July 6, 1937. C. M. MacCHESNEY 2,086,041

CONTAINER

Filed Dec. 31, 1934

Fig. 1.

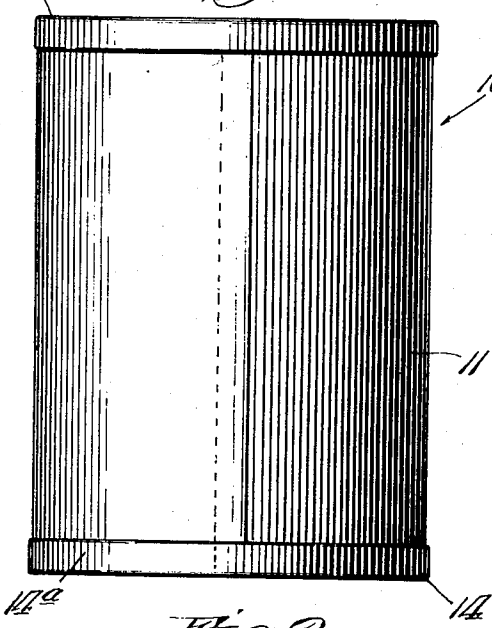


Fig. 3.

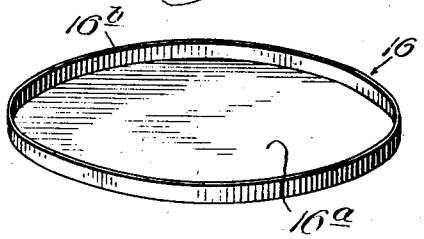


Fig. 4.

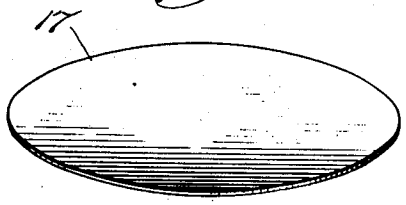


Fig. 2.

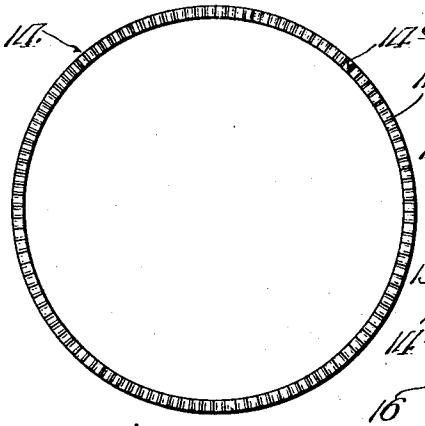


Fig. 5.

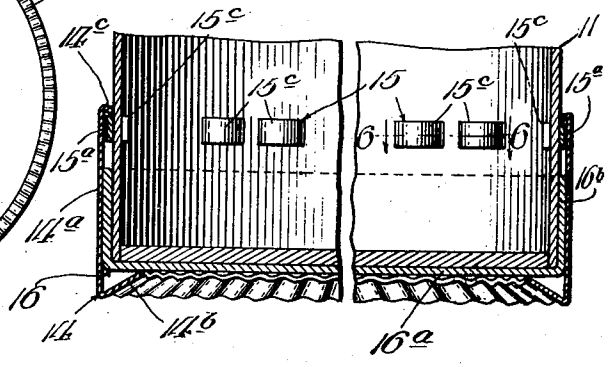


Fig. 6.

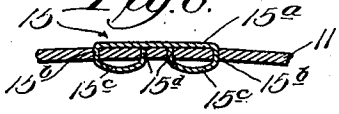


Fig. 8.

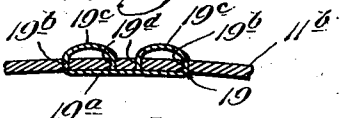
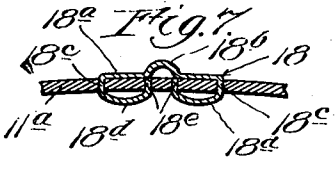


Fig. 7.



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2,086,041

CONTAINER

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Application December 31, 1934, Serial No. 759,840

8 Claims. (Cl. 229—5.7)

This invention relates to improvements in containers and method of forming the same and its primary purpose is to provide an improved collapsible container embodying a novel bottom construction by which the bottom wall of the container is united with an annular non-metallic wall. The principal parts of containers of this type are customarily made of paper, fibreboard or similar non-metallic material, including an annular collapsible wall which is shipped in its collapsed state to the point of use where it is assembled with the other parts of the container by the user. For purposes of economy in construction, it is desirable that the annular wall and the bottom wall of such a container be formed of non-metallic material and that these parts be capable of being united by the user with the use of a connecting member which may be readily put in place without the use of any auxiliary fastening means. It is therefore the principal object of the present invention to provide an improved container of this type comprising a collapsible annular wall and a bottom wall, both formed of non-metallic material, in combination with a series of fastening devices which are assembled on the annular wall at the place of manufacture and which are adapted to form an interlocking engagement with an annular metallic rim placed over the lower end of the annular wall by the user for the purpose of reenforcing this wall and supporting the bottom wall. Another object of the invention is to provide a collapsible container comprising an annular non-metallic wall in combination with a cup-shaped bottom wall adapted to fit over the annular wall, a bottom disk fitting within the annular wall, and an annular metallic rim having a flange adapted to snap over a series of attaching devices carried by the annular wall and having a part extending beneath and supporting said cup-shaped bottom member. Another object of the invention is to provide an improved method of forming a container comprising the steps of forming a collapsible cylindrical non-metallic wall, attaching to said wall an annular series of outwardly extending projections adjacent its lower end, expanding said collapsible wall within an annular metallic rim having an inwardly extending annular flange at its lower edge, and an annular inturned flange around its upper edge located above said projections when said wall is expanded, and then forcing downwardly within said annular wall to a position within said lower inturned flange a disk adapted to hold said annular wall in a condition wherein said projections interlock with the upper inturned flange on said rim. Still another object of the invention is to provide an improved method of forming a container comprising the steps of forming an annular non-collapsible metallic wall, securing to said wall adjacent its lower end an annular series of outwardly extending projections, forming an annular metallic rim having an inturned flange at its lower edge and another inturned flange at its upper edge, placing within said rim on said lower flange a cup-shaped non-metallic member, then placing within said rim and within said cup-shaped member the lower portion of said annular non-metallic wall and expanding said wall, and then placing within the lower end of said annular wall a member adapted to hold said annular wall in expanded condition wherein said projections interlock with the upper flange of said rim. Other objects relate to various details of construction, and to features of the improved method of forming the container, which will appear more fully hereinafter.

The nature of the invention will be understood from the following specification taken with the accompanying drawing, in which certain embodiments of the improved container and one example of the improved method of forming it are illustrated. In the drawing,

Fig. 1 shows a side elevation of a complete container embodying the features of the present invention;

Fig. 2 shows a bottom plan view of the container illustrated in Fig. 1;

Fig. 3 is a perspective view of the cup-shaped bottom member which is adapted to receive the lower end of the annular wall of the container illustrated in Fig. 1;

Fig. 4 is a perspective view of the bottom wall or disk which is adapted to fit within the annular wall of the container and to rest upon the cup-shaped member illustrated in Fig. 3;

Fig. 5 shows an axial vertical section through the lower part of the container illustrated in Fig. 1;

Fig. 6 is an enlarged detail section taken on the line 6—6 of Fig. 5, showing one of the attaching devices which project outwardly from the annular wall of the container;

Fig. 7 is a sectional view similar to that of Fig. 7, showing a modified form of construction of the attaching devices; and

Fig. 8 is another sectional view similar to that of Fig. 6, showing another arrangement of

the attaching devices carried by the annular wall.

As illustrated in the drawing, the improved container 10 is shown as comprising a cylindrical non-metallic wall 11, formed preferably from a sheet of paper or similar material, which has its ends overlapped or secured together by glue or other fastening means. After being thus formed, this cylindrical shell is ordinarily collapsed and a group of them are packed together in a bale or bundle and shipped to the consumer, who then expands the annular wall and assembles it with other parts of the structure, including a conventional top 13 and a bottom comprising the improved annular metallic wall 14 and other associated parts forming the bottom structure of the improved container of the present invention. The annular non-metallic wall 11 is provided at the place of manufacture with a series of attaching devices 15 which project outwardly from the outer surface of the annular wall and which are preferably in the form of metallic staples having outer projecting portions 15a lying in contact with the outer surface of the annular wall, as shown in Fig. 6, and having side arms 15b which project through the annular wall and are then reversely bent or clinched as shown at 15c with their extremities 15d again entering the annular wall in an outward direction. These attaching devices 15 form an annular series around the wall 11 and are spaced a suitable distance above the lower end of the wall 11 so that they lie slightly below the upper edge of the metallic rim 14.

The rim 14 is formed from a flat strip of steel or the like which is bent in the form of a complete annular rim with its ends overlapped and secured together by rivets, spot welds or the like. This rim comprises a cylindrical body portion 14a having along its lower edge an upwardly and inwardly inclined transversely corrugated flange 14b, and having along its upper edge an inwardly and downwardly turned annular flange 14c. These flanges are preferably formed on the body portion of the rim during the process of manufacture and prior to the operation of securing the overlapping ends of the rim together. The lower flange 14b of the metal rim is adapted to support a cup-shaped bottom member 16 of paper, fibreboard, or other non-metallic material which is preferably pressed in a hot condition into the shape shown in the drawing, where it is shown as comprising a circular horizontal portion 16a and an annular upturned flange 16b. The lower end of the annular wall 11 is adapted to fit closely within the flange 16b of the member 16 and, when so assembled within the rim 14, the outwardly projecting attaching devices 15 are adapted to lie just beneath the inturned flange 14c of the metallic rim so that the attaching devices interlock with the flange 14c and hold the cup-shaped bottom member 16 in proper assembled relationship with respect to the lower end of the wall 11. The portion 16a of the bottom member is reenforced and the lower end of the annular wall 11 is maintained in its expanded condition by means of a bottom disk 17, also preferably formed of fibreboard or other non-metallic material, which fits closely within the lower end of the annular wall 11, as shown in Fig. 5.

In assembling the container described above, the collapsible wall 11 may first be expanded within the cup-shaped member 16 and then these members may be inserted within the metallic rim 14, or the cup-shaped member 16 may be placed within the rim 14 with the portion 16a thereof resting on the annular flange 14b of the rim and then the annular wall 11 may be placed within the cup-shaped member 16 and within the rim 11 and then expanded until it engages the upstanding flange 16b and until the attaching devices 15 occupy positions just beneath the inturned flange 14c on the rim 14. If the annular wall 11 is expanded within the cup-shaped member before the rim 14 is applied, the rim may be slipped upwardly over the members 11 and 16 until the annular inclined flange 14c snaps over the attaching devices 15 into interlocking engagement therewith. When the other parts have been assembled so that the flange 14c occupies a position above the outwardly projecting portions of the attaching devices 15, the bottom disk 17 is inserted within the annular wall until it rests upon the portion 16 of the cup-shaped member. This disk is of the same diameter as the inner diameter of the wall 11 and serves not only to strengthen and reenforce the bottom of the container but also to hold the annular wall 11 in its expanded condition wherein the attaching devices 15 are maintained in interlocking engagement with the flange 14c of the rim.

Instead of employing staples of the usual form for forming the attaching devices, as illustrated in Fig. 6, the modified construction illustrated in Fig. 7 may be employed. In this form, the annular wall 11a of the container is provided with an annular series of staples 18 each of which has an outer portion 18a lying in contact with the annular wall and provided at its middle point with an outwardly curved hump or projection 18b which increases the projection of the attaching device beyond the annular wall as compared with the form illustrated in Fig. 6. Each staple 18 has side arms 18c which extend through the annular wall and these side walls are reversely bent or clinched as shown at 18d with their extremities 18e directed outwardly into the wall 11a. Another modification of the attaching devices is illustrated in Fig. 8, where the annular wall 11b is shown as being provided with attaching devices each having the form of a staple 19, similar to the form illustrated in Fig. 6, except that the staples are reversed with the transverse portions 19a thereof lying in contact with the inner surface of the annular wall and their side arms 19b projecting outwardly through the annular wall. These side arms are reversely bent or clinched on the outer side of the container wall, forming curved outwardly extending projections 19c which are adapted to interlock with the flange 14c of the rim. These projecting portions terminate in extremities 19d which project inwardly into the annular wall 11b.

Although one form of the improved container, with modifications of certain portions thereof, has been illustrated in conjunction with the illustration of one example of forming the container, it will be understood that the invention may be embodied in various forms of construction and may be practiced in various ways coming within the scope of the appended claims.

I claim:

1. The combination in a container, of an annular collapsible non-metallic wall having near its lower end an annular series of separate outwardly extending spaced metallic projections, an annular metallic rim having a lower flange extending inwardly beneath the lower end of said annular wall and having an upper flange ex-

tending inwardly above said projections, and a bottom wall supported by said lower flange.

2. The combination in a container, of an annular collapsible non-metallic wall having near its lower end an annular series of separate outwardly extending spaced metallic projections, an annular metallic rim having a lower flange extending inwardly beneath the lower end of said annular wall and having an upper flange extending inwardly above said projections, and a bottom wall supported by said lower flange and fitting within said annular wall to hold said annular wall in expanded condition wherein said projections extend beneath said upper flange.

3. The combination in a container, of an annular collapsible non-metallic wall having near its lower end an annular series of outwardly extending projections, an annular metallic rim having a lower flange extending inwardly beneath the lower end of said annular wall and having an upper flange extending inwardly above said projections, and a bottom wall resting on said lower flange and having an annular flange extending upwardly in telescoping engagement with the lower end of said annular wall beneath said projections.

4. The combination in a container, of an annular collapsible non-metallic wall having near its lower end an annular series of outwardly extending projections, an annular metallic rim having a lower flange extending inwardly beneath the lower end of said annular wall and having an upper flange extending inwardly above said projections, a bottom wall resting on said lower flange and having an annular flange extending upwardly in telescoping engagement with the lower end of said annular wall beneath said projections, and a disk fitted within the lower end of said annular wall to hold said annular wall in expanded condition wherein said projections lie beneath said upper flange.

5. The combination in a container, of an annular non-metallic wall, a series of metallic attaching devices secured independently of each other to said annular wall and projecting outwardly therefrom adjacent its lower end, an annular metallic rim having a lower inwardly extending annular flange and having an upper inwardly and downwardly inclined flange snapped over said attaching devices, and a bottom wall supported by said lower flange.

6. The combination in a container, of an annular non-metallic wall, a series of metallic attaching devices secured to said annular wall and projecting outwardly therefrom adjacent its lower end, an annular metallic rim having a lower inwardly extending annular flange and having an upper inturned flange snapped over said attaching devices, and a cup-shaped bottom member resting on said lower flange and having an upturned annular part below said attaching devices having fitted within it the lower end of said annular wall.

7. The combination in a container, of an annular non-metallic wall, an annular series of metallic staples penetrating the lower part of said annular wall and projecting outwardly therefrom, an annular metallic rim having an inturned annular flange extending over the projecting portions of said staples and having an annular inturned bottom flange, and a bottom wall resting on said inturned lower flange and having an annular upwardly extending part located below said attaching devices receiving within it the lower end of said annular wall.

8. The combination in a container, of an annular non-metallic wall, an annular series of metallic staples penetrating the lower part of said annular wall and projecting outwardly therefrom, an annular metallic rim having an inturned annular flange extending over the projecting portions of said staples and having an annular inturned bottom flange, a bottom wall resting on said inturned lower flange and having an annular upwardly extending part receiving within it the lower end of said annular wall, and a disk fitting within said annular wall and resting on said bottom wall.

CHESTER M. MacCHESNEY.