Mar. 5, 1929. W. A. BOWMAN 1,703,866

METHOD OF MAKING HOOPS

Filed May 11, 1926

FIG. 1

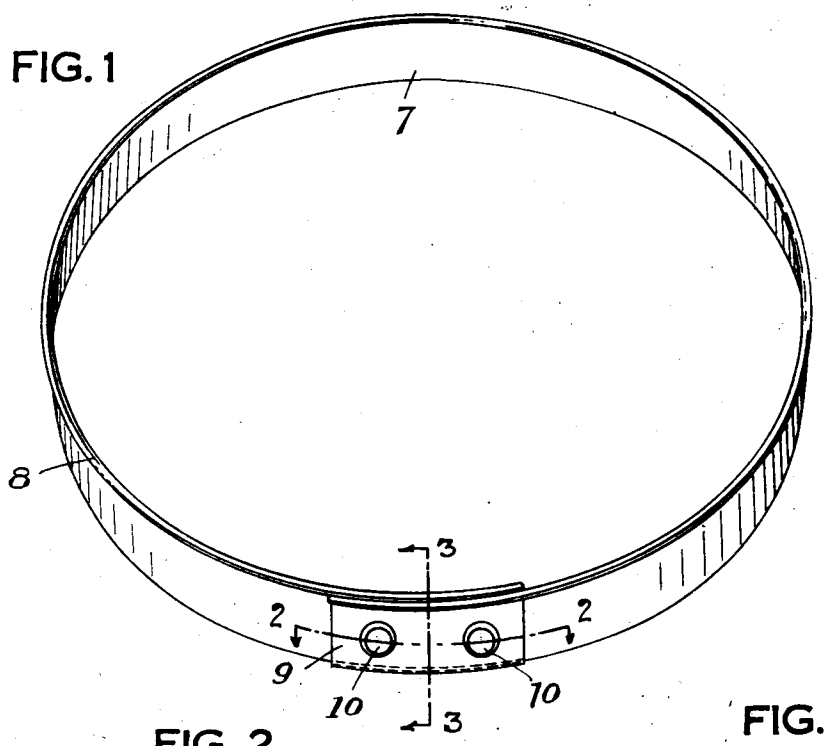


FIG. 2

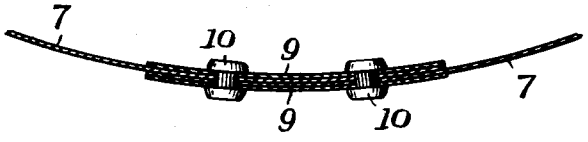


FIG. 3

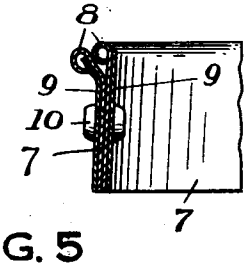


FIG. 4

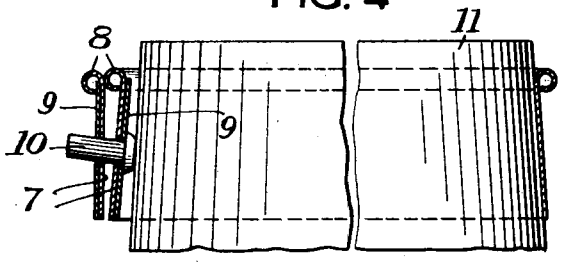


FIG. 5

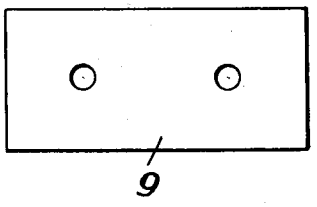
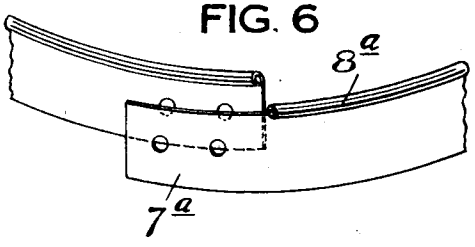


FIG. 6



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Patented Mar. 5, 1929. 1,703,866

UNITED STATES PATENT OFFICE.

WILLIAM A. BOWMAN, OF DORMONT, PENNSYLVANIA.

METHOD OF MAKING HOOPS.

Application filed May 11, 1926. Serial No. 108,248.

My invention relates to hoops and methods of making the same, and particularly to hoops of flared form such as are employed for barrels or casks.

In the manufacture of barrel hoops, and particularly those having a bead on one edge thereof, it is customary to join the ends of a steel band in such manner that the hoop thereby formed is substantially cylindrical. The hoop is then placed upon a former having the contour of the barrel upon which the hoop is to be used, and the hoop forced down on the former until the lower edge thereof is stretched slightly beyond the elastic limit of the metal. The hoop then has the necessary flare or taper so that it will snugly fit the barrel to which it is applied.

The ends of such hoops have customarily been secured together by rivets. Owing to the weakening effect produced by the rivet holes in the ends of the hoop band, the band has been formed of much heavier steel than would be required to withstand the strains to which the hoop is subjected when in use upon a barrel, because the flaring operation would cause the tearing apart of the ends of a relatively light band that would be sufficient to support the staves of the barrel.

One object of my invention is to provide a method whereby hoops for barrels of a given capacity may be made of much lighter material than heretofore, with consequent saving in expense.

A further object of my invention is to simplify and improve the manufacture of beaded hoops.

Still another object of my invention is to provide a hoop of improved form.

One manner in which my invention may be practiced is shown in the accompanying drawing wherein Fig. 1 is a perspective view of a hoop made in accordance with my invention; Fig. 2 is a view taken on the line 2—2 of Fig. 1; Fig. 3 is a view on the line 3—3 of Fig. 1; Fig. 4 is an elevational sectional view showing one step in the process of forming a hoop; Fig. 5 is a view of one of the strengthening plates which I employ; and Fig. 6 is a view similar to Fig. 1, but showing a modified form of hoop band.

Referring further to the drawing, the hoop shown consists of a metal band 7 having a beaded upper edge 8, and flaring slightly downwards so as to fit the tapering sides of a barrel to which it is to be applied.

The band 7 is preferably of such gauge that it will not have strength greatly in excess of what is required to support the staves of a barrel on which it is used. A reinforcing plate 9 of steel or other suitable material is secured to each of the ends of the band 7, by spot welding, or otherwise. The ends of the band are attached to the plates and are then secured together by rivets 10, which are passed through holes provided for that purpose, and the band then pressed downwardly upon a tapering former 11 in a manner well known to the art, to stretch the lower edge of the band and thereby produce the desired flare. The hoop can then be removed from the former and applied to the barrel.

While I have described the plates 9 as being welded to the ends of the band 7, they may be secured to the bands by another suitable means or held in place by the rivets 10, although in the latter case the joint would not have the degree of strength secured by a weld. Likewise, a plate could be disposed between the overlapping ends of the band instead of against one of the faces thereof.

Referring to Fig. 6, I have shown the ends of a beaded hoop band of modified form. The end 7^a of this band is cut away at its upper edge and the bead 8^a terminates at this cut-away portion. The cut-away portion lies beneath the opposite end of the bead 8^a, and the ends of such bead are in abutting relation with one another, instead of being overlapped as shown in Figs. 3 and 4 wherein although the overlapped portions of the beads are usually flattened, they still cause the joint to be unnecessarily bulky.

Another advantage secured by the cutting away of the upper edge of the band of Fig. 6 arises from the fact that if such cut-away portion is strengthened as by application of a plate 9, it may be grasped and the band drawn through a bead-forming die, thus enabling the bead to be formed in a single operation instead of requiring several passes through bead-forming tools as in the present practice. The addition of the strengthening plate prevents tearing off of the narrowed end portion of the band by the great force which is required to draw the band through a bead-forming die. The reinforcing plate will of

course also serve to strengthen the band during the stretching or flaring operation above referred to.

Various other changes in detail and general arrangement may be made without departing from the spirit and scope of the invention, as defined in the accompanying claims.

I claim as my invention:

1. The method of forming hoops, which comprises joining the ends of a band and reinforcing said ends to a degree that the joint will withstand the force required to stretch the body portion of the band, and thereafter expanding the hoop by stretching the same, while held by said ends.

2. The method of forming hoops, which comprises welding strengthening plates to the ends of a band, joining said ends, and thereafter expanding the hoop by stretching the same.

In testimony whereof I, the said WILLIAM A. BOWMAN, have hereunto set my hand.

WILLIAM A. BOWMAN.