

July 23, 1957

D. P. SMITH

2,800,269

VALVED BAG

Filed March 9, 1954

2 Sheets-Sheet 1

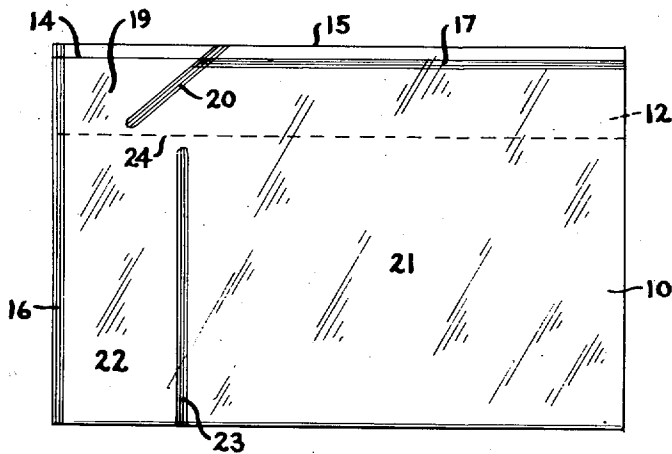


Fig. 1

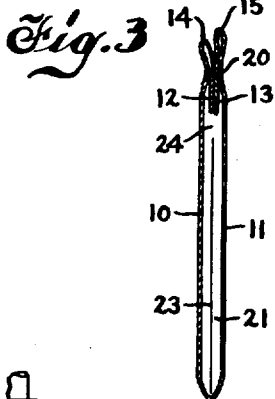


Fig. 3

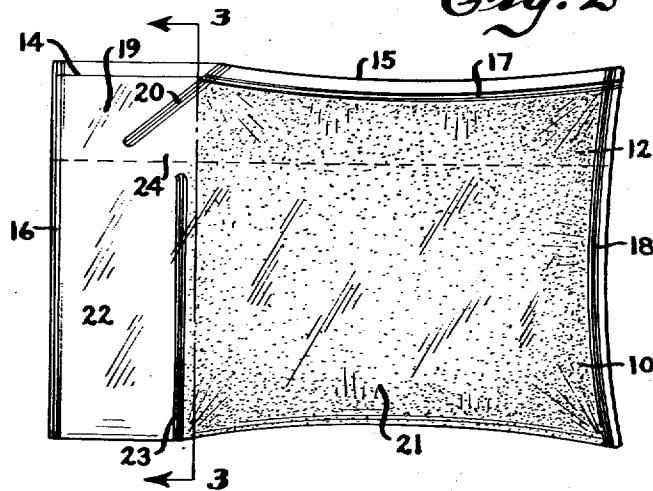


Fig. 2

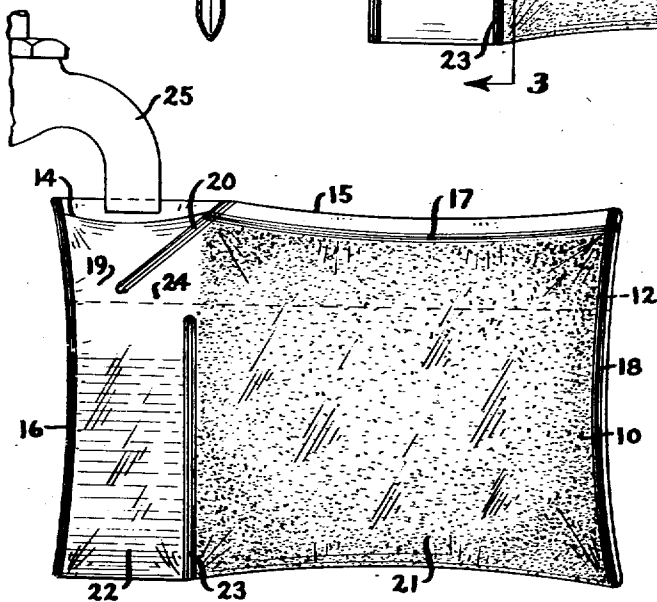


Fig. 4

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Fig. 5

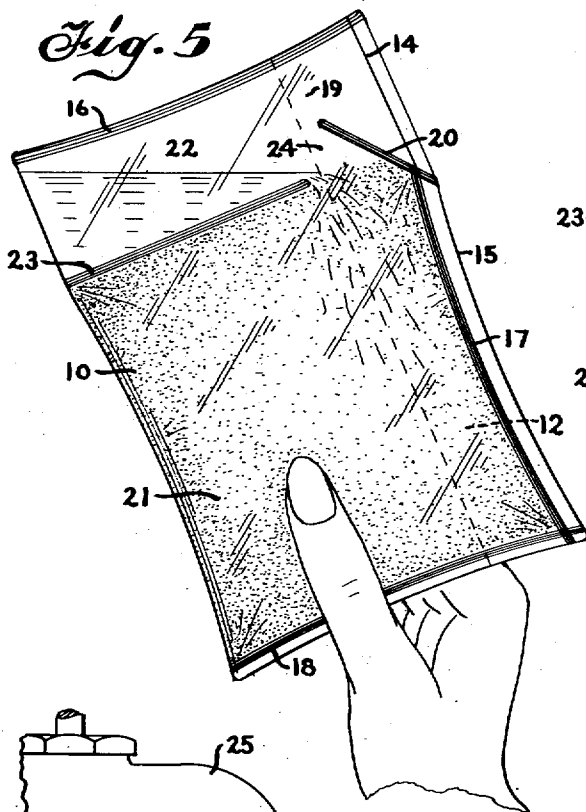


Fig. 6

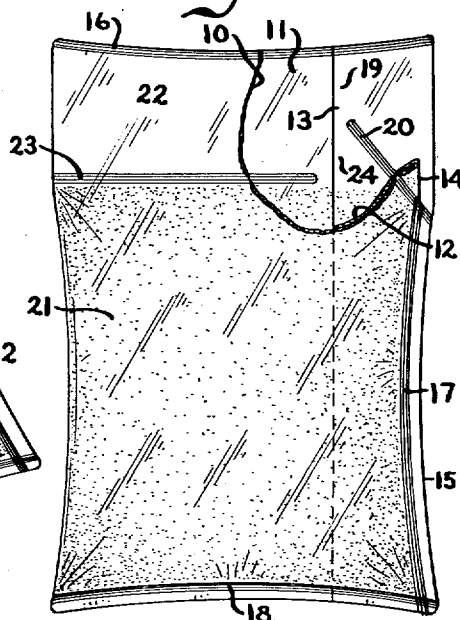


Fig. 8

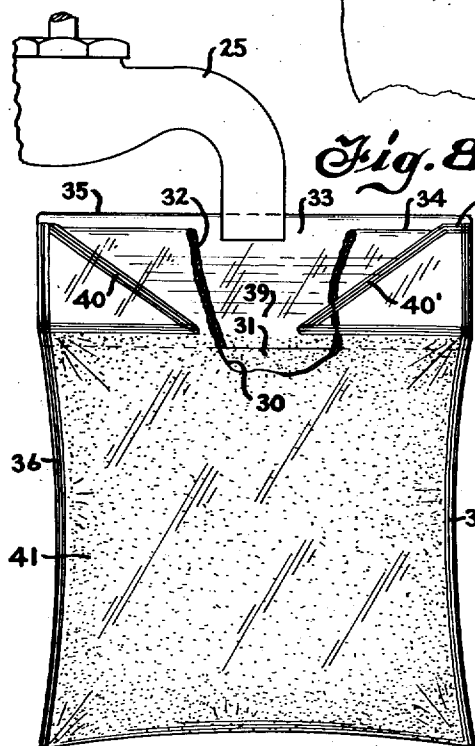
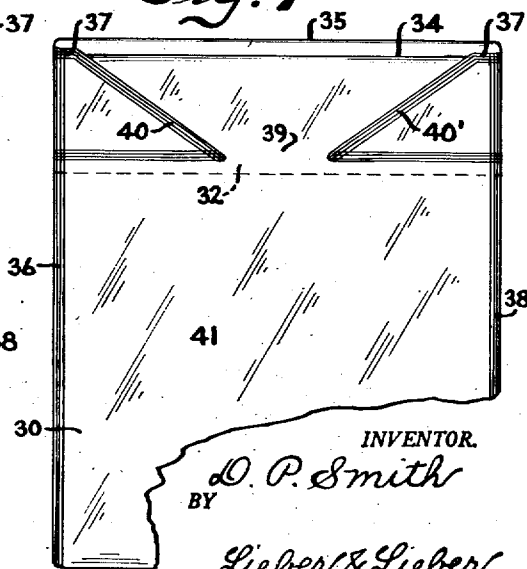


Fig. 7



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VALVED BAG

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Application March 9, 1954, Serial No. 415,039

5 Claims. (Cl. 229—62.5)

This invention relates generally to improvements in the art of packaging, and relates more particularly to improvements in the construction and operation of commodity bags of the type embodying valved access openings.

A primary object of the present invention is to provide an improved valved type commodity bag which is extremely simple and durable in construction and which is moreover highly efficient and practical in use.

Many products are now merchandised in pre-mixed form such as cake mixes, pie crust and filling mixes, other dessert mixes, frosting mixes and the like, these products requiring only the addition of water or other liquids in pre-determined quantities immediately prior to use. In the packaging of such products, it is, of course, desirable to utilize a container which will not only protectively house the same in a clean and sanitary condition but in which the product may also be effectively mixed with the liquid in a quick and easy manner by the housewife. In addition, it is highly advantageous to provide some means for readily measuring the amount of liquid added to the mix together with means for admitting the liquid to the compartment housing the product while preventing escape of the mixture from the container.

It is therefore a more specific object of this invention to provide an improved flexible container which will enable all of the foregoing objects to be readily accomplished in a most efficient and rapid manner by a novice.

Another specific object of my present invention is to provide a novel and improved commodity bag formed of flexible packaging material and provided with an access opening adapted to normally automatically close and seal the main compartment or body portion of the bag from the exterior so as to prevent escape of materials therefrom.

Another specific object of the invention is to provide an improved flexible commodity bag having a valved opening for admitting liquid thereto in measured amounts for mixing with the commodity within the bag and without need for removal therefrom.

Another specific object of my invention is to provide an improved bag-like container of unique and unitary construction formed of flexible heat-sealable sheet material and adapted to be fabricated in a rapid and economical manner with the aid of ordinary heat and pressure sealing equipment.

Still another specific object of the present invention is to provide an improved flexible container having a main commodity receiving and housing compartment and a secondary liquid measuring compartment, the secondary compartment having a valved access opening permitting ingress of liquid thereto while preventing egress therefrom and also having a valved opening to the main compartment for permitting ingress of the liquid from the secondary to the main compartment while preventing egress of the commodity and liquid therefrom.

A further specific object of the present invention is to provide an improved article of manufacture comprising:

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a commodity receiving container having side walls formed of flexible sheet material, each of the walls having a marginal portion along adjacent edges bent inwardly so as to extend in adjoining relationship between the side walls with the marginal edges of the side walls being sealed to provide an enclosure; the seal along the inturned marginal portion being located outwardly beyond the inner free edges of the inturned portions and being interrupted to provide a restricted access opening to the enclosure.

These and other specific objects and advantages of the invention will be apparent from the following detailed description.

A clear conception of the several features constituting my present improvement and of the mode of constructing and of utilizing typical flexible containers embodying the invention may be had by referring to the drawings accompanying and forming a part of this specification, wherein like reference characters designate the same or similar parts in the various views.

Fig. 1 is a side view of an empty transparent flexible container incorporating a preferred embodiment of the present invention in which liquid measuring means is provided;

Fig. 2 is another side view of the container illustrated in Fig. 1 but with the main compartment thereof filled with a commodity and sealed to confine the same therein;

Fig. 3 is a transverse section through the container taken along the line 3—3 of Fig. 2;

Fig. 4 is still another side view of the commodity laden container but showing the measuring compartment thereof being filled with a given quantity of liquid;

Fig. 5 is a side perspective view of the commodity and liquid laden container in the process of being tilted endwise to admit the liquid from the measuring compartment to the commodity-containing compartment.

Fig. 6 is a side view of the commodity laden container standing on end with the liquid emptied from the measuring compartment into the commodity-containing compartment for mixing with the commodity, a portion of the side wall of the container being broken away to more clearly reveal the valve structure;

Fig. 7 is a fragmentary side view of a somewhat modified empty valved container; and

Fig. 8 is another side view of a commodity laden container of the type illustrated in Fig. 7 and showing liquid being admitted thereto.

While the improved structure has been specifically shown and described herein as being embodied in a rectangular bag-like receptacle formed of heat-sealable sheet material such as rubber hydrochloride with the seals formed by application of heat and pressure, it is not desired or intended to thereby unnecessarily limit the invention by reason of such restricted disclosure; and it is furthermore contemplated that certain specific descriptive terms used herein shall be given the broadest possible interpretation consistent with the disclosure.

Referring to the drawings, and particularly Figs. 1 to 6 thereof, the improved commodity container shown therein as employing the invention is fabricated of flexible heat-sealable sheet material, the side walls 10, 11 in this particular instance being formed integral by folding a single sheet along a medial line. Each of the side walls 10, 11 are provided with an inwardly folded or inturned marginal edge portion 12, 13 respectively along coinciding edges, the fold lines 14, 15 of the respective marginal portions 12, 13 being offset somewhat as shown for purposes hereinafter described. With the folded marginal portions 12, 13 extending in contacting relationship between the side walls 10, 11 the marginal edges of the side walls are sealed entirely across

one end as shown at 16, and the walls are also sealed along the intumed marginal portions as shown at 17 with the other end being sealed entirely there-across as at 18 after the desired commodity has been inserted within the container as shown in Fig. 2. The seal 17 along the intumed marginal portions of the container is located between the fold lines 14, 15 and the inner free edges of the intumed portions, and it is important that this seal be located outwardly of the free inner edges of the intumed portions 12, 13 with the seal being locally interrupted as at 19 to provide a restricted access opening to the container.

It is also highly desirable to provide a diagonal seal 20 at the end of the seal 17, the diagonal seal extending from the folds 14, 15 inwardly toward but terminating short of the free ends of the intumed portions 12, 13 to thereby form a funnel-like access opening terminating at the inner end thereof in a valve defined by the free contacting edge portions of the intumed portions 12, 13. In the embodiment shown in Figs. 1 to 6 provision has also been made for measuring the amount of liquid to be added to the commodity, the container being divided into a main commodity receiving compartment 21 and a liquid measurement compartment 22 by means of a seal 23 extending transversely of the side walls, the seal 23 terminating just short of the free inner edges of the intumed portions 12, 13 so as to provide a restricted access opening 24 from the liquid measuring compartment 22 to the commodity receiving compartment 21; and it will be noted that the transverse compartment segregating seal 23 is so located that the measuring compartment 22 is immediately below the restricted funnel-shaped access opening 19.

In actual use, the containers are merchandized empty as shown in Fig. 1, and these containers may, of course, be printed with any desired indicia. To fill the containers for merchandising of the desired products, the commodity is inserted through the initially unsealed end with the seal 18 being effected after the desired quantity of the commodity has been injected into the main compartment 21. Due to the particular construction of the container wherein the intumed portions 12, 13 extend in contacting relation into the interior of the container beyond the inner end of the diagonal seal 20, a valve is thereby formed which normally remains closed and prevents egress of the commodity from within its compartment 21. When the housewife desires to prepare the commodity for serving or for cooking and prior mixing is necessary, the desired liquid may be admitted through the opening 19 as by means of a faucet 25 as shown in Fig. 4, the liquid being admitted to the compartment 22 of the container until the liquid within the compartment is level with the top of the partition or transverse seal 23. The compartment 22 may obviously be formed of a size and capacity whereby the desired amount of liquid for mixing with the commodity is received therein, and after filling of this compartment it is only necessary to tip the bag slowly on end as shown in Fig. 5 which thereupon causes the liquid to flow from the compartment 22 into the compartment 21 through the opening 24 for mixing with the commodity. During the introduction of the liquid to the compartment 22, the valve formed by the intumed portions 12, 13 obviously opens to admit the liquid, but the valve is thereafter automatically closed and prevents escape of either the liquid or the commodity during the mixing operation. After thorough mixing, any one of the seals may be broken or the container may be otherwise opened and the mixed commodity may be utilized in the desired manner. By offsetting the folds 14, 15 the mouth of the access opening 19 may be readily opened, and since the material is of a heat sealable nature, all of the seals may be formed by the ready application of heat and pressure.

Referring now more particularly to the modified struc-

ture shown in Figs. 7 and 8, such modified container is likewise fabricated of a sheet of flexible heat-sealable material folded along a transverse medial line to provide side walls 30, 31. Each of the side walls of this modified structure are likewise inwardly folded as at 34, 35 to provide intumed marginal edge portions 32, 33 respectively along coinciding edges of the container, the fold lines 34, 35 likewise being preferably offset to provide for more ready opening. As in the case of the container hereinabove described, the intumed marginal portions 32, 33 of the modified structure extend inwardly between the side walls 30, 31 in contacting relationship, and the marginal edges of the side walls are sealed entirely along opposite edges as at 36, 38 with the intumed edge being sealed partially thereacross from opposite ends as at 37. The seal 37 may be located at any desired point between the fold lines 34, 35 and the inner free edges of the intumed portions 32, 33 but should be located above such free edges, and to provide the access opening 39 with a funnel shape, a pair of diagonal seals 40, 40' are provided extending from the ends of the seals 37 inwardly toward the inner edges of the portions 32, 33 but terminating short thereof so as to permit these edges to provide a valve-like action and maintain material in the main commodity receiving compartment 41. As in the case of the structure shown in Figs. 1 to 6, the modified container may be provided with the desired commodity through one of the side edges 36, 38 before final sealing and this commodity is retained within the compartment 41 by the action of the contacting marginal portions 32, 33 and the valve formed by the extending edges thereof. When it is desired to mix a quantity of liquid with the material or commodity, it is only necessary to place the funnel-like access opening under a faucet or the like 25 and admit a predetermined quantity of the liquid which immediately flows through the opening 39 into the main compartment 41. The mixture is thereafter retained within the compartment 41 by the valve and the commodity may be kneaded and mixed while in the flexible container.

From the foregoing detailed description, it is believed apparent that I have provided an improved and novel valved container structure which is extremely simple in construction as well as highly efficient and practical in actual use. It has been found that the valving action provided by the contacting marginal portions 12, 13 and 32, 33 is highly effective in admitting liquid to the main commodity housing compartment and in retaining both the commodity and liquid within such compartment during subsequent mixing, and the simplicity with which mixing can be accomplished by reason of the improved container greatly facilitates the housewife's work. In addition, the container shown in Figs. 1 to 6 provides highly efficient means for measuring the amount of liquid desired to be introduced to the compartment 21, and the capacity of the measuring chamber 22 may be conveniently varied by predetermined positioning of the seal 23 as desired. The improved container may be used for merchandising diverse commodities requiring mixing with liquid, and any suitable heat-sealable material may be used in fabricating the same with printing being applied thereto if desired. In addition to the convenience to the housewife in mixing the commodity and in measuring the amount of liquid to be added thereto, the improved container provides for utmost cleanliness in handling of the commodity and the containers have proven that they possess considerable sales appeal. The improved devices have gone into actual commercial use and have met with considerable commercial success and have also eased the problems connected with the handling and storage of the commodities merchandised therein.

It should be understood that it is not intended or desired to limit this invention to the exact details of construction or to the precise mode of use herein shown

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and described since various modifications may occur to persons skilled in the art to which this invention pertains.

I claim:

1. An article of manufacture comprising, a commodity receiving container having side walls formed of flexible sheet material, each of the walls having a marginal portion along adjacent edges folded inwardly so as to extend partially into the container in contacting relationship between the side walls thereof, and a seal extending around the marginal edges of the side walls to provide an enclosure, the seal along the inturned marginal portion extending parallel to and being located inwardly of and adjacent to the fold lines and remote from the inner free edges of the inturned portions and being locally interrupted to provide a restricted access opening to the enclosure, the access opening being defined and further restricted by a seal extending diagonally inwardly from the fold lines and terminating short of the inner free edges of the inturned portions.

2. An article of manufacture comprising, a commodity receiving container having side walls formed of flexible sheet material, each of the walls having a marginal portion along adjacent edges bent inwardly along offset fold lines so as to extend partially into the container in contacting relationship between the side walls thereof, and a seal extending around the marginal edges of the side walls to provide an enclosure, the seal along the inturned marginal portion extending parallel to and being located inwardly of and adjacent to the fold lines and remote from the inner free edges of the inturned portions and being locally interrupted to provide a restricted access opening to the enclosure, the access opening being defined and further restricted by a pair of oppositely directed diagonal seals extending inwardly toward each other from the fold lines to a point short of the inner free edges of the inturned portions.

3. An article of manufacture comprising, a commodity receiving container having side walls formed of flexible sheet material, each of the walls having a marginal portion along adjacent edges bent inwardly so as to extend partially into the container in contacting relationship between the side walls thereof, a seal extending around the marginal edges of the side walls to provide an enclosure, and a seal extending partially across the body of said enclosure to divide the same into two communicating compartments, the seal along the inturned marginal portion being located outwardly beyond and remote from

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the inner free edges of the inturned portions and being locally interrupted adjacent to one of said compartments to provide a restricted access opening thereto.

4. An article of manufacture comprising, a commodity receiving container having side walls formed of flexible sheet material, each of the walls having a marginal portion along adjacent edges bent inwardly along offset fold lines so as to extend partially into the container in contacting relationship between the side walls thereof, a seal extending around the marginal edges of the side walls to provide an enclosure, and a seal extending transversely across the walls of said enclosure from one edge thereof to a point just short of the inner free edges of the inturned portions to divide said enclosure into two communicating compartments, the seal along the inturned marginal portion being located inwardly of and adjacent to the fold lines and remote from the inner free edges of the inturned portions and being locally interrupted immediately above one of said compartments to provide a restricted access opening thereto.

5. An article of manufacture comprising, a commodity receiving container formed of a sheet of flexible material folded along a medial line to provide side walls, each of the walls having a marginal portion along the edges remote from the fold line bent inwardly so as to extend in contacting relationship between the side walls thereof, a seal extending around the marginal edges of the side walls to provide an enclosure, and a seal extending from the bottom fold line transversely across said enclosure to a point adjacent to but below the inner free edges of the inturned portions to divide said enclosure into two communicating compartments, the seal along the inturned marginal portion being located outwardly beyond and remote from the inner free edges of the inturned portions and being locally interrupted immediately above one of said compartments to provide a restricted access opening thereto.

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