March 6, 1934. W. F. PUNTE 1,950,326

VALVE CLOSED METAL CONTAINER

Filed June 2, 1932

Fig. 1.

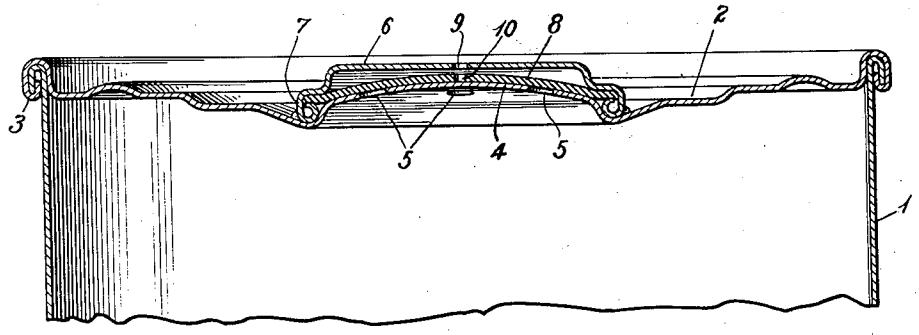


Fig. 2.

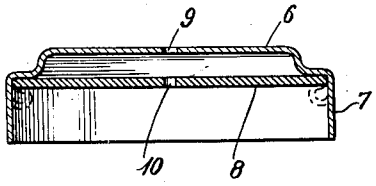
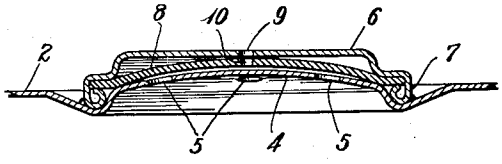


Fig. 3



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VALVE CLOSED METAL CONTAINER

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2 Claims. (Cl. 220—44)

The invention relates to new and useful improvements in a metal container, and more particularly to a container which is provided with an opening through which gas evolving from the food product in the container may escape.

An object of the invention is to provide a container of the above type with a valve for closing the opening, which valve is located wholly on the outside of the container end and is so constructed as to permit the opening of the container when the gas pressure within the container is above atmospheric pressure, and which closes when the gas pressure within the container is at atmospheric pressure.

A further object of the invention is to provide a container of the above type wherein the valve is held in place relative to the end and the opening therethrough by a metal cap which is secured to the outer face of the container end.

A still further object of the invention is to provide a container of the above type wherein the valve is adapted to be held under tension over the centrally raised dome portion of the end, said valve being free to lift when the pressure of the gas evolving from the product within the container overcomes the elasticity of the valve.

In the drawing—

Figure 1 is a vertical section through the upper portion of a container embodying the improvements, and

Fig. 2 is a vertical section through the cap member which is adapted to be attached to the end, showing the flexible valve held therein.

Fig. 3 is a view through the central portion of the cover showing the position of the valve disc when the gas is escaping.

The invention relates broadly to a metal container which includes a body portion and an end seamed thereto. The end has a centrally raised dome portion which has one or more perforations therethrough which are located adjacent the center of the end but spaced therefrom. Attached to the end on the outer face thereof is a metal cap which is also dome shaped and which is secured by welding, soldering or any other suitable way at or adjacent its periphery to the container end. In the chamber thus formed between the cap and the end and securely attached by its circumferential edge to the cap is a flexible valve member which is adapted to be held under tension over the centrally raised dome portion and normally close the openings therein. Both the cap and the valve members have central perforations which are located in staggered relation to the one or more perforations in the centrally raised dome portion of the end. It may be readily seen that the flexible valve member will yield under gas pressure from within the container to allow the gas to escape therefrom.

Referring more in detail to the drawing, the container consists of a body portion 1 to which an end 2 is attached by double seaming, as indicated at 3. The end is of the usual construction and is provided with a centrally raised portion 4, which raised portion is provided with perforations 5 spaced radially from the center thereof, as may be seen in the drawing. Attached to the outer face of the end is a metal cap 6. Said metal cap 6 is dome-shaped and the peripheral portion 7 of the cap is so shaped as to conform to an annular recess in the outer face of the end. The peripheral portion of the cap is fixed to the end either by soldering at spaced points, or by welding, or in any other suitable way, so that it becomes a rigid part of the end. It will be noted in Fig. 2 of the drawing that the flexible member 8 is held securely in place at its circumferential edge by the bending of the metal at the peripheral edge 7 of the cap before the cap is attached to the end. Both the cap 6 and the flexible valve member 8 are provided with central perforations 9 and 10. It may be readily seen from the drawing that when the cap 6 is securely attached to the cover 2, the flexible member 8 becomes stretched and held under tension over the central raised portion 4 of the end, thereby closing the openings 5 under normal atmospheric pressure within the container. When the pressure of the gas evolving from the product within the container becomes greater than atmospheric, the elasticity of the flexible valve member is overcome and the gas may escape from the openings 5 through the respective central openings 10 and 9 of the valve member and the cap.

The valve member is preferably of rubber and the cap is so shaped as to provide a chamber between the cap and the central raised portion of the end wherein the valve may be free to lift for allowing the gas to escape from within the container. It will be apparent from the above description that a very simple valve closed container has been provided which is of few parts and of rigid construction. The gas evolving from the food product can escape from the container but the air cannot enter it. This makes a container which is especially adapted for cheese products. The gas evolving from the cheese product when put into an hermetically sealed container is likely to bulge the ends of the container, making an unsightly package. By the

improved valve described above, the gas which is in the nature of an inert gas evolving from the cheese crowds out the air within the container with its oxygen content, and the valve closes so as to prevent any air entering the container, so that the container is maintained sealed and the food product substantially free from contact with the oxygen of the air.

It is obvious that minor changes in the details of construction may be made without departing from the spirit of the invention as set forth in the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters-Patent, is—

1. A metal container comprising a body portion, an end closure secured thereto having a central raised section formed with a perforation therethrough, a metal cap surrounding said raised section and secured to the outer face of the end closure, said cap having a perforation therethrough, an elastic disk located within said metal cap and having a perforation therethrough out of alinement relative to the perforation in the end closure, said disk being fixed to said cap at its circumferential edge, said connection of the disk to the cap being disposed so as to hold said disk under tension pressed against said raised section for normally closing and sealing the container, said cap being disposed relative to said disk so as to permit said disk to lift when the pressure of the gas evolving from the product within the container overcomes the elasticity of the disk and the gas to escape from the container.

2. A metal container comprising a body portion, an end closure secured thereto having a central raised section formed with a perforation therethrough, a metal cap surrounding said raised section and secured to the outer face of the end closure, said cap having a perforation therethrough, an elastic disk located within said metal cap and having a perforation therethrough out of alinement relative to the perforation in the end closure, said metal cap having a seating shoulder for said elastic disk and a flange extending below said disk and curled so as to clamp the disk against the shoulder, said shoulder being disposed relative to said central raised section as to hold the disk under tension pressed against said raised section for normally closing and sealing the container, said cap being disposed relative to the disk so as to permit said disk to lift when the pressure of the gas evolving from the product within the container overcomes the elasticity of the disk and the gas to escape from the container.

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