(No Model.)

J. F. RICH.

FLAT WOODEN HOOP.

No. 410,446. Patented Sept. 3, 1889.

Fig. 1.

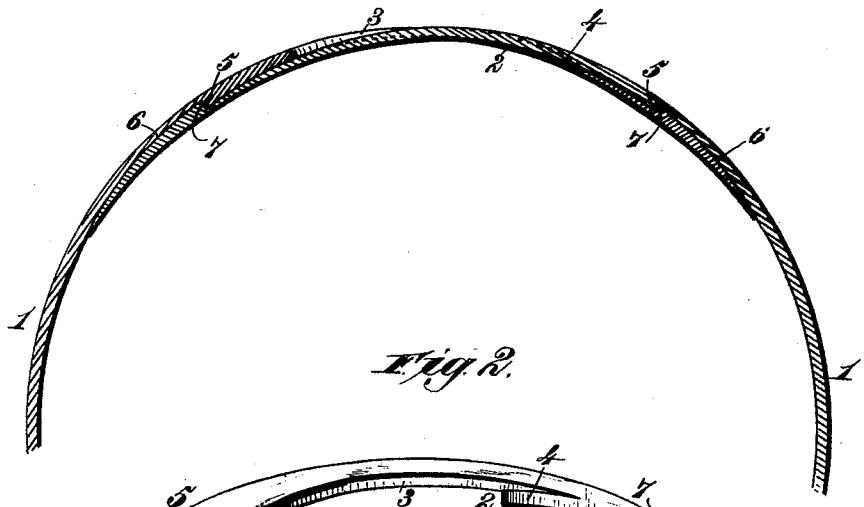


Fig. 2.

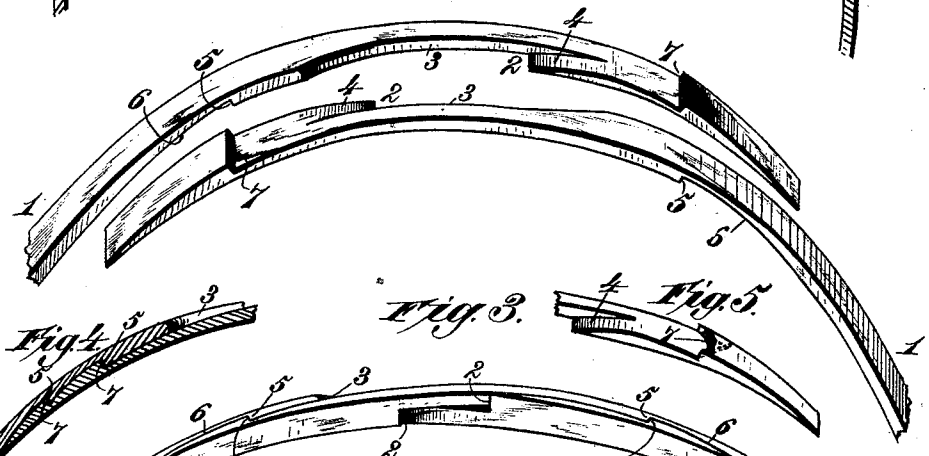


Fig. 4.

Fig. 3.

Fig. 5.

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UNITED STATES PATENT OFFICE.

JOHN F. RICH, OF SUMMERTOWN, ASSIGNOR OF TWO-THIRDS TO LUTHER L. FRIERSON, OF MOUNT PLEASANT, TENNESSEE.

FLAT WOODEN HOOP.

SPECIFICATION forming part of Letters Patent No. 410,446, dated September 3, 1889.

Application filed February 11, 1889. Serial No. 299,431. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. RICH, a citizen of the United States, residing at Summertown, in the county of Lawrence and State of Tennessee, have invented new and useful Improvements in Flat Wooden Hoops, of which the following is a specification.

My invention relates to certain improvements in the construction of wooden hoops for barrels, casks, and other similar uses; and the purpose thereof is to provide a simple and novel construction whereby the engaging ends of the hoop may be lapped one upon the other without materially increasing the thickness of the lapped portion, and whereby, also, the engaging ends may be so connected together as to offer a resistance to any bursting strain, the locking engagement of the ends being promoted and rendered more secure by the increased outward strain upon the hoop.

It is also the purpose of my invention to remove the locking strain from the interlocking or lapping notches of the hoop, and thereby avoid the well-known tendency to splitting caused by the radial or bursting strain being thrown upon a hoop which is united only by the notches cut in its opposite edges near the ends to permit the extremities to be lapped one upon the other.

It is also the purpose of my invention to provide a flat wooden hoop in which the ends are underlapped upon the opposite meeting or engaging portions and are so constructed as to not only permit this underlying engagement without increase in thickness, but also to avoid the danger of longitudinal splitting, as well as to obviate the liability of disengagement of the lapped ends caused by a blow or strain applied at an angle to the plane of the hoop.

It is my purpose, finally, to provide a flat wooden hoop which shall have such construction that it may be positively locked without material increase of thickness throughout the lapped portion, which shall require no nailing or other independent fastening in order to preserve the engagement of the lapping ends, and in which the ends shall be underlapped one upon the other and locked together with a positive and firm engagement without detracting from the strength of the material employed.

The invention consists in the several novel features of construction hereinafter fully set forth, and then definitely pointed out in the claims following this specification.

Referring to the accompanying drawings, Figure 1 is a central section of a hoop showing my invention. Fig. 2 is a detail perspective of the hoop, showing the engaging ends detached. Fig. 3 is a partial perspective looking toward the inner face of the hoop. Figs. 4 and 5 are views showing modifications in construction.

In the said drawings, the reference-numeral 1 designates the wooden body of the hoop, constructed in the usual manner. Removed by a suitable distance from each extremity is the usual transverse notch or gain, forming upon each portion a transverse edge 2, covering about half the width of the hoop, the lower end of said shoulder being met by an inclining or angular cut forming the edge 3. The outer face of each transverse edge 2 is chamfered or trimmed down, as shown at 4, Fig. 2, in order to permit the overlapping end portions to engage one with the other without materially increasing the thickness of the hoop at these points.

Upon the inner face of the hoop, at some distance from the transverse edges 2, are formed shoulders 5, having any suitable height, the wood of the inner face being cut away for a short distance to form a recess 6, which constantly deepens as it approaches the shoulder. This shoulder is adapted to engage an oppositely-formed shoulder 7, located at a short distance from the extreme end of ths hoop, which is tapered off to lie in the deepening recess 6 without producing any material increase in thickness. This construction may be duplicated upon the other end of the hoop, and the shoulder or shoulders 5 are so located upon the inner face that when the ends are overlapped and the shoulders 7 are engaged therewith the transverse edges 2 of the lapping notches will be separated one from another, as shown, thus avoiding the tendency to split so frequently observed in the old form of hoop, wherein the

lock is effected by means of these transverse edges only.

Inasmuch as the locking-shoulders 5 are formed upon the inner face of the hoop, it will be seen that the strain produced by driving said hoop upon the barrel or cask will more firmly engage these shoulders with the interlocking shoulders 7 on the overlapping ends. Inasmuch, also, as the transverse edges 2 are separated from each other, no part of the strain falls thereon, and I am thus enabled to employ the chamfers 4, and thereby lap the ends without very perceptibly increasing the thickness of the lapped portion of the hoop. I obtain at the same time a simple, quickly-adjusted, strong, and neat-appearing lock for wooden hoops which will resist all strain, which will not split, and in which any increase of strain on the hoop will more firmly unite the interlocking members or ends thereof. Moreover, by my invention I am able to extend the locking-shoulders completely across the width of the hoop, and thereby afford an extent of locking engagement capable of resisting any strain which may be applied, any increase of radial or bursting strain producing a more perfect engagement of the locking-shoulders upon which the strain falls.

Heretofore in hoops of this class the overlapping portions have usually been interlocked by the notches or gains 2, and any considerable strain applied thereto has been extremely liable to cause the hoop to split at or about its longitudinal line. This tendency has prevented the chamfering of the outer faces of the hoop, whereby the thickness of the lapped portion of the hoop is considerably more than that of the body of the hoop. While this increase in size is unsightly and objectionable, for other reasons it does not prevent the tendency to split already mentioned.

It should be noted that while I prefer to so locate the locking-shoulders 7 that the lapping notches 2 shall be separated, I may, nevertheless, so locate said shoulders that these notches shall have positive engagement one with another, the locking strain being thus distributed partly upon the locking-shoulders and partly upon the lapping notches.

By this invention all nails or similar fastenings for the purpose of preserving the engagement of the meeting ends of the hoop are wholly avoided, as the construction described and shown furnishes a strong, positive, and durable lock, by which the danger of displacement and release of the ends of the hoop, caused by a blow or strain applied at an angle, is wholly avoided.

In the flat wooden hoops heretofore used it has been necessary to use nails to retain the overlapping ends of the hoop in place, and in sliding the barrels from place to place these hoops are frequently released. My invention not only avoids this objection, but it provides a cheap, strong, and positively-locked flat wooden hoop, capable of resisting any strain, and requiring no other nailing than that necessary to retain it in place upon the barrel.

Throughout the preceding description I have repeatedly referred to my invention as being especially applicable to flat wooden hoops. This term is used in contradistinction to what is commonly known as a round wooden hoop, which is, strictly speaking, a half-round hoop, or one approximating that form, split from a pole in the manner familiar to the trade for many years. While I designate my invention as an improvement in flat wooden hoops, I intend that this term shall be understood as meaning a hoop which is substantially flat upon both sides, or upon its interior and exterior surfaces, although its outer edges or angles may be beveled or chamfered to cause its exterior face to approximate a convex or half-round surface. These hoops are well known to the trade as flat wooden hoops, the same being an article distinct from the half-round wooden hoop rived from a sapling, the outer undressed face of which forms the exterior convex face of the hoop.

Instead of a single shoulder 7, I may use two or more of such shoulders upon each lapping extremity, as shown in Fig. 4. I may also cut the shoulder or shoulders at an angle or beveling, as indicated by the dotted line *i*, Fig. 5, the engaging-shoulder being cut upon the opposite angle or bevel, whereby the tendency to lateral displacement or disengagement or springing apart of the lapping ends is counteracted. I may also prevent lateral displacement in either direction by cutting said shoulder upon the arc of a circle, or with a concave face, as shown by full lines in said Fig. 5, the engaging-shoulder being so shaped as to fit therein.

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

1. A flat wooden hoop, the overlapping ends whereof are provided with lapping notches extending partly across the width of the hoop, forming transverse edges, each of which has a chamfer upon its external face, substantially as described.

2. A wooden hoop having its overlapping ends notched, and provided upon one or both ends with shoulders on the inner face of the hoop, said shoulders engaging with oppositely-formed shoulders near the ends of the lapped portions and upon the outer faces thereof, said shoulders being so located that when engaged the transverse edges of the lapping notches are held out of contact or engagement with each other, substantially as described.

3. A wooden hoop having the lapping notches 2, each provided with a chamfer 4 on its back or external face, and provided with transverse locking-shoulders upon the inner face of said hoop, engaging with oppositely-formed transverse shoulders upon the outer faces of the engaging ends, said shoulders

being so located that the radial or bursting strain shall be substantially removed from the lapping notches 2, substantially as described.

4. A wooden hoop for barrels, casks, and similar purposes, the same having lapping notches 2, the wood being chamfered off upon the external faces of the lapping portions adjacent to said notches, said lapping portions being provided upon their inner faces with transverse shoulders extending entirely across the inner face of the hoop and adapted to engage with opposite shoulders on the external face of the lapping ends, the latter being tapered to lie in the recesses 6 beyond the transverse shoulders, substantially as described.

5. A flat wooden hoop having notches 2, the wood being beveled or chamfered on the exterior faces 4, the lapping portions being provided with interior locking-notches 5 and exterior notches 7, the wood of the extremities of the hoop being cut away to lie in recesses 6, adjacent to the shoulders 5, and the wood of the outer faces of the lapping ends being removed adjacent to the exterior shoulders to permit the engagement thereof with the interior shoulder without increase of thickness, substantially as described.

6. A wooden hoop having notches 2, edges 3, interior shoulders 5, exterior shoulders 7, recesses 6, and tapered extremities lying in said recesses, substantially as described.

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

JOHN F. RICH.

Witnesses:
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G. E. HAMMOND.