Feb. 16, 1926. 1,573,071

J. A. KAYE

COLLAPSIBLE BARREL

Filed June 28, 1923

Fig. 1.

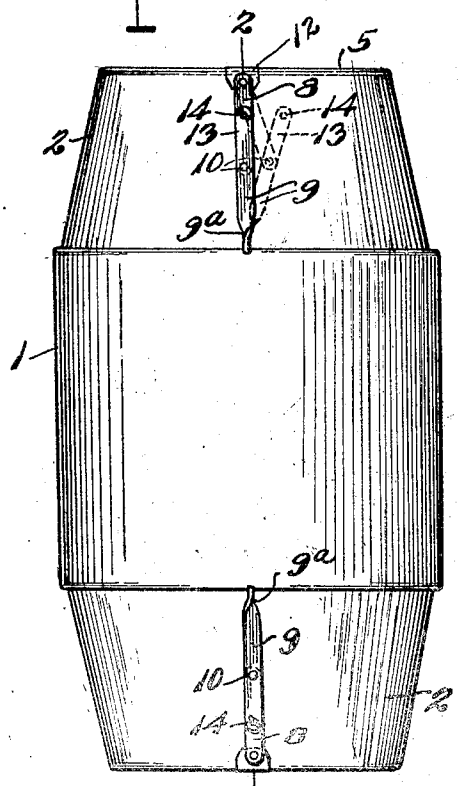


Fig. 2.

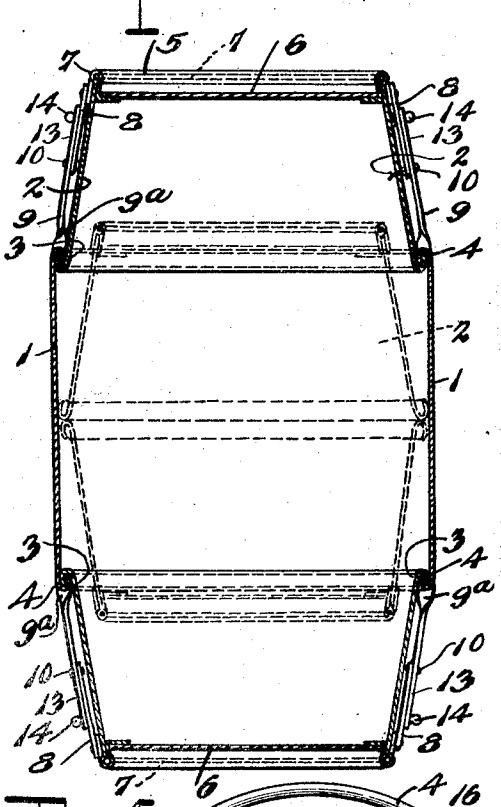


Fig. 3.

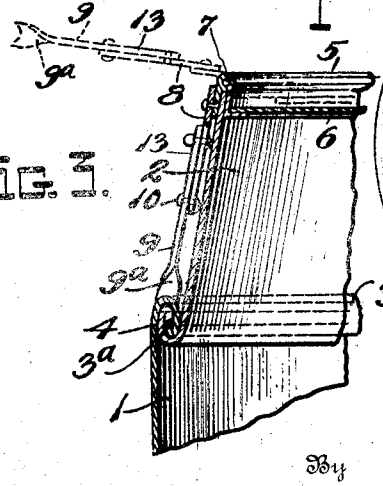
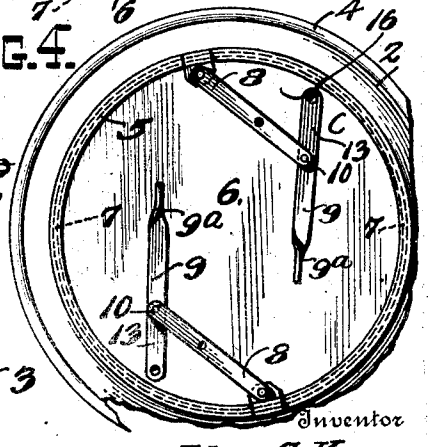


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN ARTHUR KAYE, OF SAULT STE. MARIE, ONTARIO, CANADA.

COLLAPSIBLE BARREL.

Application filed June 28, 1923. Serial No. 648,384.

To all whom it may concern:

Be it known that I, JOHN A. KAYE, a subject of the King of Great Britain, residing at Sault Ste. Marie, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Collapsible Barrels, of which the following is a specification.

The present invention relates to containers and barrels of that general type which are collapsible so that they will occupy a comparatively small amount of space when empty, and can be shipped at reduced rates.

Among the objects of the invention are to provide a collapsible barrel which can be comparatively inexpensively constructed from sheet metal, which can be readily collapsed or distended as may be desired, which provides a substantial and spacious container when it is distended, and which occupies a greatly reduced amount of space when it is collapsed.

With the above and other objects in view the invention consists in certain combinations and arrangements of the parts as will more fully appear as the description proceeds, the novel features thereof being pointed out in the appended claims.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a side elevation of a barrel constructed in accordance with the invention, showing the same in a distended position.

Figure 2 is a vertical sectional view on the line 2—2 of Fig. 1, the position of the end sections when collapsed being indicated by dotted lines.

Figure 3 is an enlarged sectional view through the upper portion of one side of the barrel showing the parts in an operative position.

Figure 4 is a top plan view of an end section showing the levers as swung upwardly and folded against the top of the section in an out of the way position.

Corresponding and like parts are indicated on all of the figures of the drawing and referred to in the following specification by like reference characters.

Referring to the drawings, the numeral 1 designates the middle section of the collapsible barrel, and the numerals 2 the end sections thereof. The middle section 1 is shown as being substantially cylindrical in shape and having straight sides, although it will be obvious that the exact shape or configuration thereof is not material to the invention, and can be varied as may be desired. The two end sections 2 are similar in shape and interchangeable, and they are preferably tapered toward the outer ends thereof, the inner and larger ends of the sections 2 being of such a size as to fit closely within the middle section 1 and telescope therein.

The sections 1 and 2 can be conveniently formed from sheet metal and the edge portions of the middle section 1 are returned inwardly at 3. The inwardly projecting edges of the returned portions may be rolled, as indicated at 3^a, to provide annular ribs which are so arranged as to tend to grip the returned edges 4 of the end sections 2 and cooperate therewith to form a tight joint when the end sections are moved outwardly into operative position. When the barrel is distended the returned edges 4 of the end sections 2 are forced into an interlocking connection with the inwardly returned flanges 3 of the middle section 1, and are tightly engaged by the rolled edges 3^a thereof to form a tight joint between the sections.

The outer and tapered ends of the end sections 2 of the barrel may have the edges thereof returned inwardly, as indicated at 5, and suitably shaped or bent to engage the respective heads 6. If desired a reinforcing wire 7 may be fitted within the fold of the returned edge portions 5, and the sheet metal tightly crimped around the wire. These wires will serve to stiffen and reinforce the sheet metal at points where it will be subjected to the action of rough handling when the barrel is in use.

The end sections 2 may each have a length or depth which is substantially equal to half the length or depth of the middle section 1, so that the two end sections will be completely housed within the middle section when the barrel is collapsed. For the purpose of holding the barrel distended a series of toggle levers may be used. Each of the toggle levers includes the lever arms 8 and 9 which are pivotally connected to each other at 10. The lever 8 is pivotally mounted upon a small plate 12, which is hingedly mounted upon the wire 7, the sheet metal of the end section 2 being suitably cut away

for this purpose. When the plate 12 is swung outwardly the toggle levers are brought into operative position at the exterior of the barrel. The lever arm 9 has the free end thereof notched and given a quarter turn, as indicated at 9a, so that it can engage the corresponding edge of the middle section 1.

An extension 13 at the opposite end of the lever arm 9 provides a handle for manipulating the toggle levers. After the sets of toggle levers have been properly positioned the handle portions 13 can be manipulated to operate the levers and bring the arms 8 and 9 of the different sets of levers into substantial alignment with each other, thereby forcibly moving the end sections 2 of the barrel outwardly to the limit of their movement. If desired the handle portion 13 of each set of levers and the lever arm 8 may be formed with corresponding openings 14 arranged to register with each other when the levers have been moved into operative position, so that a cotter pin or the like can be inserted to prevent accidental collapsing of the barrel.

When the barrel is distended and locked in the said position it can be filled and used in the same manner as any ordinary barrel or container. When the barrel is emptied the different sets of levers can be released and the end sections 2 collapsed into the middle section 1 so as to be completely housed therein. The sets of levers 8 and 9 are carried by the swinging plates 12, which can then be folded against the heads of the barrel, thereby bringing the levers into such a position that they will not interfere with the telescoping of the barrel. It will be obvious, however, that the levers can be swung outwardly at any time and brought into operative position with the notched ends 9a of the lever arms 9 in engagement with the edges of the intermediate barrel section 1. When the barrel is knocked down or collapsed it only occupies half the space which it occupies when distended, and owing to this feature the empty barrel can be shipped at greatly reduced rates. The saving in shipping charges, in cases where the empty barrel must be returned, would represent a great saving and would more than pay for the increased cost of the collapsible barrel in a very short period of time.

While I have illustrated and described one particular form of the collapsible barrel in detail, it will be understood that many modifications and changes can be made in the details of construction without departing from the spirit of the invention and all within the scope of the claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A collapsible container comprising a tubular middle section, an end section adapted to telescope within the middle section, a hinged plate permanently mounted upon one of the sections, and toggle levers carried by the hinged plate and adapted to detachably engage the other section for forcing the two sections into an expanded relation, the mounting of the toggle levers upon the hinged plate enabling them to be swung into an out of the way position when the container is collapsed.

2. A collapsible container including a tubular middle section, an end section telescoping within the middle section, a plate hingedly connected to the end section, and toggle levers mounted upon the said plate and adapted to engage the middle section for forcibly moving the end section into an expanded position, the hinged mounting of the plate enabling the toggle levers to be swung into inoperative position against the top of the end section when the sections are telescoped.

3. A collapsible container including a tubular middle section, an end section adapted to telescope within the middle section and formed of sheet metal, said end section comprising side walls and an end wall with a reinforcing wire at the intersection thereof, plates hingedly mounted upon the reinforcing wire, and toggle levers carried by the plates and adapted to engage the middle section for forcibly moving the end section into an expanded position, the hinged mounting of the plates enabling the toggle levers to be swung into inoperative position against the end wall of the end section when the sections are telescoped.

4. A collapsible container comprising a tubular middle section, an end section telescoping within the middle section, plates hingedly mounted upon the end section, and toggle levers carried by the plates and having notched end portions which are adapted to be seated against the edge of the middle section for enabling the toggle levers to forcibly move the end section into an expanded position, the hinged mounting of the plates enabling the toggle levers to be swung into inoperative position against the end section when the sections are telescoped.

5. A collapsible container comprising a tubular middle section, an end section adapted to telescope within the middle section, toggle levers carried by one of the sections and adapted to detachably engage the other section for forcibly moving the end section into an expanded position, one of the toggle lever elements being formed with an extension, and means for fastening the said extension to the other element of the toggle levers for locking the toggle levers in operative position.

In testimony whereof I affix my signature.

JOHN ARTHUR KAYE.