Dec. 31, 1968 J. P. RITCHIE 3,419,258

PACKAGE FOR DRY READY-MIX MATERIALS

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Fig. 1.

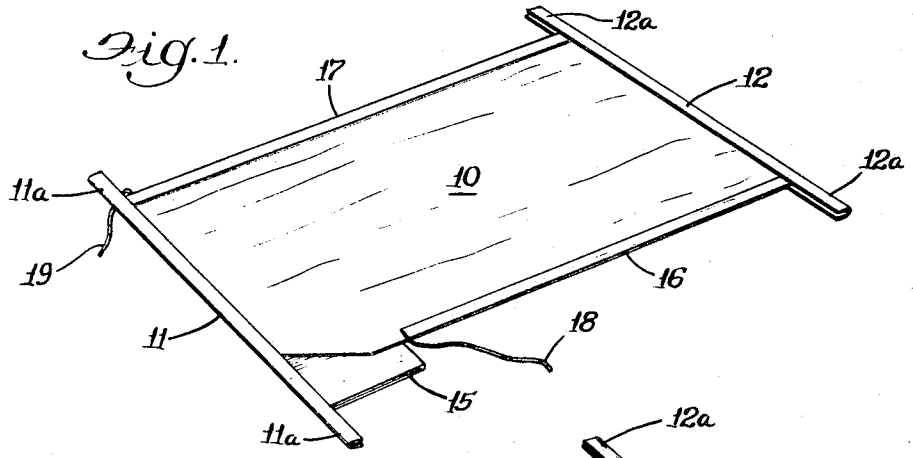


Fig. 2.

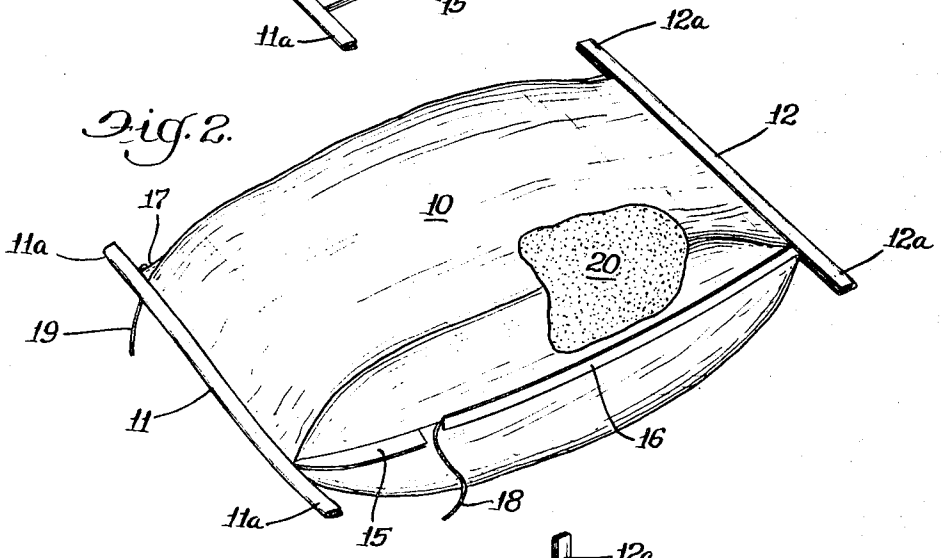
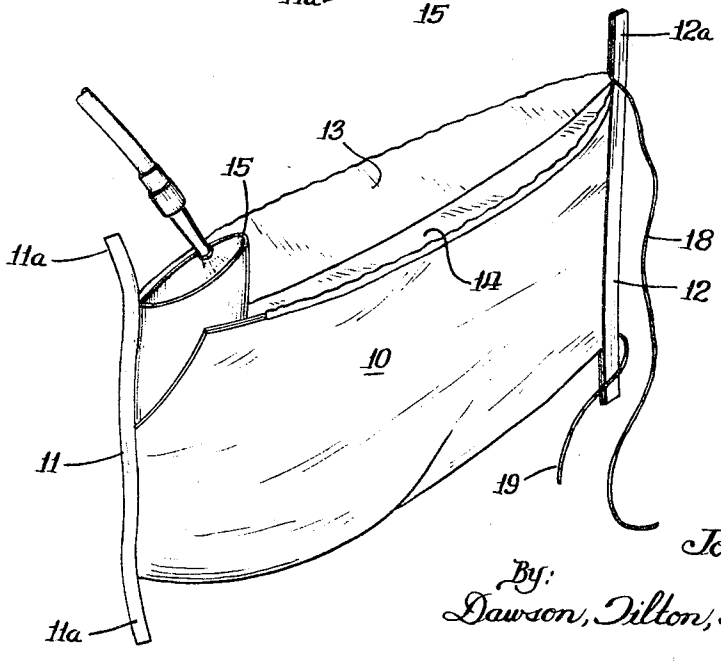


Fig. 3.



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PACKAGE FOR DRY READY-MIX MATERIALS

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Continuation-in-part of application Ser. No. 625,546, Mar. 23, 1967. This application Feb. 5, 1968, Ser. No. 703,105

4 Claims. (Cl. 266—47)

ABSTRACT OF THE DISCLOSURE

An elongated package for dry ready-mix material includes a waterproof flexible container for holding the mix, a folding spout at one corner of the container, a bellows in each side of the container, a tear strip for each bellows fastening the edges thereof together in a contracted position for shipment, and a rip cord secured along each tear strip. When the rip cords are pulled through their tear strips, the container is allowed to expand for receiving water through its spout to prepare the mix for use. Ribs are sewn to the top and bottom of the container for sealing it, and they extend about six inches beyond the sides of the bag. The package is particularly adapted for a dry cement mix which is combined with water in the expanded container just prior to use. The extensions of the top and bottom ribs are used as handles in mixing the contents.

RELATED APPLICATION

This application is a continuation in part of an application of Ritchie for Package for Dry Ready-Mix Materials filed Mar. 23, 1967, S.N. 625,546, now abandoned.

BACKGROUND

The present invention relates to a package for ready-mix materials; more particularly, the present invention relates to a package for ready-mix materials adapted to be expanded to accommodate the addition of a liquid for preparing the materials for use.

There have been attempts to provide an expandable package for ready-mix materials which are adapted to receive an additional amount of liquid to be mixed with the materials in preparing them for use. A number of prior attempts have revolved about formed, rigid metal components telescoping to an expanded condition. This rigid package, besides being expensive, is not at all suited for prevailing methods of transporting and storing ready-mix concrete materials, and the like, with which the present invention is particularly suited for use.

Another prior device includes a bag which is folded to define two separate compartments sealed relative to each other, the lower compartment containing the ready-mix. Water or other liquid is then poured into the upper compartment, and the seal is opened to permit the liquid to flow into the packaged product. The bag is formed of a rigid material, such as cardboard, so that in its expanded condition, it may serve as a shaker for dry pancake mixes, etc. Again, the rigidity of the container is considered disadvantageous from the viewpoint of handling and mixing, as disclosed within.

Ready-mix materials for concrete and the like are commonly packaged in 45 lb. or 90 lb. amounts. After adding a sufficient amount of water to a 90 lb. package of concrete ready-mix, it would be practically impossible to lift the package and shake it to mix the materials to the degree required for use.

Another attempt to provide a package for shipping dry material which is also expandable for mixing the dry material with a liquid in preparing it for use includes a

conventional flexible paper bag having a horizontal partition for containing the dry material in the lower part of the bag. The top portion of the bag is then folded down upon the partition for shipment and storage. When it is desired to prepare the dry material for use, the bag is unfolded and the liquid is poured in at the top. An aperture in the partition allows the liquid to permeate into the lower portion of the container to mix with the dry material. This particular arrangement has a disadvantage that after mixing, the container must be torn open to apply the prepared material since the aperture in the partition is of a constrictive nature, designed primarily to limit the application of the liquid during mixing.

Summary

The present invention overcomes the disadvantages in the above attempts to provide an expandable container for dry cement mixes including cement and sand, cement and gravel, and mortar and sand, by providing pleats or bellows extending longitudinally of a flexible, heavy-duty, waterproof bag, and a tear strip fastening the edges of the pleats together thereby defining a contracted condition for the package. A rip cord extends the length of the pleat and is located adjacent the tear strip so that when it is pulled, it severs the tear strip and expands the bag to an enlarged contour for receiving water.

In its contracted or storage and shipping condition, the package is substantially filled with the ready-mix material so that it has the appearance of being full and is, therefore, more acceptable from a marketing standpoint.

The container also has a folding spout or dispenser through which the water is added and extensions projecting from top and bottom ribs. When sufficient water has been added, the spout is then folded back to its sealing position, and the contents of the expanded container may then be tumbled about by gripping the rib extensions or kneaded by hand to thoroughly mix them together.

After the materials have been prepared for application, the spout is reopened and forms a dispenser for selectively dispensing the prepared materials.

Other advantages and features of the instant invention will be obvious to persons skilled in the art from the following detailed description of the preferred embodiment accompanied by the attached drawing.

Drawing

FIG. 1 illustrates an empty container for dry, ready-mix material which is constructed according to the present invention;

FIG. 2 illustrates the package of FIG. 1 wherein the container is in a contracted condition and filled with the ready-mix material; and

FIG. 3 illustrates the package of FIG. 2 in an expanded condition for receiving water to be mixed with the contents.

Detailed description

Referring then to the drawing, in FIG. 1 is seen an elongated container, generally designated as **10**, made of a heavy but flexible paper. Preferably, the container **10** also has a plastic inner liner to waterproof it. The container **10** has a top rib **11** and a bottom rib **12** at which its open ends are laced and adhesively held together for proper water-proof sealing. Each of the ribs **11** and **12** extend about six inches beyond the side of the container **10** to provide handles, **11***a* and **12***a* respectively, for convenient gripping the package when mixing.

As can be seen more clearly in FIG. 3, the paper container **10** has two accordian pleats on one side, designated **13** and **14**, and they define a bifurcated bellows extending interior of the container **10**. The pleats **13** and **14** extend

longitudinally of the container **10** between the top and bottom ribs **11** and **12**. A similar bellows is provided on the opposite side of the container.

At one end of the pleats **13** and **14**, there is provided a folding spout **15** which, in its unfolded condition, defines a communicating passage way to the interior of the container **10** for adding water (see FIG. 3) in the first instance, and for dispensing its contents after they have been properly mixed.

As best seen in FIG. 2, the spout **15** may be folded back upon itself and tucked into the bellows formed between the two side pleats **13** and **14**. This will provide sufficient sealing of the package for shipment. Adjacent exterior ridges of the pleats **13** and **14** are fastened together by means of a tear strip **16** which may advantageously be an adhesive-coated paper of the thickness and strength of brown wrapping paper.

As can be seen in FIG. 1, a tear strip **17**, similar to the tear strip **16**, fastens adjacent ridges of the pleats of the bellows defined on the other side of the container. Each of the tear strips **16** and **17** is further provided with a rip cord, designated respectively as **18** and **19**, which extend interior of their associated bellows adjacent the tear strip for its entire length.

The rip cord **18** is preferably secured to the tear strip **16** by its adhesive; and the rip cord **19** is similarly secured to the tear strip **17**. As can be seen from FIG. 1, the tear strip **16** extends from the rib **12** to a point adjacent the spout **15**, at which point a free end of the rip cord **18** protrudes. The tear strip **17** extends from the rib **12** to a point adjacent the rib **11**, at which point a free end of the rip cord **19** protrudes.

As best seen in FIG. 2, when the container **10** is filled with ready-mix material **20** and is ready for shipment or display, the tear strips **16** and **17** form an integral part of the exterior surface of the container **10** to give it the appearance of a continuous-surface bag; and at the same time, the container **10** is sufficiently full that a purchaser does not get the impression of being slighted. That is to say, the material **20** substantially fills the container **10** in its contracted condition.

When the rip cords **18** and **19** are pulled away from the container **10**, they will sever their respective tear strips **16** and **17** thereby freeing their associated bellows and permitting the container **10** to assume an expanded condition. When it is desired to use the dry ready-mix material, sufficient water is simply added through the spout **15**, as shown in FIG. 3.

With the liquid thus added, the spout **15** is then folded back upon itself and tucked back into its sealing position. If desired, the bellows can be formed of sufficient depth to provide additional space when liquid is added so that the rib **11** can be folded over upon itself a number of times for additional sealing while mixing.

The water and dry contents of the container are then mixed by gripping the rib extensions by hand and tumbling the bag about, or by kneading it with the hands or any instruments which is not sharp enough to tear the

paper of the container **10**. Hence, in its shipping or displaying state, that is, when storing only the dry ready-mix materials, the container **10** should be sufficiently small so that it has the appearance of being full to enhance consumer acceptance. In its expanded condition it must accommodate the liquid which is to be mixed with the dry ready-mix material, and it must also provide sufficient slack so that the combined contents may be moved about easily for enhancing the mixing process.

It is apparent that the particular pleat configuration shown is one of many suitable arrangements, and that other pleats, such as facing box pleats, will also work although production would be somewhat complicated.

What is claimed is:

1. A ready-mix package comprising: an elongated, flexible container including sealable means defining an orifice and a pair of adjacent accordian pleats each defining an exterior edge, and combining to define a difurcated bellows interior of said container; means securing the exterior edges of said pleats together; severing means adjacent said securing means for severing the same substantially its entire length whereby said package may be expanded to define an enlarged volume for receiving a liquid; and ready-mix materials substantially filling said container when in said contracted state, said sealable orifice means cooperating with said bellows to permit communication with the interior of said package when opened and to seal said orifice when closed.

2. The package of claim **1** wheren said securing means comprises severable tear strip fastening the exterior edges of said adjacent pleats together thereby covering said bellows, and wherein said severing means comprises a rip cord adhesively secured to the interior surface of said tear strip and extending lengthwise of said bellows for severing said tear strip when pulled away from the container.

3. The package of claim **1** further including first and second ribs sealing respectively the top and bottom of said container and extending laterially thereof about six inches whereby said rib extensions may be used as grips for mixing the contents of said container.

4. The package of claim **3** further including a second bifurcated bellows, a tear strip for sealing the second bellows, and a rip cord adhesively secured to the interior of said second tear strip for severing the same, said first and second bellows extending between said top and bottom ribs, and said orifice means communicating through one of said bellows.

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U.S. Cl. X.R.

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