Dec. 27, 1932. R. J. KERNODLE 1,892,153

COLLAPSIBLE HOGSHEAD

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Fig. 1.

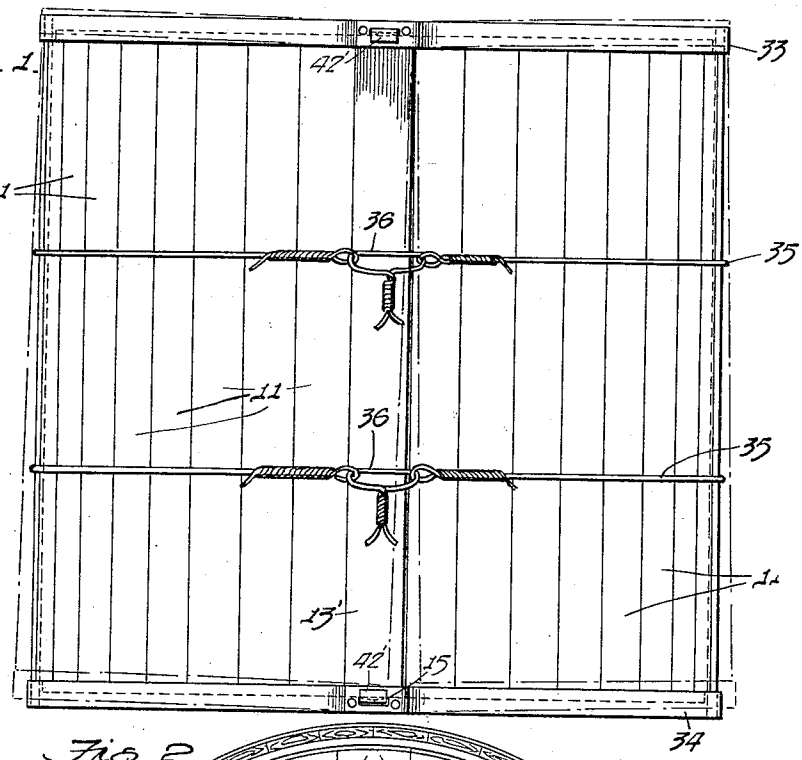


Fig. 2.

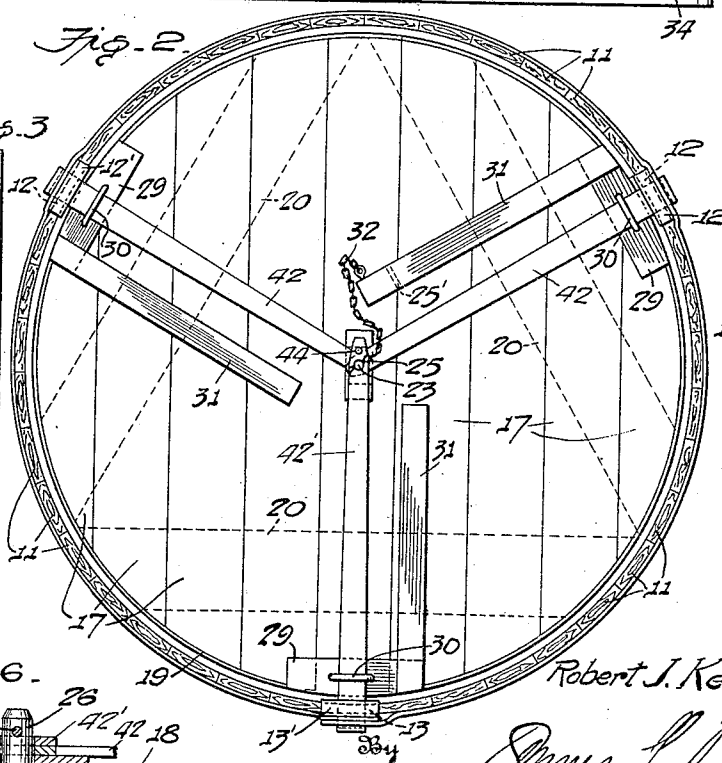


Fig. 4.



Fig. 3.

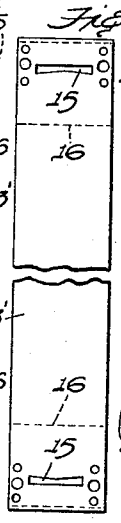


Fig. 5.

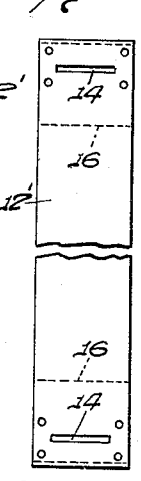
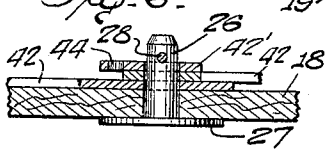


Fig. 6.



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Fig. 7.

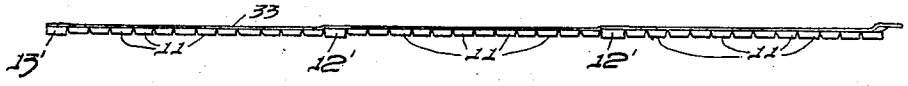


Fig. 8.

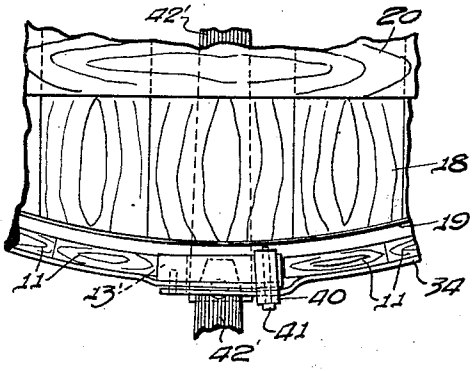


Fig. 10.

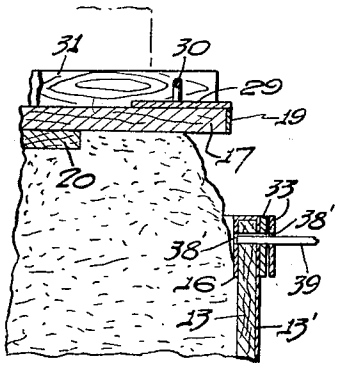


Fig. 9.

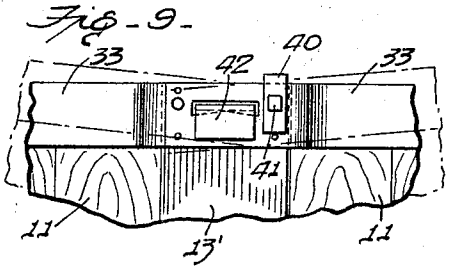


Fig. 11.

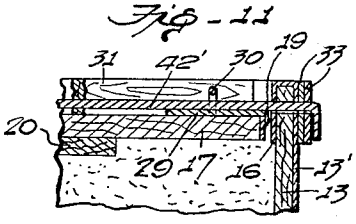


Fig. 12.

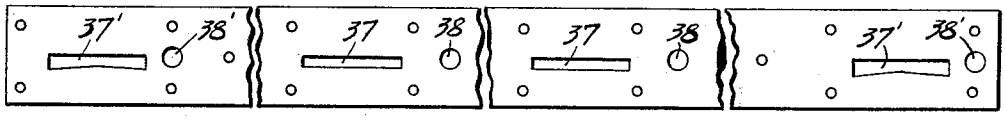


Fig. 13.

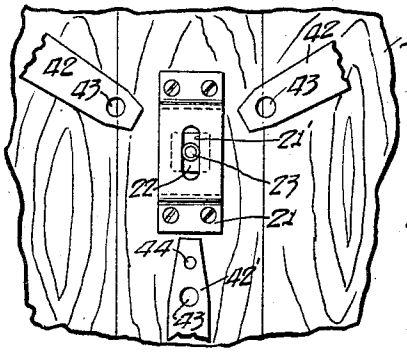
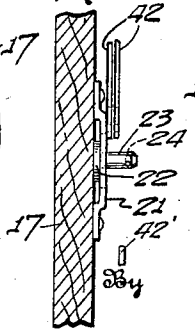


Fig. 14.



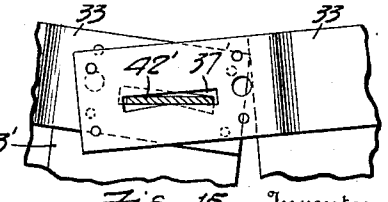


Fig. 15.

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UNITED STATES PATENT OFFICE

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COLLAPSIBLE HOGSHEAD

Application filed March 31, 1931. Serial No. 526,707.

My invention relates to hogsheads, and particularly to hogsheads for tobacco.

It is especially adapted for filling under great pressure, for closing and tightening around the compressed product, for slipping off the compressed bale after shipment, and finally for return shipment in knock-down form.

To this end my invention comprises a body composed of staves secured at both ends to flexible hoops having overlapping ends detachably secured together. By means of this construction a tight body is formed when the barrel is assembled, and when the ends of the hoops are unfastened the connected staves can be laid out flat in the form of an apron or rolled up into a compact bundle with the staves outside and the hoops bent backward as compared with their curvature when the staves are in barrel form. In addition, when all the other hoops are loosened or removed from the filled hogshead, the hoop at one end holds them together at that end, but permits the staves at the edges of the apron to separate at their other ends under pressure of the confined tobacco. This gives the barrel or hogshead body a substantially frusto-conical form and permits the head and body to be lifted off the contents of the hogshead.

My invention also comprises staves and hoops of novel construction, and heads with new and useful attachments.

My invention further comprises fastening and tightening means of special construction for drawing the body of the hogshead up tightly around its contents, and holding the assembled parts in position.

Finally, my invention consists in the combinations and details of construction disclosed in the accompanying specification and drawings and set forth in the claims.

In the accompanying drawings,

Fig. 1 is a side elevation of a hogshead made according to my invention;

Fig. 2 is a top plan view thereof;

Fig. 3 is a front elevation of the reinforcing plate or armor for the stave secured to one end of the upper hoop;

Fig. 4 is an edge view thereof;

Fig. 5 is a front elevation of the armor for one of the intermediate staves;

Fig. 6 is a detail showing in section the bottom of the hogshead, together with its central pin and the head-securing arms engaged therewith;

Fig. 7 is an edge or end view of the staves forming the body of the hogshead spread out in apron form;

Fig. 8 is a detail showing a portion of the lower head and one of the fastener arms, together with the lower hoop and a clamp for temporarily holding the hoop in place;

Fig. 9 is a front elevation of the parts shown in Fig. 8;

Fig. 10 is a view in vertical section of a portion of the upper end of one of the staves, together with the upper head resting upon the top of the tobacco before the barrel is closed;

Fig. 11 is a similar view with the head in place and the contents of the barrel forced down within the same;

Fig. 12 is a side elevation of the upper hoop before it is bent;

Fig. 13 is a detail showing parts at the middle of the upper head before the fastening arms are engaged with the center pin;

Fig. 14 is a detail showing the edges of the same parts;

Fig. 15 is a detailed view of the upper hoop and two of the staves in the position they assume when the remaining hoops have been removed or released.

Like characters represent the same parts throughout the specification and drawings.

Referring to Figs. 1, 2, 7 and 10, the body of the barrel is composed of staves 11 and other staves 12 and 13. The staves 12 and 13 are preferably covered on their front sides by armor plates 12′, 13′ respectively, the ends of which are bent over to enclose the ends of the staves as shown at 16, Figs. 4 and 5. Near the ends of the plates 12′ are slots 14, and near the ends of the plate 13′ are slots 15. One side of each of the slots 15 is widened at its ends as shown in Fig. 3.

In the preferred construction the upper head of the barrel is composed of strips 17, and the lower head is composed of similar

strips 18. Preferably the edges of the heads are surrounded by rims 19, and cleats 20 are attached to the strips which compose the upper and lower heads, securing them together to constitute a unitary structure. At the center of the upper head is a plate 21, its middle portion being raised above the plane of its ends as shown in Fig. 14, and the ends being attached to the upper surface of the head. A longitudinal slot 21′ is formed in the plate 21, and through this slot projects a pin 23 sliding in the slot and attached to a plate 22 which slides underneath the raised portion of plate 21. An opening 24 in the outer end of pin 23 receives a cotter pin 25.

Through the lower head projects a pin 26 having an opening 28 adjacent its outer end for a cotter pin and a head 27 at its inner end attached to the head, see Fig. 6. To the outer surfaces of the heads near their margins are secured three or more plates 29, carrying loops 30 for the reception of the fastening arms hereinafter described.

Guard bars 31 may be secured to the outer surfaces of the heads to protect the loops 30 when the lower head rests on the ground or platform, and when the upper head is being forced down to compress the contents of the hogshead. To one of these guards is attached chain 32, carrying the cotter pin 25, see Fig. 2. A hole 25′ in said guard receives the cotter pin when not in use.

When the hogshead is assembled, the parts are held together by the hoops 33, 34 and 35. The intermediate hoops 35 may be made of wire with their ends looped and held together by twisted wires 36.

Each of the upper and lower hoops 33 and 34 has a slot 37′ adjacent each of its ends and a plurality of slots 37 between its ends, one of the longitudinal walls of each of the end slots 37′ preferably being inclined toward its opposite wall from its ends to its mid portion, so that each of such slots is narrower at its mid portion than at its ends, for a purpose to appear later. The slots 37 are of the same width throughout their length. The hoops 33 and 34 are shown as each having two slots 37, each spaced approximately the same distance from one another and from one of the end slots 37′.

As shown in Figure 12, each of the hoops 33 and 34 has an opening 38 adjacent each of the slots 37 and an opening 38′ adjacent each of the slots 37′, one of the openings 38′ being adjacent that end of its adjacent slot which is remote from the adjacent end of the hoop, whereas the other opening 38′ is adjacent that end of its adjacent slot which is nearest the adjacent end of the hoop.

After either of the hoops 33 or 34 has been placed around the staves which form the body of the hogshead, a pin 39 is inserted through the openings 38′ in the end portions of the hoop to draw the end portions of the hoop past one another in order to bring the slots 37′ into registry, whereupon clamps 40 are placed over the hoop and the ends of the staves in straddling relation to same to temporarily hold the hoop in place. The barrel body is clamped around the heads and held in place by three or more fastening bars 42, 42′ which pass through openings 37, 37′ in the upper and lower hoops and openings 14, 15 in the armored staves and also through loops 30, passing thence radially across the heads and held together at the middle of the heads by the pins 23, 26. When the bars are assembled upon the center pins, they are held in place on these center pins by the cotter pins 25, an opening 43 being formed in the inner end of each of the bars 42 and 42′ for this purpose. Another opening 44 is made near the extreme end of bar 42′ for the reception of a tool to draw the bar 42′ to the position where it can be forced down over the center pin. The outer end of each of the bars 42 and 42′ is bent at an angle to the body of the bar to bear against the outer side of the hoop through which it extends.

Various modifications may be made without departing from the spirit of my invention. The cleat or battens 20 may be on the outer surfaces of the heads. In such case another cleat may be secured to the inner sides of the strips forming the heads and parallel to the cleat 20 which crosses strips 17 or 18 at right angles. The parallel cleats should be about equally distant from the center of the head. These two cleats hold the outer strips forming the head better than the triangle alone which is shown in Fig. 2. The ends of the cleats forming the triangle may be beveled on their inner sides at the apices of the triangle so as to form abutting beveled surfaces and leave blunt ends only about half the width of the cleats. The head may then be oriented so that the apices will adjoin the staves 12, 13 and the fastening bars 42, 42′ will rest upon them.

The operation of my invention is as follows:

Assuming the parts to be separated, as they are after the hogshead has been emptied and taken apart for return shipment, the staves are brought together to form a cylinder and the ends of the upper hoop 33 are overlapped and the hoop drawn taut by inserting a pin into holes 38′ and using the pin 39 as a lever. The ends are then temporarily secured together and to the adjacent barrel stave by the U-shaped clamp 40. A pin 41 is inserted in registering holes in the clamp, hoop and stave, to prevent slipping. The bottom or lower head is then inserted, the lower hoop is placed in position, and the parts at the bottom are clamped together in the same manner as those at the top. The other hoops may then be put on the barrel and secured as tightly as is necessary in order to hold them on.

Before the cask or hogshead is filled, the steel lower hoop is tightened and the bottom is tightly secured in the following manner:

Bars 42 are thrust through the openings 37 in the hoop 34 and also through the openings 14 of the plates 12′ and of the staves 12 which register therewith and then through the loops 30 which register with said openings until the holes 43 adjacent the inner ends of said bars are over the pin 26. The bar 42′ is then inserted through the openings 37′ in the overlapping ends of the hoop 34, the openings 15 of the plate 13′, and the opening in the stave 13, and then through the loop 30 which registers with said openings until the hole 43 adjacent the inner end of said bar is over the pin 26. The inner ends of the bars 42 and 42′ are then pressed toward the head 17 until the pin 26 projects through the holes 43 of said bars, whereupon a cotter pin 25 is inserted through a transverse aperture in the pin 26 to hold the bars in such position. The bars 42 and 42′, as they are pressed toward the head, act as levers fulcrumed in the openings of the staves 12 and 13 and the plates 12′ and 13′ and, since the ends of the plates 12′ and 13′ overlap the ends of the staves to which said plates are attached, said plates will prevent the fulcruming action of the bars 42 and 42′ in the openings of the staves from splitting the staves. The fastening arms are then secured by means of the cotter pin 25. Clamp 40 and pin 41 may now be removed. The hogshead is next filled and heaped up until the contents project some distance above the upper end of the barrel body. During the process of filling the contents may be compressed as often as is necessary or desirable. When a sufficient quantity of the product, as determined by weighing or otherwise, has been placed in the hogshead and heaped above it, the upper head is placed on the top of the tobacco and the head is forced down by hydraulic pressure or otherwise, until it lies within the body of the hogshead and below its upper end, as shown in Fig. 11. Fastening bars 42, 42′ are then thrust through the several openings in the upper hoop 33, reinforcing plates 12′ and 13′, staves and loops 30, and the holes in their ends are passed over the pin 23 and secured by cotter pin 25, the same as was done when the bottom was secured in place. Pin 23 on the upper head is made movable because the compressed tobacco in the cask would otherwise make it difficult to draw the bar 42′ far enough inward for the hole 43 of same to receive the pin 23.

When it is desired to empty the hogshead, the wire hoops 35 are cut, a pin or tool is pushed through holes 38′, 38′ in the lower hoop and used as a lever to prize the lower head inward to release bars 42, 42′ which hold the bottom head. The fastening bars are then removed. The expansion of the compressed tobacco opens the lower end of the hogshead by forcing apart the staves 11, 13 at the edges of the split cylinder, as shown in Figs. 1 and 15. The shape of the barrel body is now substantially that of a truncated cone, the inclined portions of the walls of the slots 37′ of the upper hoop permitting the end portions of the upper hoop to rock on the bar 42′, as shown in Figure 15, and the head and body may be lifted, leaving a compressed mass of tobacco resting on the bottom. If desired, the bottom may be removed before the hogshead is emptied. The upper head may now be removed and the parts are ready for re-shipment when the staves are formed into a bundle.

It is evident that some of the above operations may be in a different sequence from that described, and in emptying, either head may be considered the bottom one. When the hogshead is empty, the bars 42, 42′ passing through loops 30 hold the heads in place.

Certain features of my invention are applicable to crates, barrels, tubs or other forms of containers, and the contents of the containers may be materials other than tobacco. Therefore, the claims are not to be construed as covering only hogsheads or only containers for tobacco.

Some of the details of construction may be modified without departing from the spirit of my invention. For example, the number of fastener arms need not be limited to three and the reinforcing plates may cover only the ends of staves 12, 13, or they may in some cases be omitted altogether. The metal parts described are preferably of steel, but other materials may be used. The loops 30 are useful, but not absolutely necessary and the guards 31 may also be dispensed with.

In using the word "staves", I do not limit myself to any particular cross section or spacing. These parts may be rods spaced apart as in certain forms of crates.

What I claim is:

1. In a container comprising a side wall and a removable end wall, a pin slidably secured near the center of said end wall, and bars extending through said side wall and across said end wall and converging toward said pin, each of said bars having an opening adjacent one of its ends to receive the pin and means at its outer end to engage the side wall.

2. In a container comprising a side wall and a removable end wall, a pin slidably secured near the center of said end wall, and bars extending through said side wall and across said end wall and converging toward said pin, each of said bars having an opening adjacent one of its ends to receive the pin and means at its other end to engage the side wall, one of the bars having an additional opening radially inward of its first-named opening.

3. Means for detachably securing a removable head of a hogshead in place, said means

comprising a hoop to surround the body of the hogshead adjacent one end of the latter with its end portions overlapping and having an opening adjacent each of its ends and a flat head-securing bar insertable through said openings of said hoop and an opening in the body of the hogshead transversely of the outer face of said removable head, and detachable interengaging means between said bar and said removable head.

4. Means according to claim 3 for securing the removable head of a hogshead in place wherein the detachable interengaging means between the bar and removable head comprises an opening formed in the bar and a pin projecting from the outer side of the removable head and insertable through said opening.

5. Means according to claim 3 for securing the removable head of a hogshead in place wherein the openings in the hoop are in the form of slots, each of said slots having one of its longitudinal walls tapering from its opposite ends to its mid portion toward its other longitudinal wall.

6. Means according to claim 3 for securing the removable head of a hogshead in place including a loop carried by and projecting from the outer face of the head to align with the registering openings in the hoop and to receive the head-securing bar.

7. Means for detachably securing the removable head of a hogshead in place, said means comprising a hoop having an opening adjacent each of its ends and adapted to surround the body of the hogshead adjacent one end of the latter with its end portions overlapping and with said openings in registry with one another, said hoop also having a pair of additional openings spaced, respectively, equidistantly from one another and the first-named openings, and head-securing bars insertable, respectively, through the openings of said hoop and openings in the hogshead body registering therewith, each of said bars having means at its outer end to bear against said hoop and an opening adjacent its inner end, a pin projecting from the outer face of said removable head and insertable through the opening of said bars, and locking means to engage said pin and overlie said bars.

8. Means according to claim 7 for securing the removable head of a hogshead in place, including a plurality of loops projecting from the outer face of the removable head to align, respectively, with the openings in the hoop and receive the head-securing bars.

9. Means according to claim 7 for securing the removable head of a hogshead in place, wherein one of the head-securing bars has an additional aperture adjacent its pin-receiving opening.

10. Means for detachably securing the removable head of a hogshead in place, said means comprising a hoop to surround said body adjacent one end of the latter with its end portions overlapping and having an opening adjacent each of its ends to register with one another, a head-securing bar insertable through the registering openings of said hoop transversely of and against the outer face of said removable head and having an aperture adjacent its inner end, a pin projecting from and slidable on the outer face of said removable head to extend through the aperture of said bar, and locking means engageable with said pin to overlie said bar.

11. Means for detachably securing the removable head of a hogshead in place, said means comprising a hoop having a slot adjacent each of its ends and additional slots between said end slots and adapted to surround said body with its end portions overlapping and the slots of said end portions in registry with one another, a plurality of flat bars each having an aperture adjacent one of its ends and insertable, respectively, through the openings of said hoop to bear against the outer side of said removable head, a pin projecting from and slidable on the outer side of said removable head to extend through the apertures of said bars, and means to engage said pin and overlie said bars.

12. Means according to claim 3 for detachably securing a removable head of a hogshead in place including a reinforcing strip overlapping that portion of the body in which the bar-receiving opening is formed and having openings in its overlapping portions registering with said bar-receiving opening.

13. Means according to claim 7 for detachably securing a removable head of a hogshead in place including a plurality of reinforcing strips on the body of the hogshead, each of said strips overlapping the part of said body in which one of the bar receiving openings is formed and having aligned openings in its overlapping portions in register with one of the openings in the body.

In testimony whereof I have hereunto set my hand.

ROBERT J. KERNODLE.