

F. A. PRAHL.
KNOCKDOWN BARREL.
APPLICATION FILED JUNE 16, 1909.

980,434.

Patented Jan. 3, 1911.

Fig. 1.

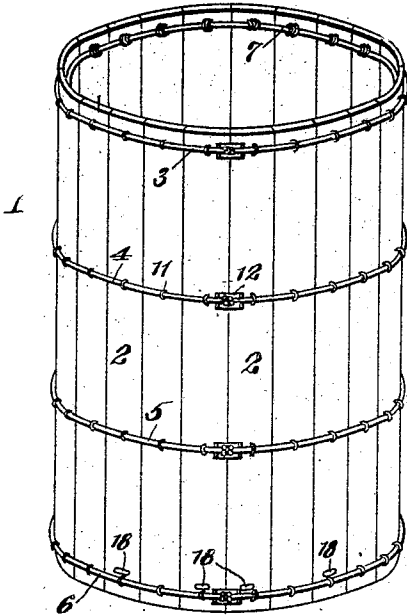


Fig. 2.



Fig. 3.

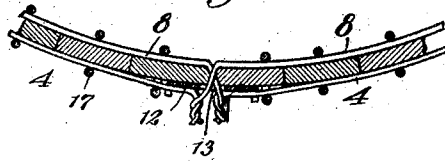


Fig. 4.

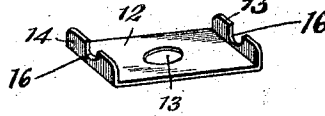
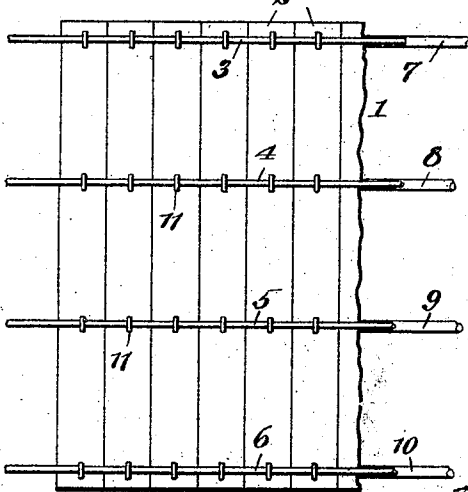


Fig. 5.



WITNESSES:

H. Crocheron
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Fig. 6.

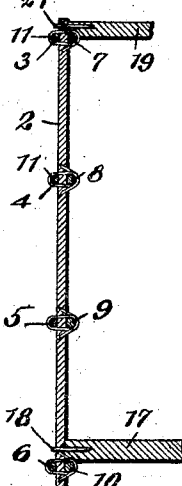


Fig. 7.

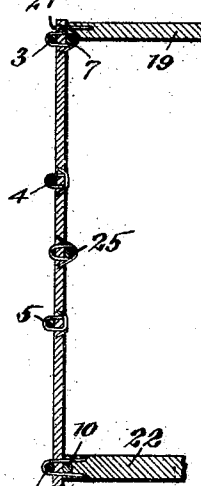
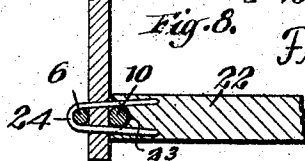


Fig. 8.



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UNITED STATES PATENT OFFICE.

FREDERICK A. PRAHL, OF NEW YORK, N. Y., ASSIGNOR TO BABCOCK BOX COMPANY,
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KNOCKDOWN BARREL.

980,434.

Specification of Letters Patent.

Patented Jan. 3, 1911

Application filed June 16, 1909. Serial No. 502,564.

To all whom it may concern:

Be it known that I, FREDERICK A. PRAHL, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Knockdown Barrels, of which the following is a specification.

This invention relates to knock-down barrels.

It seeks to provide a barrel combining a high degree of strength and durability with great economy of production. The invention consists of the features hereinafter set forth and specified in the claims.

In the accompanying drawings forming part of this specification and in which like reference numerals designate corresponding parts, Figure 1 is a perspective view of a barrel embodying one form of the invention; Fig. 2 is a sectional view of the top head; Fig. 3 is a fragmental view in sectional plan through the barrel body at one of the clips; Fig. 4 is a perspective view of a clip; Fig. 5 is a plan view showing the fabric of which the barrel body is made; Fig. 6 is a vertical section through the barrel body and showing the position of the heads; Fig. 7 is a view similar to Fig. 6 showing some of the details modified; and Fig. 8 is an enlarged detail in section of the barrel body and bottom head shown in Fig. 7.

In accordance with the present invention the body of the barrel is made up from a previously constructed fabric consisting of a series of staves having a plurality of spaced transverse wires extending across all the staves on one side and stapled thereto, and a plurality of spaced transverse wires extending across all the staves on the opposite side and stapled thereto. Heretofore various forms of knock-down barrels have been proposed. These have generally been expensive to make, lacking in strength, durability and rigidity, or otherwise impracticable or objectionable. Among these earlier suggestions it has been proposed to make a knock-down barrel of a body fabric consisting of staves and transverse wires, but these have not been satisfactory for various reasons. If the wires and staves were woven together as was proposed, then the barrel lacked rigidity and firmness, there

being nothing to hold the individual staves in place, except the frictional binding of the woven wires, and this was generally not sufficient to reliably prevent the longitudinal slipping of the staves, or some of them. Again, a woven fabric is likely to be too flexible to make a barrel of sufficient rigidity, and is expensive and difficult to construct. It has also been proposed to use a body fabric having outside wires only, which were stapled to the staves. In this case there were no inside wires whatever, and consequently there was nothing to effectually resist outside pressure or shocks which tended to collapse the barrel, except the strength inherent in the material of the staves themselves.

The present invention obviates the objections pointed out and it does so by the very economical, efficient and practical arrangement first above specified. The completed barrel largely depends for its rigidity and durability upon the location and arrangement of the wires inside and outside and the manner of securing them in place, and because of the efficient arrangement of these wires, it is entirely practicable to use staves only $\frac{3}{16}$ of an inch in thickness, cut from what has heretofore been practically waste material occurring as a by-product.

Referring now more particularly to the specific features, as shown in the drawings, 1 is the body of the barrel in tubular form. It is made from the fabric shown in Fig. 5 which comprises the staves 2, the outside wires 3, 4, 5 and 6 and the inside wires 7, 8, 9 and 10 rigidly secured to the staves by staples 11. The fabric may be rapidly and economically made in a machine to which the staves, wires and staples are fed. The outside wires extend across the outside of all the staves and the inside wires extend across the inside of all the staves, and thus are not woven or twined around the staves. The wires on the outside preferably register with those on the inside, as shown in Figs. 1, 3, 5 and 6 and at top and bottom in Fig. 7. This makes it feasible to secure the registering wires by the same staples and is economical and effective in its result.

When the completed fabric has been formed into a tube for the barrel body, its meeting edges are firmly secured by suitable means. In the preferable arrangement the

wires have ends projecting beyond the edges of the fabric, and the oppositely projecting wire ends are suitably secured together to maintain the barrel body in rigid form.

5 Projecting wire ends are shown at the left in Fig. 5. A satisfactory way of securing oppositely projecting wire ends is shown in Fig. 3. There the wire ends are all brought outside the barrel between the meeting edges
10 of the fabric, and one end of wire 4 is twisted with the oppositely projecting end of wire 8. The other end of wire 4 is twisted with the remaining oppositely projecting end of wire 8. Of course this arrangement
15 may be varied and other means for holding together the meeting edges of the fabric may be used. It is sometimes desirable to employ additional means to prevent the meeting edges of the fabric from bulging out-
20 ward somewhat. For this purpose clips or bridge pieces, such as the clip 12, may be used. The clip 12 comprises a thin metal plate having a perforation 13, and upturned ends 14 and 15 each having a notch 16.
25 These clips are located on one side of the staves across the meeting edges of the fabric and beneath one of the wires, the ends of the wire lying in the notches 16 so as to hold the clip in place. The bottom head 17 is
30 supported upon the inner side of the lower inside wire 10 and is held in place by staples 18, and the upper head 19 is supported upon the outer side of inside wire 7, being held in place by staples 21. In Figs. 7 and 8 the
35 lower head 22 is provided with an annular groove 23 to receive the wire 10 and thus support the head, and is held in place by staples 24 which span the wires 6 and 10. Either arrangement may be used for the bot-
40 tom head. Instead of having the inside and outside wires in register with each other, they may be arranged out of register, if desired. This is shown in Fig. 7 with refer-
45 ence to the intermediate wires 4, 5 and 25. It will, of course, be understood that the number of wires on either side of the staves may be considerably varied, but in any case,
50 in order to secure the desired results there should be a plurality of wires on each side of the staves and some of these should be located at or near the top and bottom of the body fabric. It is preferable, also, to have
55 the inner wires somewhat larger than the outer wires. The staves may be arranged as close together or as far apart as desired and may be rectangular and flat, or have any other desired shape.

Among the advantages of the inner end
60 wires 7 and 10, are that they provide secure and reliable means for supporting the heads in place against inwardly directed pressure, that they facilitate the formation of the body fabric into tubular form in setting up
65 the barrel, and that they add strength and rigidity to the ends of the barrel, the upper

wire 7 being especially serviceable in this respect when the barrel is filled and shipped with a cover of burlap or other textile fabric instead of a head. It will, of course, be understood that flat, flexible metal bands are
70 the equivalent of the wires, and the term "wires" is herein used in this sense.

What is claimed and what is desired to be secured by Letters Patent is:—

1. A flexible fabric for a knock-down bar-
75 rel comprising a series of staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto, and having a plu-
80 rality of spaced transverse inside wires extending across all the staves on the inner side, said inside wires being stapled to the staves and provided to resist collapsing strains, wires on opposite sides of the staves
85 being secured in place by the same staples, there being wires located near the ends of the staves and intermediate thereof.

2. A knock-down barrel comprising a
flexible body fabric consisting of a series of
90 staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto, and having a plurality of spaced transverse
95 inside wires extending across all the staves on the inner side, said inside wires being stapled to the staves and provided to resist collapsing strains, there being wires located
100 near the ends of the staves and intermediate thereof; and a bottom head resting against the inner side of the lower inside wire and stapled to the staves.

3. A knock-down barrel comprising a
flexible body fabric consisting of a series of
105 staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto, and having a plurality of spaced transverse
110 inside wires extending across all the staves on the inner side, said inside wires being stapled to the staves and provided to resist collapsing strains, there being wires located
115 near the ends of the staves and intermediate thereof oppositely projecting wire ends being secured together to hold the barrel body in shape; and a bottom head resting against
the inner side of the lower inside wire and stapled to the staves.

4. A knock-down barrel comprising a
flexible body fabric consisting of a series of
120 staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto, and having a plurality of spaced transverse
125 inside wires extending across all the staves on the inner side, said inside wires being stapled to the staves and provided to resist collapsing strains; there being wires located
near the ends of the staves and intermediate thereof; a bottom head resting against the
130 inner side of the lower inside wire and

stapled to the staves; and a top head resting against the outer side of the upper inside wire and stapled to the staves.

5 A knock-down barrel comprising a flexible body fabric consisting of a series of staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto, and having a plurality of spaced transverse
10 inside wires extending across all the staves on the inner side, said inside wires being stapled to the staves and provided to resist collapsing strains; there being wires located near the ends of the staves and intermediate
15 thereof oppositely projecting wire ends being secured together to hold the barrel body in shape; and clips extending across the meeting edges of the fabric on one side and located underneath the wires on the same
20 side.

6. A knock-down barrel comprising a flexible body fabric consisting of a series of staves having a plurality of spaced transverse binding wires extending across all the staves
25 on the outer side and stapled thereto, and having a plurality of spaced transverse inside wires extending across all the staves on the inner side, said inside wires being stapled to the staves and provided to resist
30 collapsing strains; there being wires located near the ends of the staves and intermediate thereof oppositely projecting wire ends being twisted together outside the barrel body, to hold the barrel body in shape.

35 7. A knock-down barrel comprising a flexible body fabric consisting of a series of staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto, and having a plurality of spaced transverse
40 inside wires extending across all the staves on the inner side, said inside wires being stapled to the staves and provided to resist collapsing strains; there being wires located
45 near the ends of the staves and intermediate thereof oppositely projecting wire ends being twisted together outside the barrel body to hold the barrel body in shape; and clips extending across the meeting edges of
50 the fabric on the outside and located underneath the twisted ends of the outside wires.

8. A knock-down barrel comprising a flexible body fabric consisting of a series of staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto, and having a plurality of spaced transverse
55 inside wires extending across all the staves on the inner side, said inside wires being stapled to the staves and provided to resist collapsing strains; there being wires located near the ends of the staves and intermediate
60 thereof oppositely projecting wire ends of

inner and outer wires being secured together to hold the barrel body in shape.

9. A knock-down barrel comprising a flexible body fabric consisting of a series of staves having a plurality of spaced transverse wires extending across all the staves on one side and stapled thereto, and having a
70 plurality of spaced transverse wires extending across all the staves on the opposite side and stapled thereto; oppositely projecting wire ends of inner and outer wires being secured together to hold the barrel body in
75 shape; and clips extending across the meeting edges of the fabric on the outside and located underneath the twisted ends of the wires.

10. A knock-down barrel comprising a flexible body fabric consisting of a series of staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto, and having a plurality of spaced transverse
85 inside wires extending across all the staves on the inner side, said inside wires being stapled to the staves and provided to resist collapsing strains; oppositely projecting wire ends being secured together to hold the
90 barrel body in shape; and a bottom head resting against the inner side of the lower inside wire and stapled to the staves and to the lower outside and inside wires.

11. A knock-down barrel comprising a flexible body fabric consisting of a series of staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto, and having a plurality of spaced transverse
100 inside wires extending across all the staves on the inner side there being wires located near the ends of the staves and intermediate thereof, wires on opposite sides of the staves being secured in place by the same staples.
105

12. A knock-down barrel comprising a flexible body fabric consisting of a series of staves having a plurality of spaced transverse binding wires extending across all the staves on the outer side and stapled thereto,
110 and having a plurality of spaced transverse inside wires extending across all the staves on the inner side there being wires located near the ends of the staves and intermediate thereof; and a bottom head resting against
115 the inner side of the lower inside wire and stapled to the staves, wires on opposite sides of the staves being secured in place by the same staples.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

FREDERICK A. PRAHL.

Witnesses:

IDA G. GILMORE,
BEATRICE MIRVIS.