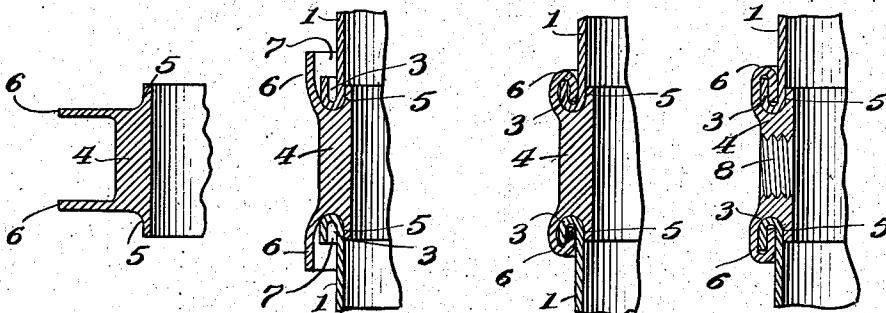
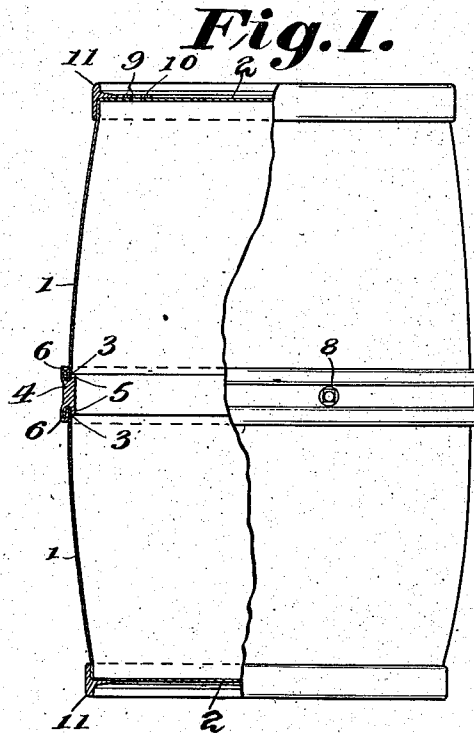


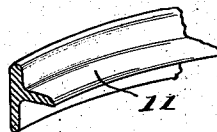
T. F. MOORE.  
ART OF MAKING BARRELS.  
APPLICATION FILED JUNE 4, 1915.

1,170,927.

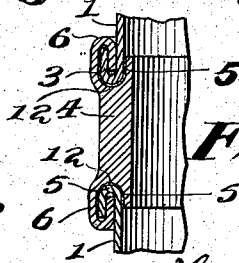
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**Fig. 2. Fig. 3. Fig. 4. Fig. 5.**



**Fig. 6.**



**Fig. 7.**

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34

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# UNITED STATES PATENT OFFICE.

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## ART OF MAKING BARRELS.

Specification of Letters Patent.

Patented Feb. 8, 1916.

1,170,927.

Application filed June 4, 1915. Serial No. 32,162.

*To all whom it may concern:*

Be it known that I, THOMAS F. MOORE, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in the Art of Making Barrels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object in view is the improvement of the art of metallic barrel making by the simplification of procedure and the enhancing of the value of results by utilization of certain novel steps and combinations of steps in the process of forming a metallic barrel as will in part become apparent and in part will hereinafter be particularly pointed out.

To facilitate a complete and easily-understood disclosure of the process, reference will be had to the details disclosed in the accompanying drawings, in which:—

Figure 1 is a sectional elevation of a barrel completed by the practising of the improved process. Fig. 2 is an enlarged detail section through a fragment of the median or connecting ring prior to bending of the groove-forming flanges. Fig. 3 is an enlarged, detail, fragmentary section through a portion of the interlocking flanges and contiguous parts prior to the interlocking of the flanges. Fig. 4 is a similar view of the same just subsequent to the interlocking of the flanges. Fig. 5 is a similar view of the same after the final step of flattening the interlocked joints has been perfected. Fig. 6 is a sectional perspective of a fragment of one of the chime plates. Fig. 7 is a view similar to Fig. 5 of the structure with a packing incorporated.

As the steps of the improved process will best be understood by a detail description of the structures seen in the drawing, such structures will be set forth specifically.

Referring to the drawing by numerals, 1, 1, indicate half sections of a barrel, each preferably formed from a sheet of metal stamped up into substantially the form of a

bowl and proportioned to form approximately one-half of a complete barrel. Each bowl-shaped section is formed at one end with a bottom 2 which forms a head of the barrel in the completed structure. The other end of each section 2 has its edge formed with an external, annular, return flange 3, which presents a hook-shaped portion in cross section and over which is adapted to be fitted the grooved parts of a median ring 4. Flange 3 is formed preferably by stamping during the forming of the body of the section 1, or subsequently thereto as preferred.

As seen in Fig. 2, the ring 4 is formed from a plate or flat rolled into shape providing edge portions having curved surfaces 5, 5, and intermediate, longitudinal flanges 6, 6. The plate having been rolled in this form while still straight, is then further rolled to turn the flanges 6 to form longitudinal edge grooves 7, 7, and the plate is then bodily curved, preferably by rolling, until it assumes the form of a ring, and the ends are welded together to complete the ring. The grooves 7 open axially toward the ends of the barrel. The resulting ring structure is then assembled with the two sections 1, in the manner indicated in Fig. 3, the parts being moved axially together, so that the grooves 7 bodily receive flanges 3 and the rounded edges of the sections formed by the flanges 3. The curved surfaces 5 are then caused to contact with and snugly fit the adjacent inner surfaces of sections 1. Flanges 6 are then infolded and interlocked with flanges 3 by being crimped over flanges 3, as by being rolled, until the parts assume the form seen in Fig. 4, and then the joints are rolled to flatten the interlocked flanges to produce the condition seen in Fig. 5. Whereupon, the main body of the barrel is completed, the joints between sections 1 and ring 4 being absolutely tight and non-leaking, and not liable to separate even under the most severe strain. This strain-resisting capacity of these interlocked joints is particularly valuable since in use the middle portion of a barrel is usually subjected to maximum strains.

A bung-hole 8 is formed in ring 4 preferably after the complete assemblage, and a similar bung or tap hole 9 is formed in one of the heads. Holes 8 and 9 are threaded to receive threaded bungs, and, to give the requisite thickness for the threads in hole 9, an annulus 10 is preferably welded to the head 2 at the point for hole 9, through which annulus, the hole 9 is formed.

Chime rings 11, 11 are provided for the barrel, and applied either before or after assemblage of the sections with the median ring 4. Each ring 11 is formed from a bar rolled into the shape seen in Fig. 7, and then rolled to form a ring, the ends being then welded to complete the annulus. The ring is then applied over the outer end of the respective sections 1, whether assembled with the outer parts or not. The edge portions of the ring are proportioned and shaped to respectively engage the head or bottom of the section and the side thereof, and said edge portions of the ring are secured to the section preferably by spot welding.

The median or connecting ring 4 is preferably of thicker stock than the walls of sections 1, and said ring, with the stiffening effect of the crimping of the interlocked flanges, materially stiffens and greatly strengthens the barrel structure.

For some uses where a packed joint is preferred, packing material, such as lead or other soft metal, jute or rubber-adhesive tape is placed between the rounded edge of the respective section 1 and the base of the respective groove 7, by either being applied to said rounded edge or placed in the groove, and the process of completing the barrel is then carried out as above specified. The resulting structure is seen in Fig. 7, wherein packing 12 appears, and as this structure is otherwise identical with that above mentioned in detail, the same reference numerals have been used in the drawing and the same description is applicable.

What I claim is:—

1. In the art of constructing metallic barrels, forming end sections of sheet metal, forming a substantially axially extending return flange about the edge of the inner end of each section, forming a connecting ring for the sections with edge grooves open respectively toward the ends of the barrel and proportioned to receive the respective rounded edges and return flanges of the inner ends of the sections, and folding the material forming the outer wall of each groove over and across the edge of the respective return flange and axially between said flange and the body of the section.

2. In the art of constructing metallic barrels, forming end sections of sheet metal, forming a substantially axially extending return flange about the edge of the inner end of

each section, forming a connecting ring for the sections with edge grooves open respectively toward the ends of the barrel and proportioned to receive the respective rounded edges and return flanges of the inner ends of the sections, folding the material forming the outer wall of each groove over and across the edge of the respective return flange and between said flange and the body of the section, and flattening the joints thus formed against the respective sections.

3. In the art of constructing metallic barrels, forming end sections each with a substantially axially extending return edge flange at its inner end, forming a connecting ring for said sections with axially open grooves for bodily receiving the rounded inner edges and return flanges of the sections, assembling said sections with their inner end edges in the respective grooves of the connecting ring, and interlocking each return flange with the material of the outer wall of the respective groove.

4. In the art of constructing metallic barrels, forming end sections each with a return edge flange at its inner end, forming a flat plate with outstanding flanges spaced from its edges, and bending said outstanding flanges to form grooves along the edges of the plate, forming the plate into a ring with the grooves opening axially, the grooves being proportioned to receive the rounded edges and return flanges of the end sections, assembling said sections with their inner end edges in the respective grooves of the ring, and folding the bent flange at each edge of the ring across the edge of and about the return flange of the respective section forming a lock joint.

5. In the art of constructing metallic barrels, forming end sections each with a return edge flange at its inner end, forming a flat plate with outstanding flanges spaced from its edges, the flanges being spaced apart a distance sufficient to enable the presence of a bung hole in the plate between the flanges, and bending said outstanding flanges to form grooves along the edges of the plate, forming the plate into a ring with the grooves opening axially, the grooves being proportioned to receive the rounded edges and return flanges of the end sections, assembling said sections with their inner end edges in the respective grooves of the ring, folding the bent flange at each edge of the ring across the edge of and about the return flange of the respective section for forming a lock joint, and forming a bung hole in the plate between the bent flanges.

6. In the art of constructing metallic barrels, forming a barrel section of sheet metal, forming a substantially axially extending return flange about the edge of the section, forming a ring for the section with an edge

groove opening toward the section and proportioned to receive the rounded edge and return flange of the section, and folding the material forming the outer wall of the  
5 groove over and across the edge of the return flange and axially between said flange and the body of the section.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS F. MOORE.

Witnesses:

FRIEDA WEIN,  
E. LOUIS JACOBS.