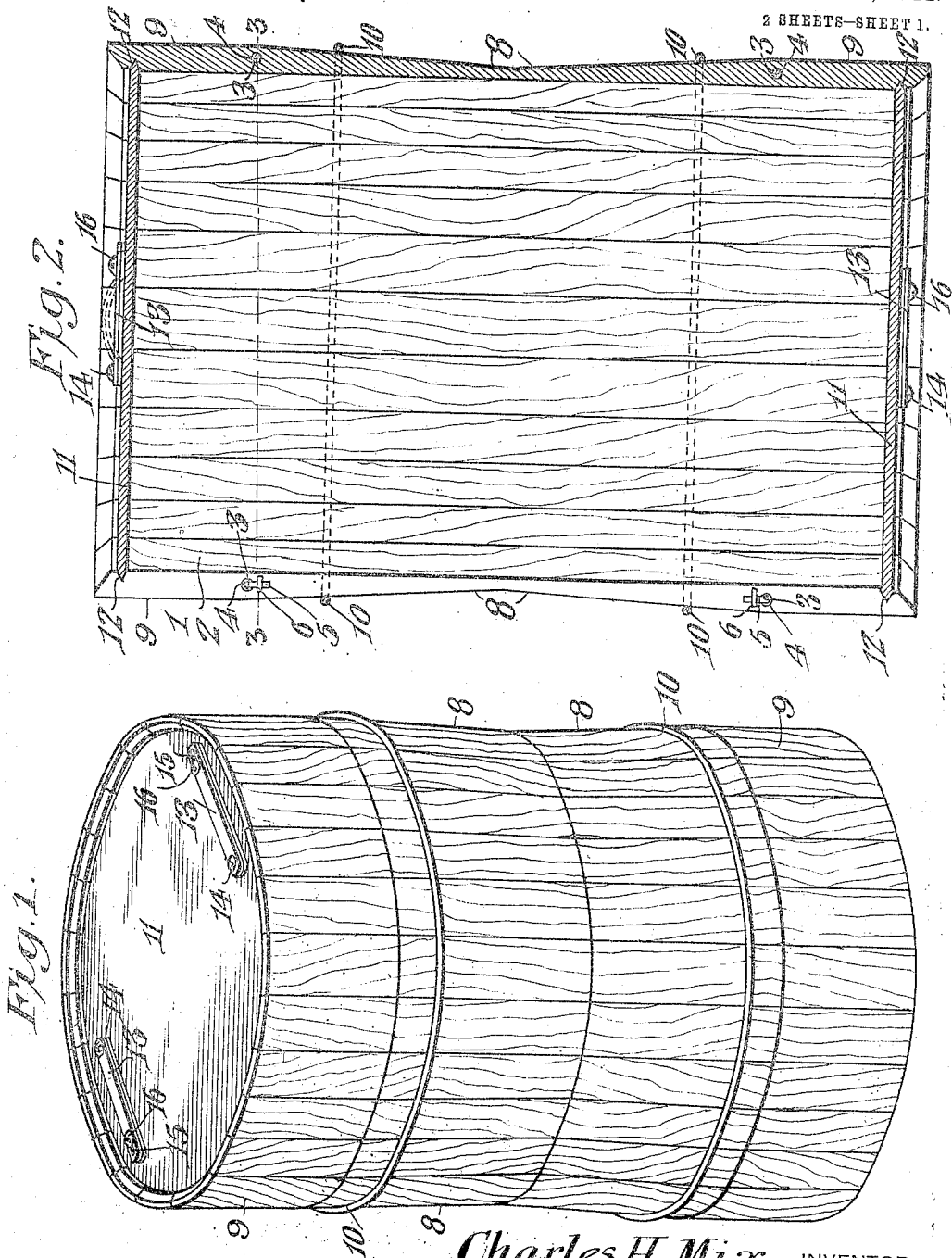


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C. H. MIX.
KNOCKDOWN BARREL.
APPLICATION FILED OCT. 19, 1910.

Patented Feb. 7, 1911.

2 SHEETS-SHEET 1.



WITNESSES

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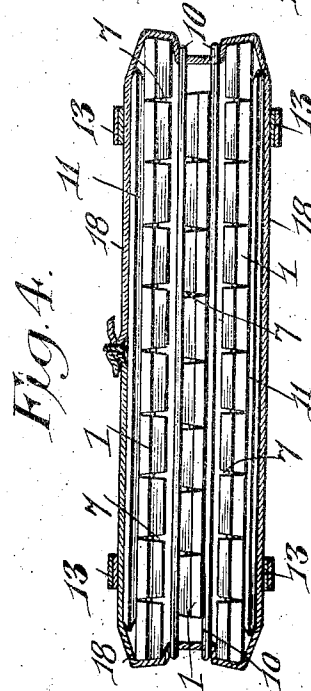
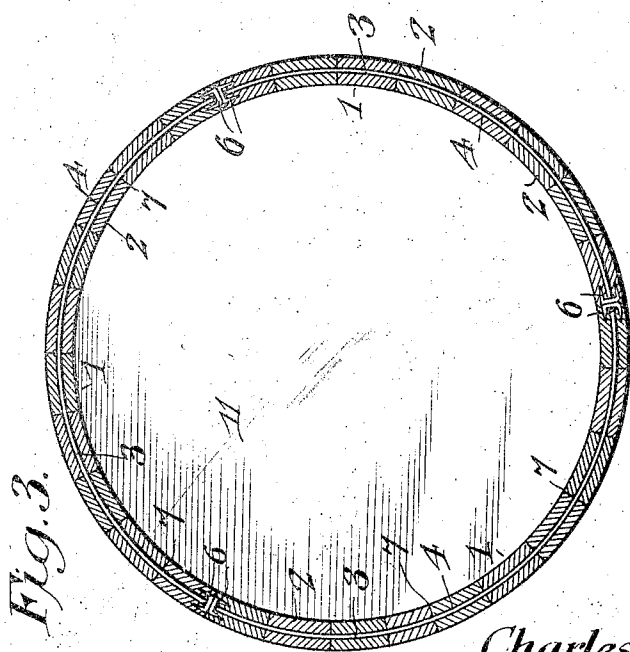
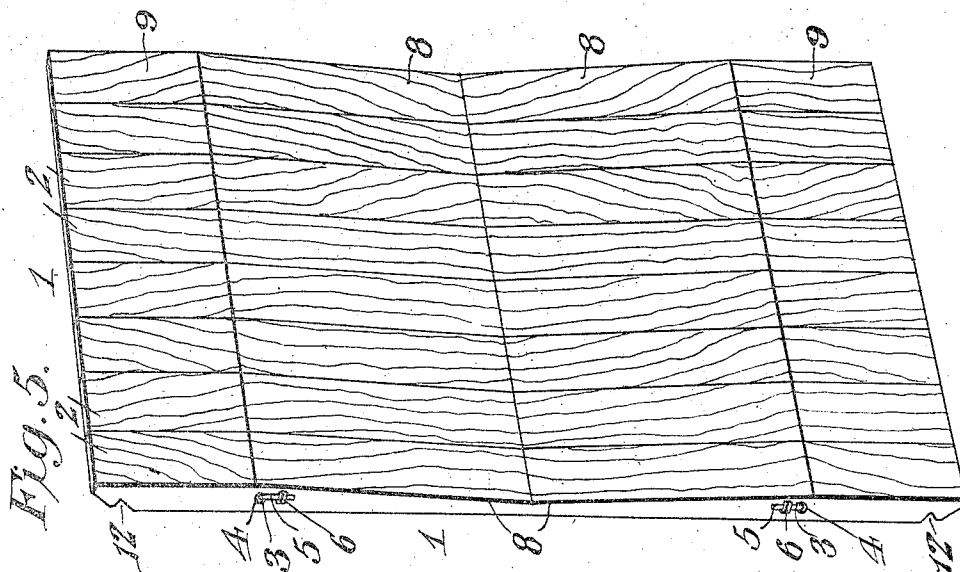


Fig. 3.

Fig. 4.

WITNESSES

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KNOCKDOWN BARREL.

983.300.

Specification of Letters Patent. Patented Feb. 7, 1911.

Application filed October 19, 1910. Serial No. 588,004.

To all whom it may concern:

Be it known that I, CHARLES H. MIX, a citizen of the United States, residing at Renovo, in the county of Clinton and State of Pennsylvania, have invented certain new and useful Improvements in Knockdown Barrels, of which the following is a specification.

The invention relates to improvements in knock-down barrels.

The object of the present invention is to improve the construction of barrels, and to provide a simple, inexpensive and efficient knock-down barrel of great strength and durability, adapted to effect a saving in time, labor and material in the construction of barrels and in handling the same, and capable of being quickly set up for use and of being readily opened at either end, and of also being knocked-down and arranged in a compact bundle for shipping or storing.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a perspective view of a knock-down barrel, constructed in accordance with this invention. Fig. 2 is a central vertical sectional view of the same. Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 2. Fig. 4 is an end elevation, the barrel being knocked-down and arranged in the form of a bundle for shipping and storing. Fig. 5 is a perspective view of one of the sections of the body of the barrel.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

In the embodiment of the invention illustrated in the accompanying drawings, the body of the barrel comprises in its construction a plurality of sections 1 of staves 2, constructed of any suitable material and connected together by interiorly arranged wires 3, passing through registering perforations 4 of the staves and having their

terminals 5 embedded in the side edges of the end staves of the sections and secured to the same by staples 6; or other suitable fastening means. In the barrel illustrated in the accompanying drawings, the staves of the sections 1 are connected by two wires, arranged at the end portions of the staves, but more than two connecting wires may be employed, if desired, and the wires may be passed through the staves at any desired point. The wires flexibly connect the staves and enable the sections to be readily bowed in setting up the barrel for use and also to be arranged flat when collapsing the barrel. The staves, which are preferably curved transversely, have vertical inner faces and are tapered radially to form inwardly converging side edges 7 for enabling them to be arranged in circular form, and to provide a tight barrel, as clearly illustrated in Fig. 3 of the drawings. The staves are also provided with oppositely tapered intermediate portions 8, forming inclined outer faces, extending from the end portions 9 of the staves to the center thereof, the intermediate portions of the staves being tapered inwardly and provided with reversely arranged wedge-shaped portions for cooperating with encircling hoops 10. The staves by being exteriorly reduced to form the taper enable the hoops to be arranged at the center of the barrel in assembling the sections, and after the sections have been properly placed together the hoops are adapted to be driven outward over the tapered or wedge-shaped portions of the staves, whereby the sections are firmly secured together and the ends or heads 11 of the barrel retained in the grooves 12. The hoops are preferably constructed of round metal, as they may be readily driven inwardly and outwardly over the tapered or wedge-shaped portions of the staves, but they may be constructed of any other suitable material, as will be readily understood. In assembling the sections of the barrel, their side portions are arranged in slightly overlapping relation to permit the hoops to be passed over the end portions of the barrel to the center thereof, and the exteriorly reduced central portion of the barrel will permit the sections to be properly assembled while the hoops are at the center. Also the tapered intermediate portions of the barrel permit the latter to be readily knocked down and either one or both heads

may be removed by loosening one or both hoops.

The barrels may be made of any size and in the heavier class of barrels or packages, they may be equipped with a greater number of hoops to adapt the barrel to the weight of its contents. As the connecting wires are interiorly arranged and as the heads are detachably clamped in the groove of the barrel, there are no nails, screws, or other fastening devices to project from the interior of the barrel, and the latter may be employed for shipping contents of any character. The straight character of the staves form a cylindrical barrel, which enables a car load of barrels to be packed more tightly and securely and with less liability of injuring their contents than a load of ordinary barrels having bulging sides. Also by arranging the hoops on the inwardly tapered portions of the staves at points intermediate of the ends of such tapered portions, the loss of a hoop from the barrel is effectually prevented.

The heads or ends of the barrel may be constructed of any suitable material and may be made either solid, as shown, or be constructed of layers or sheets of veneer, and they are each equipped with opposite handles 13, consisting of strips of spring steel, or other suitable material, secured at one end to the heads by screws 14, or other suitable fastening devices and provided at the other end with a slot 15 in which a screw 16, or other suitable fastening device is arranged. The screw 16 is sufficiently loose to permit the handle to be bowed, as illustrated in dotted lines in Fig. 2 of the drawings, the slot permitting the necessary sliding movement of one end of the handle to enable the same to be drawn downward for use. The handles may be readily grasped and bowed outward by a person handling the barrels, and they are adapted to lie flat against the outer faces of the heads and within the chime. This arranges them out of the way and prevents them from being injured.

When the barrel is knocked down, the sections are straightened out and arranged in a stack or pile with the hoops between them, and the heads at the top and bottom of the stack. The parts of the barrel are then tied together at each end of the stack by a cord or rope 18, which is extended around the bundle and passed through the hoops and the handles, as clearly shown in Fig. 4. The parts of the collapsed barrel may of course be secured in a compact bundle or package by any other suitable means, and when in this condition the barrel may be compactly stored and it may also be shipped to the

buyers and returned to the shippers at a much lower rate than an ordinary barrel. The barrels after use do not have to be destroyed, but may be used over and over again until worn out, and should one or more staves of a section become broken or otherwise injured, they may be readily replaced by new staves, as the staves or members of the sections may be readily unstrung by unfastening the attaching terminal members of the connecting wires. When required by the character of goods to be shipped, the barrel may be provided with ventilating perforations or openings without materially impairing its strength.

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

1. A collapsible barrel including staves provided with inwardly tapered or wedge-shaped portions, hoops engaging the wedge-shaped portions and movable outwardly and inwardly on the same to tighten and loosen the staves.
2. A collapsible barrel including staves provided with reversely arranged inwardly tapered portions forming an exterior recess, and hoops engaging the tapered portions of the staves, the latter being adapted to receive the hoops in the said recess in assembling the staves.
3. A collapsible barrel including staves having vertical inner faces and exteriorly reduced at their outer faces to form inwardly tapered wedge-shaped portions and to provide an exterior hoop receiving recess, and hoops engaging the tapered portions of the staves and movable inwardly and outwardly on the same to tighten and loosen the said staves.
4. A collapsible barrel including staves having opposite inwardly tapered wedge-shaped portions, heads detachably interlocked with the staves, and hoops engaging the wedge-shaped portions of the staves and movable outwardly and inwardly on the same to clamp and release the heads.
5. A collapsible barrel including a plurality of separable sections consisting of flexibly connected staves having vertical inner faces and exteriorly reduced to form inwardly tapered wedge-shaped portions, heads interlocked with the staves, and hoops arranged on the tapered portions of the latter and movable outwardly and inwardly to clamp and release the heads.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. MIX.

Witnesses:

W. E. SHAFER,
DELL CROSS.