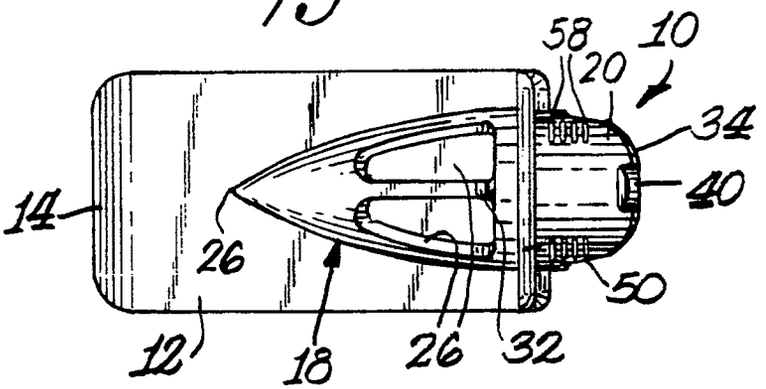


Fig.5.

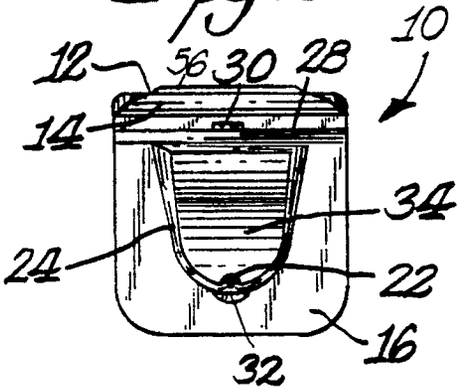


Fig. 6.

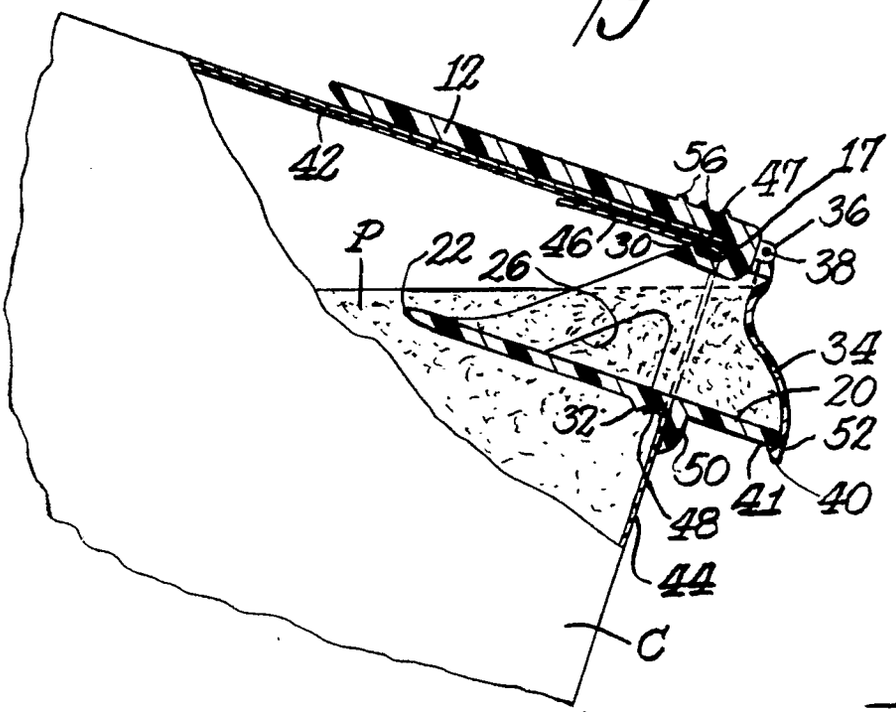


Fig. 7

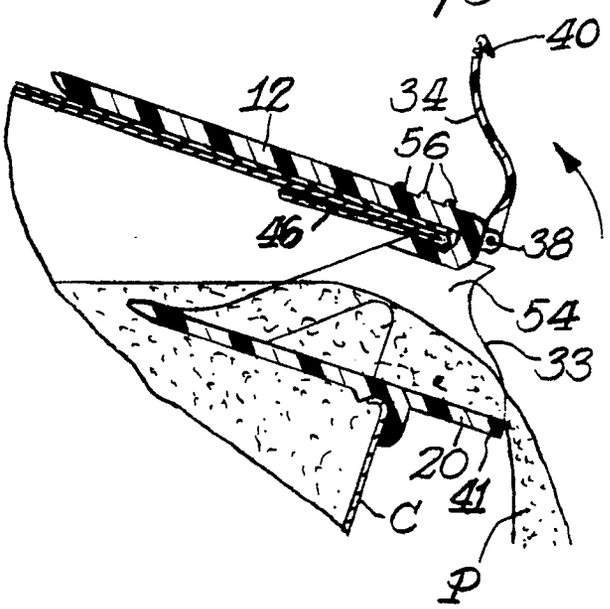
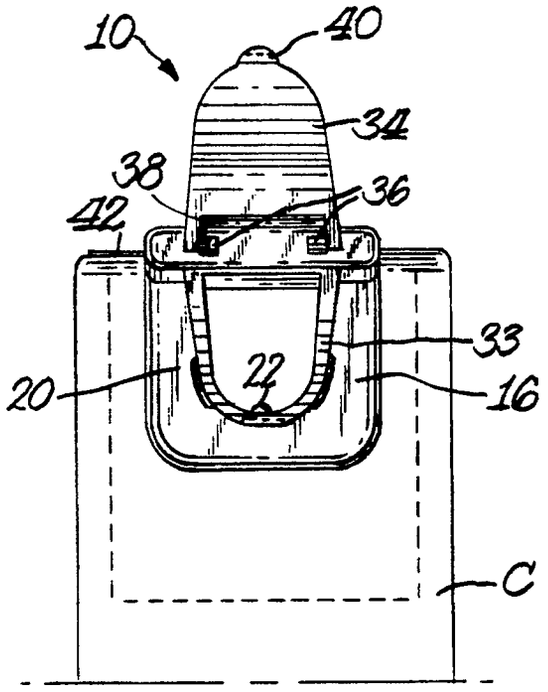


Fig. 8.



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EUROPEAN SEARCH REPORT

Application Number

EP 90 10 1017

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	WO-A-8 607 584 (P.T. WILDING) * Whole document *	1-10	B 67 B 7/86 B 65 D 5/74
Y	US-A-2 510 530 (W.F. TELSCHOW) * Column 1, line 51 - column 2, line 14; column 3, lines 1-16; figures 1,2 *	1-10	
Y	EP-A-0 208 413 (OWENS-ILLINOIS INC.) * Abstract; figures 2,3,7 *	5-8	
Y	US-A-3 927 803 (A. WEBER) * Column 3, lines 50-55; figure 1 *	8	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)
B 67 B B 65 D

The present search report has been drawn up for all claims

Place of search	Date of completion of search	Examiner
The Hague	19 October 90	VAN DEN BOSSCHE E.J.

CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone
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