March 1, 1938. J. H. O'NEIL ET AL 2,110,093

VACUUM SEALED CONTAINER

Filed Oct. 16, 1935

Fig. 1.

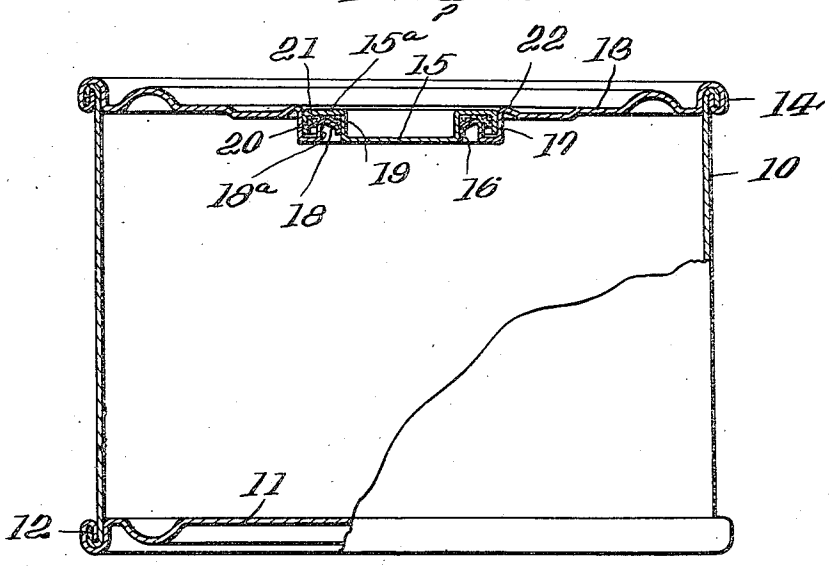
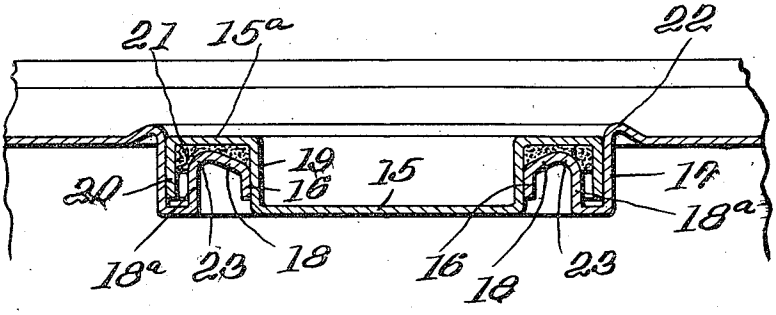


Fig. 2.



Inventors

James H. O'Neil

William F. Punte

By Mason & Porter

Attorneys

Patented Mar. 1, 1938

2,110,093

UNITED STATES PATENT OFFICE

2,110,093

VACUUM SEALED CONTAINER

James H. O'Neil and William F. Punte, Syracuse, N. Y., assignors to Continental Can Company, Inc., New York, N. Y., a corporation of New York

Application October 16, 1935, Serial No. 45,336

2 Claims. (Cl. 220—42)

The present invention relates to new and useful improvements in vacuum sealed containers and more particularly to a vacuum sealed container which is provided with a friction plug closure.

An object of the invention is to provide a container of the above type wherein the container end and the friction plug are shaped so as to provide a double friction wall contact therebetween, the friction wall contact surfaces being disposed so that, as the vacuum becomes greater within the container, the friction contact between the plug and the container end becomes tighter.

A further object of the invention is to provide a container of the above type wherein the container end is provided with a pair of friction walls joined by an intermediate supporting wall and wherein the friction plug is provided with a pair of friction walls contacting with the friction walls on the container end and spaced from the intermediate supporting wall to afford more room for the application of a sealing material.

A further object of the invention is to provide a container of the above type wherein the friction plug and the edges thereof are disposed entirely below the container end so that the plug cannot be pryed out, thus rendering the container tamper-proof.

The above and other objects of the invention will in part be obvious and will be hereinafter more fully described.

In the accompanying drawing:

Fig. 1 is a side elevation partly in section of the improved container with the friction plug in position thereon.

Fig. 2 is an enlarged sectional view showing the friction plug and the container end.

The invention relates generally to a vacuum sealed container having a friction plug closure. The container includes a body portion having an end seamed thereto, the end being provided with a central opening and the metal of the can end around the opening being shaped to provide a pair of substantially parallel friction walls which are joined by an intermediate parallel supporting wall. A friction plug is adapted to close the opening to the container end and is provided with a pair of substantially parallel friction walls which contact with the friction walls on the container end. The inner friction wall of the plug contacts with the friction wall of the container end immediately adjacent the opening therein, and the outer friction wall of the plug contacts with the outer friction wall on the container end. This outer wall on the container end is spaced from the intermediate parallel supporting wall so as to afford a greater space between the plug and the container end for applying a sealing material. The container, after the end has been seamed thereto, is fed to a vacuum chamber. After it has been thoroughly vacuumized in this chamber and before it is ejected therefrom, the plug is automatically fed to the container end and pressed in its seated position whereby to hermetically seal the container.

Referring more in detail to the accompanying drawing, the container includes a body portion 10, a bottom end 11 double seamed thereto as at 12 and an upper end 13 double seamed thereto as at 14. The end 13 is provided with a central opening which is closed by a friction plug 15. The metal of the end 13 adjacent the opening therein is drawn to provide a pair of friction walls 16, 17 which are joined by an intermediate reversely curved wall portion 18, having a portion 18a thereof parallel to and spaced from the outer friction wall 17 so as to provide an enlarged space for the application of a sealing material to the plug 15. The friction plug 15 is drawn to provide a pair of friction walls 19, 20 joined by a horizontal portion 15a, the friction walls 19, 20 contacting with the friction walls 16, 17 respectively on the end 13. A sealing material 21 is applied to the under face of the portion 15a of the friction plug 15 between its walls 19, 20 before the same is seated on the container end.

The container end 13 is provided with an upstanding rib 22 which surrounds the opening therein and, as shown in the drawing, is disposed above the plane of the friction plug 15. The inner face of the friction wall 16 on the container end contacts with the outer face of the inner friction wall 19 on the plug 15. The inner face of the friction wall 17 on the container end contacts with the outer face of the friction wall 20 on the plug. After the container has been vacuumized, the friction plug 15 with the sealing material 21 applied thereto is fed to the container and pressed thereon to close the opening in the end 13.

The inner friction wall 16 on the container end will yield slightly, the curved portion 23 of the intermediate wall 18 serving as a pivot point. The friction wall 17 on the container end will also yield slightly, the rib 22 serving as its pivot point. Thus it will be seen that as the vacuum in the container increases, the frictional contact between the plug and the container end will become tighter. As the plug

15 is drawn down, the friction walls 19, 20 thereof will press tightly against the friction walls 16, 17 respectively on the container end and cause the walls to yield slightly about their pivots 23, 22 respectively. Similarly, as the plug is drawn into tight frictional contact with the container end, the sealing material 21 will be likewise drawn in tight sealing contact with the intermediate portion 18 on the container end.

From the foregoing description it will be seen that the uppermost portion, that is the horizontal portion 15a on the plug 15, and the edge of the outer wall 20 thereof are disposed below the rib 22 on the container end 13 so that it is impossible to pry off the plug, thus providing a tamperproof container. It will also be seen that the outer wall 20 on the plug 15 is spaced from the intermediate supporting wall 18 on the container end so that a greater space is provided for the sealing material 21.

A particular advantage of the present invention lies in the fact that as the friction plug 15 is more firmly seated on the container end, both friction contact surfaces, that is, the contact surface between the walls 16 and 19 and between the walls 17 and 20, become tighter. In other words, the outer faces of the friction walls on the plug 15 contact with the corresponding inner faces of the friction walls on the container end 13 so that an outward radial pressure is exerted on both friction walls on the container end.

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

We claim:

1. A metal container comprising a body portion, an end seamed thereto and having an opening therethrough, said end being shaped adjacent the opening therethrough to provide substantially parallel inner and outer friction walls extending at substantially right angles to the plane of the end and joined by an intermediate wall portion merging in the said inner friction wall, a plug for closing the opening through the end and including a substantially horizontal wall portion terminating in substantially parallel inner and outer friction walls depending therefrom, the inner and outer friction walls on said plug being adapted to cooperate with the inner and outer friction walls respectively on said end and said horizontal wall portion on the plug overlying the said intermediate wall portion on the end and disposed below the upper edge of the outer friction wall on said end, and a sealing material applied between the intermediate wall portion on said end and the underface of the horizontal wall portion on said plug.

2. A metal container comprising a body portion, an end seamed thereto and having an opening therethrough, said end being shaped adjacent the opening therethrough to provide substantially vertical and parallel inner and outer friction walls disposed below the plane of the said end and joined by an intermediate wall extending from the bottom edge of said outer friction wall to the upper edge of said inner friction wall, a plug for closing the opening through the said end and including a substantially horizontal wall portion overlying the said intermediate wall portion and disposed below the upper edge of the said outer friction wall, said horizontal wall portion terminating in substantially vertical and parallel inner and outer walls depending therefrom and adapted to cooperate with the inner and outer friction walls respectively on said end, the said intermediate wall portion between the inner and outer friction walls on said end being reversely curved to provide with the underface of said horizontal wall portion a restricted chamber, and a sealing material applied in the restricted chamber between the said intermediate wall portion on said end and the underface of the said horizontal wall portion on said plug.

JAMES H. O'NEIL.
WILLIAM F. PUNTE.