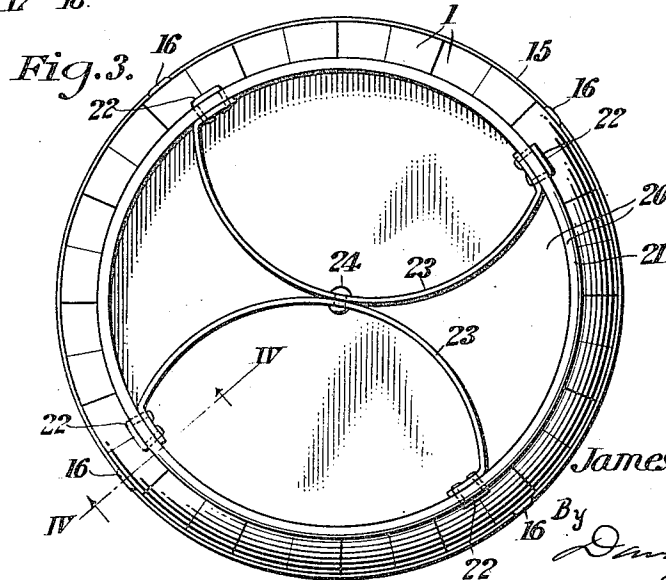
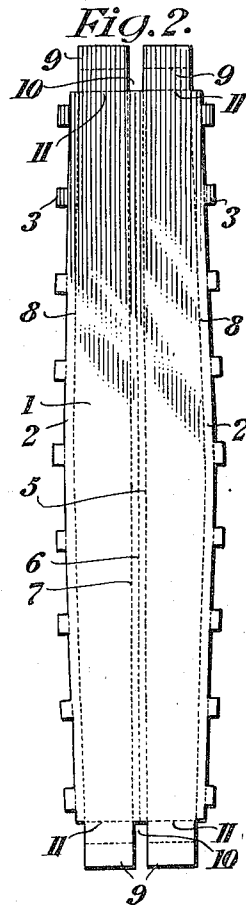
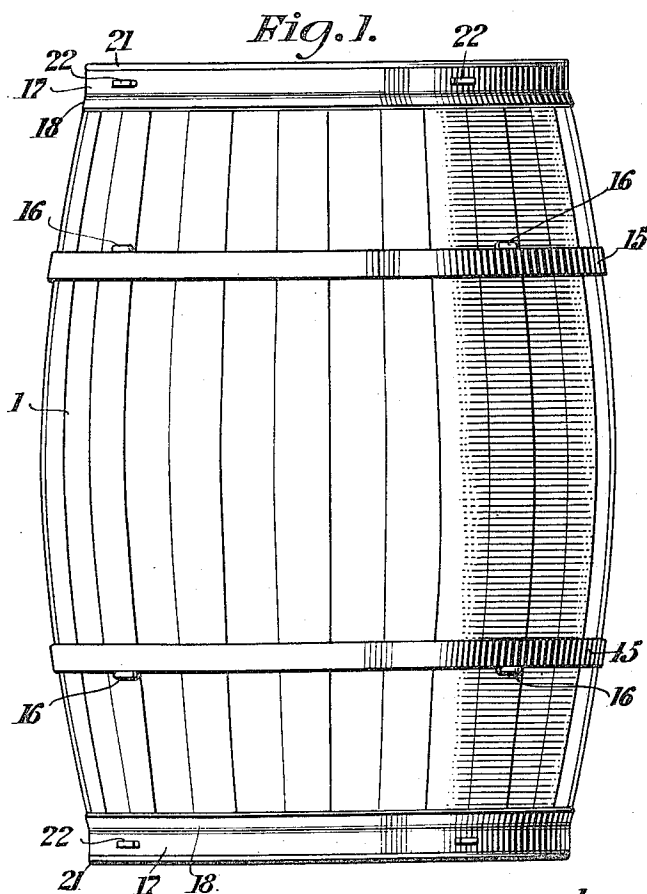


1,428,337.

J. W. McNEIL.
SHEET METAL BARREL.
APPLICATION FILED NOV. 18, 1920.

Patented Sept. 5, 1922.
2 SHEETS—SHEET 1.



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1,428,337.

Patented Sept. 5, 1922.

2 SHEETS—SHEET 2.

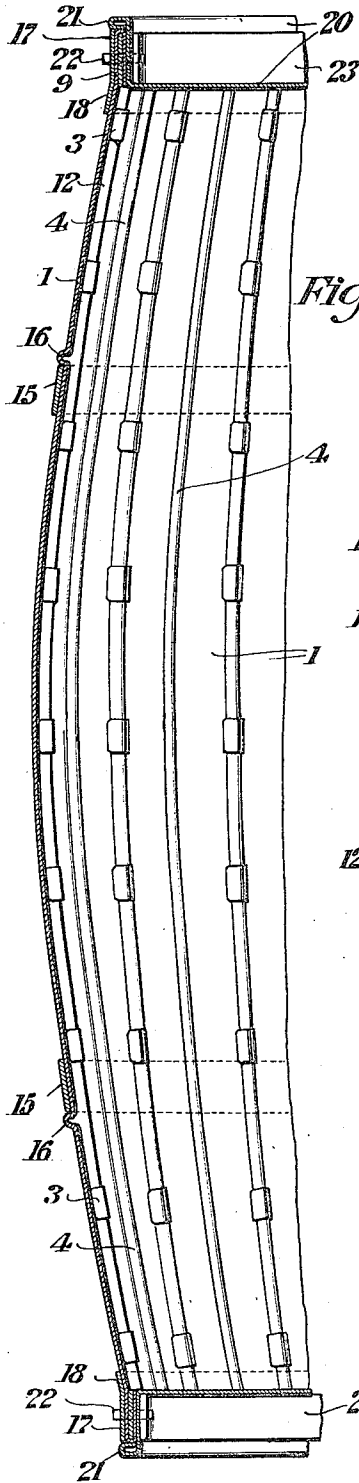


Fig. 4.

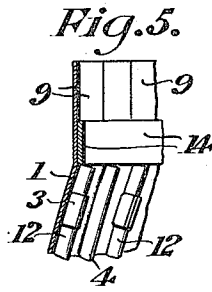


Fig. 5.

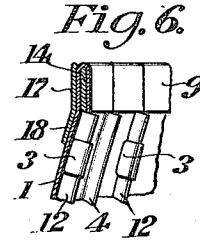


Fig. 6.

Fig. 7.

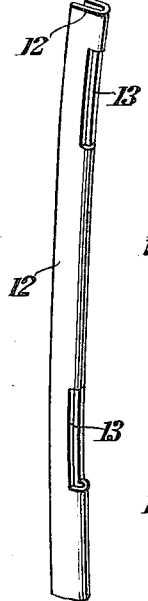


Fig. 8.

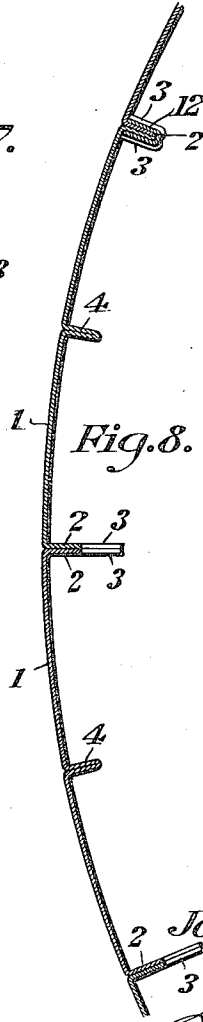
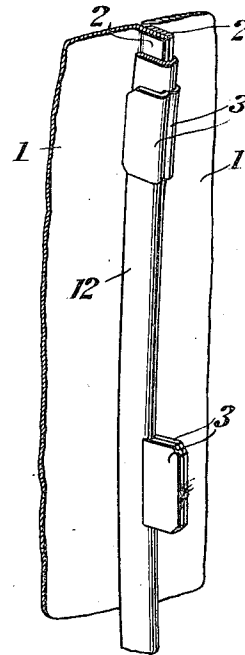


Fig. 9.



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UNITED STATES PATENT OFFICE.

JAMES W. McNEIL, OF NEWARK, NEW JERSEY.

SHEET-METAL BARREL.

Application filed November 18, 1920. Serial No. 424,922.

To all whom it may concern:

Be it known that I, JAMES W. McNEIL, a subject of the King of Great Britain, and resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Sheet-Metal Barrels, of which the following is a specification.

This invention relates to improvements in sheet metal barrels and has for one of its objects to provide a strong and durable barrel which may be easily manufactured of thin sheet metal and the parts of which may be easily assembled.

In the accompanying drawings:

Fig. 1 is a side elevation of a barrel embodying the invention;

Fig. 2 a plan view of one of the blanks from which staves are formed;

Fig. 3 a plan view of the barrel;

Fig. 4 a vertical transverse section on the line IV—IV of Fig. 3;

Figs. 5 and 6 are detail vertical sectional views showing the manner of forming the chimes of the barrel;

Fig. 7 a fragmentary perspective view of one of the stave-locking strips;

Fig. 8 a detail horizontal sectional view showing the manner of assembling the staves and locking strips; and

Fig. 9 a detail perspective view showing the manner of interlocking the staves and locking strips.

The body is formed from a plurality of staves each of which is curved in transverse section and bilged outwardly longitudinally of the stave so as to form a bilged barrel body when the staves are assembled edge to edge. Each of the staves 1 is formed with inwardly extending edge flanges 2 which project radially into the interior of the body when the staves are assembled. Each of the flanges 2 is provided with a plurality of vertically spaced lugs or tongues 3 formed integrally with the flanges. Each stave may also be provided with reinforcing rib 4 extending longitudinally of the stave midway between the side edges of the stave. The reinforcing rib on each stave is formed by folding the body portion of a stave-forming blank along three longitudinally extending lines of folds 5, 6 and 7, indicated in dotted lines in Fig. 2, to produce a double-walled inwardly projecting rib. The edge flanges

2 are formed by folding the blank along longitudinal lines of fold 8 indicated in dotted lines in Fig. 2.

Each stave blank is formed at each end with a chime portion 9 beyond the ends of the flanges 2, each of the chime portions 9 being cut away as shown at 10 to permit the formation of the reinforcing ribs 4 on the stave without forming ribs in the chimes 9. It will be obvious that when the blank shown in Fig. 2 is folded to produce the ribs 4, the adjacent vertical edges of the cut away portion 10 will be brought together. When the blank shown in Fig. 2 is pressed into shape to form a stave the chime-forming portions 9 are bent slightly outwardly along the dotted lines 11 so that said portions 9 will form cylindrical chimes at each end of the barrel when the staves are assembled.

In assembling a barrel the staves are arranged edge to edge with the side flanges of each two adjacent staves abutting against each other as shown in Fig. 8. Sheet metal locking strips 12 of channel form are then slipped upon each pair of abutting stave flanges 2. Each of the locking strips 12 is curved longitudinally to correspond with the curvature of the bilged body of the barrel and is cut away at intervals to form a series of slots or apertures 13 in the base of the channel strip. The locking strips 12 extend from end to end of the flanges 2 on the staves and the depth of the channels in the strips is the same as the width of the flanges 2 so that each locking strip embraces one pair of abutting stave flanges 2 throughout the width and length of the flanges, the outer edges of each strip engaging against the inner surfaces of two adjacent staves. The lugs 3 on each pair of abutting flanges 2 pass through the openings 13 in the locking strip when the strip is slipped on the flanges and are then bent laterally in opposite directions flat against opposite sides of the locking strip, as shown more clearly in Figs. 8 and 9. As each locking strip embraces abutting edge flanges on two adjacent staves it will be seen that the locking strips will prevent lateral separation of the staves, and as the lugs 3 extend through the openings 13 in the locking strip and are bent round upon the outer sides of the strip it will be seen that the lugs 3 and locking strips 12 will prevent relative radial movement between

the staves either inwardly or outwardly and also prevent relative vertical movement between the staves.

To form the chimes of the barrel, sheet metal hoops 14 are slipped inwardly inside the extensions 9 of the staves at each end of the barrel body against the ends of the edge flanges 2 of the staves, and said extensions 9 are then bent laterally and inwardly about the hoops 14 as shown in Fig. 6 to form a smooth cylindrical chime at each end of the barrel. Two sheet metal hoops 15 are then slipped upon the exterior of the barrel body from opposite ends of the barrel until they bind tightly on the barrel body and are then locked in position by pressing portions of certain of the staves outwardly to form locking shoulders or beads 16 on the exterior of the body against which the edges of the hoops nearest the ends of the body engage. Two chime hoops 17 are then placed about the exterior of the chimes of the barrel. The hoops 17 are formed of thin sheet metal and preferably provided with outwardly flaring skirt portions 18 embracing the ends of the body portions of the staves.

Cup-shaped sheet metal heads 20 fit within the chime portions of the barrel body and seat against the adjacent ends of the stave flanges 2. The upper edge of the circular side wall of each head is rolled to form an outwardly projecting flange or bead 21 which overhangs the outer edge of the chime of the barrel and rests thereon and also rests against the upper edge of the chime hoop 17. The heads may be locked in place in any suitable manner. For this purpose I have shown staples 22 which are driven inwardly through hoops 17 and 14, the chime portions 9 of the staves which are bent about the internal hoop 14, and then through the side wall of the head and clenched. If desired each head may be braced or reinforced by a sheet metal spider comprising two bowed sheet metal members 23 fastened together midway their ends by a rivet 24 and having their opposite ends fastened to the head and the barrel body by the staples 22, as shown in Figs. 3 and 4. The head reinforcing spiders will prevent the heads from bulging outwardly endwise of the barrel.

It will be observed that the stave parts of the barrel are of simple construction, may be readily formed of thin sheet metal, and may be easily and quickly assembled. It will also be observed that by forming the chime portions of the barrel in the manner above described very strong chimes are produced which are not likely to become bent or crumpled in handling the barrel.

It will be obvious that the reinforcing ribs 4 on the staves may be omitted if desired and that, if these reinforcing ribs are to be omitted, it will be unnecessary to cut away the chime-forming extensions 9 of the

staves as shown at 10 in Fig. 2. It will also be obvious that the head reinforcing spider 23 may be omitted if desired.

What I claim is:

1. A barrel comprising a plurality of sheet metal staves each provided with a pair of inwardly extending flanges along the side edges thereof and a plurality of locking members of channel form each of which embraces the abutting flanges on two adjacent staves, each of said locking members being provided with a plurality of openings spaced apart longitudinally of the member and the flanges on the staves being provided with lugs extending through said openings and bent laterally.

2. A sheet metal barrel comprising a plurality of staves each formed of a single piece of sheet metal and provided with two integral side flanges extending radially into the barrel, each of said side flanges being provided with a plurality of integral lugs along its inner edge, and a plurality of sheet metal locking members of channel form each of which embraces the abutting side flanges on two adjacent staves and is provided with a plurality of openings through which the lugs on the side flanges of the staves extend, the lugs on each pair of abutting stave flanges being bent laterally in opposite directions flat against opposite sides of the locking members.

3. A barrel comprising a plurality of metal staves each provided with side flanges projecting radially into the barrel, and a plurality of locking members of channel form embracing each pair of abutting side flanges on the staves and having their outer edges engaging the inner sides of the staves from end to end of the side flanges, said locking members being provided with apertures and the side flanges on the staves being provided with lugs extending through said apertures and bent laterally upon the locking members, the staves being curved transversely and longitudinally to form a bilged barrel body and the locking members being curved longitudinally to correspond with the longitudinal curvature of the staves.

4. A barrel comprising a plurality of staves and means for attaching their edges together, said staves having chime-forming extensions, a sheet-metal hoop set within said chime-forming extensions, said chime-forming extensions, being folded inwardly and downwardly to thereby envelop said hoop, a head having an annular flange fitting against said folded-down chime-forming part, and fastening means extending through the flange on the head, the two thicknesses of chime-forming portions and the intermediate hoop.

5. A metal barrel comprising a plurality of staves each provided with side flanges extending inwardly into the barrel, a plurality of locking members of channel form each

embracing one pair of side flanges formed on the abutting edges of two adjacent staves, means for positively interlocking each of said locking members with the pair of side flanges embraced thereby, each stave being provided with a chime-forming extension on each end thereof bent laterally and inwardly upon itself, a metal hoop at each end of the barrel embraced by the doubled chime-forming portions of the staves and engaging the ends of the side flanges of the staves along its inner edge, and a plurality of metal hoops surrounding the barrel body, certain of the staves having a portion thereof pressed outwardly to form projections at the outer side of the barrel for locking the hoops in place.

6. A barrel comprising a plurality of sheet metal staves each formed with side flange projecting radially into the barrel, a plurality of locking members of channel form each embracing one pair of stave flanges at the abutting edges of two adjacent staves, each of said locking members being provided with apertures and the side flanges of the staves being provided with lugs extending through said apertures and bent laterally, each of the staves being provided with a chime-forming extension at both ends bent laterally and inwardly to form a circular channel, a sheet metal hoop seated in the

channel formed by the doubled-chime-forming portions of the staves at each end of the barrel, a sheet metal hoop surrounding the chime portion of the barrel, heads seated in the chimes of the barrel, and fastening devices passing through the chime-embracing hoops and the chimes and secured to the heads for locking the heads in the chimes.

7. A barrel stave comprising a sheet metal blank having a chime-forming portion at each end thereof narrower than the body portion of the blank cut away midway its side edges, the body portion of the stave being folded longitudinally in one direction along a line midway between the inner edges of the divided chime-forming portions and folded longitudinally in the opposite direction along lines coincident with the inner edges of the divided chime-forming portions to form a double-walled longitudinal reinforcing rib extending from end to end of the body portion only of the stave, the edge portions of the body of the blank being bent laterally along lines coincident with the outer edges of the chime-forming portions to form side flanges extending from end to end of the body portion only of the stave.

In testimony whereof I hereunto affix my signature.

JAMES W. McNEIL.