

April 25, 1944.

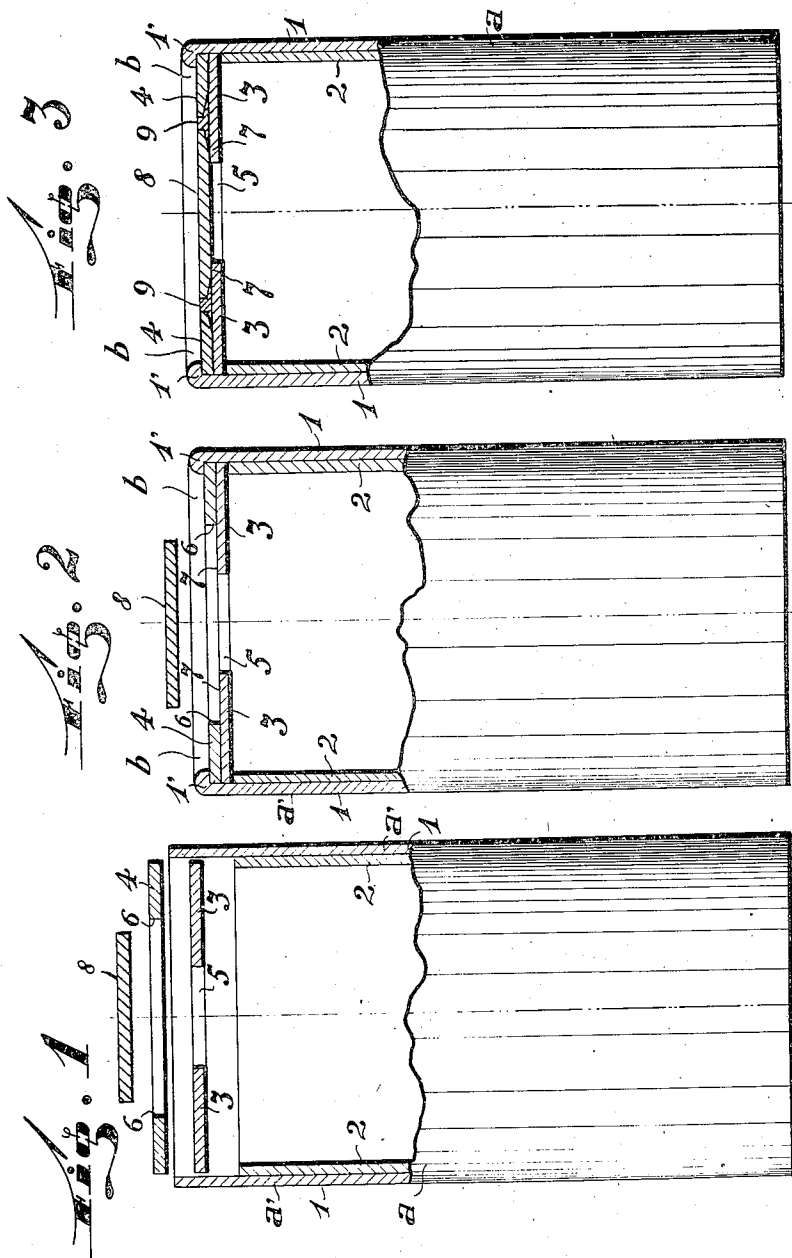
G. E. C. KRAFT

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CLOSURE FOR CONTAINERS IN GENERAL

Filed Aug. 22, 1942

2 Sheets-Sheet 1



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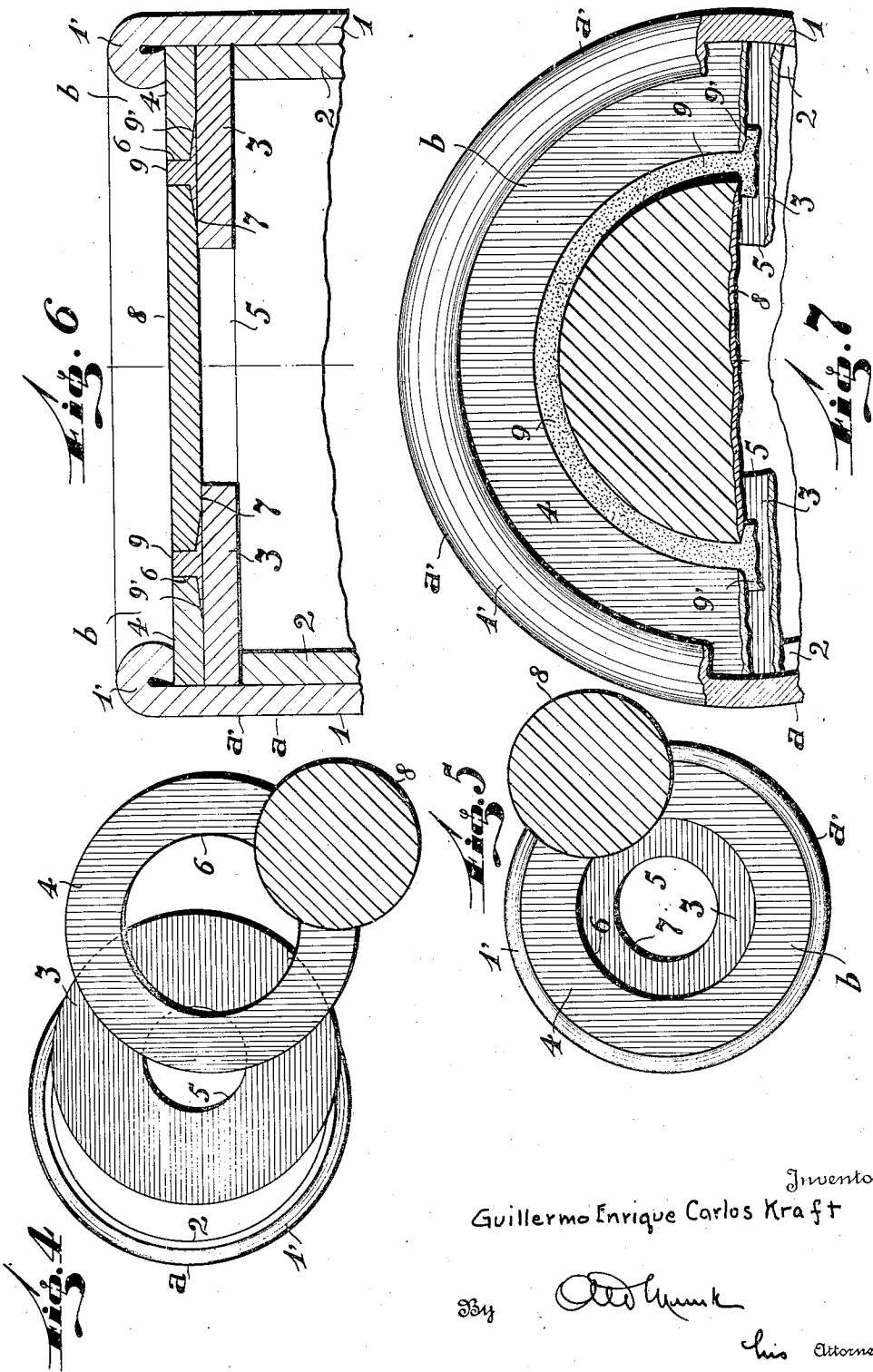
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UNITED STATES PATENT OFFICE

2,347,417

CLOSURE FOR CONTAINERS IN GENERAL

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Application August 22, 1942, Serial No. 455,763
In Argentina February 11, 1942

2 Claims. (Cl. 229-43)

This invention relates to a novel closure for containers of the type wherein the lid is constituted by a simple disc adapted directly by an adhesive on a corresponding seat.

In general, the invention consists of a closure which on being applied to a container of the drum type or other structure, forms a cover serving both as a head joined to the side walls, and as a seat for the lid, said cover being so arranged that the adhesive used to secure the disc of said lid will prevent the opening of the container except by violating or tearing said head open.

For this purpose, the container head, instead of being formed by a single piece, is constituted by two washer-shaped members. Both members have the same external diameter but different internal diameters, so that when superposing both members with the member having the larger opening on top, they will form a step or depression around the opening of the container, so as to act as a seat for the disc constituting the lid; and inasmuch as the latter disc is glued with an adhesive serving as a joint covering, the filtration of the adhesive, which is used in a semi-liquid form, will provide a permanent seal, upon entering the joint of the two superposed washers.

This arrangement renders the closure airtight, and therefore if the container is made waterproof, even if made of pasteboard it may be used to contain liquid products.

In order that the invention may be more clearly understood and readily carried into practice, same has been illustrated by way of example and in a preferred embodiment in the accompanying drawings, wherein:

Fig. 1 is an elevational view, partly in section, of the container before the application of the head with the corresponding lid, showing the structure of the elements forming said head when suitably combined.

Fig. 2 is an elevational view, partly in section, showing the head already formed and integrated with the side walls. This figure also shows the manner in which the opening remains, with the off-set seat formed to receive the lid.

Fig. 3 is an elevational view of the container, partly in section so as to show the seal when completed; this view also shows the manner in which the glue has penetrated between the two pieces forming the head, forming a firm substantially permanent mordant.

Fig. 4 is a plan view of the elements constituting the container head and lid, before being assembled.

Fig. 5 is a plan view of the container with the head in assembled position, showing the opening left in the head and serving as a seat for the lid.

Fig. 6 is a diametrical sectional view of a detail of the container closure, clearly showing the mordant formed by the glue binder used for securing the lid disc, and

Fig. 7 is a plan view of the closure, with the elements constituting same sectioned so as to clearly show the manner in which the two head pieces are combined in order to allow the penetration of the adhesive used in fixing the lid.

The same reference characters are used throughout the different figures to indicate like or corresponding parts or elements.

As may be seen from the drawings, *a* is a drum-shaped container made of pasteboard or other suitable material, the side walls *a'* of which are constituted by cylindrical pieces 1 and 2 so arranged that the inner piece 2 serves as a stop or seat for the head *b* which is secured by turning the edge 1', in a well known manner.

According to the present invention, the head *b* is formed by two pieces 3 and 4 which, as clearly shown in Figs. 1 and 4 are apertured or washer-shaped discs having the same external diameter but different internal diameters. Said piece 3 which is placed underneath is provided with a perforation intended to form the container mouth 5 and which is substantially smaller than the perforation 6 of the piece 4, so that on superposing both pieces 3 and 4 as shown in Figs. 2 and 5, they will form a step, presenting an annular depression 7 relative to the outer surface of piece 4, said depression surrounding the mouth 5 and serving as a seat for a lid 8 constituted by a disc having a smaller diameter than the perforation 6 but a larger diameter than said mouth 5.

As may be seen in Fig. 2, in order to form the head *b*, both pieces 3 and 4 are seated on the internal piece 2 of the side wall *a'* and are secured by turning the flange or border 1' of said piece 1 of the same wall, so that both pieces 3 and 4 are juxtaposed and combined as if they constituted a single element. However, the joint of one piece with the other, even when joined together by means of a suitable adhesive, will allow the filtration of a fluid substance applied through the portion corresponding to the seat or depression 7.

For this purpose, when fixing the lid 8 by means of glue or other suitable substance 9, and inasmuch as said glue is applied in a substantially liquid form so as to fill the annular space

between said lid 8 and the edge of the perforation 6, said glue apart from spreading under the lid so as to secure same to the seat 7, will also enter the interstices between the two pieces 3 and 4 forming the head b, as shown in Figs. 3, 6 and 7. Therefore, apart from serving as a binder, the portions 9' of said adhesive will act as a holding means for preventing the removal of the lid 8.

Thus, the glue 9 and the penetrated portion 9' thereof between said pieces 4 and 3 will form such safe seal for the lid 8 that the latter could not be removed without tearing open the head b, which would evidence a violation of the closure.

In short, in order to close the container in the manner described above, it will be sufficient to place the lid 8 more or less centered relative to the perforation 6, and pour glue or other adhesive substance 9, capable of forming a binding means and a filling for the space between said lid 8 and the edges of the perforation 6. And inasmuch as the adhesive will be applied in a substantially liquid form, it will spread under the lid 8 and enter between the pieces 3 and 4, thereby acting also as a holding means, in such a manner that the lid 8 will remain as integrating the head b. As this closure is air-tight and solid, the container may be used to contain liquid products if suitably water-proofed. In order to empty the contents, any portion of the head b may be perforated.

Apart from the assembly described above, the closure or seal may comprise a wafer glued over the assembly of the head b.

It is evident that many modifications in construction and details will occur to those skilled

in the art, without departing from the scope of the invention as clearly set forth in the appended claims.

What is claimed is:

1. Closure means for a cylindrical container formed with an annular internal seating flange near its end, said closure means comprising a first washer of an outer diameter substantially equal to the inner diameter of said container, said first washer being seated on said flange and having a relatively small inner diameter, a second washer having an outer diameter equal to the outer diameter of said first washer and an inner diameter considerably greater than the inner diameter of said first washer, said second washer being seated on said first washer, means to hold said two washers in position in said container, a sealing disc having a diameter exceeding the inner diameter of said first washer and being slightly less than the inner diameter of said second washer, said disc being disposed on said first washer and in the central opening of said second washer, and an adhesive surrounding said sealing disc and securing it to the inner circumference of said second washer, part of said adhesive penetrating between said disc and first washer and between said first and second washers to complete the seal.
2. Closure means, as claimed in claim 1, wherein the inner diameter of said first washer is about one third of its outer diameter and the inner diameter of said second washer is about two thirds of its outer diameter.

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