

(No Model.)

G. S. LONG.

BARREL.

No. 381,077.

Patented Apr. 10, 1888.

Fig. 1

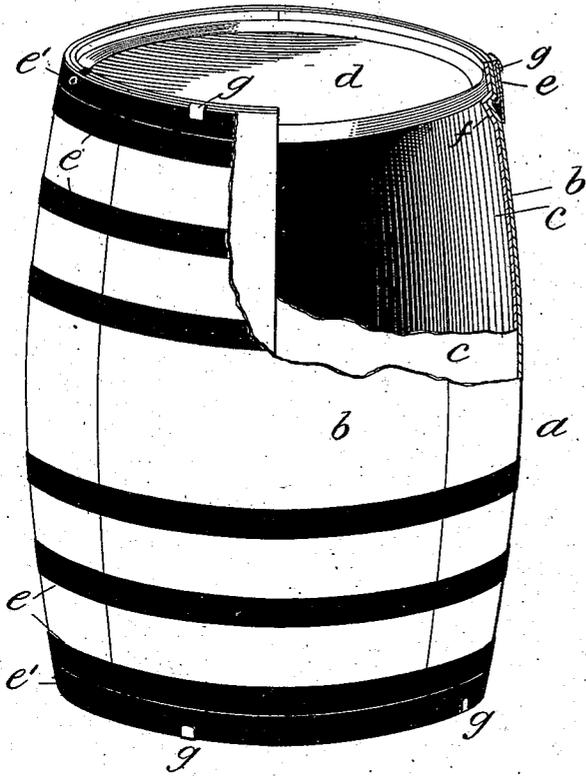


Fig. 3

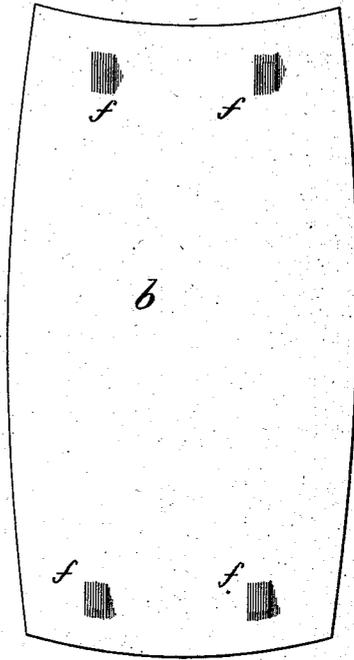


Fig. 2

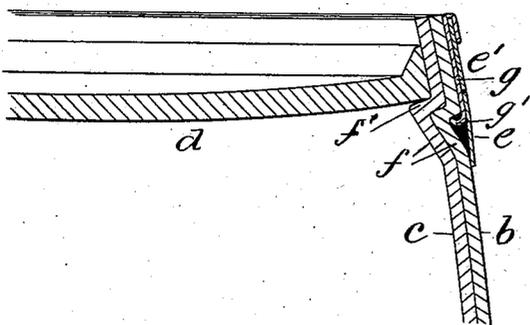


Fig. 4



Witnesses

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Inventor

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By his Attorneys

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UNITED STATES PATENT OFFICE.

GEORGE S. LONG, OF HARTFORD, CONNECTICUT, ASSIGNOR OF TWO-THIRDS TO EDWARD H. JUDD AND FREDERICK C. ROCKWELL, OF SAME PLACE.

BARREL.

SPECIFICATION forming part of Letters Patent No. 381,077, dated April 10, 1888.

Application filed June 6, 1887. Serial No. 240,351. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. LONG, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Barrels, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My improvement relates, in part, to the class of barrels that are formed of staves or sections of material arranged in layers as to thickness, the several layers breaking joints or overlapping each other in the completed structure; and it also relates to the devices making up the barrel as a whole, and to means for holding the same together.

The object of my improvement is to provide a barrel made in multiple layers as to thickness of the component staves with interlocking parts, and also to provide a barrel with an improved head and means for supporting and securing the head in place, and also for securing the hoops to the barrel; and to this end my invention consists in a barrel having a series of peculiar hollow indentations near the ends of the staves, that form within the barrel a shoulder to support the head and a recess to receive the end of a clamp.

It further consists in a barrel made up in sections of suitable fibrous material, preferably paper or straw board, in a plural number of layers, and provided with hollow indentations having angular shoulders on the side near the ends of the stave, and that interlock depthwise of the layers.

It further consists in a barrel having the peculiar shouldered indentations within it near the ends to support the head, in combination with a concaved head having a beveled edge that rests upon the said shoulders and within the barrel.

It further consists in a barrel made up of a number of sections in multiple layers with hollow indentations that form locking-lugs on one side and a socket on the other, in combination with a hoop-clamp and a hoop; and it further consists in details of the several parts of the device and their combination, as more particularly hereinafter described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of a barrel made in accordance with my invention, with parts broken away to show construction. Fig. 2 is a detail view, on enlarged scale, in vertical section through the head, showing the head-supports and clamp-socket. Fig. 3 is a detail view showing the ends of the stave-layers with the indentations or locking device. Fig. 4 is a detail perspective view of the clamp.

In the accompanying drawings, the letter *a* denotes the barrel as a whole, composed of the exterior stave-sections, *b*, and the interior stave-sections, *c*; *d*, the heads, and *e e'* the hoops by which the barrel parts are held together. These stave-sections are preferably formed of sheets of fibrous material—such as straw-board—or sheets of paper-pulp, or the like, that are of the requisite thickness and cut to the proper shape to form the sections of a bilged barrel. The barrel proper is made up of any convenient number of layers of such stave-sections, two, however, being preferably used and usually found sufficient for the ordinary purposes or use of a barrel; but the number of layers will of course depend upon the use to which the barrel is to be put and the strength required therein. These stave-sections preferably overlap or break joints with each other depthwise of the stave, for obvious purposes. In order that these stave-sections may be more closely held together and prevented from moving lengthwise or laterally upon each other, I make use of the hollow indentations *f*, formed in the substance of the staves and projecting inward, these projections being so formed as to interlock with each other, as shown in Fig. 2. The shape of the indentations is such that a shoulder, *f'*, is formed on the upper side within the barrel and a similar shoulder facing in the opposite direction on the outer side of the barrel. The purpose or function of these hollow indentations is to serve as a means for holding the several stave-sections in proper relation to form a shoulder within the barrel to support the head, and also to form on the outside of the barrel a recess of proper shape to receive one end of a clamp, *g*. The purpose of the clamp is directly to hold the end hoops, *e'*, on

the barrel, and indirectly to secure the head in the barrel by thus holding the hoops firmly in place.

5 The clamp *g* is preferably made of a sheet or strip of metal of suitable thickness, with an in-
 10 turned foot, *g'*, preferably sharpened or provided with holding-points, and this end is adapted to engage the shoulder on the outside of the barrel. It is evident, however, that a
 15 clamp of this kind may be secured at any point by driving the sharpened feet into the substance of the barrel where it is thick enough, and when it is thus secured its other
 20 end may be turned over the edge of a hoop, and thus hold it from slipping out of place.

The head *d* may be of any convenient form and material adapted for this purpose; but I
 25 prefer to use a head made of the same material—straw-board or the like—of which the barrel-stave sections are composed, the said
 30 head fitting closely within the barrel before the end hoops are driven thereon, and being also concaved. There is no croze formed in the ends of the staves, as the shoulders on the
 35 indentations serve to support the barrel-head in proper position, the edge of the head being preferably thickened by turning up a flange, so as to present a broad bearing-surface that
 40 is tapered or bevels inward to fit the sloping surface of the inside of the stave-sections, as clearly shown in Fig. 2 of the drawings. When such a head is placed within the barrel with its inner side resting upon the shoulders
 45 *f'* of the projections, the clamps *g* are placed upon the outside around the edge of the barrel, and a hoop is driven thereon outside of the body of each clamp and inclosing the clamps between the inner side of the hoop and the outer side of the barrel. The head is secured
 50 in place by turning the outer ends of the clamps outward and downward over the edge of the hoop.

The object of making the head concave is to prevent it from bulging out, and this result is
 55 due to the arched form, that causes any pressure from within the barrel that would tend to push the head out to be met by the thrust of

the edge of the head upon the edges of the staves, and this thrust is directly opposed by the hoops around the outside of the barrel, as
 60 well as by the substance of the staves.

I claim as my invention—

1. In a barrel or like package, in combination, a number of stave-sections of straw-board
 55 or like fibrous material arranged in layers that break joints with each other, the staves of each layer being provided with interlocking and
 60 inturned hollow indentations, the adjacent walls of which on the side near the ends of the stave form angular shoulders, and the hoops
 65 whereby the stave-sections are held together, all substantially as described.

2. In combination with the outer stave-sections, *b*, the inner stave-sections, *c*, having the
 70 inward-projecting and interlocking hollow indentations *f*, forming the shoulders *f'* within the barrel, the head *d*, resting on the said
 75 shoulders, and with an upturned flange around its edge that fits upon and conforms to the straight slope of the inner side of the staves,
 80 and the hoops, all substantially as described.

3. In a barrel or like package, the combination of the stave-sections *b c*, made of sheets of
 85 fibrous material, as straw-board, each section having the hollow indentations *f*, that serve as locking devices for the sections and as a
 90 head-support, the barrel-head made of like fibrous material and having the flanged and beveled edge, and the hoops whereby the barrel-sections are held together, all substantially
 95 as described.

4. The combination, with the stave-sections *b c*, of sheets of fibrous or pulpy material, as
 100 paper, having the hollow indentations *f*, with shoulder *f'*, that forms the head-support, a head, *d*, a hoop inclosing the staves near the end, and a locking clamp, *g*, with its foot *g'*
 105 held in place in the hollow of the indentations and its free end turned over the outer edge of a hoop, all substantially as described.

GEORGE S. LONG.

Witnesses:

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 A. B. JENKINS.