April 30, 1935. U. S. JOHNSON 1,999,460

GAS SEPARATING APPARATUS

Filed March 21, 1933

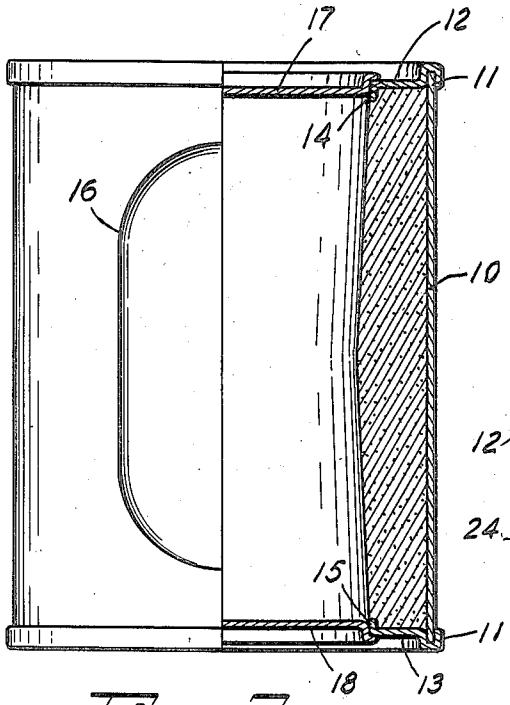


Fig. 2.

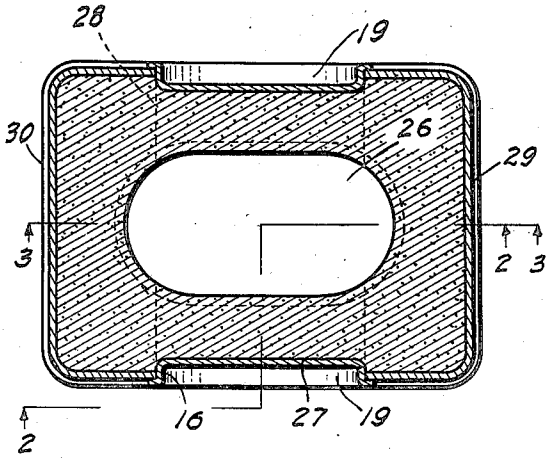


Fig. 1.

Fig. 3.

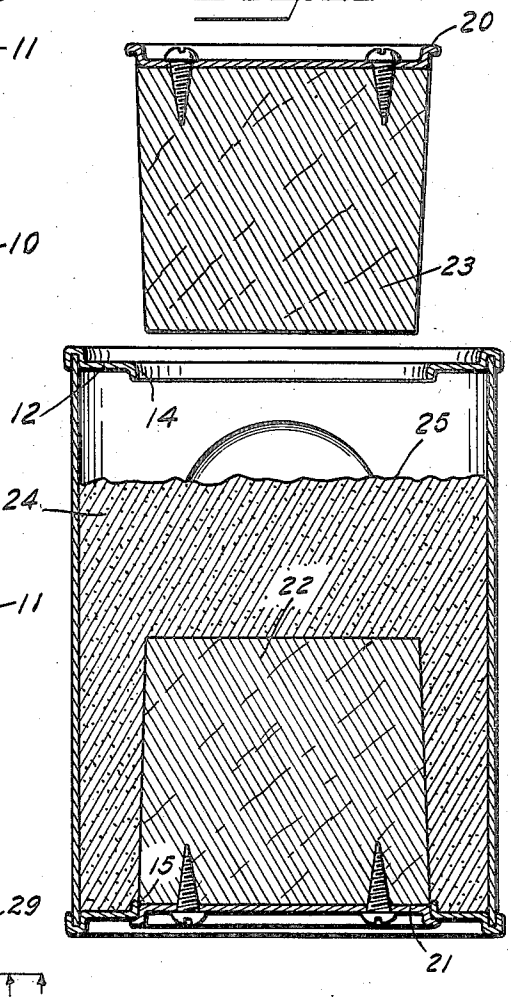
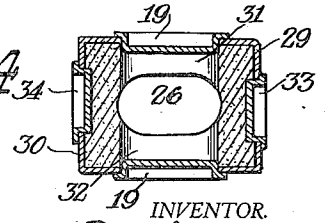


Fig. 4.



INVENTOR.

Ulysses S. Johnson

BY

Harry C. Schroeder

ATTORNEYS.

Patented Apr. 30, 1935 1,999,460

UNITED STATES PATENT OFFICE

1,999,460

GAS SEPARATING APPARATUS

Ulysses S. Johnson, Oakland, Calif.

Application March 21, 1933, Serial No. 661,938

4 Claims. (Cl. 183—4)

This invention has reference particularly to an odor adsorbent article to be used in refrigerators, although being equally applicable for use under other conditions, such as for the purpose of adsorbing noxious gases given off by gas heaters.

Odor adsorbent articles as presently provided are usually in the form of a brick without any covering means, this brick sluffing off and dropping into articles of food, and furthermore being subjected to any odoriferous or noxious gases from the time of manufacture until the article is actually to be used.

The main object of the invention therefore, is to mold an odor adsorbent material within a container, whereby, when the material is molded, it is completely packaged.

Another object of the invention is to provide an article as outlined which may be sealed against contact with noxious gases from the time of manufacture until such time as the article is actually put into use, and at any time thereafter thus preserving the material in its activated state up to the time and between times of its actual use.

A still further object of the invention is to provide a container which can be modified to suit the specific conditions, the usual container for household use being of an impervious material adapted to be sealed completely during non-use.

Other objects and advantages of the invention will become apparent as the following description is read on the drawing forming a part of this specification, and in which similar reference characters are used to designate similar parts throughout the several views, of which:

Fig. 1 is a transverse sectional view through the invention.

Fig 2 is a section taken on line 2—2 of Fig. 1.

Fig. 3 is a section taken on line 3—3 of Fig. 1, and also including the means for forming the axial passage through the odor adsorbent material.

Fig. 4 is a transverse section through the invention in a modified form and shown on a reduced scale, showing the transverse passage.

The invention consists of a container having side walls 10, these side walls being usually formed of an impervious material such as waxed pressboard or metal, where the material is to be preserved for some time between the time of manufacture and the time of use. Fixedly secured by the usual methods to the top and bottom of the wall or shell 10 as indicated at 11, is a top 12 and a bottom 13, these members being formed of sheet metal, and having friction-top-receiving apertures 14 and 15 formed therein, these apertures being in axial alignment within the completed container. Friction-top-receiving apertures 16 are also formed in the side walls, these apertures also being in alignment with each other and adapted to receive friction covers.

A friction top cover 17 and a similar friction bottom cover 18 and friction side covers 19 are all provided to fit the apertures or openings formed in the container, and are adapted to seal the contents against contact with air or gases until such time as the article is to be placed in use and at any time thereafter.

The molding means consists of the container exclusive of the covers 17 and 18, but including the side covers 19, the covers 17 and 18 being replaced by auxiliary covers 20 and 21, which frictionally fit into the openings 14 and 15.

Fixedly mounted on the inside surface of the auxiliary covers 20 and 21, are half-length cores 22 and 23, the terminal ends of these cores just meeting when the two auxiliary covers 20 and 21 are secured in the openings 14 and 15, these half-length cores being slightly tapering to permit their convenient removal, and having the same form as the openings 14 and 15 and being coextensive with the openings where they are secured to the auxiliary covers. The half-length cores are indicated as being secured to the auxiliary covers by means of screws although any other suitable means may be provided and would depend on the material from which the cores were formed. The cores 22 and 23 are indicated as formed of wood and secured to the auxiliary covers 20 and 21, however a drawn shell may be used, which is formed to include both the cover member and the core, and which would function in exactly the same manner.

In forming these odor adsorbent articles, a container has the covers 19 frictionally secured in the side apertures 16, the auxiliary bottom cover 21 with the half-length core 22 is frictionally secured in the bottom as indicated in Fig. 3, the plastic material 24 is filled to a predetermined level as indicated at 25, the top auxiliary cover with the half-length core 23 is forced down into the material and the cover frictionally secured in the opening 14, the package being permitted to rest for a predetermined length of time to permit setting of the plastic material, after which the half-length cores and auxiliary covers are removed, leaving an axial passage 26 extending through the container and the material, the material being formed at such a level 25 that when the half-length core 23 is fully inserted,

the excess material will be forced upwardly around the core to fill the space to the top 12. The article is then forwarded to a bake oven where it is thoroughly dried the passages 26, 31 and 32 permitting the escape of gases from the article while drying, and which can be controlled by inserting all covers except the top cover, and loosely placing the top cover in position to prevent action of outside gases on the contents, after which the covers 17 and 18 are frictionally secured to seal the material against ingress of moisture or gases until such time as the article is to be used.

It will be noted that the covers 19 form recesses 27 to receive the covers 19 at any future time where it is desired to again seal the contents, these covers being removed when the article is to be used.

It will also be noted that transverse passages 31 and 32 may readily be provided by the same means as shown clearly in Fig. 4 by providing auxiliary side covers with cores coinciding with the dotted lines 28 shown in Fig. 1, and that these side covers can also be supplied in the sides 29 and 30 as shown at 33 and 34 in Fig. 4, when it is desired to increase the superficial contact area.

It will be understood that variations in the article of the process which are consistent with the appended claims may be resorted to without detracting from the spirit or scope of the invention or sacrificing any of the advantages thereof.

I claim:

1. An odor adsorbent article comprising a container having removable top and bottom covers and removable side covers frictionally secured in apertures formed in the container, said container being filled with an odor adsorbent material having aperture-coextensive passages formed therethrough registering with the apertures, said material being molded within the container with said passages formed during the process of molding.

2. A gas separation apparatus comprising an impervious container having side walls and end walls, aligned-friction-cover-receiving apertures formed through said walls, an odor adsorbent composition molded within said container and having aperture-coextensive passages formed therethrough, and a friction cover for each aperture replaceable at will for hermetically sealing the composition against contact with extraneous gases.

3. A gas separation apparatus comprising an impervious container having side walls and top and bottom walls and aligned friction-cover-receiving apertures formed through said top and bottom walls and through said side walls, a gas adsorbent composition molded within said container with aperture coextensive passages formed therethrough and forming vertical and transverse interconnecting passages, and a friction cover for each aperture for controlling the passage of gases through the apparatus and for sealing the apparatus at will.

4. A gas separation apparatus comprising an impervious container provided with a filler of gas separation composition molded within the container and having interconnecting gas passages formed therethrough, openings coextensive with said passages formed through the walls of said container, and a friction cover for each opening for hermetically sealing the container at will.

ULYSSES S. JOHNSON.