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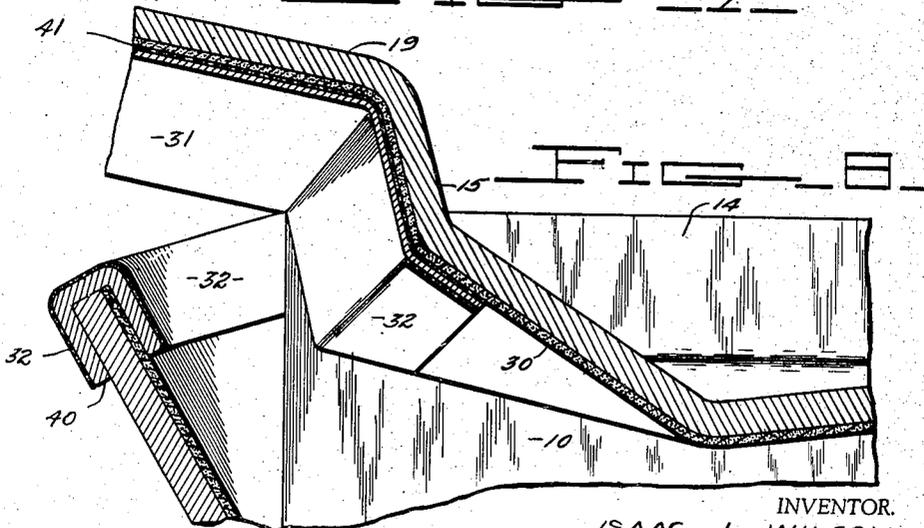
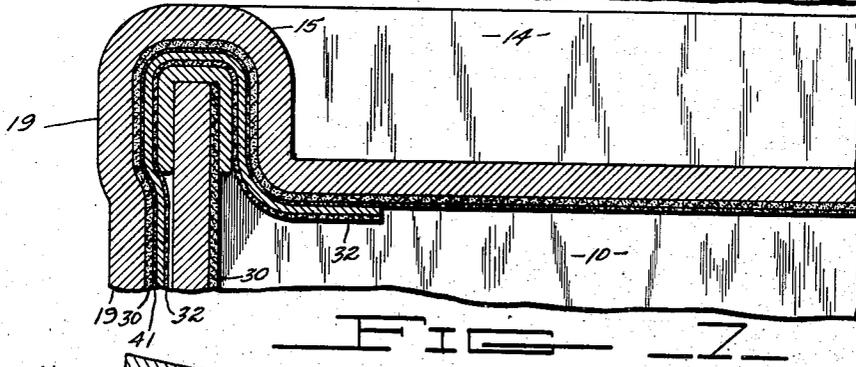
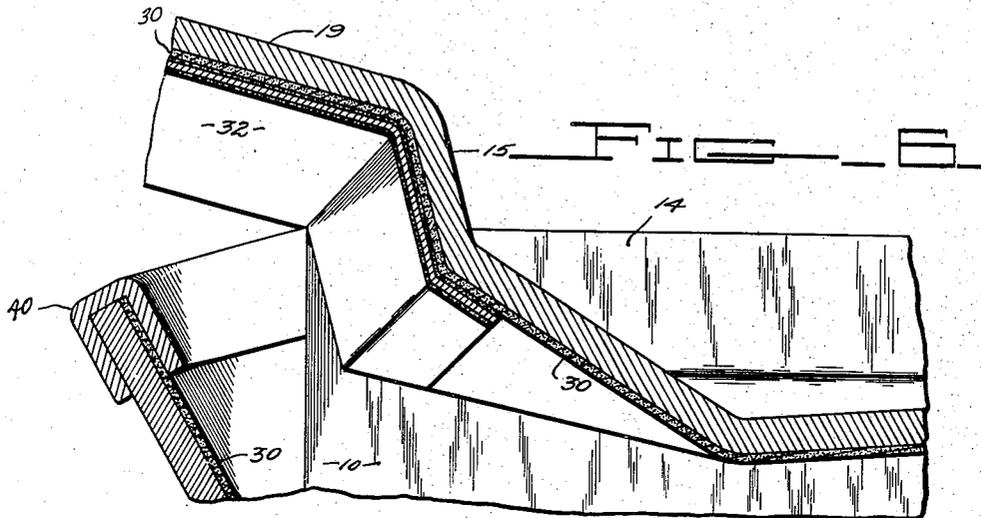
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SEALING STRUCTURE FOR CONTAINERS

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2 Sheets-Sheet 2



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SEALING STRUCTURE FOR CONTAINERS

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This invention relates to containers formed of sheet fibrous material, such as paperboard, and is directed particularly to a structure for sealing the top member or cover to the body of the container.

Containers of this type are usually manufactured and shipped to the user with a portion of the cover or top member unsecured to the body to provide an opening through which the container may be filled, and this unsecured portion of the cover is then sealed to the body of the container. Accordingly, the unsealed portion of the top edge of the body is exposed until the container has been filled and sealed, with the result that such exposed portion may be contaminated, or rendered unsanitary, by persons handling the container previous to the time that it is filled and sealed. Also, the confronting surfaces of the top member and body member are sealed in such a manner that when the seal is broken the raw material, from which the container is formed, is exposed and is contacted by the contents of the container as the same is poured from the container with the result that containers formed of fibrous material, such as paperboard, absorb the liquid contents during the pouring operation, whereupon the absorbed liquid is subjected to particularly rapid bacterial action.

The present invention has as an object a container of the type referred to embodying a top structure providing an effective impervious seal between the top of the container and the body thereof, which seal is conveniently broken to permit the container to be opened and during the breaking of the seal a sterile impervious surface is provided over which the contents of the container will pass in being removed from the container.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a container embodying my invention shown in perspective and in sealed condition.

Figure 2 is a perspective view, similar to Figure 1, showing the container in unsealed and open condition.

Figure 3 is an inverted plan view of the cover member before the same is attached and sealed to the body of the container.

Figure 4 is a sectional view taken substantially on line 4—4, Figure 1.

Figure 5 is a reduced top plan view of the container in sealed condition.

Figure 6 is an enlarged fragmentary sectional view illustrating the top portion of the container in unsealed open condition for the reception of the contents.

Figure 7 is a view, similar to Figure 6, illustrating the container in sealed condition.

Figure 8 is a view, similar to Figures 6 and 7, illustrating the container after the same has been unsealed and opened.

The container consists of a tubular body member 10 which may be of any desired cross sectional form and which may be formed from a blank of sheet material, such as paperboard. The body 10 is provided with a suitable bottom closure which may include tabs 11 foldable over the bottom edge of the body and effectively sealed to the outer surface thereof. The container is completed by a top member 12 which may vary in form in accordance with the shape or contour of the body 10.

As previously stated, my invention has to do particularly with the structure for effectively sealing the top member to the body after the contents has been placed in the container. Accordingly, the form or arrangement of the body, bottom member and top member may be varied appreciably without affecting the sealing structure hereinafter described.

In the embodiment shown, the body is rectangular in cross section and the cover blank is scored at 13 to form peripheral flanges 14, 15. The flanges 14, 15 are also scored at 16 to form peripheral flanges or tabs 17, and the flange 15 is scored as at 18 to form a flange 19. The flanges 14, 15 and 17, 19 are complementary. The flanges 14 are bent upwardly to extend in parallel relation to the inner surface of the sides of the body 10, and the tabs 17 are folded downwardly about the outer surface of the sides of the body. The flanges 14, 17 are initially secured and sealed to the inner and outer surfaces of the adjacent sides of the top portion of the body, the flanges 15, 19 being unsecured to the adjoining side of the body to form an opening through which the container may be filled as hereinafter described. It will be observed that the tab 19 is of appreciably greater width than the complementary tabs 17, see Figure 3.

The cover member is also provided with score lines 20 extending inwardly from each corner and converging to meet a transversely extending score line 21, and a score line 22 extends in-

wardly from the outer edge of the tab 19 to the score line 21.

The side of the body adjacent the tab 19 is provided with a transversely extending score line 24 spaced downwardly a distance from the top edge of that side and with a pair of converging score lines 25 extending upwardly from the ends of the score line 24 and meeting at the top edge of the container. With this arrangement, lateral pressure on opposite sides of the container cause the side panels 26 and a central panel 27 to move outwardly and simultaneously effects a ridge formation in the forward panels 28 of the cover member, as illustrated in Figure 2, forming an opening 29 through which the container may be filled, or the contents may be poured or removed therefrom.

The interior of the container, including the inner surface of the top and bottom members, is provided with a coating 30 to render the inner surface of the container impervious. This coating is in the nature of a thermoplastic and also serves to unite and seal the flanges 14, 17 to the top edge of the adjacent sides of the body 10.

The container is shipped to the user with the tab 19 folded downwardly over the panels 26, 27, as illustrated in Figure 4, but not sealed thereto. The tab 19 is folded upwardly, and the panels 26, 27 moved outwardly to form the opening 29, as shown in Figure 2, to admit the contents and thereafter the panels 26, 27 are permitted to assume their normal position and the tab 19 folded downwardly over the panels and sealed to the front side of the container. The container is opened by pulling the tab 19 upwardly, unsealing it from the container and the contents is poured through the opening 29 over the top edges of the panels 26.

This invention has to do particularly with the structure for effecting a seal between the tab 19 and the adjoining side of the container and in presenting the top edges of the panels 26 in a sterile condition when the container is unsealed. This structure consists generally of a strip of impervious sheet material secured either to the inner surface of the tab 19 or to the upper portion of the panels 26, the exposed surface of the strip being coated with a substance sealable to the other member but being readily separable from the strip when the tab 19 is moved out of engagement with the panels 26.

The strip of impervious sheet material is indicated as at 31 and may be formed of any thin, flexible, impervious material, metal foil being particularly well suited for this purpose.

In the embodiment shown, the strip 31 is secured to the inner or under side of the tab 19. The exposed side or surface of the strip is provided with a coating 32. This coating possesses the characteristic of being sealable to the top portion of the panels 26 to seal the tab 19 thereto. The coating 32 adheres to the panels in such a manner as to be permanently secured thereto with sufficient adhesion to cause the coating to peel or strip from the strip material 31 when the tab is forcibly pulled outwardly from the container. This coating may consist of any one of a number of suitable materials, for example a thermoplastic in the nature of co-polymer of vinyl acetate and vinyl chloride, in which instance the coating 32 is applied to the metal foil 31 and is baked thereon in order to have sufficient adhesion thereto to form an effective and proper seal between the side wall of the container and the top member. However, this adhesion be-

tween the coating and the metal foil is not as great as the adhesion between the coating and the fibrous material of the container or panels 26. Accordingly, when the tab 19 is pulled outwardly and upwardly the coating 32 will remain secured to the side wall of the container and forms a sterile surface over which the contents of the container is poured. Also, the now exposed surface of the strip 31 is sterile and when the tab 19 is folded downwardly over the coating 32 to close the opening 29 for the temporary protection of any of the contents remaining in the container, the coating 32 does not become contaminated by engagement with any unsterile portion of the cover.

In order to insure a perfect and permanent seal between the coating 32 and the top portion of the panels 26, that portion of the panels may be provided with an additional coating 40 which also serves to make the top edge of the panels impervious. The coating 40 may be applied in any suitable manner. However, I have found it most effective to apply the coating in the nature of a tape of coating material preferably formed of the same material as the coating 30. The tape is applied to the top edge of the panels 26 and extends downwardly over the inner and outer surfaces thereof and is bonded thereto.

The foil strip 31 is preferably provided with a coating on both sides, the coating 41 coating with the coating 30 on the inner side of the tab 19 to permanently secure the foil strip to the tab. If desired, the foil strip 31 may be initially permanently secured to the panels 26, or the coating 40, and the tab 19 secured to the foil strip after the container has been filled. In either event, the arrangement is such that the coating 32 or 41 will sever or strip from the coating when the container is unsealed.

The container structure herein described is particularly durable and rugged and due to the fact that the flanges 14, 15 are sealed to the inner surface of the side walls of the body and the flanges 17, 19 are sealed to the outer surface of the side walls, the top closure is firmly sealed to the body of the container and is leak-proof for all liquids.

What I claim is:

1. A container formed of sheet fibrous material comprising a body member, a top member, said members being secured together along confronting surfaces, a strip of impervious sheet material initially secured to the confronting surface of one of said members, the exposed surface of said strip being coated with a substance permanently sealable to the confronting surface of the other member and being effective to secure the top member to the body member, said substance being readily separable from said strip when the top member is removed from the body member.

2. A container formed of sheet fibrous material comprising a tubular body, a bottom member secured to the lower end of the body, the top edge of the body being coated with an impervious substance, a cover member, a strip of impervious sheet material secured to the inner surface of said cover member and being coated with a substance sealable to the coating on the edge of the body member to seal the cover to said member, the coating on said strip adhering to the coating on the body edge and readily separating from said strip when the cover member together with the strip are removed from the body.

3. A container formed of sheet fibrous material including a tubular body, a bottom member secured to the lower end of the body, a cover member secured throughout a portion of its periphery to the top edge of the body, the unsecured portion of the cover including a tab foldable over the adjacent portion of the top edge of the body, a strip of impervious sheet material permanently secured to the inner surface of said tab, the exposed surface of said strip being coated with an impervious adhesive material, said adjacent edge portion of the body being coated with an adhesive sealable to the coating on said strip, the coating on said strip being effective to seal said tab to the body of the container and being readily severable from the strip when the tab is moved outwardly from the body.

4. A container formed of sheet fibrous material including a tubular body, a bottom member secured to the lower end of the body, a cover member secured throughout a portion of its periphery to the top edge of the body, the unsecured portion of the cover member including a tab foldable over the adjacent portion of the top edge of the body, a strip of impervious sheet material permanently secured to the inner surface of said tab, the exposed surface of said strip being coated with an impervious adhesive material and being effective to seal said tab to the body of the container and being readily severable from the strip when the tab is moved outwardly from the body.

5. A container formed of sheet fibrous material and including a tubular body, a bottom member secured in one end of the body and a top member secured throughout a portion of its periphery to the top edge of the body, the unsecured portion of the cover member including a tab foldable over the adjacent portion of the top edge of the body and extending downwardly over the side of the body, a strip of impervious sheet material permanently secured to the inner surface of said tab, a coating of adhesive material applied to said edge portion of the body and extending downwardly over the adjacent side of the body, said coating terminating at a point remote from the lower edge of said tab, the exposed surface of said strip being coated with an impervious adhesive material sealable to the

coating on the edge of the body member and being effective to seal the tab to the body of the container and being readily severable from the strip when the tab is moved outwardly from the body.

6. A container formed of sheet fibrous material including a tubular body, a bottom member secured to the lower end of the body, and a cover member secured throughout a portion of its periphery to the top edge of the body, the inner surfaces of said body, bottom member, and cover member, being coated with an impervious material, the unsecured portion of the cover member including a tab foldable over the adjacent edge portion of the top edge of the body, a strip of impervious sheet material permanently secured to the inner surface of said tab, the top edge of the body adjacent said tab being coated with an adhesive material extending downwardly from said top edge on the outer surface of the body, said tab being foldable over said edge and extending downwardly below the coating on the body, the exposed surface of said strip being coated with an impervious adhesive material sealable to the coating on the edge of the body to effectively seal said tab to the body of the container and being readily severable from the strip when the tab is moved outwardly from the body.

7. A container formed of sheet fibrous material including a tubular body, a bottom member secured to one end of the body, and a cover member secured throughout a portion of its periphery to the top edge of the body, a tape formed of adhesive material applied to the unsecured portion of the top edge of the body and extending downwardly on the inner and outer surfaces of the body, the unsecured portion of said cover including a tab foldable over said tape and extending downwardly on the outer surface of the body below said tape, a strip of impervious sheet material permanently secured to the inner surface of said tab, and the exposed surface of said strip being coated with an adhesive sealable to said tape and being effective to seal said tab to the body of the container, and being readily severable from said strip when the tab is moved outwardly from the container.

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