(No Model.)

J. C. DOZIER.

BARREL AND METHOD OF MAKING SAME.

No. 505,446. Patented Sept. 26, 1893.

Fig. 1.

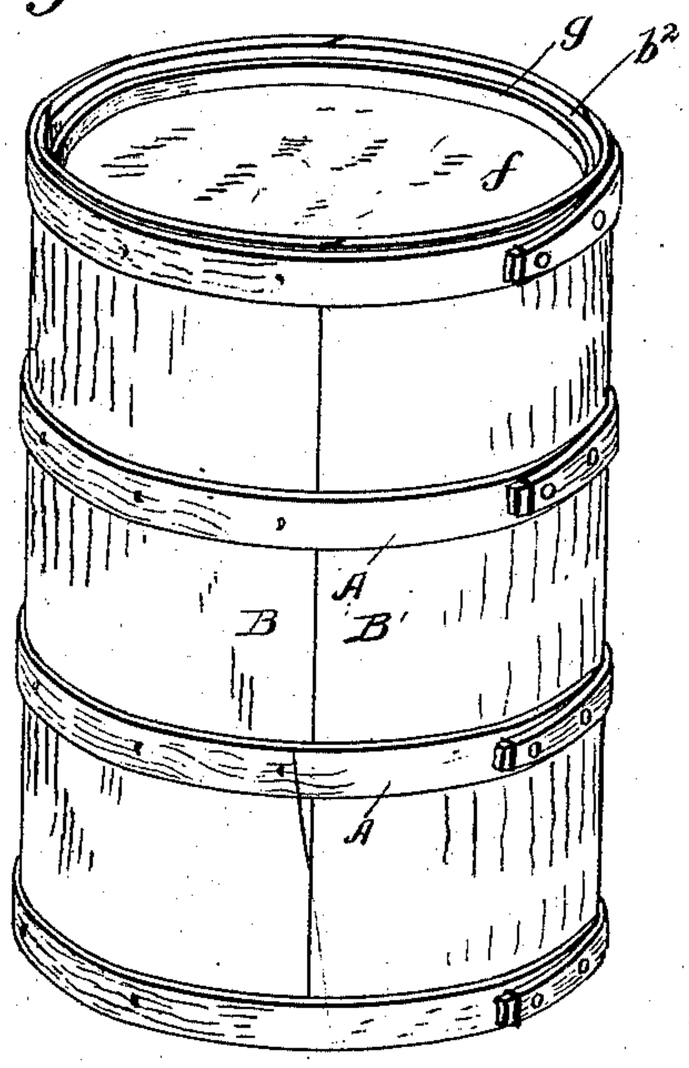


Fig. 2.

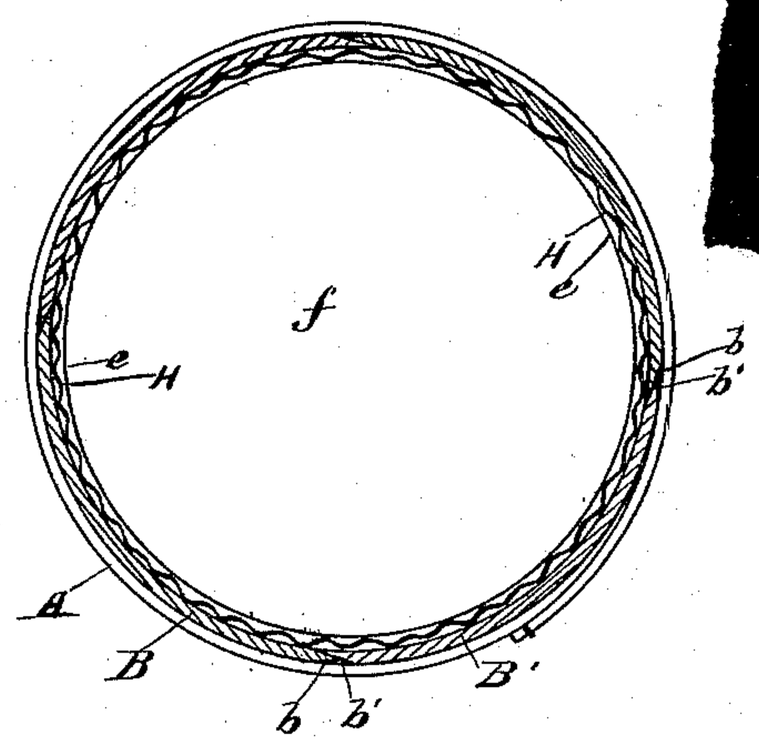


Fig 3.

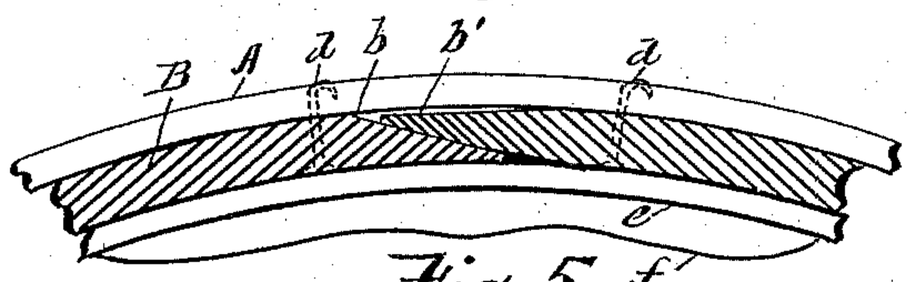


Fig. 4.

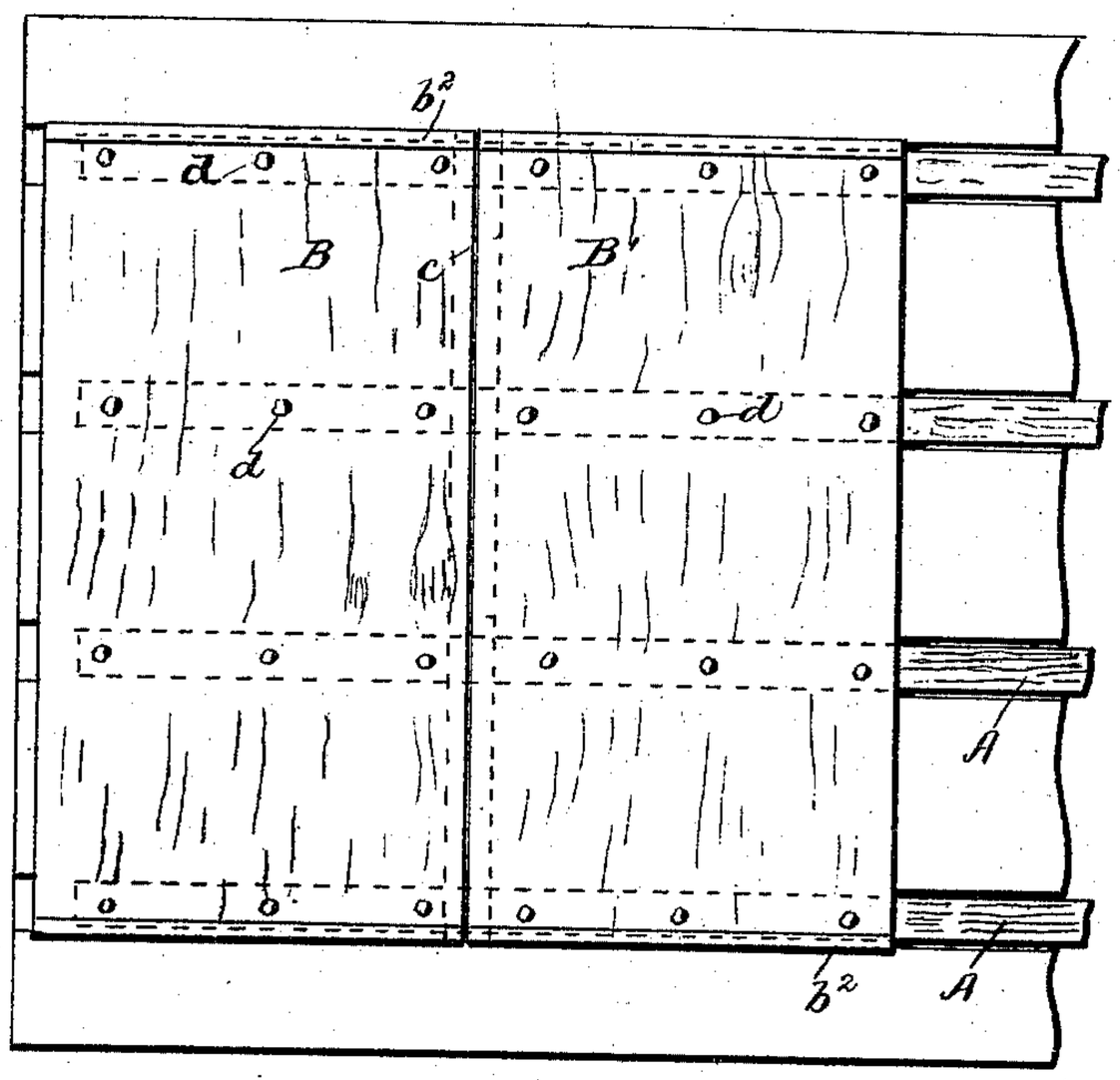
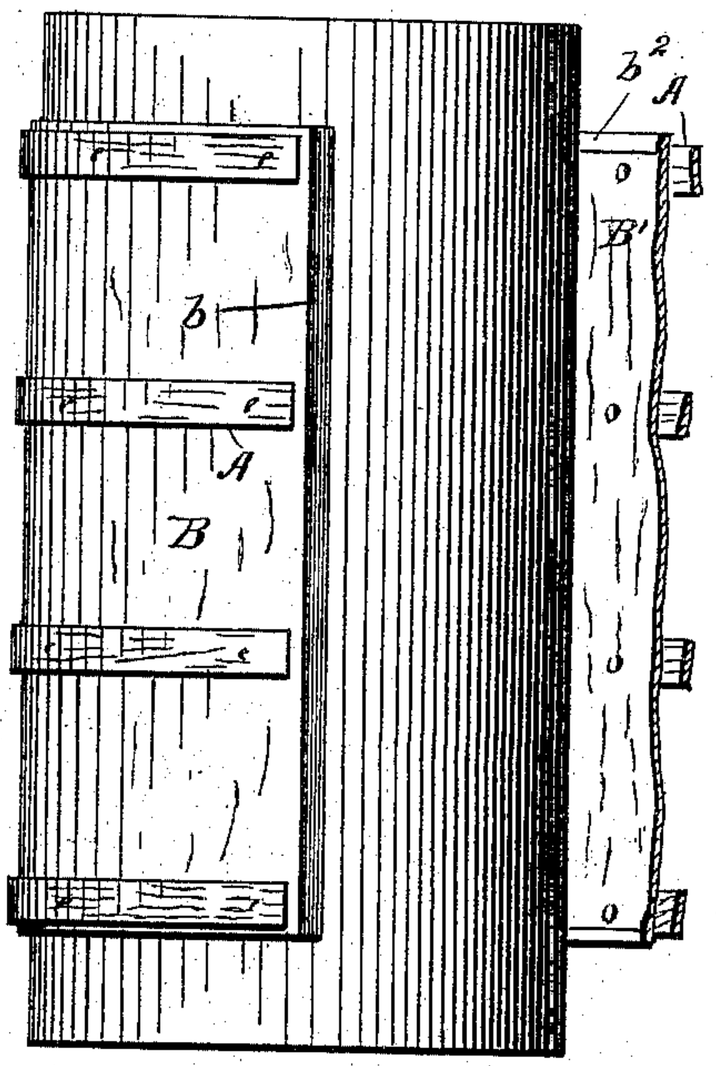


Fig 5.



Witnesses
W. H. H. Knight
W. E. Bernhard

Inventor
James C. Dozier

By Attorneys,
Edson Bros.

UNITED STATES PATENT OFFICE.

JAMES C. DOZIER, OF LOUISVILLE, KENTUCKY.

BARREL AND METHOD OF MAKING SAME.

SPECIFICATION forming part of Letters Patent No. 505,446, dated September 26, 1893.

Application filed December 1, 1892. Serial No. 453,795. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. DOZIER, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Barrels and Methods of Making the Same; 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.

My invention relates to improvements in barrels and the method of making the same, and the objects in view, are, first, to provide a barrel of novel and simple construction especially adapted for holding powdered substances such as flour or cement, and secondly, to facilitate and cheapen the manufacture of the barrel.

With these ends in view the first part of my invention consists of a barrel comprising a series of staves each having its side edges beveled or inclined on its outer face only and the series of staves arranged to have the beveled face of one stave overlap the outside beveled faces of the adjacent staves throughout their length, in contradistinction to the staves having their inner and outer opposing faces overlapping each other, and the hoops which encompass the staves and are secured thereto.

The invention further consists of a lining for a barrel comprising a corrugated sheet arranged within the barrel, close against the same, and made of pliable material, such as paper, so as to be flattened when the cement or flour is forced or packed therein so that the barrel takes up the pressure of the contents of the barrel and the lining is thus prevented from breaking when the substance is packed tightly therein.

The invention further consists in the method of making a tight barrel, comprising a series of steps; first laying the strips which are to form the loops in straight parallel positions and at suitable distances from each other, then fastening the staves, having the edges thereof beveled on one face only, to the strips and arranging said staves so that their beveled edges do not contact with each other so that a space is left between the contiguous edges or adjoining staves; placing the connected strips and staves around a cylindrical former and thereby contracting the staves so that the edges thereof are brought together and the one edge of one stave is overlapped by the inner faces of the adjoining staves; whereby the bevels on the lapped staves are on the outside faces of all the staves, thus making the outside of the barrel practically cylindrical while the inner surface of the barrel is a true cylinder; and finally fastening the lapped ends of the hoops.

The invention further consists in the novelties of construction as will be hereinafter fully described and pointed out in the claims.

The accompanying drawings fully illustrate my invention, in which—

Figure 1 is a perspective view of the barrel, and Fig. 2 is a cross sectional view through the same. Fig. 3 is an enlarged cross sectional view showing the form of the lapped joint between two adjacent staves. Fig. 4 is a plan view of the connected strips and staves showing the positions of the latter before the parts are bent into cylindrical form, and Fig. 5 is a view illustrating the barrel when bent around the cylindrical former.

Like letters of reference denote corresponding parts in all the figures of the drawings.

I will first proceed to describe the method of constructing the barrel or keg, and in this connection it should be borne in mind that I aim to provide a barrel with tight joints and which more particularly are designed for packing powdered substances such as flour, cement, &c., so as to retain the substance within itself and prevent the escape of the same through the joints between the staves of the barrels.

In practicing my method, I first provide the series of long strips A which are steamed or softened in any desirable way, and then laid in parallel positions, at suitable distances from each other, in straight parallel grooves in a bed or table, the bottoms of said grooves being faced with metal or other hard substance to prevent the fastening nails from being driven into the bed or table and also to effect the clinching of the nails when they are driven through the staves and strips. The staves B, B′, are first prepared, that is before they are fastened to the strips A, A. Each stave is provided on its outer face with

the bevels *b*, *b'*, which are formed along the side edges of the stave, the bevel *b* on one edge extending in the reverse direction to the bevel *b'* on the other edge of the stave. The inner face of the stave, at opposite ends thereof, is chamfered at b^2, for the purpose of easily passing the heads into or out of the barrel after the body has been completed. After the staves have thus been prepared, by forming the bevels *b*, *b'*, b^2, at the sides and ends thereof, they are ready to be secured to the spaced paralled strips A, and in this connection it may be remarked that no particular order is necessary in the selection and fastening of the stave to the strips as the staves can be selected at random and fastened in the manner presently specified.

I am aware that previous to my invention a barrel has been composed of staves, the adjoining pairs of which have been provided with bevels on their opposing faces, that is, one stave having a bevel on its outer face and the other stave with a bevel on its inner face, and, hence, in the construction of a barrel having staves of this character, it is necessary that care be exercised to select and arrange the staves in a particular manner so that the bevel on the inner face of one stave will lap the bevel on the outer face of the contiguous stave. But by providing the staves with both the bevels on their outer faces only it is not necessary, as has been stated, that this care shall be exercised in selecting and placing the staves as they can be chosen indiscriminately and placed on the strips A with the bevels on the outer exposed sides thereof.

A sufficient number of staves to form the barrel or keg of the desired diameter are fastened to the strips A in this wise:—The staves are placed transversely across the strips but in accordance with my invention care must be taken that the edges of the staves do not touch or overlap one another so that small spaces *c*, *c*, are left between the contiguous edges of the staves, and the latter are fastened to the strips by the nails *d* which are driven through the staves and strips, the ends of the nails being clinched by the resistance of the metallic linings in the bottoms of the grooves in the table or bed in which the strips are laid, as is obvious. The connected strips and staves can thus be quickly and accurately united together and the barrel can now be completed by bending the strips and staves into a cylindrical form and finally securing the heads in the ends of the cylindrical body.

To form the cylindrical body, I take the connected strips and staves to a cylindrical former, the outside diameter of which is the same as the exact inside diameter of the barrel it is desired to produce. The connected strips and staves are now bent around this cylindrical former and the ends of the hoops are held by clamps on the cylindrical former, and the connected hoops and staves are now pressed into close contact with the cylindrical former by means of a pressure roller which is brought to bear against all parts of the staves and hoops as the cylindrical former and barrel are rotated, whereby the staves and hoops are so contracted that the spaces between the staves are closed and the inner faces of the staves are forced inward so as to overlap the beveled outer faces of the contiguous staves, thus producing a barrel with true cylindrical inner and outer surfaces and with tight joints throughout the entire length of the lapped portions of the staves. The ends of the hoop are over-lapped and fastened by nails or staples in the usual way, and the barrel is now slipped off the end of the cylindrical former, after which the inside bands *e* are fastened within the barrel, within the chines thereof, the heads *f* are placed in the barrel to rest on the bands *e*, and the outside bands *g* are fastened within the barrel so as to confine the heads between the bands *e*, *g*, as is obvious. It will thus be seen that I produce a barrel having tight joints between its staves, which joints extend the full length of the staves and are formed by bevels on the outer faces of the staves only, see Figs. 2 and 3. The barrel is thus in all respects a tight barrel, capable of being produced very rapidly and economically as compared with the cost of the common stave barrels; and it can be used for any purpose the same as the ordinary barrels of commerce, although by its peculiar construction it is especially well adapted for packing flour, cement and other powdered substances.

To more effectually retain the contents of the barrel and prevent the same from escaping through the joints between the staves, particularly when flour or cement is packed therein, I provide the barrel with a lining H preferably formed of paper. This pliable lining is crimped or corrugated lengthwise and bent into cylindrical form, the outside diameter of which corresponds exactly to the inside diameter of the barrel. This corrugated lining is fitted snugly within the barrel, and when the barrel is packed with flour, cement or other substance, the pressure against the lining causes the crimped or corrugated parts thereof to expand or flatten out more or less so that the lining is made larger than the barrel and thus the pressure is sustained by the barrel itself and not by the lining.

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

1. The barrel herein shown and described, having the series of staves B each provided on its outer face only with the oppositely extending bevels *b*, *b'*, arranged longitudinally along its respective side edges, said staves being forced or held together by external hoops or bands and each stave having one of its bevels *b* overlapped by the inner face of the adjacent stave, whereby each stave has the side *b'* thereof fitted on the beveled face *b* of the adjacent stave while its other beveled face

b' is overlapped by another adjacent stave, as set forth.

2. In a barrel, having the lapped edges the expansible, pliable, corrugated lining H fitted snugly within the barrel and adapted to be uniformly expanded or pressed outward against said staves of the barrel by the pressure of the contents packed within said barrel, substantially as described.

3. The method of making a barrel, which consists in arranging the hoop-strips in parallel positions, forming each stave with the longitudinal bevels b, b', on its outer face and at the side edges thereof, laying the staves on their flat faces upon the hoop-strips and spacing said staves apart to leave the openings or spaces c between the contiguous beveled edges thereof; fastening the staves and hoop strips together; bending the connected hoops and staves around a cylindrical former and subjecting them to pressure to contract the body and thereby cause the beveled edges of the staves to overlap one another and close the spaces c; and then fastening the hoops in place, substantially as herein set forth.

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

JAMES C. DOZIER.

Witnesses:
E. F. SAUERMANN,
JOSEPH L. WALKER.