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C. M. GERE

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VENTED CONTAINER AND RELIEF VALVE THEREFOR

Filed Dec. 2, 1930

Fig. 1.

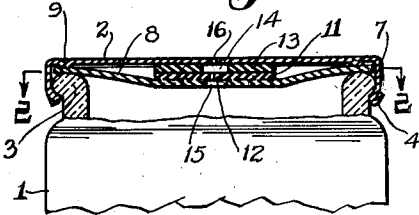


Fig.5.

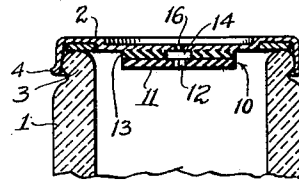


Fig. 2.

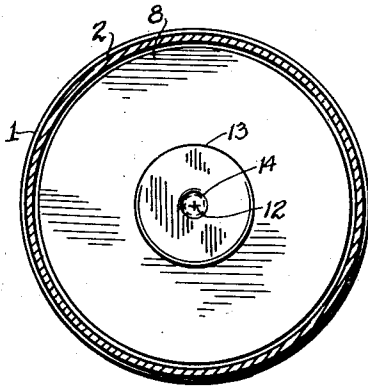


Fig.6.

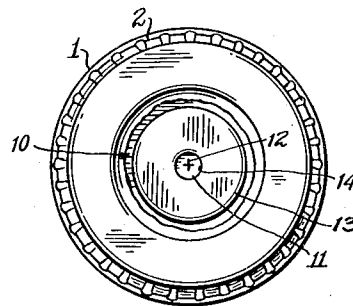


Fig. 3.

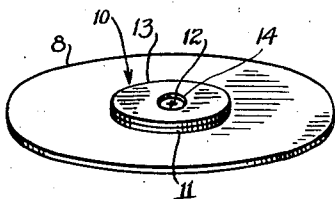


Fig. 7.

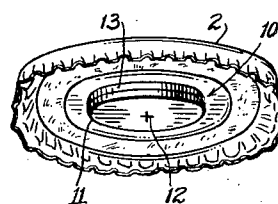
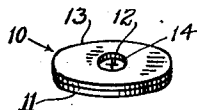


Fig. 4.



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VENTED CONTAINER AND RELIEF VALVE THEREFOR

Application filed December 2, 1930. Serial No. 499,600.

This invention relates to containers, particularly adapted to the retail packaging of cheese or other products in which a curing process involving a fermentative reaction of the product may take place within the container.

The invention also relates to the construction of a relief valve which while of general utility is adapted in particular to the venting of such containers as are above described, to relieve them of excess pressure of the carbon dioxide gas generated by the fermentation and preventing the entrance of atmospheric air into the container.

Other objects of the invention will appear as the following description of illustrative embodiments thereof proceed.

In the drawings in which the same characters of reference have been employed throughout the several figures to designate identical parts:

Figure 1 is a side elevation, partly in section showing the mouth portion of a jar or container;

Figure 2 is a cross section taken along the line 2—2 of Figure 1;

Figure 3 is a perspective view of the liner and valve;

Figure 4 is a perspective view of the valve per se;

Figure 5 is a vertical section through another type of jar or container;

Figure 6 is a top plan view of the lid, the central portion being broken away to show the valve; and

Figure 7 is a perspective view of the lid arranged in such position that it can be viewed from beneath.

Referring now in detail to the several figures and first adverting to that form of the invention shown in Figures 1 to 4, the jar 1 which may be of glass or any other suitable material is provided with a lid 2 of tin, said lid being secured to the mouth 3 of the jar, by having the sides of the lid crimped beneath the peripheral bead 7 which surrounds the mouth of the jar. The crimping may not be continuous but may be provided at spaced intervals.

A liner 8 of paper which is normally in the

form of a flat disk lies within the lid 2 and when the latter is crimped against the mouth of the jar, the edge of the liner is compressed between said jar and an annular rib 8 pressed in from the material of the lid.

The three elements, the jar, lid and liner, insofar as they have been described are old in the art and represent a common commercial form of container.

It is quite advantageous to pack cheese while in the uncured state in containers, in quantities such as is generally sold retail. The curing or aging of the cheese may therefore take place within the container with the attendant advantages that there is no loss of weight through evaporation, no formation of rind and no opportunity for mould growth.

It is known however, that the fermentative process is accompanied by the evolution of carbon dioxide gas with the risk of swelling the head of the container or perhaps bursting it. It therefore, becomes essential to provide the container with some means for relieving it of the excess pressure of the carbon dioxide gas and at the same time preventing access of atmospheric air to the contained product.

I have therefore, designed a valve for this purpose which through its inherent flexibility is adaptable to any type of container or to be attached to any kind of surface and the cost of which will add only negligibly to the entire cost of the container. This valve is shown per se in Figure 4, and in combination with the lid and liner in Figures 1, 2 and 3. The valve which in general is designated by the reference character 10 comprises a pair of disks of flexible material such as rubber, superposed and secured together in any suitable manner as by being cemented by rubber cement. The lower disk 11 is provided with a slit 12 which may preferably be in the form of short slits intersecting at right angles as shown. The upper disk 13 is formed with a hole or well 14 with which the slit in the lower disk communicates. In that form of the invention shown in Figure 1, the lower face of the valve is cemented to the upper side of the liner 8. The valve being made of flexible material such as rubber yields to inequalities in the liner so that it can be cemented thereto

in a fluid-tight manner. The latter element has a hole 15 registering with the slit 12 and placing said slit in communication with the chamber of the container. The lid 2 is punched with a small vent 16 registering with the well 14.

In operation, when the pressure of the carbon dioxide gas in the container rises above a determined value, the middle portion of the lower disk, which is unsupported by the upper disk, bulges out into the well 14 causing the slit 12 to spread, creating an opening through which the excess pressure of carbon dioxide is relieved. The lower disk 11 then resumes its planar condition closing the slit so that atmospheric air will not enter to diffuse with and dilute the carbon dioxide gas retained in the containers. It is to be understood that mould cannot propagate except in the presence of oxygen and that while the carbon dioxide gas remains undiluted, the cheese is surrounded by a sterile medium.

It is of course, optional in that form of the invention shown in Figure 1 to cement the valve either to the liner or to the inner surface of the tin lid itself.

In that form of the invention shown in Figures 5, 6 and 7, the liner is dispensed with and the lid is of slightly different type which however, is immaterial to the purpose of the invention. The valve 10 in this instance is cemented to the lower face of the lid. The operation is exactly the same, the lower disk 11 bulging under pressure and resuming its normal form in which the slit is closed, when the pressure has been relieved.

It is to be understood that the valve being flexible lends itself readily for attachment to any surfaces whether they be straight or dished or irregular in contour, and that the slit forms an efficient means for preventing the entrance of atmospheric air into the container under conditions in which the pressure within the container is never less than that of atmosphere, the principal purpose of the valve being to prevent diffusion of the atmosphere with the contained carbon dioxide gas.

It is obvious that in addition to its indicated preferred utility, the container with the valve therefore is equally well suited to the packaging of sauerkraut or other food-stuffs in which fermentative processes are taking place.

What I claim is:

Receptacle comprising a container and a lid member therefor, a liner member in said lid member clamped between said lid member and said container, and a relief valve between said lid member and said liner member, said valve being secured to one of said members and having transversely disposed intersecting slits on its lower face and a communicating chamber on its upper face, said lid member having a vent in communication

with said chamber and said liner member having an aperture exposing said intersecting slits.

In testimony whereof I affix my signature.
CLAIR M. GERE.

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