Aug. 26, 1930. J. F. PETERS 1,773,855

SOFT METAL DISK CLOSURE FOR HARD CANDY, SALTED PEANUTS, AND TOBACCO CANS

Filed Feb. 19, 1926

Fig. 1

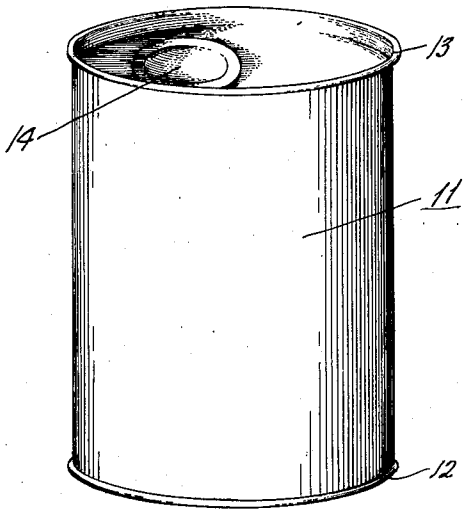
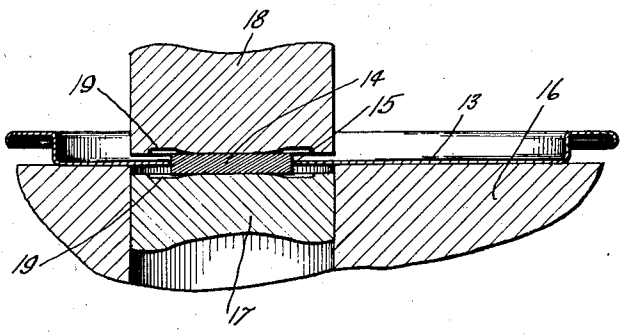


Fig. 2



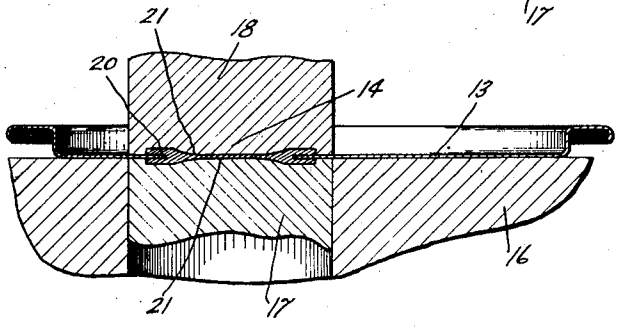


Fig. 3

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UNITED STATES PATENT OFFICE

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SOFT-METAL DISK CLOSURE FOR HARD CANDY, SALTED PEANUTS, AND TOBACCO CANS

Application filed February 19, 1926. Serial No. 89,304.

This invention relates in general to hermetically sealed sanitary cans and to the process of closing them.

Heretofore cans of this type have been provided with friction caps or plugs requiring corresponding friction seat walls in the can end, which entails at least one additional operation in the making of the end and is an extra expense. The dispensing hole of my can end can be made by the same die operation which draws the can end. Another disadvantage of a mere friction closure lies in the fact that it does not provide an effective hermetic seal. Cans for the packing of hard candies, peanuts and the like, have in the past also been provided with a stud hole and a tin cap soldered over such hole. Solder is objectionable for use in cans which contain food products. The modern sanitary can has taken the place of soldered cans. The use of solder and its application is also very expensive. Soldered closures are comparatively hard to open except with especially prepared cutting tools and such cutting operation is always attended by some danger of injury to the hands of the consumer.

To avoid the foregoing objections, disadvantages and expensive construction of the old type of candy can, I have invented a can closure which is both sanitary and hermetic and which is inexpensive and extremely easy to remove even without any tool and without the slightest danger of injury to the hands of the consumer.

A further object of my invention resides in the provision of a closure for the dispensing opening of a can consisting of a flowable material; and further in the process of closing the opening by means of such a closure of flowable material.

Another object of my invention resides in providing a method of forming a closure, which method permits the dispensing hole of the can to be formed by the same die operation which draws the can.

A further object of the invention is the provision of a can for the packing of small solid articles, such as hard candy and the like, which are desired to be dispensed in small quantities through a relatively small or restricted pouring opening, and in the provision of an hermetic, easily ruptured sealing closure for said dispensing opening.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

It will be understood that my new type of can and closure can be used not only for the packing of hard candy, but is applicable also for the packing of a great variety of other products where the advantages of this type of package are demanded, and I do not want to limit myself to such use, nor do I want to limit myself to the exact construction shown on the accompanying drawings, which form part of these specifications.

Fig. 1 is a perspective view of a container embodying my improved sanitary and hermetic closure.

Fig. 2 is a cross sectional view of a sanitary can end, dispensing hole closure, applying chuck and die just prior to the closure securing operation.

Fig. 3 is a similar view showing the positions of the chuck and die at the moment when the dispensing hole closure has been compressed into hermetic closing position.

Referring now to Fig. 1 of the drawing, the numeral 11 represents a sanitary can body with bottom end 12 and top end 13 double seamed thereto. Reference numeral 14 designates my improved dispensing hole closure in completed attachment form, also clearly shown in cross section in Fig. 3. This dispensing hole closure 14 consists in its initial configuration of a disk-shaped, comparatively thick, soft metal piece or stud of a diameter exactly coinciding with the diameter of the dispensing hole 15 of the can end. The closure 14 is hermetically attached to the can end (in this present illustration the top end 13) before said end 13 has been double seamed to the can body 11, in the following manner:

The end 13 is positioned by any well known automatic or manual means upon the bed of a die press 16 (see Fig. 2) so that the dispensing hole 15 is concentric with a lower upward-

ly reciprocable chuck 17 and also with an upper downwardly movable die 18. Before the chuck 17 and the die 18 are raised and lowered respectively as shown in Fig. 2, the soft metal closure plug 14 has been fed into position (as illustrated in Fig. 2) so that its thickness is equally divided between the outside and inside of the can end surface and it circumferentially and frictionally engages the circumferential edge of the dispensing hole 15. The chuck 17 is then raised and simultaneously the die 18 is lowered and the plug 14 is compressed between chuck and die until the soft metal of the plug gives way under the equalized downward and upward pressure of the die and the chuck, and is forced into the recesses 19 of the chuck and die being extruded in such a manner that it flows over and under an appreciable margin of the can end adjacent the circumferential dispensing hole edge and hermetically clamps said dispensing hole edge, as clearly illustrated in Fig. 3.

It will be noted that the shape of the chuck and die faces is such as to squeeze the metal of the closure 14 into a thick annular outer portion 20 and into a central thin portion 21.

It is the central thin portion 21 of the soft metal closure which is easily ruptured and removed, and once the central portion is broken away the thicker clamping portion 20 can be easily removed also, thus leaving the clean edged dispensing hole 15.

After a can end has thus been provided with the closure 14 it may be double seamed to a filled container, or if desired, stored away for future use in connection with such containers.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. In a can, an opening in a wall portion thereof, an extrudable metal disk filling said opening with its middle portions extruded from the center to and about the marginal edges of the opening to form an hermetic seal, the intermediate portion of said disk being relatively thin to permit rupture.

2. In a can, an end therefor having a discharge opening therein, a closure of disk form filling said opening and having the circumferential edges of the can end which forms the opening embedded in the material of said closure, the middle parts of the closure being extruded by sealing pressure to make the middle part of the closure thin, the extruded metal being forced over the inner and outer surfaces of the can end around said opening.

3. The process of forming a closure for a discharge opening in a can or other container comprising filling the opening with a body of flowable material and causing the material to flow from a thereby thinned center to and about the marginal edges of the opening to tightly close the same.

4. The process of forming a closure for an opening in a container comprising inserting a disk or the like of extrudable metal in said opening and causing said metal to flow from and thin the center of the disk and to embed the marginal edges of the opening therein.

5. The process of forming a closure for an opening in a container comprising inserting a disk of extrudable metal in said opening and extruding said metal radially outwardly from the center of the disk and to cause it to flow about the marginal edge of the opening to form an hermetic seal leaving the central portion of the disk relatively thin.

6. The process of forming a can end and closure which comprises simultaneously die forming the can end and die stamping the dispensing opening in said can end, inserting in said opening a disk of flowable solid material and die pressing said material to cause it to flow from a thereby thinned center to and about the edges of the opening to form a firm union therewith.

7. In a can, a portion of the can which has a discharge opening, and an extrudable metal disk in said opening, said disk being caused to flow radially and thereby embrace the edges of said opening both on the inner and on the outer sides thereof, and having its central portion compressed to thinness, whereby the opening is hermetically sealed and the middle portion of the disk is readily removable by cutting or punching.

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