

July 28, 1936.

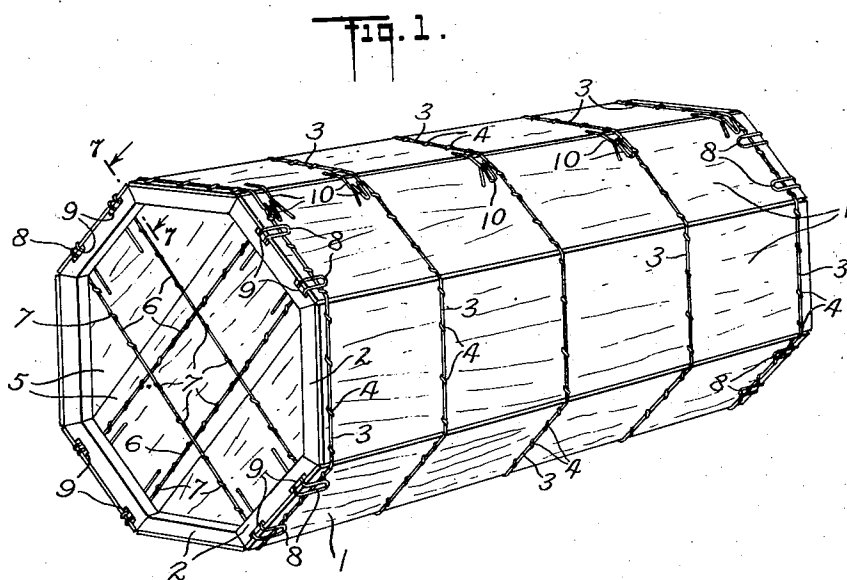
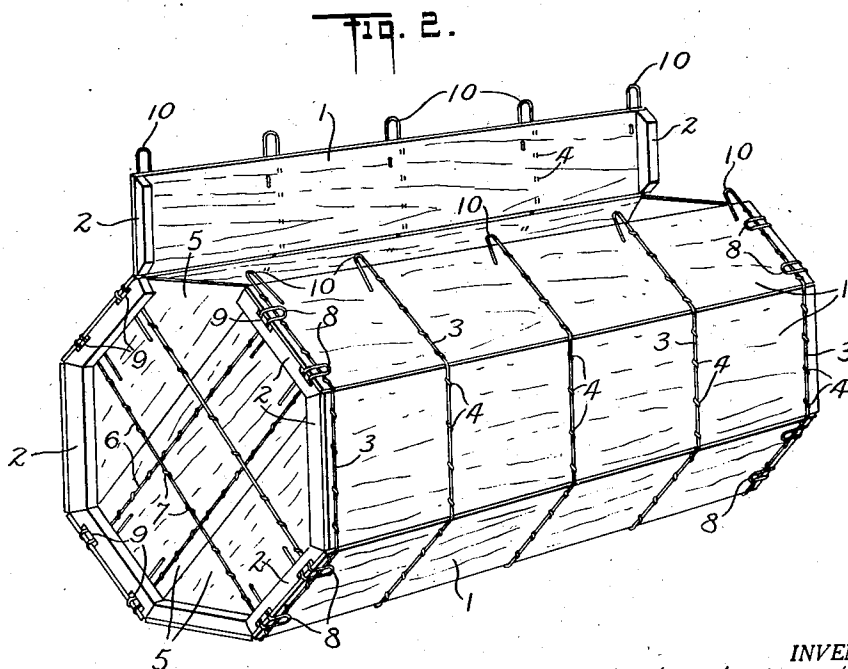
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2,048,667

BARREL

Filed Dec. 22, 1933

6 Sheets-Sheet 1



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6 Sheets-Sheet 2

Fig. 3.

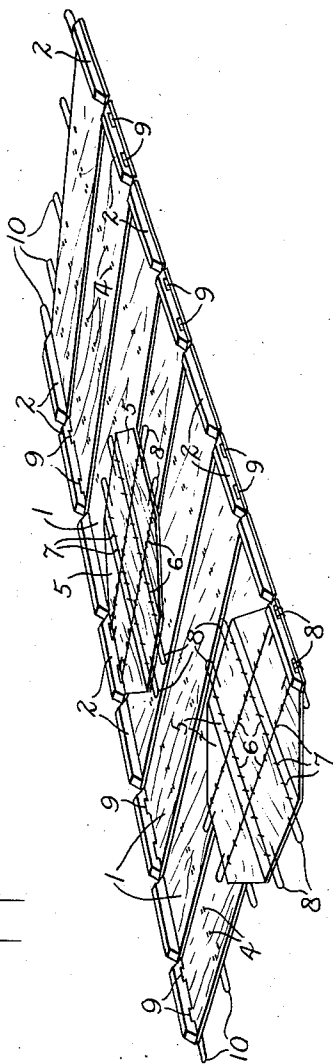
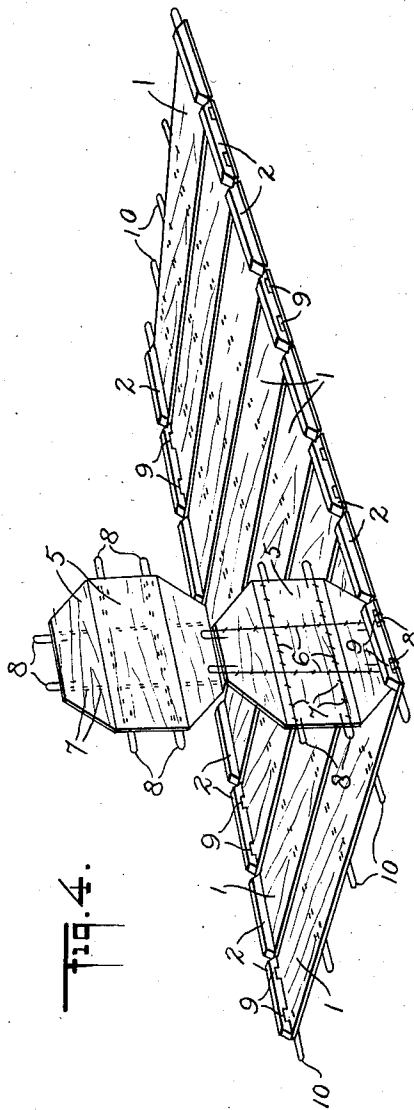


Fig. 4.



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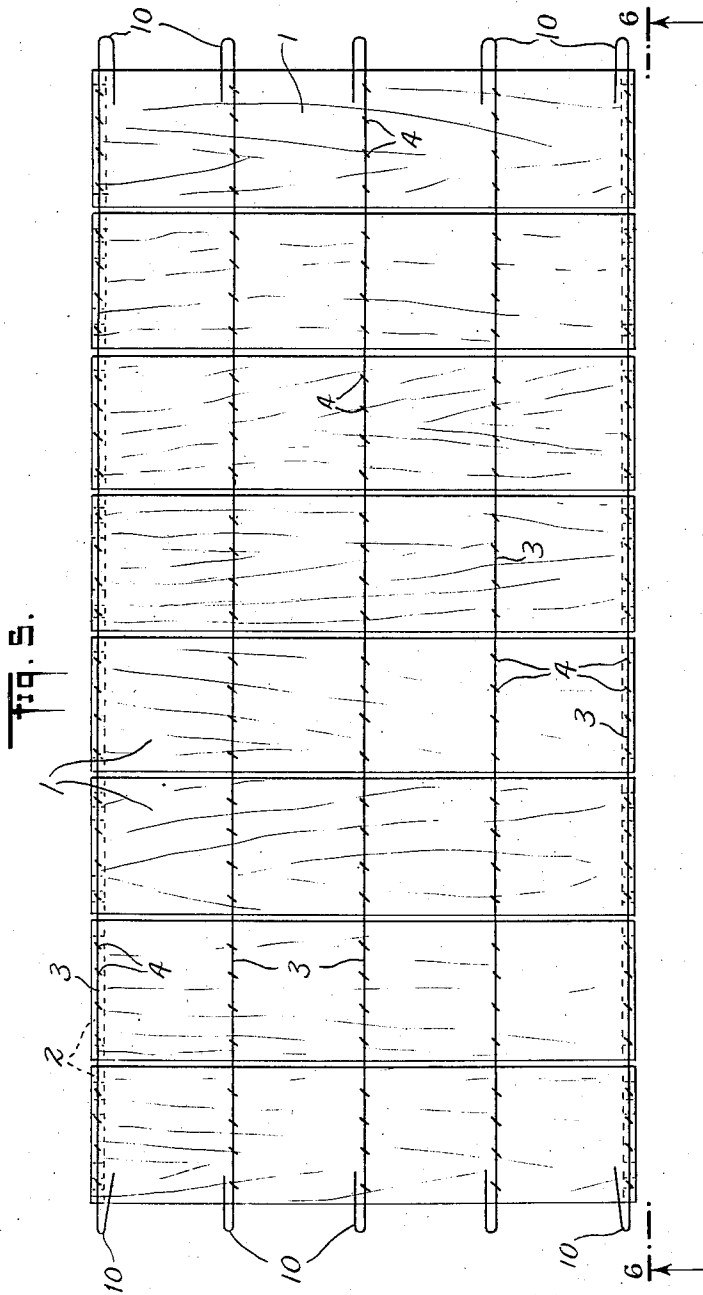
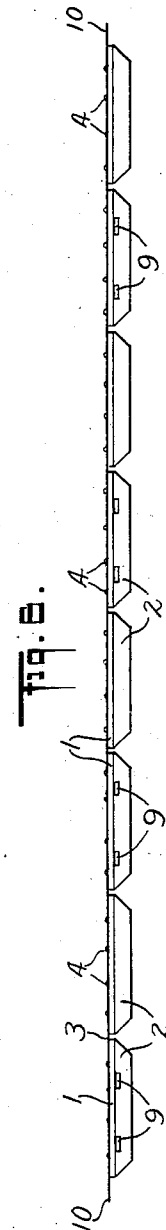
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Filed Dec. 22, 1933

6 Sheets-Sheet 3



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BARREL

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6 Sheets-Sheet 4

Fig. 7.

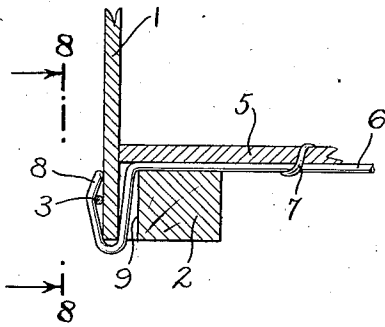


Fig. 8.

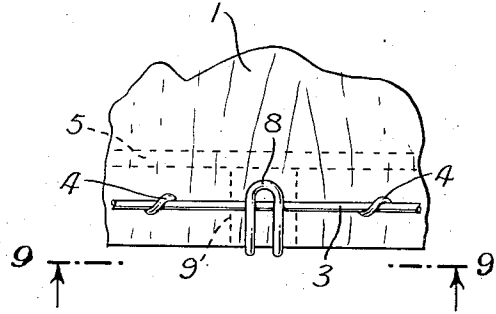


Fig. 9.

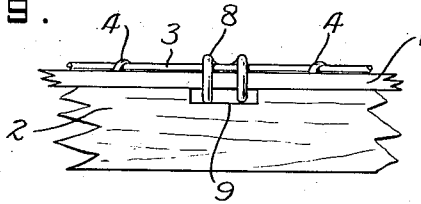
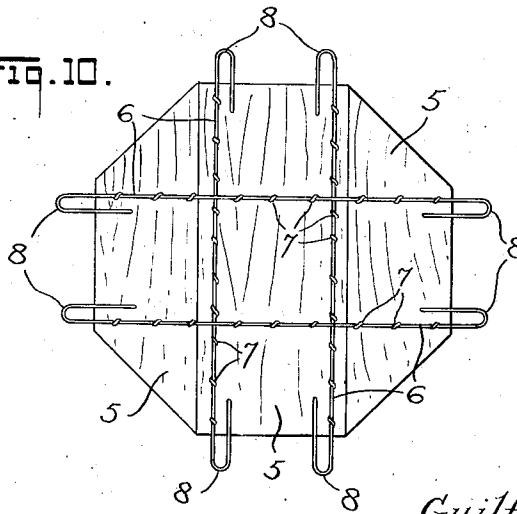


Fig. 10.



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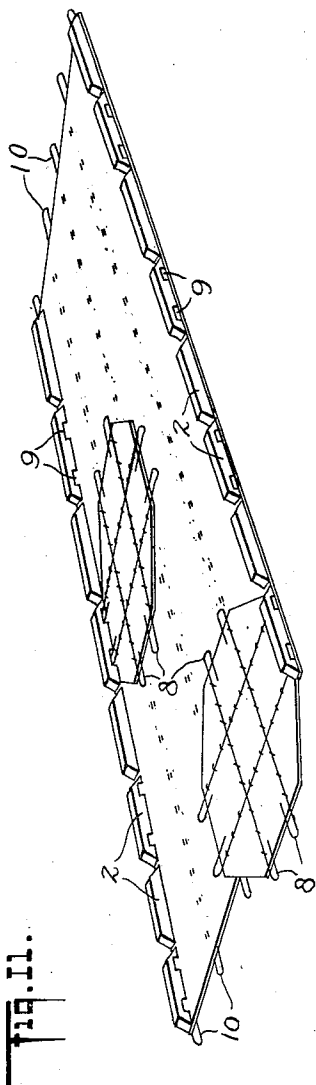
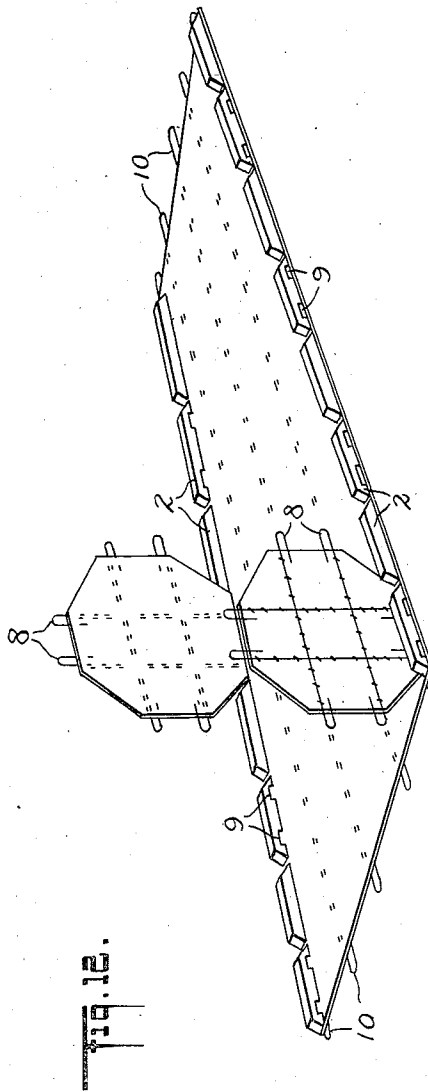
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6 Sheets-Sheet 5



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BARREL

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Fig. 13.

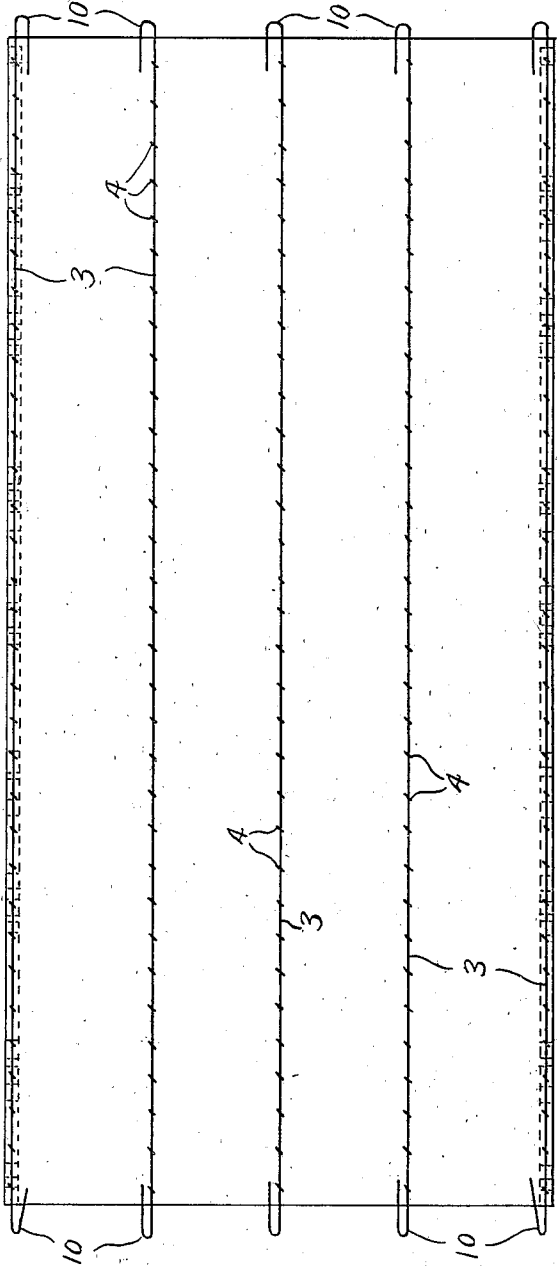
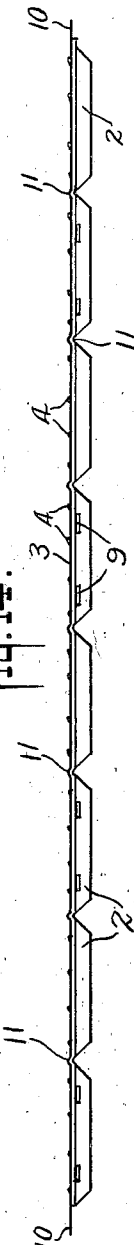


Fig. 14.



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UNITED STATES PATENT OFFICE

2,048,667

BARREL

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Application December 22, 1933, Serial No. 703,509

8 Claims. (Cl. 217—12)

This invention relates to barrels and particularly to wire reenforced barrels.

It is an object of the invention to produce a strong but light barrel, thus reducing freight charges on shipment of the barrel whether loaded or unloaded.

It is a further object to produce an efficient barrel from inexpensive materials, thus reducing the cost of manufacture.

It is a further object to produce a barrel which may be opened and closed on the side instead of at the head.

It is a further object to produce a barrel which may be shipped in the flat to the user and readily assembled by the user into barrel form.

It is a further object to provide a knock-down barrel which may be readily disassembled after use and reassembled for a second use.

It is a further object to provide a barrel reenforced both on the sides and on the heads with reinforcing flexible binders.

It is a further object to provide a one piece barrel shook which may be readily assembled into barrel form.

It is a further object to provide a barrel so constructed and arranged as to save space both in storage and in transit.

In the drawings:—

Figure 1 is a perspective view of a completed barrel embodying the invention.

Fig. 2 is similar to Fig. 1 but showing the manner of raising one of the side sections to provide an opening in the side wall of the barrel through which the contents may be inserted or removed.

Fig. 3 is a perspective view of the inner side of a one piece barrel shook consisting of the side wall sections and the two heads connected in the flat for shipment to the user.

Fig. 4 is the same one piece shook with the two heads raised at right angles to the side wall sections preparatory to folding the side wall sections into barrel form.

Fig. 5 is a plan view of the upper side of the blank which when folded forms the side walls of the barrel.

Fig. 6 is a side elevation of the same blank seen from the line 6—6 in Fig. 5.

Fig. 7 is an enlarged cross-sectional view taken on the line 7—7 of Fig. 1 and showing the manner in which the wires on the heads are connected to the side walls of the barrel.

Fig. 8 is a side elevation seen from the line 8—8 of Fig. 7.

Fig. 9 is an end view seen from the line 9—9 of Fig. 8.

Fig. 10 is an enlarged plan view of one of the barrel heads.

Figs. 11, 12, 13 and 14 are similar to Figs. 3, 4, 5 and 6, but showing the use of an integral sheet of side material such as fiberboard for the side walls of the barrel instead of the sectional side material shown in Figs. 3 to 6 inclusive.

Referring to Fig. 1, the barrel consists of a plurality of side sections (eight in the illustrative embodiment) each consisting of a sheet of side material 1 preferably of rotary cut veneer or resawed lumber and two interior cleats 2. The cleats of each side section are located at or adjacent the ends of the section and the cleats of the several sections at each end of the barrel cooperate to produce an interior supporting frame for the side walls.

The several side sections are connected together by encircling flexible binders (preferably wires) 3 secured to the sections by staples 4, some of which straddle the wires 3, pass through the side material 1 and are clinched on the under side of the side material, and some of which straddle the wires 3, pass through the side material 1 and anchor in the cleats 2.

Located within the frame formed by the cleats 2 at each end of the barrel is a head consisting of one or more sheets of material (preferably rotary cut veneer or resawed lumber) 5, to which are secured a plurality of flexible binders (preferably wires) 6 secured to the sheets by staples 7.

The heads are formed to fit within the side sections of the barrel and close the ends thereof. Thus in the eight-sided barrel shown in Fig. 1, the heads will be formed octagonally as shown in Fig. 10. As there shown, each head is provided with four reenforcing binders 6, two of which run parallel to each other in spaced relationship, and the other two of which extend parallel to each other in spaced relationship but at right angles to the first mentioned binders. Each binder 6 extends across and beyond the head and preferably is provided at either end with a bight 8 extending some distance beyond the edge of the head. Thus as shown in Fig. 10, each head is preferably provided with eight bights fairly equally spaced about the perimeter of the head.

Referring again to Fig. 1, oppositely disposed cleats 2 preferably are provided with grooves 9 forming openings between the cleat 2 and the side material 1 to receive the bights 8 of the head. As shown in Figs. 1 and 2, the bights 8 are passed through the grooves 9 and then bent over onto the side section to retain the head in position. With

the eight bights 8 so connected to the side sections, the head is securely held in position within the frame formed by the cleats 2.

The bights 8 of the heads preferably overlies and contact with the side wires 3 with which they cooperate to increase the strength and rigidity of the package as a whole. Because the wire bindings fixed on the heads are each secured to the side sections at opposite sides of the container, displacement of a side section is resisted by the opposite side section to which the wires 6 are secured and by the cleat frame at each end of the barrel.

Referring to Fig. 2, the binders 3 preferably are provided at their ends with bights 10 which may be hooked one through the other as shown in Fig. 1 to complete the continuity of the wires and hold the several sections in barrel form. To open the barrel the bights 10 are unhooked and a side section raised, as shown in Fig. 2, to provide a side opening through which the contents may be inserted or removed.

Referring to Figs. 5 and 6, the side material 1 and cleats 2 for the side sections are assembled in the flat in foldable relationship and the binding wires 3 are stapled thereto. The bights 10 may be formed on the wires by machinery in the manner disclosed in patent to Rosenmund No. 1,933,031 of October 31, 1933.

After the side wall blank as shown in Figs. 5 and 6 has been completed, the heads are connected to the inner side of the blank as shown in Fig. 3. This connection is perfected by passing two of the bights 8 on the head through the grooves 9 in a cleat 2 and bending the bights 8 over the side binding wire 3. The one piece shook thus formed may be shipped to the user in the flat, a number of such one piece shooks being bundled together for shipment.

When the one piece shook reaches the user he raises the two heads in the manner shown in Fig. 4 and then folds the side walls into barrel form, inserting the bights 8 on the heads through the grooves 9 in the side cleats of alternate sections and bending the bights 8 over the side binding wires 3 as shown in Fig. 2. When the heads have been thus secured to the side sections, leaving one of the side sections raised as shown in Fig. 2, the container may be filled through the opening in the side. When the contents have been inserted, the raised side section may be lowered into closing position and the bights 10 on the side binding wires 3 interengaged to close the barrel, as shown in Fig. 1.

The barrel on reaching its destination may be unloaded by disengaging the bights 10, raising one of the side sections to the position shown in Fig. 2 and removing the contents through the side opening thus provided.

The barrel may then be reduced to the flat one piece shook by disengaging the bights 8 on the heads from all but one side section.

Referring to Figs. 11 to 14 inclusive a construction is shown in which the sections of side material 1, as shown in Figs. 1 to 10, are replaced by a single integral sheet of fiberboard or the like, long enough to provide a continuous side wall for the barrel. When fiberboard is used it is preferably creased at potential box corners as shown at 11 in Fig. 14 to facilitate the bending of the material.

Such integral side material is desirable for the shipment of commodities requiring tight containers free from openings.

Barrels of the type disclosed herein save much

space in storage and in transit. For example, barrels of the stave type having a capacity of 7,056 cubic inches occupy approximately one and one-quarter times as much space as barrels of the type disclosed herein having the same capacity. Moreover, barrels of the stave type cannot readily be shipped to the user in the flat, while the barrel disclosed herein may be shipped in the flat as a one piece shook and can be stored in the flat until used. Barrels of the stave type having a capacity of 7,056 cubic inches occupy eight times as much storage space as is required for one piece shooks of the type herein disclosed and which when assembled into barrel form have the same capacity as the stave barrel.

The coordination of the wires on all sides of the barrel disclosed herein permits the use of thinner and hence lighter wooden materials.

The side opening feature of the invention permits a ready opening and closing of the barrel without special tools and without injury to any portion of the barrel.

While in the illustrative embodiment of the invention, openings in the side sections to receive the ends of the head binders are provided by forming grooves 9 in the cleats, it will be understood that suitable openings may be provided in other ways, for example, by cutting out a portion of the side sheet 1 adjacent a cleat 2 to form an opening in the side section through which the binder on the head may be passed.

Having described the invention, what is claimed is:

1. A barrel construction comprising, in combination, eight side wall sections and two heads, each side wall section consisting of a sheet or sheets of side material and an interior cleat secured thereto at or adjacent each end thereof, whereby the cleats of the several sections form a supporting frame at each end of the barrel, the cleats of alternate sections being grooved at two places to provide two openings between the cleat and the side material secured thereto, wire bindings encircling and secured to the side wall sections and provided with interengageable bights at their ends, whereby the bights may be interengaged to close the barrel and disengaged to permit raising one of the side sections to open the barrel, a pair of spaced wires secured to and extending across each head, a second pair of spaced wires secured to and extending across the head substantially at a right angle to the first pair of wires, each end of each head wire being provided with a bight which extends through a groove in a cleat and is bent over onto the exterior of a side section, whereby the wires on each head pass through the side wall sections at eight points spaced about the periphery of the barrel and connect the head to the side walls at those points while leaving a side wall section adjacent the interengageable bights free of attachment to the heads to permit opening the barrel through one of its side wall sections.

2. A barrel construction comprising, in combination, eight side wall sections and two heads, each side wall section consisting of a sheet or sheets of side material and an interior cleat secured thereto at or adjacent each end thereof, whereby the cleats of the several sections form a supporting frame at each end of the barrel, the cleats of alternate sections being grooved to provide openings between the cleat and the side material secured thereto, flexible bindings encircling and secured to the side wall sections and provided with interengageable fastenings at their

ends whereby the fastenings may be interengaged to close the barrel and disengaged to open the barrel, a plurality of spaced wires secured to and extending across each head, a second plurality of spaced wires secured to and extending across the head substantially at a right angle to the first plurality of wires, each end of each head wire extending through a groove in a cleat and being bent over onto the exterior of a side section whereby the wires on each head pass through the side wall sections at points spaced about the periphery of the barrel and connect the head to the side wall at those points while leaving a side wall section adjacent the interengageable fastenings free of attachment to the heads to permit opening the barrel through one of its side wall sections.

3. A barrel construction comprising, in combination, at least six side wall sections and two heads, each side wall section consisting of a sheet or sheets of side material and an interior cleat secured thereto at or adjacent each end thereof, whereby the cleats of the several sections form a supporting frame at each end of the barrel, certain of the oppositely disposed side wall sections being provided with openings through which binders secured to a head may be passed, flexible binders encircling and secured to the side wall sections and provided with interengageable fastenings at their ends whereby the fastenings may be interengaged to close the barrel and disengaged to open the barrel, a plurality of spaced binders secured to and extending across each head, a second plurality of spaced binders secured to and extending across the head at an angle to the first plurality of binders, each end of each head binder extending through an opening in a side wall section and being bent over onto the exterior of the side wall section whereby the binders on each head pass through side wall sections at points spaced about the periphery of the barrel and connect the head to the side walls at those points while leaving a side wall section adjacent the interengageable fastenings free of attachment to the heads to permit opening the barrel through one of its side wall sections.

4. In a barrel construction the combination of at least six foldably related side wall sections connected together by encircling flexible binders secured thereto and provided with releasable fasteners at their ends whereby a side wall section may be raised to provide a side opening through which the contents of the barrel may be inserted or removed, and a head located within the side wall sections at each end of the barrel and secured to four oppositely disposed side wall sections by a plurality of flexible binders crossing each other and secured to the head and extending thereacross and passing through oppositely disposed side wall sections whereby at least one side wall section may be opened and closed without disturbing the attachment of the head to the other side wall section.

5. In a barrel construction the combination of a foldable side wall consisting of an integral sheet of side material, eight foldably related interior end cleats, and exterior flexible binders secured to the sheet and cleats and provided with releasable fasteners at their ends whereby a portion of the foldable side wall may be raised

to provide a side opening through which the contents of the barrel may be inserted or removed, certain oppositely disposed cleats being grooved to provide an opening between the cleat and the sheet of side material, and a head located within the side wall on each end of the barrel and secured to the side wall by a plurality of flexible binders crossing each other and secured to the head and extending thereacross and passing through grooves in oppositely disposed cleats.

6. In a barrel construction the combination of a foldable side wall consisting of an integral sheet of side material, at least six foldably related interior end cleats, and exterior flexible binders secured to the sheet and cleats and provided with releasable fasteners at their ends whereby a portion of the foldable side wall may be raised to provide a side opening through which the contents of the barrel may be inserted or removed, the side wall being provided adjacent each end with a plurality of oppositely disposed spaced openings, and a head located within the side wall at each end of the barrel and secured to the side wall by a plurality of flexible binders crossing each other and secured to the head and extending thereacross and passing through oppositely disposed openings in the side wall.

7. A one piece barrel shooK comprising, in combination, eight foldably related side wall sections each consisting of a sheet or sheets of side material and an interior cleat secured to each end thereof, the several sections being connected together in foldable relationship by flexible binders secured thereto and provided at their ends with interengageable fasteners, two eight-sided heads each provided with a plurality of flexible binders secured thereto and extending thereacross, and a second plurality of flexible binders secured thereto and extending thereacross at an angle to the first plurality of flexible binders, one end of one or more of said flexible binders being passed through a side wall section adjacent one end thereof and bent over onto the exterior of said side wall section to connect the head to that section, whereby the side wall sections and the heads so secured thereto may be shipped in the flat to the user and readily assembled by the user into barrel form.

8. A one-piece barrel shooK comprising, in combination, at least six foldably related side wall sections each consisting of a sheet or sheets of side material and an interior cleat secured to each end thereof, the several sections being connected together in foldable relationship by flexible binders secured thereto and provided at their ends with interengageable fasteners, two heads each provided with a plurality of flexible binders secured thereto and extending thereacross and a second plurality of flexible binders secured thereto and extending thereacross at an angle to the first plurality of flexible binders, one end of one or more of said flexible binders being passed through a side wall section adjacent one end thereof and bent over onto the exterior of said side wall section to connect the head to that section, whereby the side wall sections and the heads so secured thereto may be shipped in the flat to the user and readily assembled by the user into barrel form.

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