Sept. 12, 1950 R. P. PETERS 2,522,058

CONTAINER

Filed Nov. 6, 1945

Fig. 1.

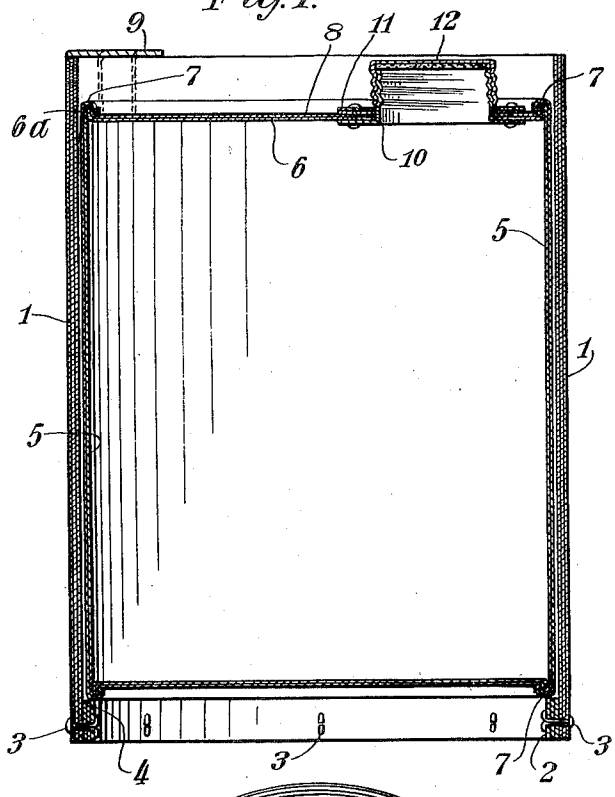
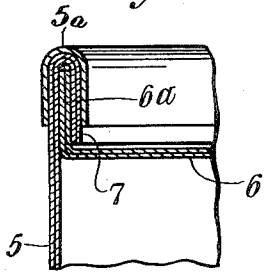


Fig. 4.



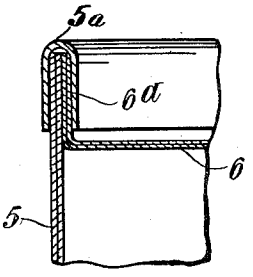


Fig. 5.

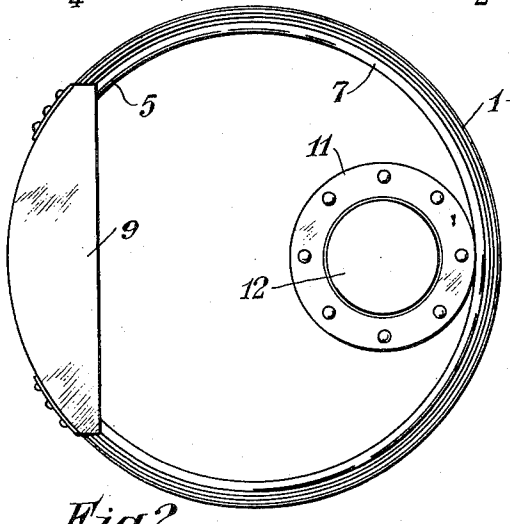


Fig. 2.

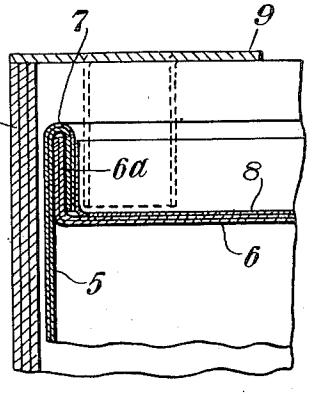


Fig. 3.

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CONTAINER

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In Great Britain September 20, 1944

Section 1, Public Law 690, August 8, 1946
Patent expires September 20, 1964

1 Claim. (Cl. 229—4.5)

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This invention relates to cylindrical containers made of paper, for the storage and transport of powdered and/or liquid materials.

Hitherto, these containers have been made with a single cylindrical wall, formed by reeling a length of paper into laminations on a mandrel, such wall having rigidly-attached end pieces forming a complete enclosure. In practice, such containers are frequently subject to severe handling, such as dropping, and, unless the container is strongly built, damage is likely to ensue.

The object of the present invention is to provide improved constructional forms of container which are more adapted to resist the hard wear of rail and road transport and the like, without any reduction of watertightness, whilst maintaining an economic production cost.

According to the invention, the improved container comprises a lining which is the container proper, and a closely-fitting, unattached outer protective case comprising a surrounding wall, and means for holding the lining captive in the case at both ends, whilst permitting slight relative movement axially. The lining may have relatively weak walls with strong ends, but will fit the protective case sufficiently closely for the resistance to axial movement to provide a shock-absorbing effect. The case may be open at both ends but will always be a sufficiently tight fit on the liner to provide a cushion between the lining and the case. The protective case will be strong enough to withstand all normal shocks, such as when dropped endwise or on a corner, but the need to eliminate distortion of the case (which, in a one-piece container might spring the joints open) is eliminated, since the distortion stresses will not be transmitted with any violence, to the slightly-movable cushioned liner.

Preferably, the lining is made from a single or double thickness of stout paper or like material, rolled into cylindrical form and fitted with recessed end pieces made of Kraft-lined bitumen board or the like, the margins of the paper being folded over the edges of the flanges of the end pieces, and the complete liner is then slid into a strong outer cylindrical casing made of a laminated paper strip. This cylindrical casing is fitted with a handle at one end, which overlies the top of the liner to prevent its withdrawal, whilst allowing of a slight axial movement of the liner in the casing. After insertion of the liner into the base at the end furthest from the handle, a closing hoop is affixed to the casing to prevent withdrawal of the liner.

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An example of the invention is illustrated in the accompanying drawing, wherein:

Fig. 1 is a vertical diametrical section through the container;

Fig. 2 is a plan; and

Fig. 3 is a section to a larger scale through the upper corner of the container.

Fig. 4 and Fig. 5 show modifications.

As shown in Figs. 1, 2 and 3, the outer container 1 is made in laminated form by winding a length of paper on to a mandrel, similarly to the container walls shown in my earlier British Specifications Nos. 466,469, 478,567, 495,500 and 568,269. Into the lower end of this casing 1 is fitted a bead or rim 2, secured in place by rivets 3, the bead being of strip wood, card or other suitable material, and providing a shoulder at 4 within the casing on which the liner may rest.

The liner, which is the container proper, consists of a single or double lamination of paper, usually of the same kind as that from which the outer case is made, with its abutting edges suitably seamed together, and into each end of the cylinder 5 thus formed is placed a flanged disc 6 of bitumen board or the like, with the flange 6a directed outwards. These discs 6 form recessed end pieces and are placed sufficiently far into the wall of the liner 5 to allow the margin 7 of that wall being folded over the edge of the flange 6a, whereafter a disc 8 of paper or the like is secured to the end piece 6 so as to cover the joint between the flange 6a and the said margin 7.

The liner 5 is made a close sliding fit within the outer container 1, so as to have only a thin film of air between the two, and the lower edge of the liner rests on the said bead or rim 2. The liner 5 is slightly shorter than the container 1 so that, when upright, its upper end lies below the upper edge of the outer container for a short distance, see Fig. 3. Secured to the upper part of the outer container is a metal handle 9, which projects over the open end of the casing 1 and forms an obstruction for withdrawal of the liner 5 as well as serving as a handle, but allows a small axial movement of the liner within the container.

Suitable filling and emptying means are provided in one end of the liner 3. In the drawing, a flanged screwed orifice 10 is riveted to the top disc 6, under a clamping ring 11, and is fitted with a screw cap 12. If a liquid or semi-liquid is to be carried in the container, the liner 5 will be proofed after its manufacture, by the placing within it of a quantity of liquid proofing material, which will be swilled around so as to cover the

whole of the interior area, and in particular to fill the corners between the cylindrical wall 5 and the ends 6. The outside of the liner will be painted with a similar or other liquid proofing material. These external and internal proofings will depend on the material to be packed. The outer container 1 may also be proofed, or may be formed from an already-proofed material.

As shown in Figs. 4 and 5, the end of the liner 5 is secured to the flange 6*a* of the top disc 6 by a metal hoop 5*a* of channel section which is swaged into position. The liner may have its margin 7 turned in over the flange of the top disc as shown in Fig. 4, or, as shown in Fig. 5, the ends of the liner and of the flange may be flush with each other.

In use, should the container be dropped, say on one edge, the primary shock is taken by the outer cylinder 1, and any distortion of that cylinder, instead of straining the joints of the enclosed container, results merely in a relative movement between the parts 1 and 5. In consequence, the actual package, the parts 5 and 6, is relieved of many stresses which normally would burst it, whilst at the same time it is adequately supported against crushing and against collapse due to the weight of the contents.

What I claim is:

A container for the transport and storage of

powdered and liquid materials, comprising a rigid, laminated, open-ended outer case of paper, a box extending chord-wise across one end of the case to serve as a handle, a hoop secured within the other end of the case, and a liner within the case, located between the bar and hoop, capable of slight axial movement relatively to the case, but closely-fitting the case, such liner having a paper wall and end discs of bitumen board with a filling orifice in one of such discs.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,087,469	Stern	Feb. 17, 1914
1,148,502	Cowlishaw	Aug. 3, 1915
1,417,707	Wright	May 30, 1922
1,590,747	Hulbert	June 29, 1926
2,200,200	Donnelly	May 7, 1940
2,369,013	Braloff	Feb. 6, 1945

FOREIGN PATENTS

Number	Country	Date
503,756	Great Britain	Apr. 11, 1939