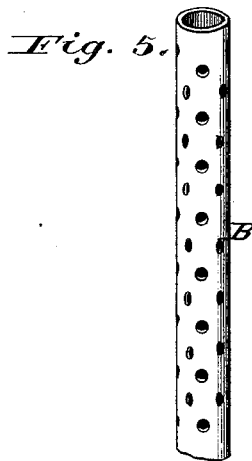
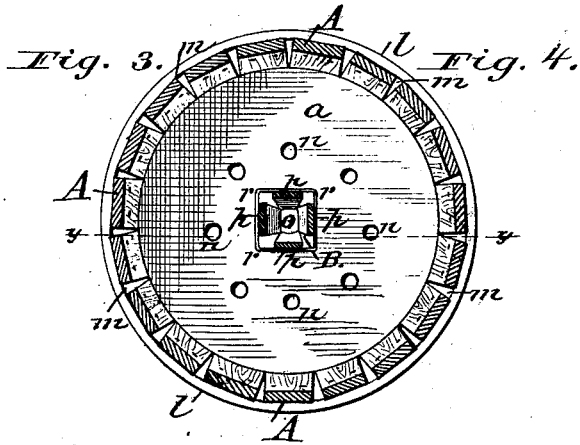
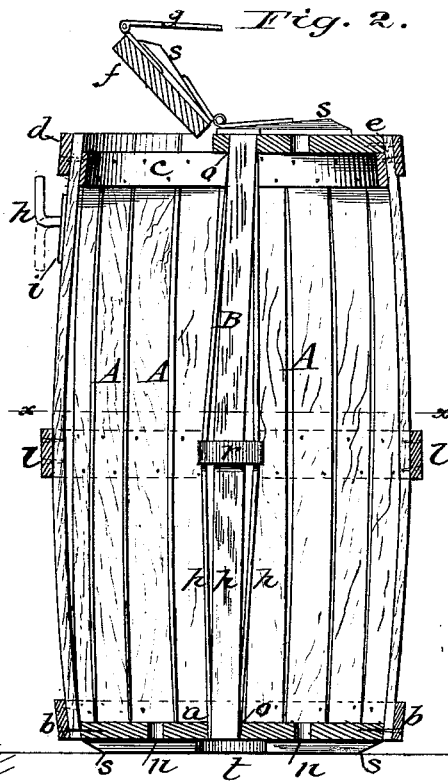


J. H. MARVIL.  
FRUIT-CRATE.

No. 190,883.

Patented May 15, 1877.



Attest:  
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# UNITED STATES PATENT OFFICE

JOSHUA H. MARVIL, OF LAUREL, DELAWARE.

## IMPROVEMENT IN FRUIT-CRATES.

Specification forming part of Letters Patent No. **190,883**, dated May 15, 1877; application filed January 22, 1877.

*To all whom it may concern:*

Be it known that I, JOSHUA H. MARVIL, of Laurel, in the county of Sussex and State of Delaware, have invented certain new and useful Improvements in Barrels or Crates for Shipping Fruits, Vegetables, &c., of which the following is a specification:

This invention relates to certain improvements in the construction of barrels or crates for shipping fruit, vegetables, and other perishable articles which require to be thoroughly and effectually ventilated to preserve them.

The invention consists in constructing a barrel or crate of a series of staves, which are cut into straight strips without a bevel at either end, and which are secured in position at their lower ends directly to the circular bottom, and by an external hoop or band, through which the nails or screws are driven into the staves and bottom, the upper end of the staves being secured in position by means of an internal and external hoop or band, through which and the staves are driven nails or screws, the ordinary bulge or expanded portion to the barrel being made by means of an expansion device, which presses and distends the center parts of the staves outwardly, an external hoop or band being secured to the distended or expanded staves by means of nails driven through the hoop or band and staves, and clinched on the inside, whereby the bulge is retained in the staves.

In the drawings, Figure 1 represents a perspective view of a barrel or crate constructed according to my invention; Fig. 2, a vertical central section; Fig. 3, a horizontal transverse section; and Fig. 4, a detached view, showing the form of the staves; and Fig. 5, a modification of the central ventilating-flue.

Referring to the drawings, A represents the staves, which are cut from wood into a rectangular shape without a bevel at the ends, and are secured in position at the lower ends by means of the bottom *a* and the external hoop or band *b*, through which and the staves are driven nails or screws into the said bottom. The upper ends are supported and held firmly in position by means of an internal and an external hoop or band, as shown at *c* and *d*, and through which hoops or bands and staves are driven nails, which are clinched upon the in-

side of the internal hoop. The head of the barrel is composed of two sections, *e* and *f*, and rests upon the internal hoop *c*, which is placed a sufficient distance below the upper ends of the staves to permit the top surface of the head to be on a line flush with the upper ends of the staves. The section *e* of the head is fixed in position by nails or screws driven through the external hoop *d* and staves into the same, and the section *f* is hinged, in any suitable manner, to the fixed part, and provided with a suitable fastening device for holding it down, which device consists, in the present example, of a hasp, *g*, on the lid, and an angular pin, *h*, pivoted in a plate, *i*, attached to one of the staves, the hole in the hasp being slipped over the pin, and the projecting end of the pin turned out of coincidence with the hole. The necessary bulge or distended central portion of the staves is formed by means of an expansion device arranged on the interior of the staves, and expanded to distend or press outward that portion of the staves, and they are held and supported in this expanded or distended position by means of an external band or hook, *l*, arranged around the staves, and through which nails or screws are driven.

When the expansion device is operated to expand the, or distend the, central portion of the barrel, it will be seen that the staves are slightly separated from each other by such expansion, so as to create intervening spaces *m* for the passage of air into the barrel or crate from the sides thereof. The head and bottom are perforated in any suitable manner. In the present example the perforations are simply circular openings bored through, as shown at *n*. In order to thoroughly and effectually ventilate the central portion of the crate there is located in the barrel a central vertical air-flue, B, which opens at its ends through the bottom and fixed part of the head, each end being secured in position in the openings *o o*, provided for its reception. This air-flue B consists, in the present example, of four strips of wood, *p*, secured at their ends in the openings *o*, and expanded at their central portion and held in such position by a band, *r*, riveted or otherwise attached to the strips *p*, so as to create at each corner an intervening space extending the entire length of the flue, whereby air can enter at the

top and bottom of the flue, and pass through said spaces into the interior of the barrel or crate at the center thereof. The head and bottom of the barrel or crate are provided with battens or pieces of wood *s s*, attached to the same, so that when the crates are placed one upon the top of the other there will be an intervening space between them, so as to permit the free access of air through the heads and bottoms and the central ventilating-flue. The battens *s* are provided with curved recesses *t*, whereby the barrel can be easily raised and lowered with the ordinary barrel-hooks employed for this purpose.

It will be evident that instead of constructing the central flue of a series of strips, as described, the same can be simply a perforated tube, as shown in Fig. 5, cylindrical, square, or other desired shape, and may communicate with lateral flues extending through the staves, so as to admit air from the sides of the barrel to the central flue; and it will also be observed that two or more of these flues may be disposed within the barrel without departing from my invention.

The barrel or crate as thus constructed will be found most efficient in shipping fruit, vegetables, and other perishable articles during warm weather, or in warm climates, inasmuch as a thorough and effectual ventilation of every part of the articles is obtained; and by the peculiar construction of the barrel or crate hereinbefore set forth, they can be rapidly manufactured, with suitable machinery, with but comparatively little cost. In some cases I design dispensing with the sectional head of the crate.

I do not herein claim, broadly, the combination, with a shipping-case having rests attached to its ends, of a central ventilating-flue, extending from end to end of the case, and constructed of slats, having spaces between them for the admission of air; but,

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A barrel or crate for shipping fruit, consisting of staves *A*, attached to the bottom, and connected at their upper ends to the interior and exterior hoops *c* and *d*, said staves being expanded at their central portion, and held in such position by an exterior hoop, *e*, connected with the staves by nails, substantially as and for the purpose described.

2. A crate composed of a series of staves, expanded at their center to create spaces *m*, perforated bottom and head, and bottoms *s*, provided with recesses *t*, attached to the same, substantially as described.

3. The combination, in a crate, of the staves, expanded at their center to create intervening air-spaces, and held in such position by a hoop or band, the perforated head and bottom, and a central flue or flues within the crate, constructed to ventilate the central portion of the latter, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of the subscribing witnesses.

JOSHUA H. MARVIL.

Witnesses:

VANDRETH S. MARVIL,  
THOMAS W. RALPH.

1,500  
5/15/02