No. 833,382. PATENTED OCT. 16, 1906.

L. M. GREIF.

ART OF MANUFACTURING CLEATS FOR BARRELS.

APPLICATION FILED JULY 14, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

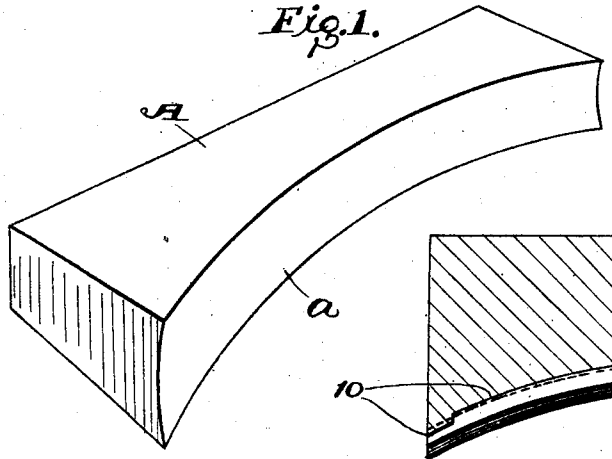


Fig. 3.

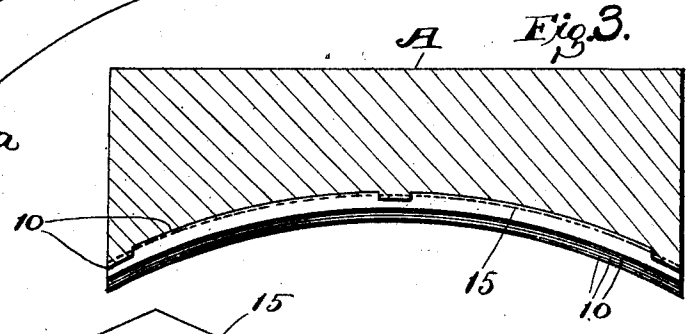


Fig. 2.

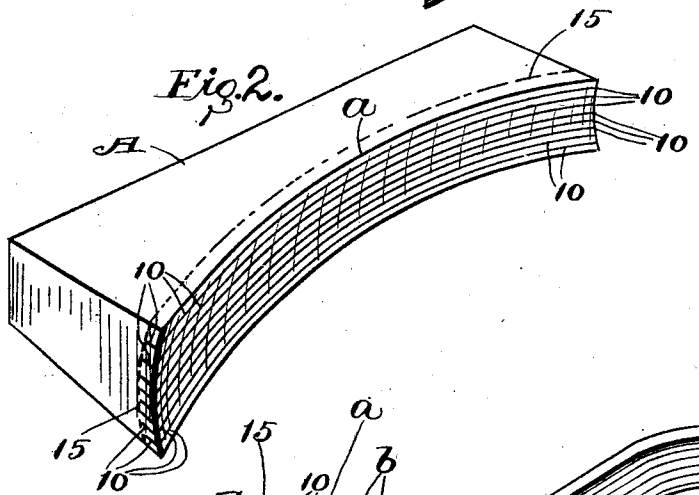
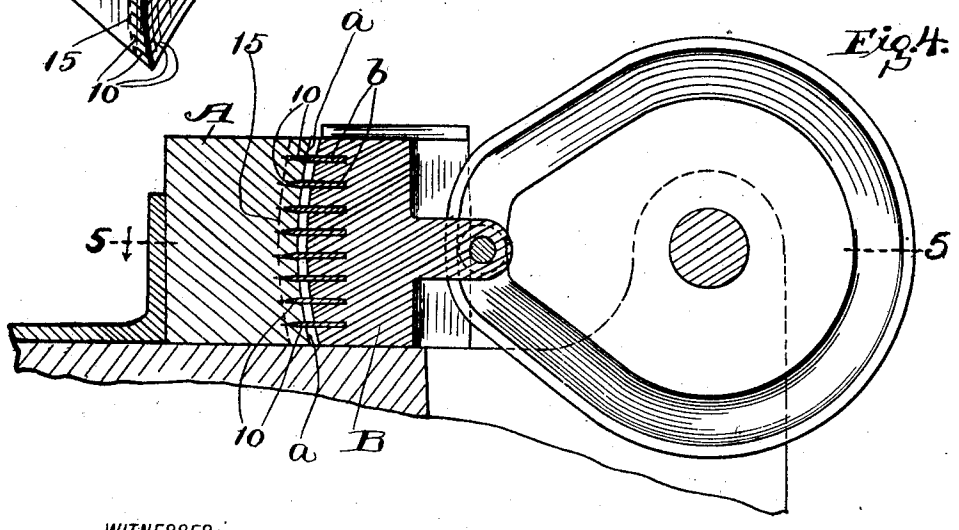


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

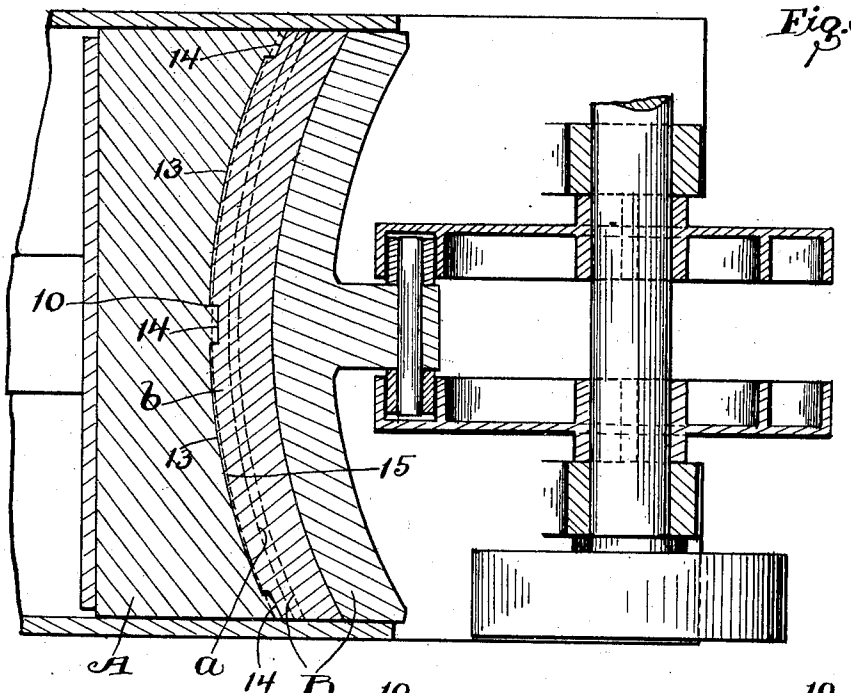


Fig. 6.

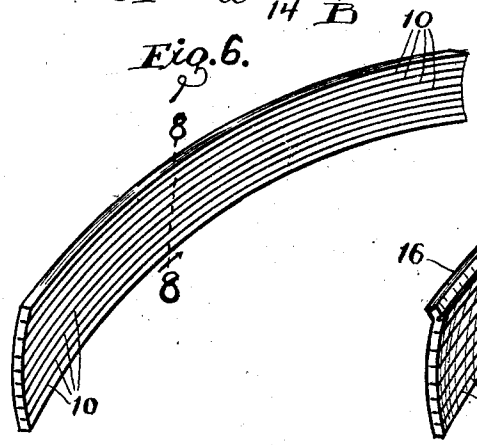


Fig. 7.

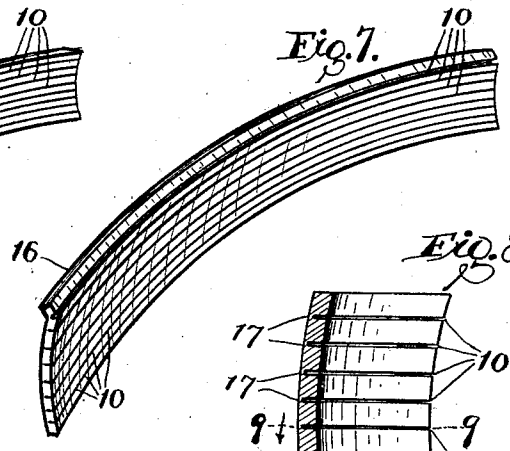
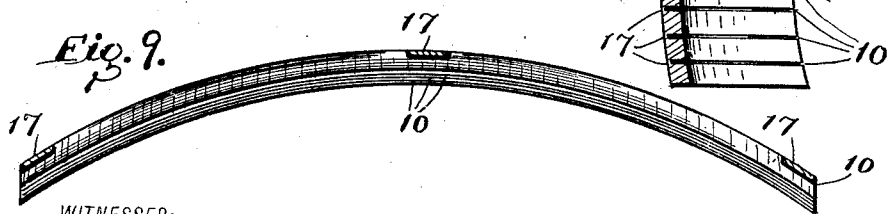


Fig. 8.

Fig. 9.



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ART OF MANUFACTURING CLEATS FOR BARRELS.

No. 833,382. Specification of Letters Patent. Patented Oct. 16, 1906.

Application filed July 14, 1906. Serial No. 326,225.

To all whom it may concern:

Be it known that I, LOUIS M. GREIF, a citizen of the United States of America, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in the Art of Manufacturing Cleats or Liners for Barrels; and I hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

This invention relates to an improved process of manufacturing curved wooden barrel-cleats known in the trade as "liners" for barrels, which liners or cleats are adapted to extend transversely of the sections composing the barrel-heads and reinforce the heads and are curved longitudinally to conform to the curvature of the circumferential edges of the said heads and inner sides of the staves composing the barrels.

The primary object of this invention is to make longitudinally-curved barrel cleats or liners with greater facility and more economically than heretofore.

Another object is to have the cleats or liners retain their shape until utilized and to render them capable of being more conveniently handled for storage or shipment.

With this object in view and to the end of realizing other advantages hereinafter appearing this invention consists in the steps hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of a wooden bolt or block, having a concave face formed on one side of the block. Fig. 2 is a perspective view of the block with the face of the block provided with longitudinal kerfs. Fig. 3 is a longitudinal section of the block illustrated in Fig. 2. Fig. 4 is a transverse section of a block being operated on and illustrates a reciprocatory cutter-head employed in cutting the block simultaneously at suitable intervals transversely of the face of the block. Fig. 5 is a horizontal section on line 5 5, Fig. 4, looking downwardly. Figs. 6 and 7 are views in perspective of slabs cut from the block and having longitudinal kerfs to form cleats or liners. Fig. 8 is a transverse section on line 8 8, Fig. 6, looking in the direction indicated by the arrow. Fig. 9 is a longitudinal section on line 9 9, Fig. 8, looking downwardly. Figs. 8 and 9 are drawn on a larger scale than the remaining figures.

My improved process comprises, first, a wooden bolt or block A, which is to be converted into longitudinally-curved cleats or liners for barrels and has a concave face *a* at one side, which face is curved transversely and has a longitudinal curvature corresponding to the longitudinal curvature of cleats or liners to be made. The face *a* is cut longitudinally from end to end of the block and at suitable intervals transversely of the face to form parallel kerfs 10, which extend longitudinally and from end to end of the face and are suitably spaced transversely of the said face. The kerfs 10 are made simultaneously by the knives *b* of a reciprocatory cutter-head B, which is supported and operated in any approved manner. Figs. 4 and 5 illustrate the formation of the kerfs 10 by the knives *b*. Each knife *b* has alternating long and short cutting edges, as shown in Fig. 5, with the long cutting edges 13 somewhat in advance of the short cutting edges 14. Preferably each knife *b* has three short cutting edges 14, arranged one at each end and the other centrally between the ends of the knife and is provided with two long cutting edges 13, arranged in line endwise between and somewhat in advance of the central short cutting edge and outer short cutting edges. The long cutting edges 13 of each knife *b* are curved to conform to the longitudinal curvature of the face *a*, so that the said cutting edges will during the operation of the cutter-head enter the face *a* at one and the same time from end to end of the cutting edges.

When the kerfs 10 have been made in the block A, a slab which is to be converted into cleats or liners is cut, and thereby removed from the block on curved lines parallel with the transverse and longitudinal curvatures of the face, as indicated by the dotted lines 15 in Figs. 2, 3, 4, and 5, and thereby a correspondingly-curved face formed on the remainder of the block.

The kerfs 10 are made deep enough to facilitate the division into cleats or liners of the slab to be cut from the block, and preferably the kerfs extend from the face *a* far enough into the block to perforate the said slab the whole length of the slab except at the ends and centrally between the ends. In other words, the kerfs 10 are preferably made somewhat shallower at the ends and centrally between the ends than along the remaining portions of the kerfs, so that a slab can be severed from the faced side of the block with a cut

which will intersect with the deeper portions of the kerfs and not with the shallower portions of the kerfs.

Figs. 6, 7, 8, and 9 show a slab which has been cut from the block A, and Fig. 7 illustrates the manner of taking a cleat or liner 16 from the said slab.

It will be observed that my improved process more especially comprises the provision of a wooden block having a curved face or side, then making parallel kerfs in the block longitudinally and from end to end of the said side, with the kerfs somewhat shallower at the ends and centrally between the ends than along their remaining portions, and then severing a correspondingly-curved slab from the said curved side of the block by a cut which will intersect only with the deeper portions of the aforesaid kerfs, so that adjacent cleats or liners of the slab will be attached together, as at 17, Figs. 8 and 9, only at points spaced longitudinally of the cleats or liners.

It is obvious that by my improved process cleats or liners for barrels can be economically manufactured with great facility and without waste of material and that a cleat or liner can be readily removed from a slab cut from the block. The cleats or liners composing the slab are of course left attached together until utilized in the construction of barrels, because slabs are not only more conveniently handled for storage or shipment than separate cleats or liners, but the attachment of several cleats or liners together in the form of a slab is instrumental in the retention by each cleat or liner of the proper curvature or form, especially if the wood is not yet adequately seasoned.

I would also have it understood that my improved process of making cleats or liners for barrels broadly comprises the provision of a bolt or block of wood, cutting and thereby removing slabs successively from a side of the said block, and operating on the said side preparatory to each slab-removing operation as required to form several parallel cleats or liners.

What I claim is—

1. The herein-described process of making longitudinally-curved cleats or liners for barrels, consisting in providing a wooden bolt or block having a face which is curved to conform to the longitudinal curvature of the cleats or liners to be made, then making kerfs in the block which extend longitudinally and from end to end of the face and are spaced transversely of the face and deep enough to facilitate the division into cleats or liners of the slab to be cut from the block, and then cutting and thereby removing a slab from the faced side of the block on a curved line parallel with the longitudinal curvature of the face.

2. The herein-described process of making longitudinally-curved cleats or liners for barrels, consisting in providing a wooden bolt or block having a curved face, then making kerfs in the block which extend longitudinally and from end to end of the face and are spaced transversely of the face and deep enough to facilitate the division into cleats or liners of the slab to be cut from the block, and then cutting a slab from the faced side of the block parallel with the curvature of the face so as to form a correspondingly-curved face on the remainder of the block.

3. The herein-described process of making cleats or liners for barrels, consisting in providing a wooden bolt or block having a curved face, then making kerfs in the block which extend longitudinally and from end to end of the face and are spaced transversely of the face and extend from the face into the block far enough to perforate the greater portion of the slab to be cut from the block, and then cutting and thereby removing a longitudinally-curved slab from the faced side of the block.

4. The herein-described process of making cleats or liners for barrels, consisting in providing a wooden bolt or block having a curved face, then making kerfs in the block which extend longitudinally and from end to end of the face and are spaced transversely of the face and extend from the face far enough into the block to perforate the slab to be cut from the block except at the ends and centrally between the ends, and then cutting and thereby removing the said slab from the block.

5. The herein-described process of making cleats or liners for barrels, consisting in providing a wooden bolt or block; then making parallel kerfs simultaneously in a side of the block, with the kerfs somewhat shallower at the ends and centrally between the ends than along the remaining portions of the kerfs, and then severing a slab from the said side of the block by a cut which will intersect with the deeper portions of the aforesaid kerfs.

6. The process herein described of making cleats or liners for barrels consisting in providing a bolt or block of wood, cutting and thereby removing slabs successively from a side of the block, and operating on the said side preparatory to each slab-removing operation as required to form several parallel cleats or liners, with adjacent cleats or liners attached together at a plurality of points spaced longitudinally of the cleats or liners.

In testimony whereof I sign the foregoing specification in the presence of two witnesses.

LOUIS M. GREIF.

Witnesses:
C. H. DORER,
B. C. BROWN.