G. E. HERRMANN AND B. W. TUCKER.

BARREL.

APPLICATION FILED DEC. 30, 1916.

1,358,203. **Patented Nov. 9, 1920.**

Fig. 2

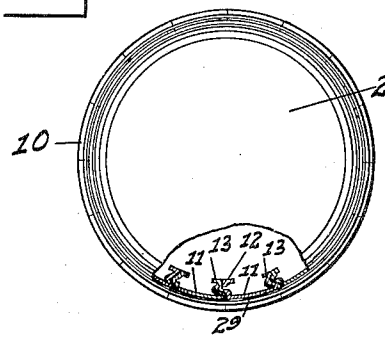


Fig. 7

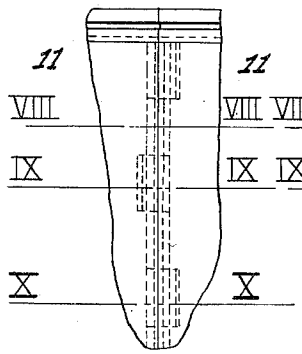


Fig. 11

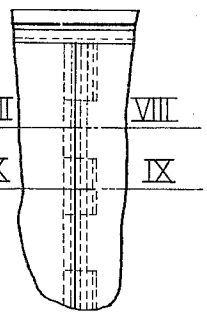


Fig. 1

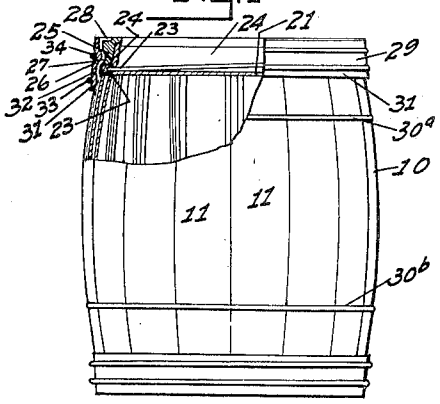


Fig. 3

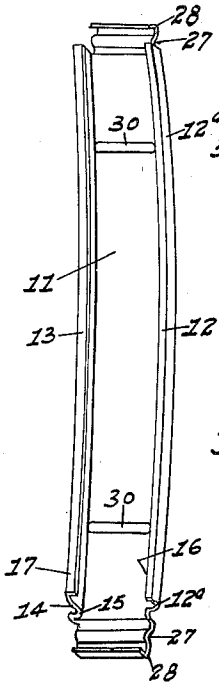


Fig. 6

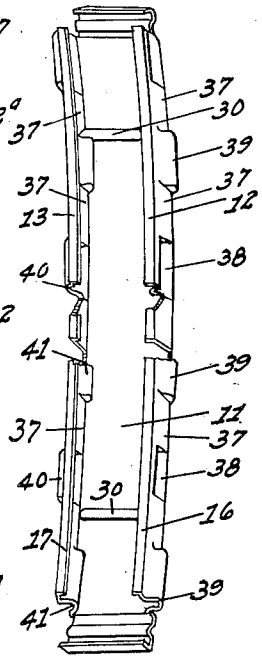


Fig. 5

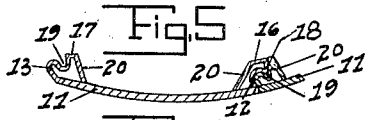


Fig. 4

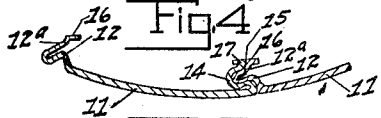


Fig. 8

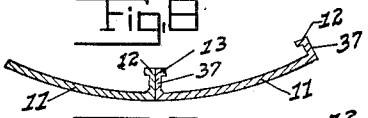


Fig. 9

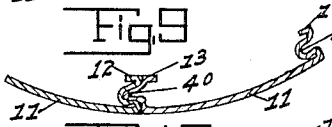
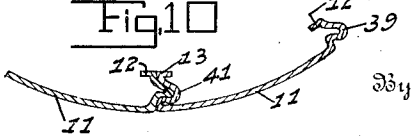


Fig. 10



Inventor

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By their Attorneys

Criswell & Davis

UNITED STATES PATENT OFFICE.

GEORGE E. HERRMANN, OF MORRISTOWN, AND BENJAMIN W. TUCKER, OF SOUTH ORANGE, NEW JERSEY; SAID TUCKER ASSIGNOR TO SAID HERRMANN.

BARREL.

1,358,203. Specification of Letters Patent. Patented Nov. 9, 1920.

Original application filed February 12, 1912, Serial No. 676,963. Divided and this application filed December 30, 1916. Serial No. 139,775.

To all whom it may concern:

Be it known that we, GEORGE E. HERRMANN and BENJAMIN W. TUCKER, citizens of the United States, and residents of Morristown, county of Morris, and State of New Jersey, and of South Orange, county of Essex, and State of New Jersey, respectively, have invented certain new and useful Improvements in Barrels, of which the following is a specification.

This invention relates more particularly to barrels made from sheet steel or similar metal.

One of the principal objects of the invention is to provide a barrel or other container having a plurality of staves or members each of which is provided with a groove lengthwise of the stave and extending throughout the greater part of its length and along one edge, and a tongue or rib portion along the other edge of said stave, the said tongue portion of one stave being adapted to fit into the groove portion of the adjacent stave, and the tongue and groove portion of the staves so formed that they will be positively interlocked and reinforced by the interlocking action in order that the barrel when assembled will be strong and not liable to collapse under the strain to which such objects are subjected.

A further object of the invention is to provide a joint between the staves or members of the barrel or other container, which may be variously formed and the barrel or container made substantially flush on the exterior surface thereof.

A still further object of the invention is to provide a simple and efficient barrel or other container which may be readily made and assembled and in which the members may be detachable.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will be then pointed out in the claim at the end of the description.

In the drawings, Figure 1 is an elevation, partly broken away and partly in section, of one form of barrel embodying our invention;

Fig. 2 a plan view, partly broken away and partly in section;

Fig. 3 a detail perspective view of one of the barrel staves or members;

Fig. 4 a fragmentary transverse sectional view through two of the stave members, showing the form of joint between staves constructed as shown in Fig. 3;

Fig. 5 a similar view showing a slightly different form of joint;

Fig. 6 a detail perspective of a stave in which interlocking grooves and projections are formed alternately in each flange;

Fig. 7 a fragmentary elevation showing part of a barrel formed with staves constructed as shown in Fig. 6;

Fig. 8 a sectional view, taken on the line VIII—VIII of Fig. 7;

Fig. 9 a sectional view taken on the line IX—IX of Fig. 7;

Fig. 10 a sectional view taken on the line X—X of Fig. 7; and

Fig. 11 a view similar to Fig. 7, in which staves having spaced grooves formed in one flange and spaced projections formed in the opposite flange, are employed.

This application is a division of our Patent No. 1,216,804, dated February 20, 1917.

While we show and describe the invention as applied to a barrel, it will be understood that the invention may be applied to other containers as well as to bilged or similar forms of barrels.

The barrel or container body 10 comprises a plurality of staves or members 11. Each stave is curved and bilged centrally to adapt the barrel to be larger at the central portion as is usual in the ordinary form of barrel, to adapt the same when lying on its side to be easily and readily placed on end. The staves or members are each provided along their edges with flanges 12 and 13. These flanges extend the greater part of the length of the staves and project inwardly from the body portion so that when the staves are assembled the outer surface of the barrel will be substantially flush. The flange 12 has a projecting portion 12^a extending lengthwise thereof, which forms a rib or tongue. The tongue is forced from the flange and is located between the body portion of the stave or member and the outer edge of said flange, and said tongue in one form extends at an angle with respect to the body of the barrel and the body of the flange. In Figs. 1 to 4, the tongues

or ribs extend toward the body portion and are adapted to enter a groove 14 in the flange 13. The groove 14 of each stave is of a size to receive the tongue or rib 12ª of the stave next adjacent thereto, and said groove is formed by depressing the body of said flange 13. The flange 13 when depressed will be substantially U-shaped in cross section so that a part, as 15, overlaps the body of the barrel stave and rests upon the same at the curved portion of the said flange, thus providing a backing for the grooved portion tending to prevent the same from collapsing by any strain that might tend to force the said flange outward or spread or open the joint when the barrel staves or members are assembled. The U-shaped portion of the flange corresponds with the tongue or rib 12ª, and by having the rib and grooved flanges at an angle with respect to the body portion they will tend better to interlock and prevent the separation or opening by spreading or otherwise of the flanges at the joint, at the same time permitting the barrel staves or members where desirable to be readily assembled and to be as readily detached in case it is desired to replace one stave by another when injured, or for any other purpose. The outer edge of the flange 12 may be provided with an inwardly extending part or angular portion 16, and the flange 13 may be provided with a similar angular portion 17 in order to strengthen the flange and also avoid a more or less sharp edge as might occur when the barrel is made of the usual thin sheet metal.

The tongues 12ª and grooves 14 of the flanges 12 and 13, instead of extending angularly and inward toward the body of the staves, as shown in Figs. 2, 3 and 4, may be formed as shown in Fig. 5, in which the tongues or ribs 18 of the flanges 12, and the groove portions 19 of the flanges 13 extend outward. In either or both cases, the angular portions 16 and 17 of the flanges 12 and 13 may be extended inward, as at 20 in Fig. 5, to further brace the flanges by the engagement of the part or brace portions 20 with the inner surface of the stave bodies.

The flanges of the staves or members 11 do not extend the entire length of the staves or members, and at their ends provide shoulders on which rest the heads 21. Both ends of the barrel or container may be similarly constructed, though it will be understood that one end may be formed in any suitable manner and a securing means, such as shown in the drawings, provided at one end only of said barrel or container. As shown, each head 21 has its body portion, and, at the outer edge thereof, is provided with an annular bead or rib 23 from which projects upwardly a flange 24. A ring or member 25 of heavier metal is arranged over the bead 23 of the head and the flange 24, and this ring or member may be in a plurality of parts or may be a solid and continuous ring, as preferred. This ring 25 is provided with an annular groove portion 26 which is adapted to receive a rib or tongue portion 27 formed transversely of the staves at their ends. Each stave has its ends bent outward to pass about the rib 23 of each of the heads 21, and also about the lower edge of ring 25. The staves or members have their outer ends bent inward or angularly formed, as at 28, adapted to fit a recess in the outer edge or surface of the ring 25, in order to provide a substantially flush outer surface for the ends of the barrel, as shown in Fig. 1. If the ring or member 25 is made in sections the outer ends of the staves need not be forced outward to receive the ring members, but if the said ring or member 25 be solid and of one piece the outer ends of the barrel staves or members may be sprung outward and then forced inward to engage the ring, as shown best in Fig. 1. The ends of the barrel staves are held to the ring and the several parts locked together at each end of the barrel, by a compression band or member 29. This band or member may be annular and split to permit the same to be compressed, and said band is provided with a depressed inwardly extending grooved portion adapted to fit in the transverse groove formed by the ribs 26 of the barrel staves. The band 29 has a skirt portion 31 extending lengthwise of the barrel staves a short distance, which is of less diameter than said band so as to provide a shoulder or seat 32. A fastening wire or band 33 is located under the shoulder 32, and a band or wire 34 is located in the groove formed by the rib 27 so that when the wires 33 and 34 are tightened by twisting the ends thereof or otherwise, the band or member 29 will be compressed, thereby holding the ends of the barrel staves, the ring members 25 and the heads rigidly together and in such way as to provide a very strong and effective end for the barrel or container.

The barrel body is provided with transversely extending grooves intermediate the ends thereof, which are formed by depressing the barrel staves or members of the container transversely thereof, as indicated at 30, so that when the barrel body is assembled, two substantially continuous grooves will be provided. In one of said grooves a tightening wire or band 30ª is located, and in the other groove is a wire or band 30ᵇ, so that when said wires are tightened by twisting the ends or otherwise, the barrel body will be bound about the same intermediate its ends, serving to hold the barrel staves or members of the container together.

In Figs. 6 to 10, the construction is somewhat similiar to that shown in Figs. 1 to 4,

except that instead of the ribs and grooves of the flanges being continuous, the interlocking portions are spaced apart in the manner shown, the projecting portions alternating; that is the ribs extend from one flange into a groove of the flange of the next adjacent stave, while the next interlocking portion projects from the flange containing the groove into a groove of the flange adjacent thereto, thus alternating throughout the length of the flanges. Of course, the said spaced interlocking portions could be located to project from one flange only to enter spaced grooves or similar parts of the flange of the next adjacent stave, as indicated in Fig. 11. In Figs. 6 to 10 the flanges 12 and 13 are straight for a part of their length, as shown at 37, and projecting from the flange 12 is a groove 38, and spaced therefrom a tongue or rib 39, thus alternating throughout the length of said flange. The flange 13 is similarly formed with alternating tongues or ribs 40 and grooves 41 separated by the straight portion 37, the grooves of one flange being opposed to the tongues or ribs of the opposed flange. Thus, when the barrel or container is assembled, the tongues of one flange will fit into the grooves of the adjacent flange of the next stave.

From the foregoing it will be seen that a simple and effective joint is provided for positively locking the staves or members of barrels or other containers; that said joint permits the barrel staves or members to be detachably held together in order that an injured stave or member may be replaced by another or for any other reason; that the invention may be applied to various kinds of containers; and that said barrel or container when constructed in the manner disclosed, will be strong, light, and may be readily made and assembled, and at the same time is inexpensive to manufacture.

What we claim is:

A barrel container comprising a plurality of members having inwardly extending side flanges, each flange having projections extending inwardly toward the center of the member and forming recesses and others extending outwardly and projecting beyond the edge of said member and forming shoulders, the projections on the flanges of one member being adapted to interlock with the recesses in the flanges on the adjacent members.

In testimony whereof we hereunto affix our signatures this 29th day of December, 1916.

GEORGE E. HERRMANN.
BENJAMIN W. TUCKER.