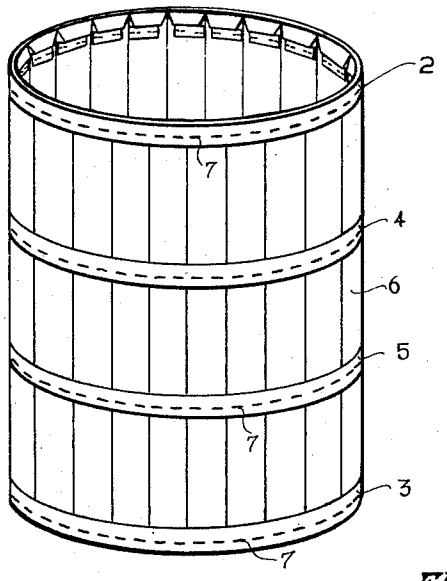
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METHOD OF MAKING KNOCKDOWN SHIPPING CONTAINERS

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FIG. 1



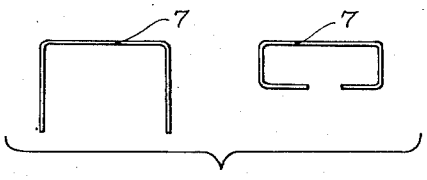


FIG. 7

FIG. 2.

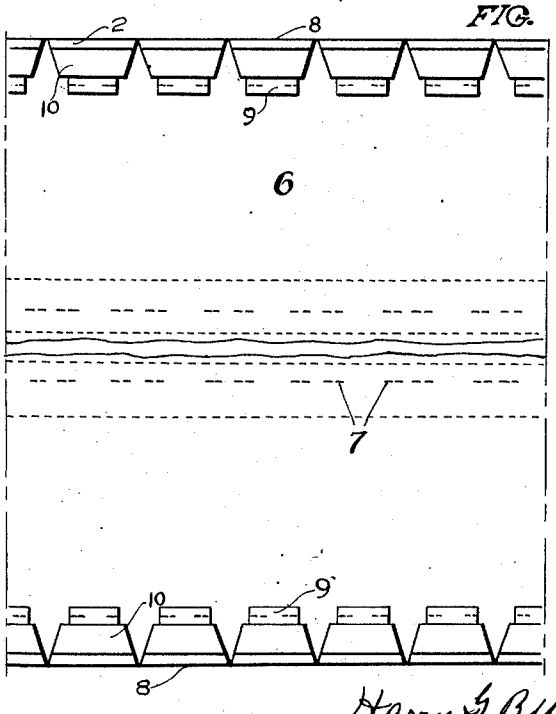
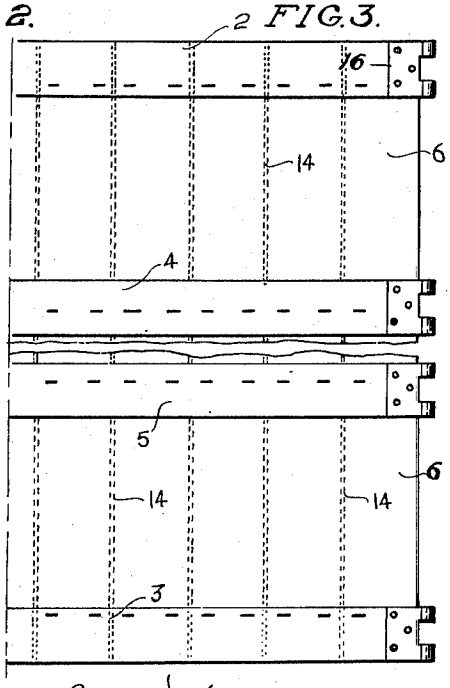


FIG. 3.



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FIG. 4

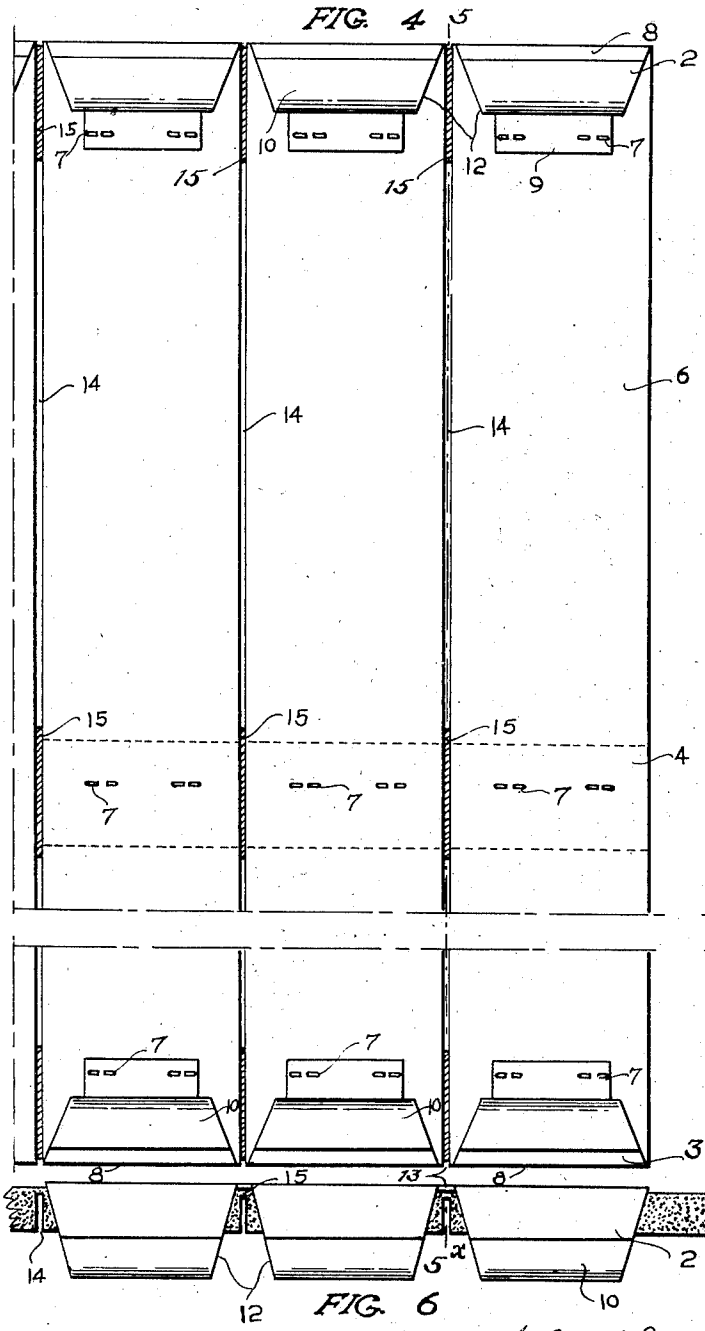


FIG. 5

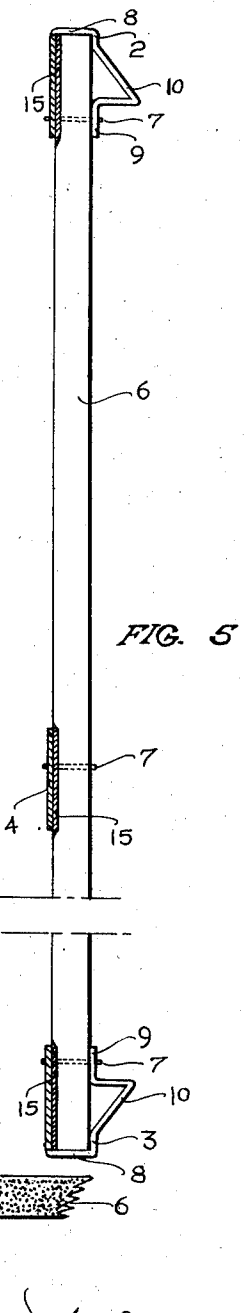


FIG. 6

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UNITED STATES PATENT OFFICE

2,555,530

METHOD OF MAKING KNOCKDOWN SHIPPING CONTAINERS

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Application April 19, 1946, Serial No. 663,527

8 Claims. (Cl. 144—309)

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Our invention relates to containers for the shipment of goods or articles in bulk and particularly to tobacco hogsheads and it has for its object to provide a container especially designed for convenience in converting it after use into a flat knocked down condition for return shipment to the packers for reconversion into barrel form for subsequent shipments of goods.

Our invention also has for its object to provide an improved design for the construction of such a container or hogshead which contributes to its fabrication in quantities, or in mass production by the practice of a method of construction and assembly of parts which is novel and contributes to its strength, appearance, functional performance and longevity under the severities experienced in shipping both in the loaded and unloaded condition.

Another object of our invention comprehends the method of making the cylindrical body of a tobacco hogshead which is ultimately to be of barrel stave formation out of one or more flat sections by the use of boards of a width equivalent to the circumference of the barrel and of the length thereof; securing to their ends and mid sections metal hoop sections and subsequently sawing the boards lengthwise beneath the hoop section to form the separate staves whereby the assembly may be conveniently shaped into curved segments.

Another object of our invention relates to the formation of barrel sections in halves, each comprising a single board of a length defining the length of the barrel, securing to their ends binding strips which overlap the outer and inner faces of the boards, those portions on the outer faces serving to form the end hoops, the other portions serving as head retaining members and being provided with spaced notches, and thereafter sawing said boards lengthwise in line with said notches to form a series of staves held together by said binding strips.

A still further object of our invention is the provision of a hogshead made of two flat boards, preferably of veneer, to which metal strips, which ultimately form the barrel hoops, are secured on their outer faces at the ends and intermediate points by attaching devices which in the separate strips are spaced in longitudinal alinement, the boards being subsequently sawed through lengthwise along lines falling between said fastening devices, save for those portions underlying the metal strips and in these areas being partly or mostly sawed away.

To these and other ends our invention consists

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in further improvements all as will be more fully described in the accompanying specification, the novel features thereof being set forth in the appended claims.

In the drawings:

Figure 1 is a perspective view of a container constructed in accordance with the present invention, a barrel form being used for convenience in illustration and description.

Figure 2 is a fragmentary plan view showing a portion of a board ultimately to become a barrel side as seen from the interior before it is bent into arcuate form.

Figure 3 is a similar fragmentary view showing the exterior appearance of the parts illustrated in Fig. 2.

Figure 4 is a replica of Fig. 2 enlarged somewhat out of proportion to facilitate the showing of certain details of construction.

Figure 5 is a longitudinal cross sectional view taken on the line 5—5 of Fig. 4.

Figure 6 is a top plan view looking downwardly on Fig. 4 and

Figure 7 is a view of the staple fastener.

Similar reference characters indicate similar parts.

Our present invention is a radical departure from the usual coopering job by which containers especially barrels have been heretofore constructed. In that operation the staves which have previously been preformed are assembled vertically around the bottom head, secured by a hoop, brought into an upright position and secured in a circular form by surrounding them with other hoops. In contradistinction to this our method comprises the selection of a board or boards of a length corresponding to the height or length of a given barrel and of an aggregate width corresponding to the circumference of the barrel, or if the latter is to be made in sections a single board is selected having a width equal to the length of the arc of such section. To this flat board or boards we affix the hoops, or hoop sections, as the case may be and form the staves by sawing the board lengthwise beneath the several hoop sections, the staves being held in assembled position by the fastening devices by which they are secured to the hoops. This assembly still being in the flat form is ready to be wrapped around a barrel head or other circular form to complete the sides or body of the barrel.

In illustrating our invention we have shown it as applied in the fabricating of tobacco hogsheads such as depicted in Fig. 1 having the end hoops 2 and 3 and intermediate hoops 4 and 5.

Figures 2 and 3 show a flat board 6 which it will be understood is of the required length, area and thickness to the outer face of which the hoops, or hoop sections are applied in parallel position extending transversely or crosswise of the board.

Any suitable form of fastenings may be employed for securing the hoops to the board 6, such as staples or rivets, although we prefer to use staples 7 as these can can be driven with present day automatic machines with both speed and accuracy. There is also an advantage in their use as their separated ends span a portion of the wood to form a secure hold thereon without the possibility of splitting the grain of the wood. In applying the fasteners 7 those in the several hoops are accurately positioned in alinement lengthwise of the board so that free unobstructed spaces save for the hoops themselves exist between their respective rows.

Our invention also comprehends especially designed end hoops which reinforce the ends of the staves, provide a convenient means for securing the barrel heads in place and which are so made in strip form as to be capable of easy application to the ends of boards 6 in the flat and yet permit it when it is cut into staves to be bent into circular form. For these reasons the end hoops 2 and 3 are made in the form of channels providing the top or flange section 8 and inner leaves extending over the inner end faces of the board 6, as indicated at 9, on which angular offsets 10 are formed which extend into the completed barrel for the purpose of acting as abutments or stops with which the barrel heads engage to secure them firmly in place. The width of the separate leaves 9 is somewhat less than the width of a stave so that there exists between their adjacent ends slots 12 which fall in line with the free spaces on the board between the contiguous rows of the hoop fasteners 7. These slots it will be noticed extend through the flanges 8 as indicated at 13.

Following the completion of the above described assembly the board 6 is severed lengthwise along lines connecting the centers of slots 12 on the end hoops by presenting it to a gang of saws which cut saw kerfs 14 severing it into a predetermined number of staves. In performing this last operation a specially designed sawing machine is used having a relative vertical movement between its table and saws, timed in relation to the movement of board 6 and the placement of the several hoops thereon, whereby the peripheries of the saws miss each hoop. In this way the saw kerfs have only a very thin section of wood 15 beneath each hoop while in the spaces between the hoops they effect a complete severance of the board. A suitable form of sawing machine especially designed for performing the aforementioned operation forms the subject matter of our copending application Serial No. 663,528, filed April 19, 1946.

Suitable connections are applied to the ends of the hoops, or hoop sections, for securing them together when the barrel body is set up as an example of which there are shown in Fig. 3 plates 16 having open eyes formed thereon, each similar to one section of a hinge member, the two members of which are adapted to overlap and receive a pintle by which they are locked together as will be understood.

Amongst the advantages to be noted in the construction of a barrel, or other form of container, embodying our present invention it will be noted that the body and hoop, or binder, assembly is first completed as a perfectly flat article so that large quantities of said parts may be completed and stored in a small space until required for use. When so required they may be shipped in this form to the point of use and quickly assembled. Likewise after each use the sections may be disconnected and again flattened for return shipment to the original point of packing, or elsewhere as may be desired.

We claim:

1. The method of making barrel sections comprising the selection of a board of a width equal to such section and of a length equal to that of the barrel, applying to its ends and across its intermediate portion hoop sections, fixing the latter to said board at predetermined points and finally severing the board longitudinally between said hoop sections and grooving the board beneath said affixed hoop sections and between said points to form staves.

2. The method of making barrels, comprising the selection of two or more boards, each of barrel length and of a combined width equal to the circumference of the barrel, applying to the boards hoop sections equal to the board widths, fixing said hoop sections thereto at spaced points, sawing the boards lengthwise between said hoop sections and grooving the board beneath said affixed hoop sections and between their points of fixation to form separate staves, bending the hoop sections into arcs and finally connecting the adjacent ends of corresponding hoop sections to form a complete circle.

3. The method of making barrels comprising the selection of two flat boards of barrel length and each of a width substantially one half of the circumference of a barrel, applying crosswise on the outer faces of the boards at their ends and intermediate portions alined sections of hoops, fixing all of the latter to the boards at spaced points, severing the boards longitudinally between said hoop sections and grooving the board beneath the hoop sections and between said points of fixation to form each into a plurality of staves, bending the hoops and staves into semi-circular sections and securing the latter into a cylindrical body by uniting the contiguous ends of the hoop sections.

4. The method of making barrels comprising the selection of two or more flat boards of barrel length having a combined width equal to the circumference of a barrel, affixing at spaced points in crosswise alinement on the ends and intermediate portions of the boards equivalent hoop sections, cutting the boards lengthwise between said hoop sections and grooving the board beneath the hoop sections to form a plurality of staves each individually attached to their respective hoop sections, bending said sections into arcs and uniting the latter into a completed cylinder by attaching the contiguous ends of the hoop sections together.

5. The method of making arcuate barrel sections comprising the selection of a board of barrel length and of a width equal to the arc, affixing hoop sections to the ends and intermediate portions of the board at a series of spaced points and finally severing the board longitudinally between said hoop sections and grooving the board beneath the hoop sections between said points of fixation to form a series of substantially separate staves each attached to the several hoop sections.

6. The method of making arcuate barrel sections comprising the selection of a board of bar-

rel length and of a width equal to the arc, applying to the face of the board at its ends and intermediate points hoop sections, securing the latter to the board by attaching devices located at spaced points on each hoop and in longitudinal alinement in the several hoops and finally severing the board between said hoop sections and grooving the board beneath the affixed hoops along lines located between said points of attachment to form a plurality of separate but connected staves.

7. The method of making knockdown barrels comprising the selection of flat boards of barrel length and of widths equalling the length of given arcuate circumferential sections of the barrels, applying around the ends of the boards reinforcement bindings one portion of which lying upon the upper face of the board constitutes a hoop section the other portion overlying the underface of the board being composed of disconnected leaves separated at their proximate edges and carrying barrel head latch projections, placing fasteners through the hoop sections to secure them to the boards, sawing the latter longitudinally between said hoop sections and grooving the board beneath the hoop sections along lines intermediate the leaves to form a series of connected staves, bending the sections thus formed around a cylindrical barrel head in contact with said latch projections and thereafter uniting them by fastening the contiguous ends of the hoop portions of said reinforcements together.

8. The method of making knockdown tobacco hogsheads comprising the selection of two flat

boards of barrel length each of a width corresponding to one half the barrel circumference, applying to the ends of the boards metal reinforcements U shape in cross section the part thereof on the outer face of the board being continuous to form a hoop section the other part lying on the inner board face being divided into leaf sections of stave width, placing fasteners through the hoop sections opposite said leaves, sawing the boards longitudinally between said hoop sections and grooving the board beneath the hoop sections along lines extending between said leaves, bending the assembled staves and hoops into circular form around a barrel head and finally locking the parts together by jointly connecting the adjacent ends of corresponding hoop sections.

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JACOB DOUGLAS GAY, JR.

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