

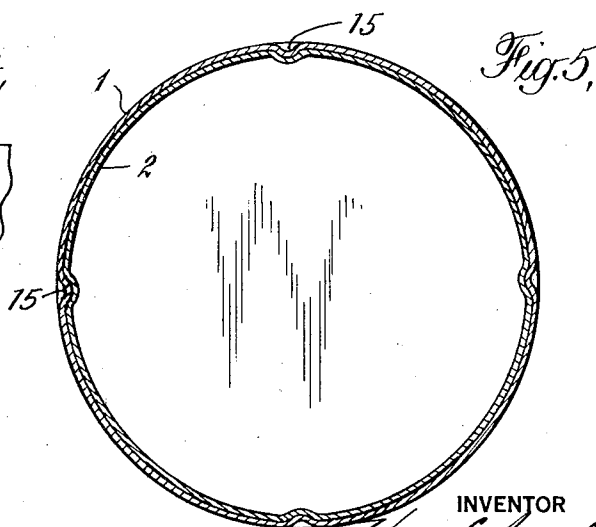
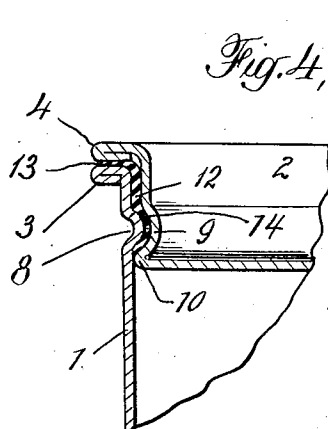
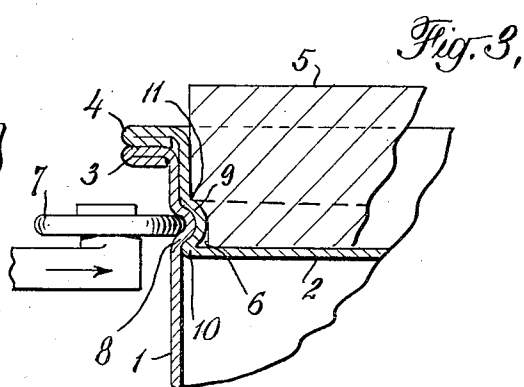
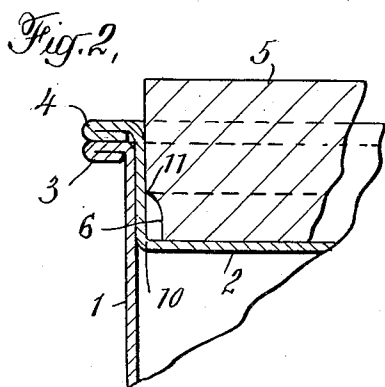
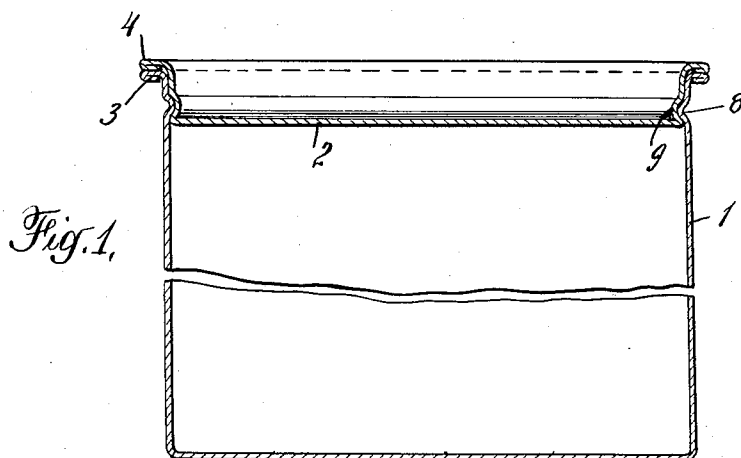
April 16, 1929.

V. C. SNYDER

1,709,196

METHOD OF APPLYING COVERS TO CONTAINERS

Filed Feb. 16, 1926



INVENTOR

*V. C. Snyder*

BY

*James D. Davis* *Frederic D. Edwards*  
ATTORNEYS

## UNITED STATES PATENT OFFICE.

VERNON CHARLES SNYDER, OF GLEN ROCK, NEW JERSEY.

## METHOD OF APPLYING COVERS TO CONTAINERS.

Application filed February 16, 1926. Serial No. 88,557.

This invention relates to metal cans or containers of that type which have a body proper and a cup-shaped cover frictionally held in place but which is removable without injury to the container.

The object of the invention is to provide an improved method of applying a friction cover of the above mentioned type to the can body so that a more effective seal is obtained when the cover is in place, the method being an inexpensive and expeditious one which requires apparatus of an extremely simple nature.

The invention is illustrated in the accompanying drawings in which Fig. 1 is a vertical section of a container whose cover has been applied by the improved method.

Fig. 2 is a partial section showing one of the steps in the method of applying the cover to the body of the can;

Fig. 3 is a partial vertical section showing another step in the method of applying the cover to the body of the can;

Fig. 4 is a partial vertical section illustrating the use of a gasket between the cover and the body of the can, and

Fig. 5 is a horizontal transverse section illustrating a modification of the invention.

In Fig. 1 which represents a container after the cover has been applied thereto by the improved method, the body of the container is shown at 1 and the cup-shaped cover is shown at 2. The upper edge portion of the body of the can may be crimped or folded upon itself as shown at 3, and the peripheral edge of the cover may also be crimped or folded upon itself as shown at 4. The folded over portions 3 and 4 reinforce the edges of the can body and the cover respectively and constitute shoulders which are sufficiently rigid to facilitate opening of the can by inserting a suitable implement between the shoulders and prying the cover from the can body. The body of the can has a circular groove 8 forming an inwardly extending projection which engages in a corresponding groove or recess 9 formed in the adjacent vertical wall of the cover. These grooves cause the cover to be more firmly locked in place than if they were absent and their use results in a more effective seal. However, they do not prevent the cover from being pried off in the manner that is customary with friction covers. These grooves are formed in the cover and in the body of the can by the improved method now to be described.

When it is desired to apply the cover to the

can body, as for instance after the can has been filled with the commodity it is intended to contain, the cover is positioned in place in any suitable type of machine and a chuck shown at 5 (Figs. 2, and 3) is inserted in the cover and forces the cover in place. The lower edge of the chuck 5 is provided with a clearance 6. A roller 7, which may constitute a part of the assembling machine, is then pressed against the body of the can immediately above the bottom of the cover 2. The roller is then bodily rotated about the can, or the can is rotated about its own axis in such a way as to produce a circumferential groove 8 in the wall of the can and a corresponding groove or recess 9 in the adjacent vertical wall of the cover. The pressure applied by the roller 7 is in a direction which is substantially parallel with the plane of the cover bottom. The cover bottom is therefore capable of resisting the inward pressure of the roller and when the metal is deflected by the roller to form the grooves 8 and 9 the outer edge 10 of the cover bottom and the shoulder 11 on the chuck will act as fulcrums so that the metal between these points will assume the shape of the periphery of the roller. During the act of forming the grooves the chuck opposes inward pressure in a zone spaced from the bottom of the cover. This zone may be considered as a narrow zone occupied by the peripheral shoulder 11 or the zone extending upwardly from the shoulder to the top of the container. The chuck does not oppose inward pressure at any point below this zone otherwise the chuck would have to be collapsible in order to remove it. Preferably the periphery of the roller is so shaped as to make the grooves substantially semi-circular in cross section. After the cover has been applied in this manner the chuck 5 is withdrawn and the can is removed from the machine. The formation of the groove 8 in the outer surface of the wall of the can body produces an inwardly extending projection on the inner surface of the wall. This projection engages in the circumferential groove or recess formed in the vertical wall of the cover and thereby locks the latter in place. The complete can with the cover applied in the manner above described is shown in Fig. 1. This method of applying the cover to the can body produces a container which is air tight, or very nearly so, and the cover is firmly locked in place, but, nevertheless, it may be removed in the same manner

as the ordinary friction cover by inserting a suitable implement between the shoulders 3 and 4 and prying the cover off. In so doing, neither the cover nor the can body are injured or damaged and the cover may be replaced if desired.

In some instances it may be desirable to insert a gasket between the cover and the can body before the cover is applied. This is illustrated in Fig. 4 wherein a gasket for this purpose is represented at 12. The gasket may be of any suitable material such as paper, rubber or the like and it is preferably so shaped that a horizontal portion of it may be gripped between the shoulders 3 and 4, and a vertical portion of it may be gripped between the vertical wall of the cover and the adjacent portion of the can body. When the cover is forced into the can that portion of the gasket which lies between the shoulders 3 and 4 is compressed or pinched as represented at 13, and when the circumferential groove is formed in the can body and the vertical wall of the cover, the portion of the gasket between the deformed portion of the can body and the deformed portion of the cover is pinched or compressed as represented at 14. This insures a double seal, one at 13 and the other at 14.

If desired the circumferential grooves which lock the cover in place and produce the seal need not extend entirely around the container. As shown in Fig. 5 instead of continuous circumferential grooves, a plurality of indentations 15 may be formed in the can body and in the adjacent wall of the cover. These indentations may be formed in a manner similar to that described above except that the roller will have one or more projections thereon to form the indentations. These indentations are spaced apart circumferentially of the container as shown in Fig. 5 and any number may be employed. They will answer the purpose where the seal need not have as high a degree of efficiency as the seal described above. Even though this type of cover-locking means may not afford a thoroughly air tight seal it may advantageously be used on cans of certain types merely because of its locking characteristic. For instance, when used for paint, syrup and the like the container will prove superior to containers of the friction cover type heretofore employed for this purpose because the cover will be firmly locked in place during shipment. The circumferential length of the indentations

shown in Fig. 5 may vary from that of mere indentations at single points as shown in Fig. 5, to indentations of considerable circumferential length depending upon the degree of locking and sealing that is required.

It will now be seen that the improved method employed for grooving or indenting the can body and the cover is a simple and expeditious one involving the use of mechanism of a simple and inexpensive character. By utilizing the bottom of the cover as one fulcrum during the formation of the grooves, a simple chuck of a non-collapsible character may be employed, and this greatly simplifies and cheapens the process.

I claim:

1. The method of applying a cup-shaped metal cover to a metal container which comprises inserting said cover in one end of said container, inserting a chuck in the cover adapted to oppose inward pressure in a zone spaced from the bottom of the cover but not at any points below said zone, and indenting the side wall of said container and the side wall of said cover by pressure applied inwardly toward the central axis of the container between said zone and the bottom of the cover to form an inwardly extending projection on said container fitting into a corresponding depression in said cover, whereby during the act of indenting the container the bottom of the cover forms a lower fulcrum for the indentation and the chuck provides an upper fulcrum for the indentation thus permitting the use of a non-collapsible chuck.

2. The method of applying a cup-shaped metal cover to a metal container which comprises inserting said cover in one end of said container, inserting a chuck in the cover adapted to oppose inward pressure in a zone spaced from the bottom of the cover but not at any points below said zone, and forming a circular groove in the side wall of said container and the side wall of said cover by pressure applied inwardly toward the central axis of the container between said zone and the bottom of the cover to form an inwardly extending rib on the container fitting into a corresponding groove in said cover, whereby during the act of grooving the container the bottom of the cover forms a lower fulcrum for the groove and the chuck provides an upper fulcrum for the groove thus permitting the use of a non-collapsible chuck.

In testimony whereof I affix my signature.

VERNON CHARLES SNYDER.