Nov. 9, 1943. H. A. SCOTT 2,334,041

CONTAINER

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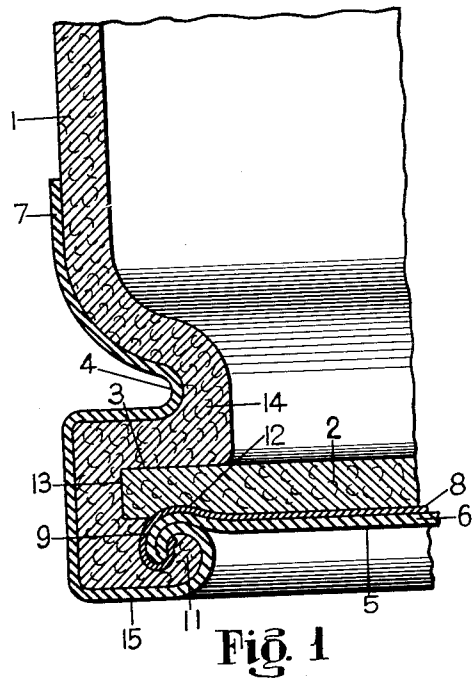


Fig. 1

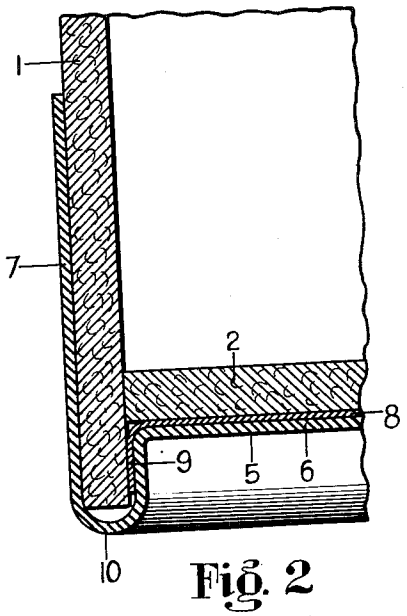


Fig. 2

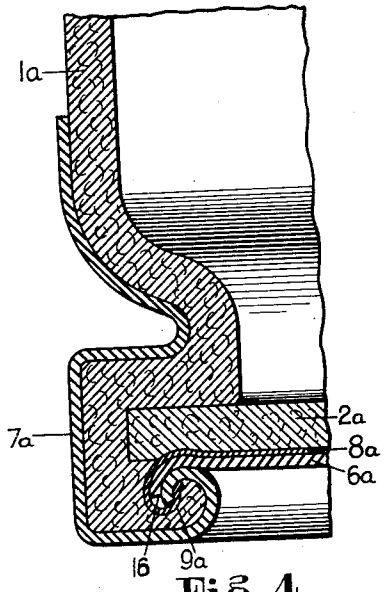


Fig. 4

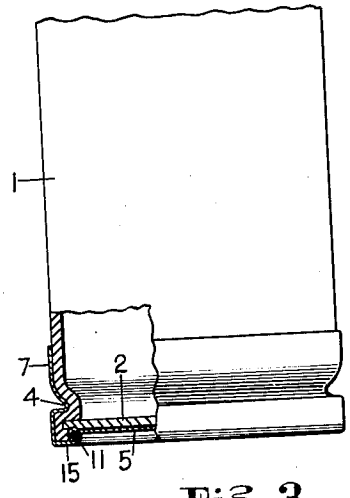


Fig. 3

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CONTAINER

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Application August 1, 1941, Serial No. 405,055

3 Claims. (Cl. 229—5.6)

My invention relates to containers. It has to do, more particularly, with a barrel or container that is formed primarily of such material as fiber board, pulp board, or paper or straw board, although it is not necessarily limited thereto. More specifically, it relates to the bottom structures of a container of the type indicated.

One of the objects of my invention is to provide a fiber barrel or container of such a nature that the bottom head will be securely held in position and the associated chime structure will be of such a nature that it will withstand the excessive blows to which a container of this type is subjected in normal use.

Another object of my invention is to provide a fiber barrel structure or container having the bottom head applied thereto in such a manner that there will be a fluid-tight seal between the bottom head and the cooperating body portion of the barrel.

Another object of my invention is to provide a fiber barrel structure or container having a bottom head so constructed that its inner portion is of fiber material but its outer portion is of metal and thus the contents of the container will not contact with the metal but still the metal will protect the fiber portion from scuffing or other injury.

In its preferred form, my invention contemplates the provision of a container comprising a substantially cylindrical body portion which is made of fiber board or other similar material and which has open ends. A head or disk of heavy fiber material is placed in the lower end of the body portion. Then a suitable metal tray is positioned on the end of the body portion below the fiber disk. This metal tray consists of a disk-like portion which lies within the body portion beneath the fiber disk and which has a peripheral flange that extends outwardly, along the inner surface of the body portion, around the ends of the body portion and then towards the top of the body portion, along the outer surface of the body portion. The fiber body portion together with the metal tray are bent to form a continuous internal groove, the walls of which tightly embrace the top and bottom surfaces of the fiber disk adjacent its periphery. This also produces a continuous external groove in the body portion and flange of the metal tray at a point spaced above the fiber head or disk. This serves to provide a resilient joint which will effectively withstand the shock applied to the lower chime and prevent crushing of the chime. The lower end of the container will be enclosed by the continuous metal tray and will, therefore, be completely moisture-proof even though it stands in water. Furthermore, the metal tray will protect the fiber disk or head and the lower end of the fiber body portion from injury.

The preferred embodiment of my invention is illustrated in the accompanying drawing wherein similar characters of reference designate corresponding parts and wherein:

Figure 1 is a detail, in vertical section, of the lower end structure of a container made according to my invention.

Figure 2 is a similar view showing the parts of the end structure assembled and ready for a final forming operation to produce the structure of Figure 1.

Figure 3 is a side elevation, partly broken away, illustrating the lower portion of a container having the end structure of my invention.

Figure 4 is a view similar to Figure 1 but showing a modification of my structure.

With reference to Figure 3 of the drawing, I have shown a barrel structure comprising a body portion 1 which may be of suitable fiber material. This body portion is preferably of cylindrical form and may be produced in any desired manner.

As indicated in Figures 1 and 3, when the lower head structure is finally completed, it embodies a disk-like fiber head 2 which is held in position within a continuous internal groove 3 formed in the lower end of the body portion. A continuous external groove 4 is formed above the head in the body portion to provide a resilient chime structure. The fiber head 2 has its lower surface protected by a metal tray member 5 which has a main disk-like portion 6 that lies beneath the member 2. The tray member 5 also includes a peripheral flange portion 7 which extends downwardly, around the end of the body portion 1 and then upwardly along the outer surface of the body portion. This flange 7 is bent with the body portion 1 to produce the internal groove 3 and the external groove 4.

In forming this bottom head structure, as indicated in Figure 2, the disk 2 is inserted into the lower end of the cylindrical shell or body portion 1. This disk 2 is preferably made of heavy fiber material similar to the shell 1 and is just slightly smaller in diameter than the shell 1. A tray 8 of light fiber material is also inserted into the lower end of the shell 1 below the disk 2. This tray 8 embodies a disk-like body portion and a downwardly extending peripheral flange 9 which extends along the inner surface of the shell 1.

The metal tray 5 is then positioned on the lower end of the shell or body portion 1. The disk-like portion 6 thereof will support the fiber disk 2. The flange 7, at this time, will be U-shaped in cross-section and will extend downwardly, around the end of the shell 1, and then upwardly into overlapping relationship with the outer surface of the shell 1. It will be noted that the outer portion of flange 7 extends a considerable distance above the disk 2. Thus, the metal tray forms a continuous metal member having a channel therein which receives the lower end of the shell 1. It will be noted that the flange 9 of the light fiber tray 8 also extends into the channel formed in the flange 7 of the tray 5.

The assembled unit indicated in Figure 2 is then subjected to a final forming operation. This final forming operation will bend the fiber body portion or shell 1 together with the flange 7 of the metal tray 5 in the manner indicated in Figure 1. The lower end of the body portion or shell 1 together with the flange 7 of the metal tray 5 is bent into overlapping relationship with the outer surface or bottom surface of the head 2. The lower U-shaped portion 10 of flange 7 and the extreme lower end of the body portion 1 will be curled or beaded, as indicated at 11 in Figure 1, and will be forced into the lower surface of the cooperating disk or head 2 and tray 8, forming therein a continuous groove 12 which is spaced slightly inwardly from the edge of the disk 2. This gives a bulging action at the point 13 which adds further to the tightness of the joint.

When the body portion or shell 1 and the flange 7 are simultaneously bent, the external groove 4 is formed therein. By forming this continuous external groove 4, there is produced an inwardly projecting rib 14 which is spaced from the end of the body portion and against which the disk 2 is clamped. It will be apparent that the continuous internal groove 3 is formed which receives the head or disk 2 and tightly embraces it. By forming the external groove 4, a resilient chime structure is produced. Any blow applied to the lower end of the container at the point 15 will merely serve to cause the walls of the groove 3 to more closely approach each other and grip the head structure 2 therebetween. Moreover, the walls of the external groove 4 will flex towards each other and will absorb the shocks applied to the end of the container. The metal tray 5 will completely cover the bottom of the fiber head 2 and will extend around the lower end of the body portion 1. Thus, the fiber end 2 and the lower end of the body portion 1 will be protected from injury by a continuous enclosing metal member. Furthermore, the continuous metal member 5 will produce an absolutely moisture proof lower end structure. In fact, the lower end of the container may stand in water without leaking. Also, the lower end of the container will be vapor proof in that escape of vapor from the contents of the container through the bottom head structure will be prevented. Also, it will be apparent that although the fiber head 2 has its outer surface protected by metal, the contents of the container will not contact with metal.

In Figure 4, I illustrate a slight modification of my structure. In this instance, the disk portion 6a and the flange portion 7a of the metal tray are formed as separate members. However, the function of the structure will be substantially the same as before with the exception that there will be a joint 16 between these members. However, these members will be held together very tightly and, furthermore, the flange 9a of the light fiber tray 8a will extend around this joint and will be clamped in such a position. Thus, this joint will be effectively sealed. The lower end of the body portion 1a and the disk 2a will be effectively protected.

It will be apparent from the above description that I have provided a fiber barrel structure of such a nature that the bottom head is securely held in position and the associated chime structure is of such a nature that it will withstand the excessive blows to which the container of this type is subjected in normal use. Furthermore, it will be apparent that the head structure will be fluid-tight even under the most unfavorable conditions.

Various other advantages will be apparent from the preceding description, the drawing and the following claims.

Having thus described my invention, what I claim is:

1. A container structure comprising a body portion made of fiber board or the like, a barrel head inserted in the end of said body portion and including a disk of heavy fiber material, a metal tray disposed within said end of said body portion outside of said barrel head, said metal tray having a disk-like portion covering the barrel head and having a peripheral flange extending around the end of said body portion and then into overlapping relationship to the outer surface of the body portion, said body portion, together with the flange of said metal tray providing a continuous rib which extends inwardly from the side wall of said body portion to support and prevent inward movement of said barrel head and a continuous flange on the extreme end of the body portion which extends inwardly substantially the same distance as said continuous rib and in parallel relationship to said head and rib and in overlapping relationship to the outer surface of said head, and said last-named flange having a continuous bead on its inner surface formed by curling the flange of the metal tray around the end of the body portion, said flange fitting in a continuous groove formed in the outer surface of said head adjacent the periphery thereof.

2. A container structure according to claim 1 wherein the barrel head also includes a disk of flexible fiber material disposed on the outer surface of the heavy disk and having a flange which extends between the flange of said metal tray and said body portion.

3. A container structure according to claim 1, wherein the flange and disk-like portion of the metal tray are separate members.

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