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OPENER AND SPOUT FOR MILK CARTONS AND THE LIKE

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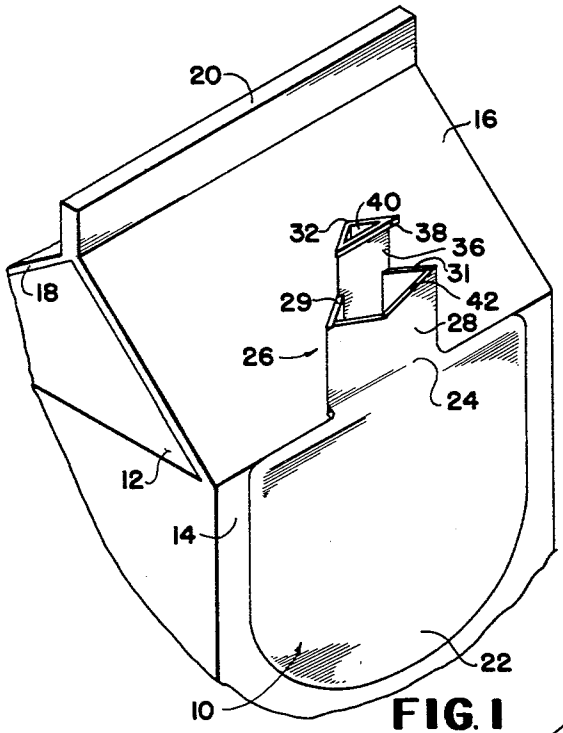


FIG. 1

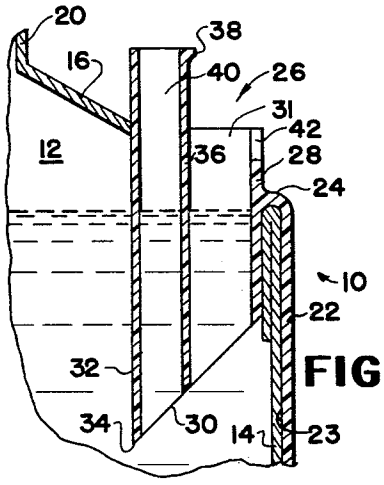


FIG. 2

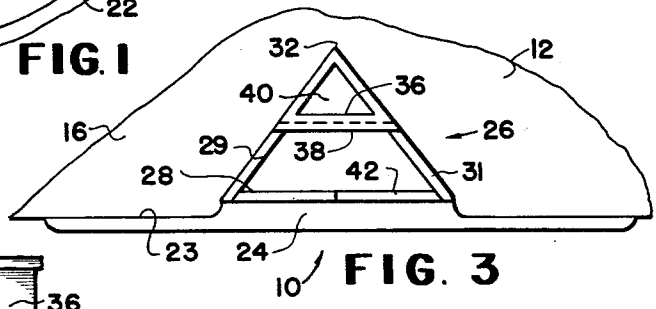


FIG. 3

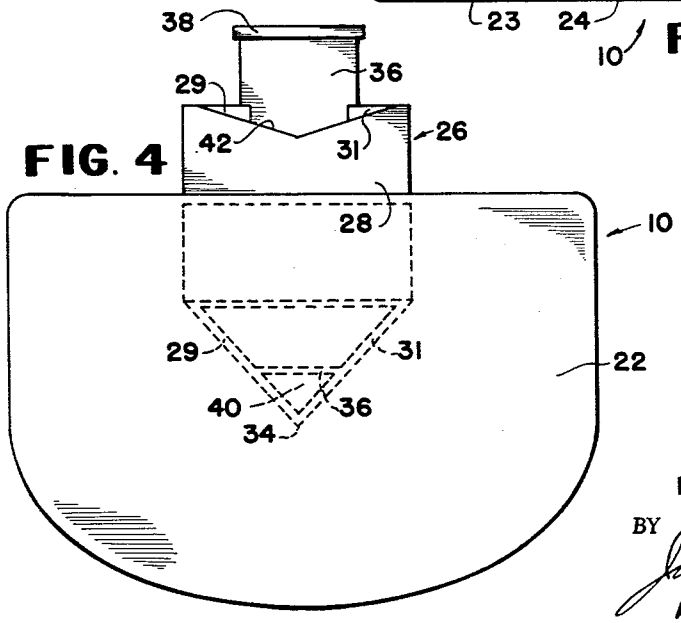


FIG. 4

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OPENER AND SPOUT FOR MILK CARTONS AND THE LIKE

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This invention relates to opener means. In a more specific aspect it relates to opening means for cartons and the like especially coated cardboard milk cartons. In a still more specific aspect the invention relates to means for puncturing and thereby opening a cardboard milk carton or the like with such means having spout means integrally formed therewith for removing the contents of the carton.

Various types of opener means are known to the art. These include common opening devices for cans and the like containing lubricating material or other fluids wherein the function of the opener means is to puncture the container. In some instances the devices of the prior art contain spout means associated with the opener means for discharging fluids from a container. However, the problems involved in opening metallic cans and removing liquids therefrom is substantially different from that where milk or other household products are removed from a carton or the like, particularly where the carton is a container made of cardboard or other easily flexible material. The relatively flexible side walls of containers of cardboard and the like are easily torn or punctured in use, and this causes loss of a portion of the fluid. Also, when pouring milk or the like from a container, air vent means are desirably provided and located so that some air is provided to the carton during pouring operation, and such is preferably provided without the necessity of punching two spaced holes in the container.

In accordance with the present invention, opener means for cartons and the like are provided which includes plate means having a surface shaped to be positionable against the outer surface of a carton or the like. Spout means are provided with the plate means and have a portion thereof positioned in spaced relation to the plate means and define therewith a recess to receive a portion of the carton or the like. The spout means has means therewith forming air vent means positioned in spaced relation to the plate means. The opener means is constructed and adapted so that a portion of the spout means is insertable into a carton or the like with the spout means and the plate means gripping in the recess therebetween a portion of the carton to hold the opener thereon.

Accordingly, it is an object of the invention to provide new opener means.

Another object of the invention is to provide new opener and spout means which are particularly constructed and adapted for use on cardboard cartons, or the like, such as is commonly used to contain milk and other fluids.

Another object of the invention is to provide new opener and spout means for cardboard milk cartons or the like having air vent means properly located therein so that air is received by the carton during passage of fluids therefrom.

Another object of the invention is to provide new opener and spout means having air vent means formed therein and having a pouring lip across the spout means for the discharge of fluids from the carton.

Another object of the invention is to provide new opener and spout means for cartons and the like having air vent means therein with a lip positioned on the air vent means to deflect liquids and prevent entrance of same into the air vent.

Various other objects, advantages and features of the invention will become apparent to those skilled in the art

from the following description taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a partial isometric view showing a carton for milk or the like with a preferred specific embodiment of the opener and spout means of the invention mounted thereon.

FIG. 2 is a partial enlarged cross section view longitudinally through the carton and opener and spout means of FIG. 1.

FIG. 3 is a top plan view of the carton and opener and spout means shown in FIG. 1.

FIG. 4 is a side elevation view of the opener and spout means of FIG. 1.

The following is a discussion and description of a preferred specific embodiment of the new opener and spout means for milk cartons or the like of the invention, such being made with reference to the drawings whereon the same reference numerals are used to indicate the same or similar parts and/or structure. It is to be understood that such discussion and description is not to unduly limit the scope of the invention.

Referring now to the drawings in detail, a preferred specific embodiment of the opener and spout means for cardboard milk cartons and the like of the invention is illustrated generally at **10** in the drawings and is preferably constructed for use on a milk carton or the like **12** which normally has a flat side wall or surface **14** and a top portion including inclined walls or surfaces **16** and **18** which are joined at the top portions thereof to form a flange or lip **20** which is sealed in the bottling plant and which must normally be opened to remove the contents of the carton. The cardboard milk cartons can be the usual wax coated kind. And, the new opener means of the invention has been found to work well on the relatively new plastic coated cartons, normally coated with polyethylene material.

The opener and spout **10** can be made of any suitable material, preferably molded from a suitable plastic material, and it has been found desirable to injection mold the opener and spout **10** from such as polystyrene polyepoxies, vinyl plastics, polyethylene, polypropylene, etc. The opener and spout **10** includes an elongated and relatively wide face plate **22** which is generally rectangular in shape and preferably has rounded edges as best illustrated in FIGS. 1 and 2. When the opener and spout is used on a milk carton or the like **12** having a flat side or surface **14** the face plate is preferably flat on the inner surface **23** thereof so as to be positionable against the outer surface of the carton **12**.

A flange **24** is provided and is preferably integrally formed with the face plate **22** and is located along the center portion of the upper edge of the face plate and projects therefrom at substantially a right angle thereto as best illustrated in FIG. 2.

Elongated spout means are provided as shown generally at **26** and in the preferred specific embodiment of the invention illustrated in the drawings, the spout means **26** includes a base wall **28** which is preferably integrally formed with the flange **24** and projects to each side of the plane of the flange **24**. The spout means **26** is generally triangular in transverse cross section and top plan view as best illustrated in FIG. 3 and has walls **29** and **31** integrally formed with wall **28**. The base wall **28** is desirably located in a plane which is substantially parallel to and spaced from the plane of the face plate **22**.

The lower end portion **30** of the walls **29** and **31** of the spout means **26** are preferably tapered from the base wall **28** to the edge **32** of the spout means opposite from the base wall and are desirably inclined outwardly and downwardly away from the base wall as illustrated in FIGS. 2 and 4 to form a sharp point **34**.

A wall **36** is provided in the spout means **26** and is

preferably integrally formed with walls **29** and **31** and extends from the bottom edge of the spout means upwardly therealong and is desirably positioned in a plane substantially parallel to and spaced from the plane of the base wall **28**. The wall **36** has a lip **38** extending thereacross located at the upper edge thereof which faces the base wall **28**. The lip **38** functions to deflect liquids poured from the spout means **26** between the base wall **28** and the wall **36** and which might otherwise tend to adhere to the surface of the wall **36** during pouring thereof. The wall **36** and the portion of the walls **29** and **31** between the wall **36** and the edge **32** extend above the base wall **28** and define an air vent shown generally at **40**.

The upper edge of the base wall **28** of the spout means **26** is preferably inclined from the end portions thereof downwardly and inwardly toward the center of the base wall and defines a pouring lip **42**. The pouring lip **42** permits pouring of a relatively small stream of fluid from the carton **12**.

The opener and spout means **10** is especially constructed to be mounted on a coated cardboard carton **12** containing milk or the like and in use the point **34** of the spout means **26** is placed against the inclined surface **16** or **18** of the carton and the lower portion of the face plate **22** is placed against the flat surface **14** of the carton and the spout and opener means is then pressed downwardly causing the point **34** of the spout means to pierce the inclined top portion **16** of the carton. As the opener and spout means is forced downwardly a small portion of the top of the carton is cut and folded downwardly and outwardly against the side **14** of the carton as illustrated in FIG. 2 as a result of engagement therewith by the lower edge **30** of the spout means. The folded portion of the milk carton is located in the recess between the face plate **22** and the base wall **28**, the face plate and base wall being positioned apart a sufficient distance so that the folded portion of the container is easily accommodated therebetween and so that such is snugly and firmly gripped therebetween. This close fitting and snug engagement of a portion of the carton between the plate **22** and spout means **26** retains the opener and spout means in mounted position on the carton **12**. With the opener and spout means **10** thus mounted on the carton, the carton can be grasped by hand and tilted so that milk or other fluids contained therein can be discharged from the carton through the spout means **26** and from the portion thereof between the walls **28** and **36** with the milk or other fluid flowing across the pouring lip **42** to be accurately directed into a glass or other suitable container. During pouring operations, air enters the carton **12** through the air vent **40** defined by the wall **36** and the portion of the container between the wall and the edge **32**, such eliminating the possible formation of a partial vacuum within the upper portion of the carton which might impede the flow of fluids from the carton. Also, as milk is poured from the spout means **26** any tendency of the fluid to adhere to the outer surface of the wall **36** which might result in uneven flow of the milk or the like is eliminated by the lip **38** which is engaged by the milk and deflected downwardly along with the milk or other fluid pouring across the lip **42**.

While the opener and spout means of the invention has been described in connection with a preferred specific embodiment thereof, it will be understood by those skilled in the art that such is intended to illustrate and not to unduly limit the scope of the invention which is defined by the claim.

I claim:

An opener and spout for cardboard milk cartons and the like comprising, in combination, an elongated and relatively wide face plate having a flat inner surface positionable against the outer surface of a milk carton or the like, an integral flange along the center portion of one edge of said face plate and projecting therefrom at substantially a right angle thereto, elongated spout means having a base wall integrally formed with said flange and projecting to each side of the plane of said flange, said spout means being triangular in transverse cross section with said base wall thereof being positioned in a plane substantially parallel to and spaced from the plane of said face plate, the lower end portion of said spout means being tapered from said base wall thereof to the edge thereof opposite from said base wall and inclined outwardly and downwardly from said base wall to form a sharp point, a wall in said spout means extending from the bottom edge thereof upwardly therealong and positioned in a plane substantially parallel to and spaced from the plane of said base wall, said last-named wall having a lip thereon at the upper edge thereof facing said base wall thereof to deflect liquids, said last-named wall and the portion of said spout means between said wall and said edge thereof opposite from said base wall extending above said base wall and defining an air vent, the upper edge of said base wall of said spout means being inclined from the end portions thereof downwardly and inwardly toward the center of said base wall and defining a pouring lip, said opener and spout being constructed and adapted to be mountable on a cardboard milk carton or the like with said point of said spout means piercing the inclined top portion of said carton and folding a portion of same downwardly to be snugly gripped between said base wall of said spout means and said face plate and with said air vent providing a passageway for air into said carton during the pouring of milk therefrom across said pouring lip.

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