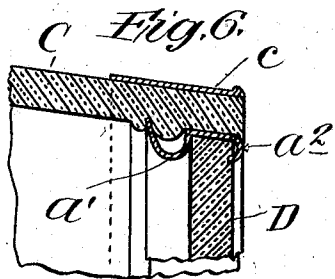
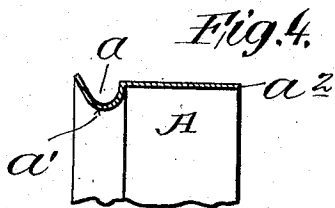
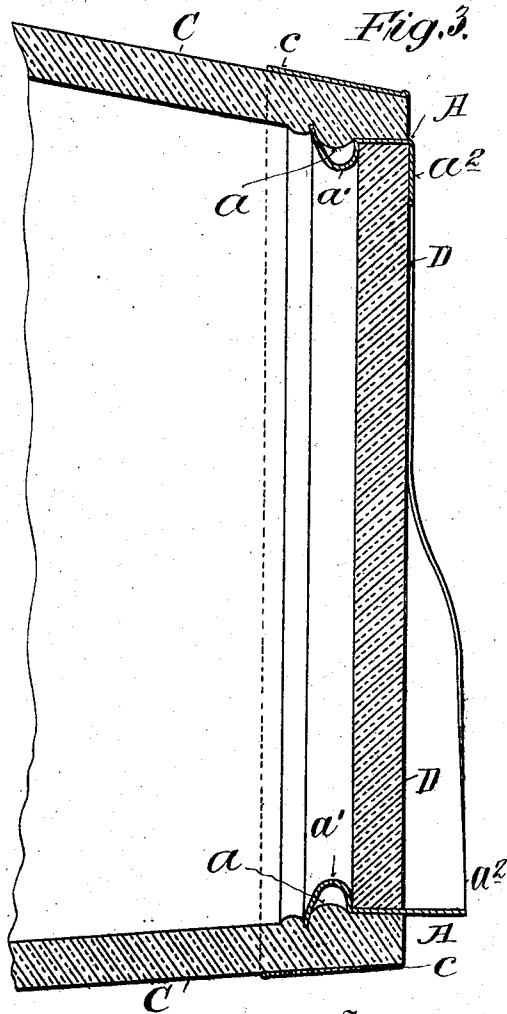
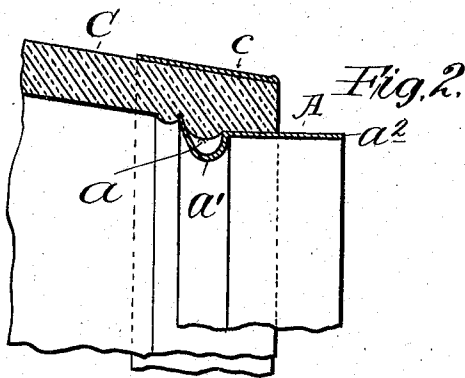
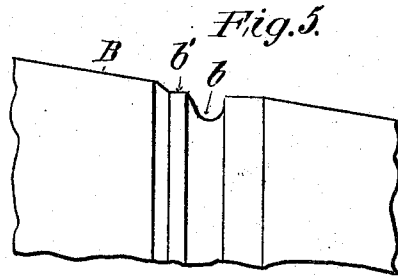
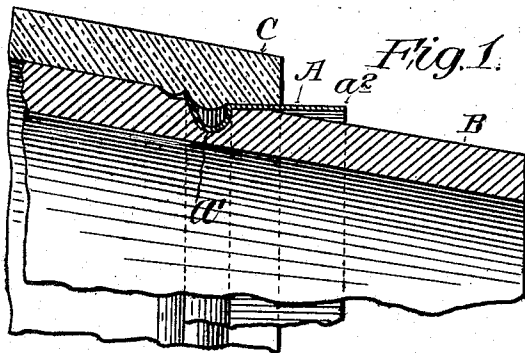


W. H. DECKER.
 MEANS FOR HOLDING BARREL HEADS IN PLACE.
 APPLICATION FILED MAR. 15, 1909.

941,562.

Patented Nov. 30, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM H. DECKER, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE SOLVAY PROCESS COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

MEANS FOR HOLDING BARREL-HEADS IN PLACE.

941,562.

Specification of Letters Patent. Patented Nov. 30, 1909.

Application filed March 15, 1909. Serial No. 483,640.

To all whom it may concern:

Be it known that I, WILLIAM H. DECKER, a citizen of the United States, residing in the city of Syracuse, in the county of Onondaga and State of New York, have invented a new and Improved Means for Holding Barrel-Heads in Place, of which the following is a specification.

My invention relates to barrels or containers formed of paper pulp, and more particularly to that class of barrels the bodies of which are formed by winding paper pulp in superposed layers upon a bilged mandrel, whereby bilged barrel bodies of this material are produced. Such barrel bodies are wound upon collapsible mandrels, and after such a barrel body is completed and removed from the mandrel, it is difficult or impossible to efficiently secure the heads therein in any manner heretofore known, without straining and weakening the barrel body. To the end of providing a simple and efficient means of securing and holding the heads in such barrels, I secure the engagement of a holding device with the barrel body by winding the barrel body in the first place upon a metal band or hoop so shaped as to provide an internal seat for the barrel head, and adapted to be folded or turned down upon the outside of the barrel head, whereby it is securely held in its place against pressure in either direction.

My invention will be best understood by reference to the accompanying drawings, which illustrate an embodiment thereof.

Figure 1 of the drawings shows a longitudinal section of a portion of a collapsible mandrel with the metal band by means of which the barrel head is held in place, and a portion of a barrel body wound thereon; Fig. 2 shows a longitudinal section of a portion of a barrel body with the metal band apart from the mandrel; Fig. 3 shows a longitudinal section of one end of a barrel with its head in position, and a portion of the metal band turned down to hold the head in place; Fig. 4 shows a section of the metal band separate from the barrel; Fig. 5 shows an elevation of a collapsible mandrel, and Fig. 6 a preferred form of bending the band upon the outer surface of the barrel head.

Referring to the drawings, A indicates a band or hoop of suitable material, such as thin sheet iron or steel, of such circumference as to fit the interior of the end of a

barrel body, and provided on one side with a groove, *a*, forming on the other side a corresponding rib or projection *a'*.

B indicates a collapsible mandrel, of any usual or suitable construction, upon which the barrel body is wound. The mandrel, B, is provided with a circumferential groove, *b*, of such size and shape as to receive the rib, *a*, and so located that when the barrel body is wound on the mandrel, the rib, *a*, being in the groove, *b*, the part *a'*, of the band, A, will project somewhat beyond the end of the barrel.

In order to engage the band, A, with the barrel body, the mandrel, B, is partially collapsed, and the band, A, placed thereon, the rib, *a*, being set in the groove, *b*, the mandrel is then expanded and the barrel body, C, is wound thereon in the usual way, partially overlapping the band, A, until it is of the desired thickness. As the barrel body is wound the soft pulp composing it is forced somewhat into the groove, *a*, thus forming a rib upon the interior of the barrel body engaging therewith, and is also pressed upon the upstanding inner edge of the band, A, so that this edge is embedded in the material of the barrel body, or tightly pressed against its inner surface, whereby a water-tight joint is formed. The mandrel is then collapsed and the barrel body, C, with the band, A, in place therein is removed.

As the pulp composing the barrel body dries the barrel body contracts upon the band, A, so that in this way, as well as by the engagement of the groove, *a*, and the inner edge of the band, with the barrel body, the band is held firmly in position in the end of the barrel body. The embedment of the inner edge of the band, A, in the material of the barrel body not only assists in holding the band in place and making a liquid proof engagement between the band and the interior of the barrel body, but also covers the rough edge which the band would otherwise present on the interior of the barrel, and avoids the presence of any crevice in which the contents of the barrel might lodge. The barrel head, D, is then put in place, its inner surface being seated against the rib, *a*, and the flange, *a'*, is turned down upon the outer surface of the head, as shown in the upper part of Fig. 3, or in Fig. 6.

In Fig. 3 of the drawings I have shown the flange, *a'*, of the metal band turned

down flat upon the barrel head, as may be done. I prefer, however, to turn down the flange a^2 , in the form shown in Fig. 6. In this form of construction the flange, a^2 , is beaded or turned over in such shape that the outer edge of the flange, a^2 , meets the outer surface of the barrel head at substantially a right angle, and is preferably pressed somewhat into the barrel head. Thus not only is the barrel head held more firmly against pressure from within the barrel, but a liquid tight joint is provided, thus adapting the barrel to contents of any nature. In this case also the parts are so relatively located that the outer surface of the barrel head is somewhat within the end of the barrel body, thus providing a chime to the barrel, and enabling the bead of the flange, a^2 , to lie flush with or below the end of the barrel body. In order to remove the barrel head it is only necessary to turn up the turned down part of the flange, a^2 , and the head can then be readily lifted out. While I have illustrated the application of the band, A, to one end of the barrel only, it will be evident that a similar band is to be applied in the same way, and at the same time, to the other end of the barrel body, for securing the head therein.

Evidently the form and proportions of the band, A, may be varied without departing from the nature of my invention, as it is essential only that the band shall be firmly engaged with the barrel body, and shall present a flange which can be turned down upon the exterior of the barrel head, and I therefore do not limit myself to the precise form shown in the drawings, variations of which will readily occur to those skilled in the art.

What I do claim as new and desire to secure by Letters Patent is:

1. As a means of securing heads in barrels, a metal band in engagement with the interior surface of the barrel, and presenting a seat for the inner surface of the head, and having the outer edge thereof turned down upon the outer surface of the head, substantially as set forth.
2. The hereinbefore described means of securing in place the heads of paper pulp barrels which consists of a grooved and ribbed band into engagement with which the barrel body is forced in the process of construction while in a plastic state, and which

is adapted to be turned down upon the exterior of the barrel head, substantially as set forth.

3. As a means for securing heads in barrel bodies, a metal band having a circumferential groove in engagement with the inner surface of the barrel body, a projection providing a seat for the inner surface of the barrel head, and a portion projecting beyond the end of the barrel body, and adapted to be turned down upon the head, substantially as set forth.

4. As a means of securing barrel heads in place, a metal band provided with a groove engaged with the interior of the barrel and a corresponding rib presenting a seat for the head, and having its inner edge embedded in the inner face of the barrel body, substantially as set forth.

5. As a means of securing barrel heads in place, a metal band presenting a seat for the head on the interior of the barrel, and having its outer edge bent over so as to meet the outer surface of the head at an angle thereto, substantially as set forth.

6. As a means for securing barrel heads in place, a metal band presenting a seat for the head on the interior of the barrel, and having its outer edge embedded in the exterior of the barrel head, whereby a water tight joint is formed between said band and said head, substantially as set forth.

7. As a means for securing barrel heads in place, a metal band secured to the interior of the barrel body, presenting a seat for the head on the interior of the barrel, having its inner edge embedded in the inner surface of the barrel body, and its outer edge embedded in the exterior of the barrel head, whereby a liquid tight joint is formed between the interior and exterior of the barrel, substantially as set forth.

8. As a means for securing barrel heads in place a metal band in engagement with the interior of the barrel body and forming a water proof joint therewith and having its outer edge in engagement with the exterior of the barrel head, substantially as set forth.

In testimony whereof, I have hereunto subscribed my name, this 10th day of March, A. D., 1909.

WILLIAM H. DECKER.

Witnesses:

CLARKSON A. COLLINS,
WILLIAM J. KINDGEN.