No. 826,847. PATENTED JULY 24, 1906.

R. W. HARDIE.

BARREL.

APPLICATION FILED JUNE 21, 1905.

Fig. 2.

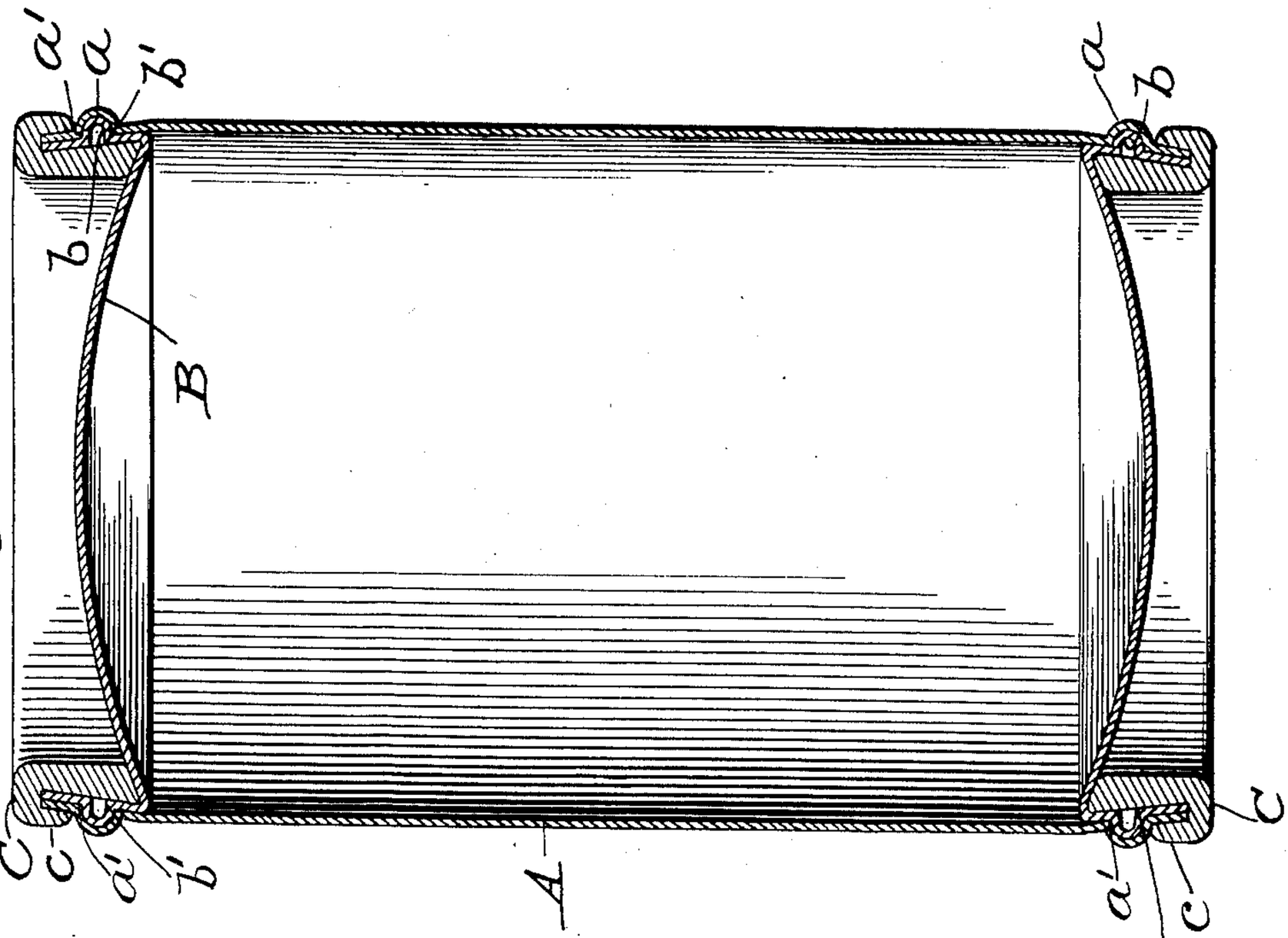
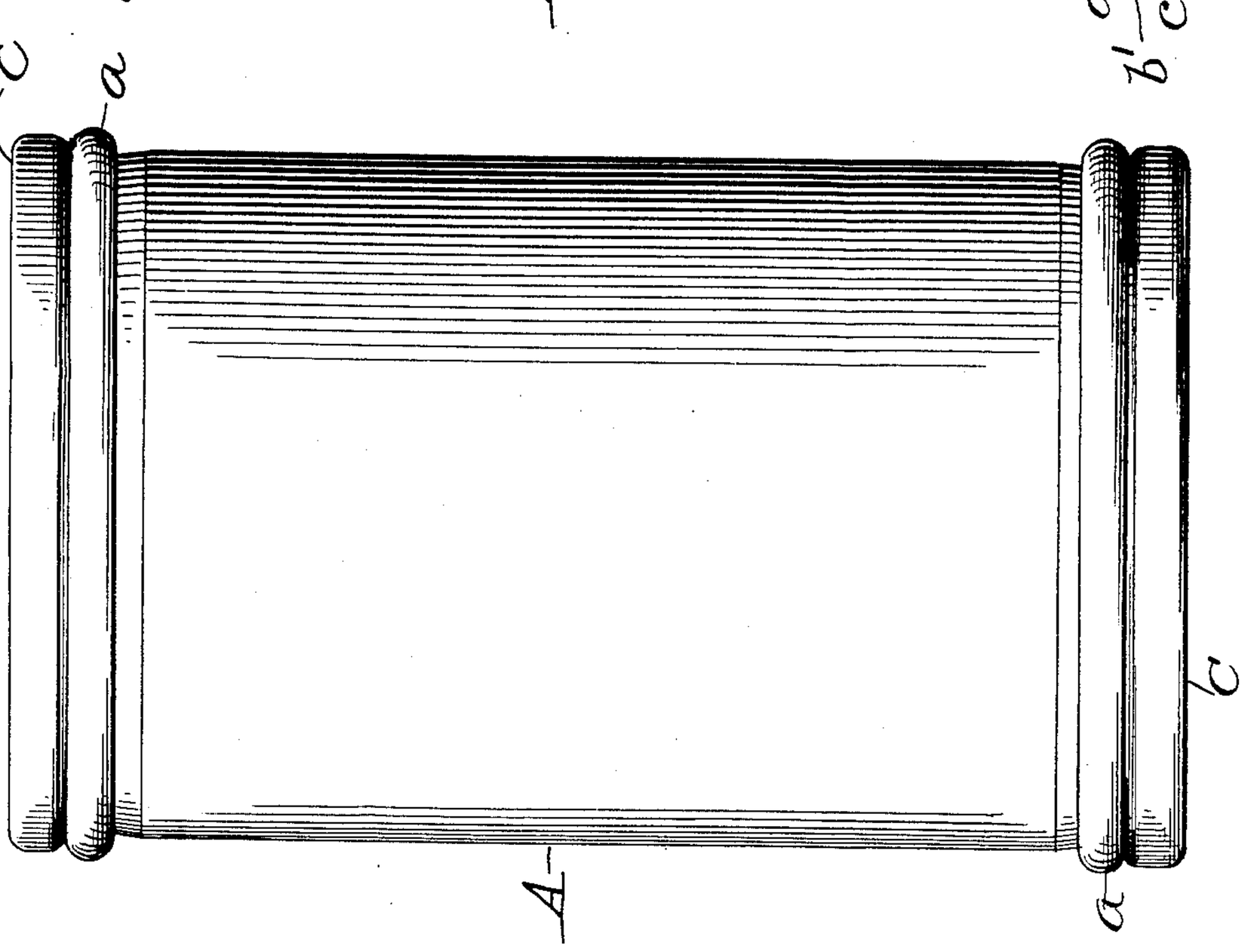


Fig. 1.



WITNESSES

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BARREL.

No. 826,847. Specification of Letters Patent. Patented July 24, 1906.

Application filed June 21, 1905. Serial No. 266,216.

To all whom it may concern:

Be it known that I, ROBERT W. HARDIE, a citizen of the United States, residing at the city of New York, in the State of New York, have invented new and useful Improvements in Barrels, of which the following is a specification.

My invention relates to metal barrels adapted to contain oils, chemicals, and other liquids requiring absolutely tight joints.

In structures of this character used heretofore the head has been secured to the shell by means of rivets, brazing, and by both rivets and brazing. Rivets alone do not make a satisfactory joint, and brazing-solder affects injuriously some chemicals, which prohibits its use for such purposes. Brazing, moreover, is difficult and expensive, especially when applied in a circular line to join a head with a shell. To overcome such disadvantages, barrels have been made wherein a joint between the shell and head is formed on a hoop having a recess into which the edges of the shell and flange of the head are rolled and clamped therein around a shoulder of the hoop by means of a flange pressed into such recess. In such construction, however, considerable difficulty has been found in maintaining the end of the shell and flange of the head clamped tightly around the shoulder of the hoop by means of the edge of the flange of the hoop. In such construction, moreover, when the hoop is bent slightly, as when a barrel with its contents is upended carelessly or the barrel is permitted to fall heavily on one point of the hoop, the edge of the flange is drawn away from the shoulder of the hoop, and the shell and flange of the head become loosened slightly at such point and cause the barrel to leak. In such a case it is practically impossible to bring the hoop back to its original shape and re-form the joint.

My invention has for its object to secure the head to the shell or a barrel by means of a tight joint formed without the use of rivets or brazing and adapted to be maintained in a serviceable condition. This I accomplish by the means illustrated in the acompanying drawings, in which—

Figure 1 is a side elevation of a barrel embodying my invention. Fig. 2 is a vertical section of the same.

As illustrated in the drawings, A represents a cylindrical shell having its ends inclined inward and provided with a circumferential rib *a*, extending outward and abruptly from the shell, thereby making an annular shoulder *a'*, angular in cross-section with the end of the shell. A head B, having its circular or body portion preferably concavo-convex in cross-section, is provided with a cylindrical flange inclined inward and adapted to bear against the inner end of the shell A. A rib *b*, corresponding with the rib *a* of the end of the shell, is formed in the flange of the head, extending outward from the flange of the head abruptly, so as to form an annular shoulder *b'* angular in cross-section on one side of the flange and a corresponding annular recess on the opposite side. The shoulder *a'* of the end of the shell is compressed and embedded so closely into the annular recess of the flange of the head as to make an absolutely tight joint between such parts, through which even oils and chemicals cannot leak. The outwardly-extending portions of the interlocking ribs of the shell and head are, moreover, drawn so tightly together as to prevent any leakage between such parts. This is accomplished by first forming the rib in the end of the shell and pressing the rib into the flange of the head, so as to engage the rib of the shell.

A head-band C is applied to the end of the shell and flange of the head to protect such parts and take the strain from the end of the barrel. This band has an inclined wall bearing against the flange of the head with its lower portion extending preferably to the circular portion of the head, and the band is provided with a flange *c*, which is turned over onto the outer extremity of the shell, with its edge preferably bearing against the rib of the shell, so as to clamp the shoulders of the head and shell and bind them tightly together. By means of such construction a tight joint between the end of the shell and flange of the head is maintained even when the outer edge of the head-band has become bent slightly, for the reason that the joint is formed independently of the head-band and does not depend upon any exact adjustment of the parts composing the head-band.

If the end of the barrel be subjected to any extraordinary strain or injury, causing the head-band to become considerably bent and the shoulders of the shell to become loose and start a leak, the angular shoulders of the shell and head-band may be re-formed and the joint reëstablished by bending the surplus metal forming the ribs over toward the edge

of the flange of the head-band and the leak stopped without re-forming or rebending the head-band itself.

The shape of the ribs may be modified without departing from my invention, providing that an annular shoulder be formed thereby in the end of the shell and flange of the head.

What I claim as new, and desire to secure by Letters Patent, is—

In a barrel, the combination with a shell, having its end inclined inward, of a head having an inclined flange, and a head-band having an inclined wall bearing against the flange of the head and provided with a flange adapted to clamp the edges of the shell and flange of the head, the shell and flange of the head being provided with interlocking ribs and annular angular shoulders compressed tightly together and formed independently of the head-band, substantially as shown and described.

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

ROBERT W. HARDIE.

Witnesses:
HENRY O. PERRIN,
ANDREW HAMILTON.