April 13, 1937. R. W. BARBEE 2,077,347

BARREL HOOP

Filed March 22, 1935

Fig. 1.

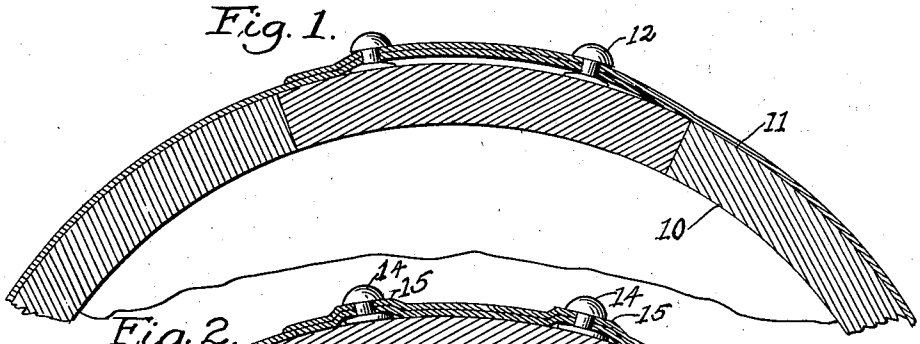


Fig. 2.

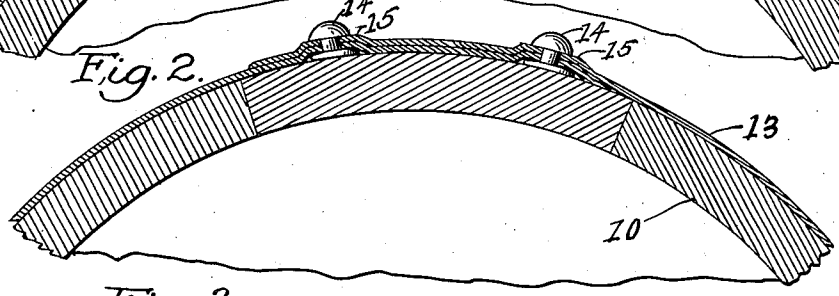


Fig. 3.

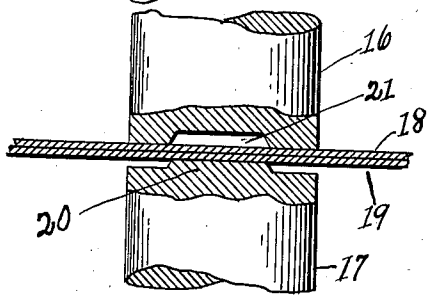


Fig. 4.

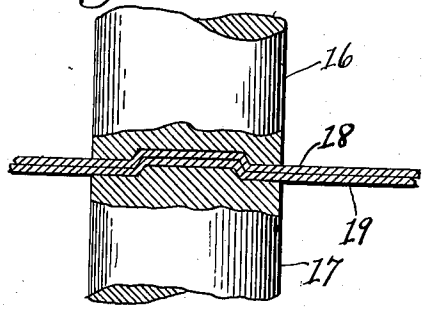


Fig. 5.

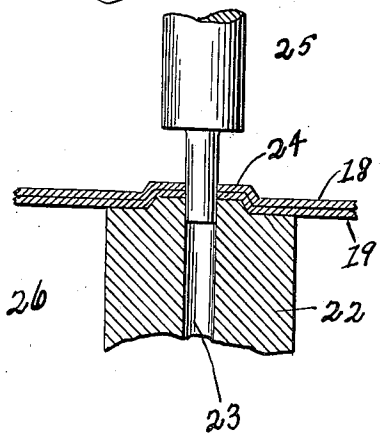
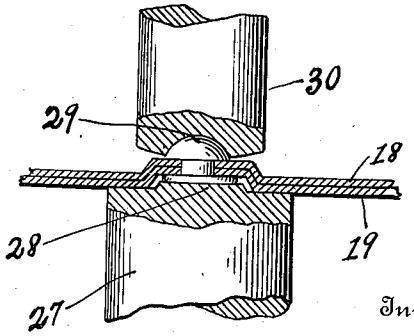


Fig. 6.



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BARREL HOOP

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4 Claims. (Cl. 217—91)

My invention relates to a barrel hoop and to a method of making the same and it is an object of the invention to provide a hoop of this character which shall be less liable to damage a barrel to which it is applied. In the case of the usual barrel hoop which is tapered, i. e., it is a section of a truncated cone, the ends are connected by rivets and the heads of the rivets project at the inside of the hoop, so that when such a hoop is applied to a barrel the head will very often scratch the surface of the barrel as the hoop is driven into place, thus marring the appearance of the barrel, and such scratches are often deep enough to cause decay of the wood to start, so shortening the life of the barrel. With my improved hoop the head of the rivet is in the plane of the inner face of the hoop or a little below such plane so that it becomes impossible for the head to abrade the surface of the wood of the barrel. Such hoops are of course used also in the manufacture of butter tubs and other containers wherein staves are to be held in coacting relation without nailing the hoops to hold them in place.

In a recent development of barrels for whiskey a machine is used which makes a very smooth surface on the barrel, this being desirable both for appearance and also in order to prevent decay, since the smoother a surface the less chance for decay to begin and the better the surface presented for varnishing or painting to still further guard against decay. But hoops such as heretofore in use tear the wood and render such improvements useless to a large degree. Furthermore, when rivet heads catch in the wood they interfere with the movement of the hoop and cause inconvenience in driving it into place.

Another object of the invention is to strengthen metallic barrel hoops. In the ordinary hoop there is a direct shearing strain on the rivets. By the use of my invention this shearing strain is done away with and the strain is thrown on the material of the hoop itself, which is of course stronger than the rivets when countersunk as shown herein.

Another object is to provide an improved method of joining the ends of metallic barrel hoops.

In the drawing, which is made a part of this application and in which similar reference characters indicate similar parts:

Fig. 1 is a section of a portion of a barrel, showing a hoop joint according to present practice,

Fig. 2, a similar section showing the use of my improvements,

Figs. 3 and 4, elevations, partly in section, illustrating the method of forming a countersink in the overlapped ends of a metallic hoop,

Fig. 5, a similar view showing the step of punching a hole in the deformed or drawn or countersunk portions of the hoop, and

Fig. 6, a similar view showing the method of applying a rivet.

In the drawing, reference character **10** indicates the wooden staves of a conventional barrel, though it is to be understood that my invention is not limited to use with a barrel having such staves. A conventional hoop is shown at **11**, the ends of such hoop being overlapped and connected by rivets **12**. It will be seen that the heads of the rivets must either bend the hoop outward radially of the barrel to a limited extent as shown in Fig. 1 or else must abrade the wood and form seats therein for themselves.

In Fig. 2 there is shown a highly-finished barrel or the like in section, said container being provided with an improved hoop according to my invention, in which the material of the same has been deformed by drawing certain areas out of the plane of the metal of the hoop, these areas being so located in the end portions of the hoop as to register with one another and there being registering holes therein for rivets **14**, the rivets being preferably concentric with circular deformed or countersunk areas **15**, though the shape of such areas and the location of the rivets therein are not essential features of my invention.

Figs. 3 to 6 illustrate a preferred method of making the joint in the hoop. In Fig. 3 there are shown a pair of dies **16** and **17**, between which the overlapped ends of the hoop are inserted, these ends being lettered as **18** and **19**. One of the dies is provided with a projection **20** which, when the two are brought together as in Fig. 4, forces the metal of the parts **18** and **19** into the corresponding depression **21** in the other die.

Thereafter the deformed or countersunk parts of the two ends are placed on a die **22** having an orifice **23**, preferably at the center of the preferably circular indentations **24** and a punch **25** is caused to form a hole in such indentations, the punch preferably fitting accurately in the orifice **23**. The die **22** has a raised portion at **26** which preferably fits in the registering indentations to center the same with reference to the punch.

The parts **18** and **19** are now placed on another die **27** which has a central projection at **28** for supporting the head of a rivet. The height of the projection is such as at least to

maintain the upper surface of the head (which is the underside in Fig. 6) in the plane of the face of part **19**, which is the inner face of the finished hoop, and preferably a little higher than said face, as shown in Fig. 6, so that the head will either form a part of the curved inner plane face of the hoop or be a little outward in a radial direction from said face, whereby it becomes certain that the head cannot scratch the wood or other material of the body of the barrel. A die **30** having a rounded indentation in its lower end is now brought down upon the end of the rivet to complete the operation.

I am aware that joints of generally similar appearance to mine have been used in connecting flat sheets of metal and the like, and that such joints have been made by first punching holes in the metal, then inserting rivets and then simultaneously clinching the rivet and deforming the metal surrounding it but such joints are less satisfactory than mine and their purpose is different. I do not claim such a joint or such a method, but what I do claim is:

1. The combination of a container with a highly finished smooth surface, and preformed metallic hoops encircling said body, each hoop having overlapping end portions each provided with registering holes, and a rivet in each of such pairs of registering holes, one head of each rivet being countersunk into the container-engaging surface of the hoop to such an extent that it does not protrude beyond said surface.

2. A metallic hoop for barrels and the like, said hoop having registering rivet-receiving holes and having corresponding struck-up portions about said holes, said portions being struck up sufficiently to receive a rivet head and prevent it from protruding beyond the face of the hoop.

3. A metallic hoop for barrels and the like, said hoop having overlapping end portions with registering rivet-receiving holes therein and with corresponding struck-up portions around said holes, such portions being struck up sufficiently to receive a rivet head and prevent it from protruding beyond the face of the hoop, and being also in interlocking relationship so as to relieve the shearing stresses on the rivets.

4. A metallic hoop for barrels and the like, said hoop having registering rivet-receiving holes, and a rivet in each pair of registering holes, one head of each rivet being countersunk into the container-engaging surface of the hoop to such an extent that it does not protrude beyond said surface.

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