July 14, 1942. C. B. ARNOLD 2,290,085

PLYWOOD BARREL

Filed Aug. 2, 1940

Fig. 1

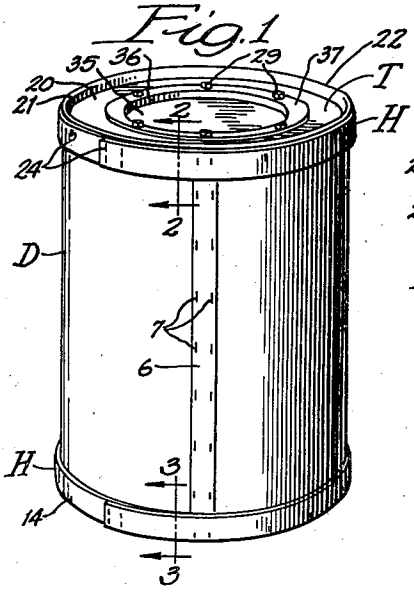


Fig. 2

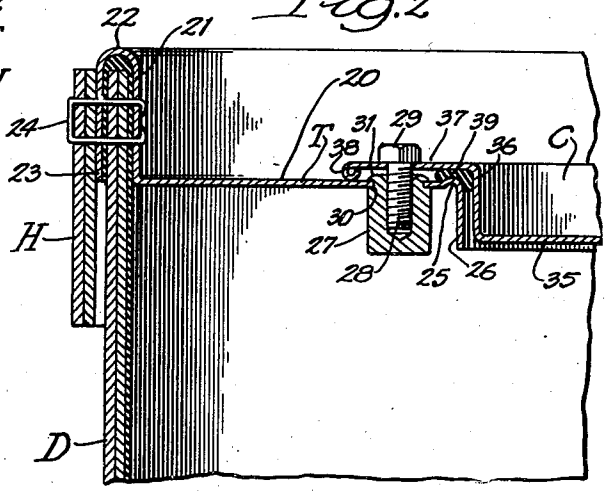


Fig. 3

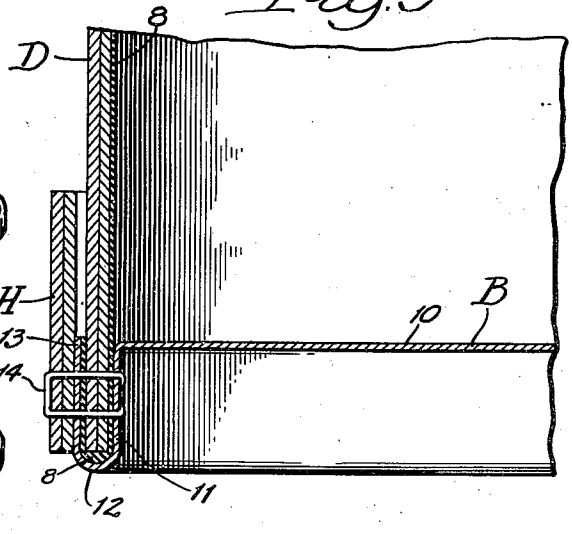


Fig. 4

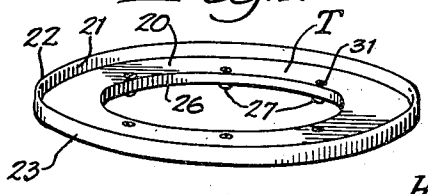


Fig. 5

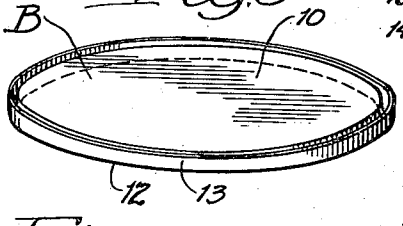


Fig. 6

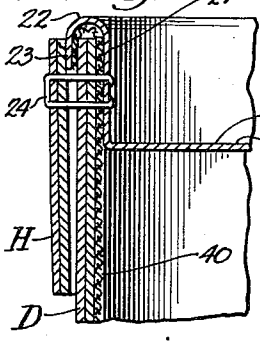
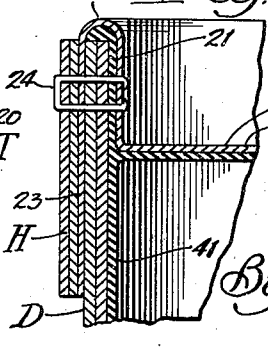


Fig. 7



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UNITED STATES PATENT OFFICE

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PLYWOOD BARREL

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Application August 2, 1940, Serial No. 349,585

2 Claims. (Cl. 217—76)

This invention, which relates to a container in the form of a barrel, comprises a plywood drum equipped with metallic heads, the upper of which is provided with a removable closure. The present improvements are directed to such a container of composition character wherein the entire structure can be made so tight and convenient for use as to be well adapted for the reception of various viscous or semi-solid substances such as greases, all without danger of contamination or leakage. In the accomplishment of these ends I combine the wood and metal barrel parts in such a way as to promote mutual reinforcement, whereby adapting the container for handling and usage under severe conditions of service over a long period of time.

A suggestive embodiment of my invention is set forth in the accompanying drawing wherein—

Figure 1 is a view in perspective of the container with the closure fitted in place;

Figs. 2 and 3 are details in section, on an enlarged scale, taken on lines 2—2 and 3—3, respectively, of Fig. 1;

Figs. 4 and 5 are perspective views of the container top and bottom, respectively;

Fig. 6, which is a view generally similar to Fig. 2 shows a modified construction adjacent the upper head of the drum; and

Fig. 7 is a similar view showing a further modified construction.

As shown, the container comprises a body in the form of a cylindrical plywood drum D. The plies comprising the barrel are desirably united over every portion of their contacting surfaces by a suitable adhesive. The joint at the meeting edges of the drum may be covered over with a strip 6 which extends desirably for the length of the drum to which it may be conveniently secured as by means of staples 7.

The cylindrical plywood drum is desirably coated interiorly as at 8 with latex or other sealing material which will be resistant to attack by the intended contents of the container. Such a coating is desirably extended around the meeting edges of the drum where the joint occurs, as well as over the opposite ends of the drum and upon the exterior surface thereof for a limited distance from each end where plywood hoops H are fitted in place. The outer circular edge of each hoop is desirably arranged flush with the proximate end of the drum (see Figs. 2 and 3), and the ends of the hoops may be chamfered and overlapped in the usual way (see Fig. 1).

In general, the construction of the drum and the reinforcing hoops applied exteriorly thereof may be as described up to this point. The metallic parts of the present container are confined mostly to the two heads, one being the bottom B and the other the top T. Except for the provision of a removable closure which is fitted to the top, these two parts may be substantially alike.

Referring now to Fig. 3, the bottom B comprises by preference a head in the form of a flat sheet metal plate 10 with a depending circular wall 11 adapted for close fitting within the drum adjacent its lower end, this wall then executing a return bend 12 which underlies the proximate end of the drum to provide a collar 13 which is extended upwardly within the hoop H to terminate, if desired, at a point which is about opposite the plate 10. The coating 8 which is applied to the inner and outer surfaces of the drum, as already explained, lies to the inside of the circular wall 11 and collar 13, as shown. The assembly of the metallic bottom with the plywood drum to which is also fitted the two hoops H may be completed by a plurality of staples 14 whose parallel shanks traverse the hoop and drum also the spaced collar and circular wall of the bottom with the pointed ends of the staples clinched against this wall. Such an assembly makes for a tight construction and, with the aid of an appropriate coating as already described, the container is admirably suited for the retention of grease or other semi-solid or viscous substances.

The container top T, which is generally similar to the bottom just described, comprises a head in the form of a sheet metal top plate 20 with an upstanding circular wall 21 which at 22 executes a reverse bend to provide a collar 23, the circular wall and collar being adapted to extend alongside of opposite surfaces of the drum adjacent the upper end thereof with the coating 8 interposed therebetween to maintain a leak-proof connection. The upper hoop H which is fitted around the drum adjacent its upper end is extended around the collar and therebelow. As by means of staples 24 which traverse the hoop, drum, the collar and circular wall of the head, these several parts are interconnected fixedly, the staple ends being clinched by preference against the circular wall as shown.

The top plate 20 is in the form of an annulus with a center opening adjacent which is a slight upward hump 25 forming part of a bend from which depends a flange 26 defining the central opening of the head. A number of socket members 27, each interiorly threaded to receive the

shank 28 of a bolt having a head 29, are arranged coradially and relatively close to the flange 26, each of these sockets depending from the head through an opening 30, the material forming these sockets being slightly reduced in diameter at the top to facilitate their assembly and provide, when outwardly peaned as at 31, a simple locking means whereby each of these members is fixedly secured in place.

The closure C, also of sheet metal, comprises a flat plate 35 with an upturned marginal flange 36 adapted to lie to the inside of the flange 26, the closure being also formed with a ledge 37 which is extended outwardly from the flange 36. This ledge is desirably formed with its outer edge rolled downwardly and inwardly in the form of a bead 38 adapted, when rested upon the head, to maintain the ledge in slightly spaced relation thereto. Openings are provided in the ledge, one in register with each socket member, for the reception of the bolts 28 whose heads 29 are adapted to bear against the ledge when the bolts are screwed home to secure the closure tightly in place. A gasket 39 adapted to be fitted around and over the hump 25 serves to complete a leak-proof connection between the closure and the top head.

In Fig. 6 I have illustrated a plywood drum D to whose upper end is applied a head comprising a flat sheet metal plate 20 with an upstanding circular wall 21 which at 22 executes a reverse bend to provide a collar 23. The circular wall and collar are adapted to extend alongside of opposite surfaces of the drum adjacent its upper end with an interposed lining 40, desirably of fabric impregnated with a resistant or repellant material suitable to withstand the intended contents of the drum. In this construction the collar 23 extends down over the outside of the drum only a short distance so as to terminate just above the circular row of staples 24 which interconnect the hoop, drum and inside wall of the head. The lining 40 is desirably extended downwardly to and over the opposite end of the drum where a duplicate head may be provided, all as hereinbefore described in connection with Figs. 2 and 3. The showing in Fig. 7 is generally similar except that the collar 23 is extended further downwardly to terminate about opposite the lower end of the hoop H, and in lieu of the applied lining of fabric or other material I have here indicated a coating 41, as of latex which may be conveniently sprayed on the interior surface of the drum and of its two heads.

The container of this invention combines the advantages of plywood for the cylindrical body and of sheet metal for the two heads, one of which is fitted with a metallic removable closure. Each of the heads is extended to provide spaced circular walls between which is received the proximate end of the plywood drum. The spaced metallic walls are joined by a rounded edge forming an end rim for the container. No matter which way the drum be stood, it is the rounded metal edge that is rested against the supporting floor. The plywood drum is thus protected and reinforced at its two ends by the metal of the associated heads.

While the two hoops applied exteriorly of the plywood drum serve as a reinforcement therefor, there is still lacking any means for assuring perfect circularity of the drum. A tendency toward slight non-circularity results from the joint which is always present at the meeting ends of the plywood when bent into cylindrical form to make the drum. By associating with such a drum, at each of its two ends, a metallic head having spaced circular walls which receive and hold between them the proximate end portions of the drum, the latter is constrained into perfect circularity and so maintained during all normal usage over a prolonged period of service. This is of advantage in that the drum is enabled to better withstand compressive forces and to resist disruption or breakage due to excessive rigors in handling. In addition, the rounded metal rims whereon the ends of the drum are supported will provide a better rolling surface, when the drum is thus moved about in accordance with usual practice.

The closure which is fitted to the top head is permitted to make a tight seal therewith by reason of the compressible gasket which is interposed between the facing surfaces of the closure and head. It is not necessary that the closure be fitted tightly to the head, only that means be provided for drawing the closure into tight engagement with the gasket that is interposed between itself and the head. This I have accomplished in a simple manner by the provision of threaded socket members with each of which may engage a bolt whose head is adapted to bear with pressure against the upper side of the ledge which is extended outwardly from the closure. In such a construction the closure may be secured tightly after the container is filled, removal of the closure being accomplished by the smple operation of loosening the bolts after which further use thereof is usually not called for.

I claim:

1. In a container, the combination of a multilayer plywood cylindrical drum, a sheet metal collar fitted exteriorly around the drum adjacent one end thereof, the collar being extended outwardly beyond the proximate drum end and then reversely inwardly to provide a cylindrical wall extending along the interior surface of the drum for a limited distance and then laterally to provide a circular head, a liquid-impervious lining on the interior surface of the drum and extending around the proximate drum end between the drum and collar on one side thereof and between the drum and cylindrical wall on the other side thereof, a hoop fitted around the collar exteriorly of the same, said hoop being of greater width than the width of the collar and having one edge thereof substantially flush with the proximate end of the drum, and means extending through and permanently interconnecting the hoop, drum, lining and circular wall.

2. In a container, the combination of a multilayer plywood cylindrical drum, a sheet metal collar fitted exteriorly around the drum adjacent one end thereof, the collar being extended outwardly beyond the proximate drum end and then reversely inwardly to provide a cylindrical wall extending along the interior surface of the drum for a limited distance and then laterally to provide an annular head, a hoop fitted around the collar exteriorly of the drum, said hoop being of greater width than the collar and extending inwardly of the barrel beyond the plane of the annular head, and means extending through and permanently interconnecting the hoop, collar, drum and cylindrical wall and serving to draw said latter parts including the plywood layers of the drum together.

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