

(No Model.)

H. S. HOPPER.  
HOOP FOR BARRELS, &c.

No. 523,281.

Patented July 17, 1894.

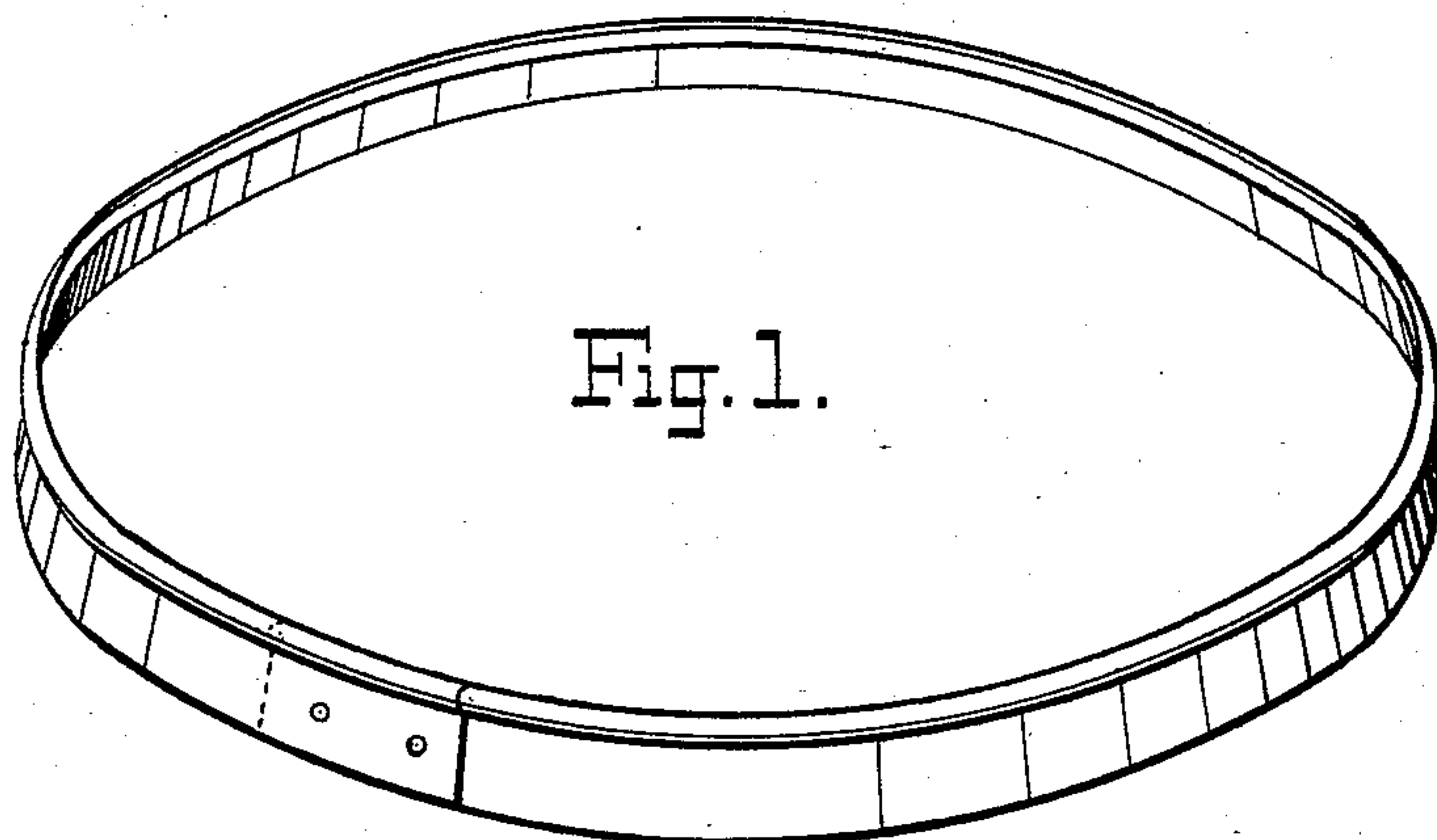


Fig. 1.

Fig. 3.

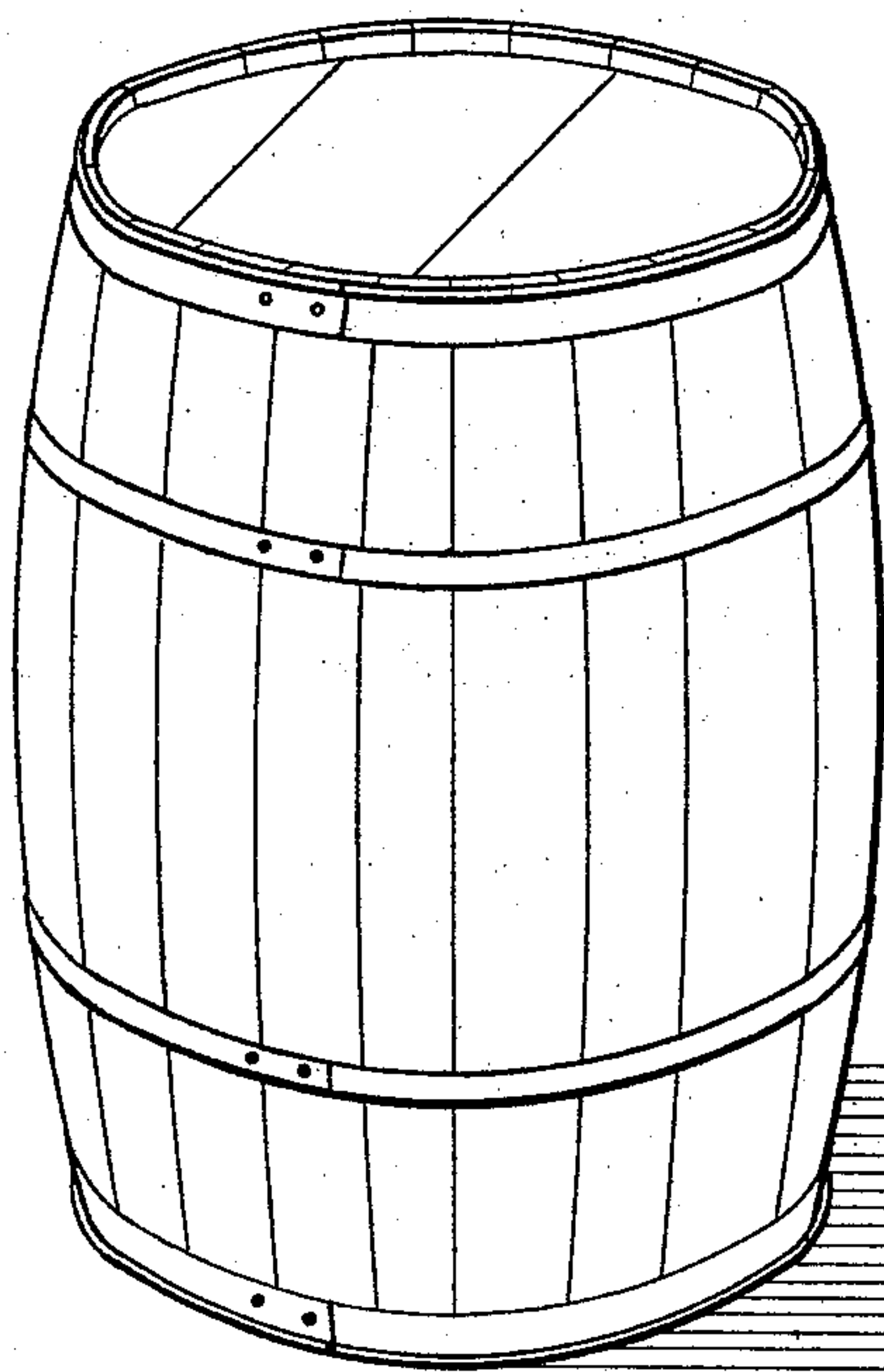


Fig. 2.

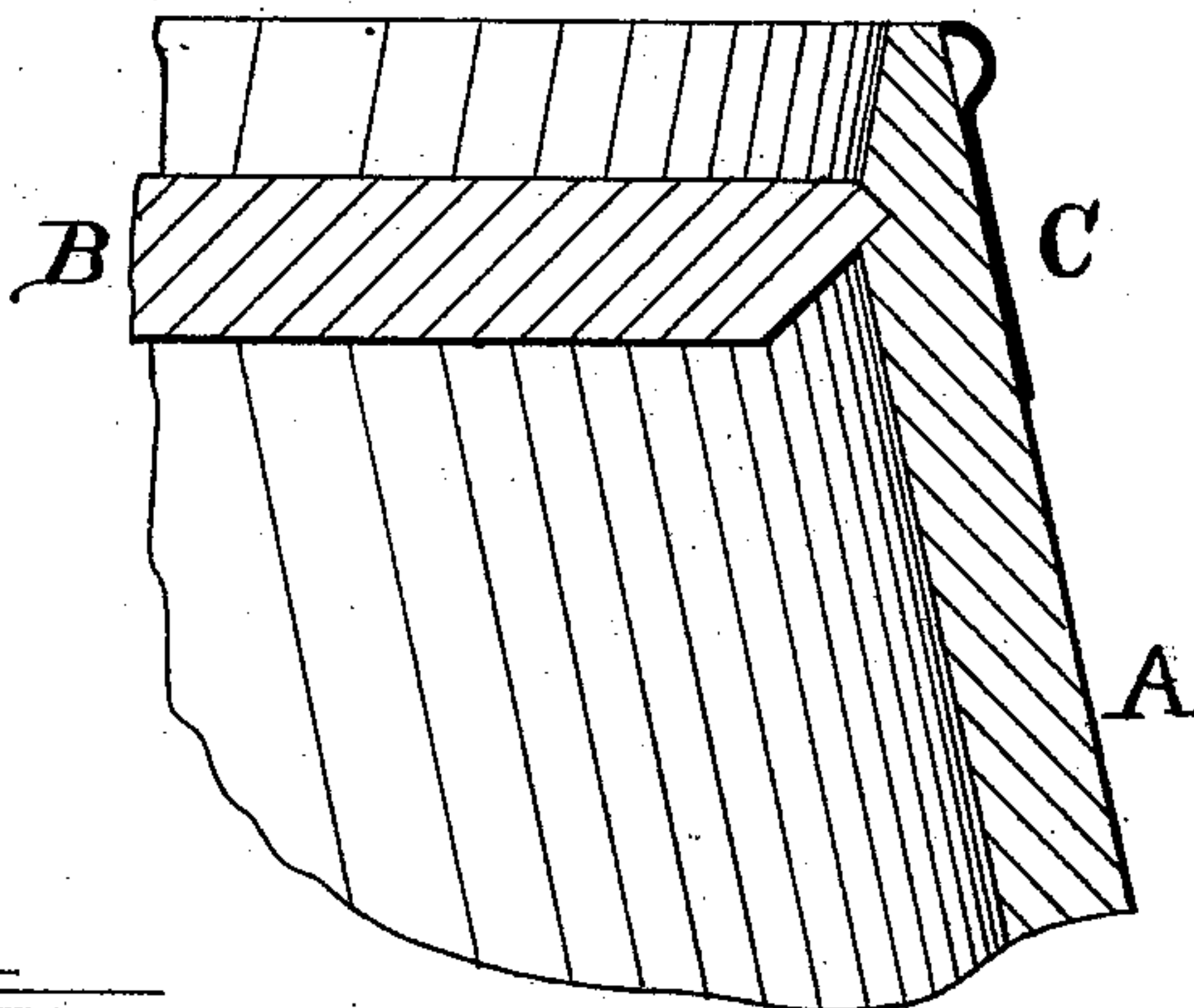
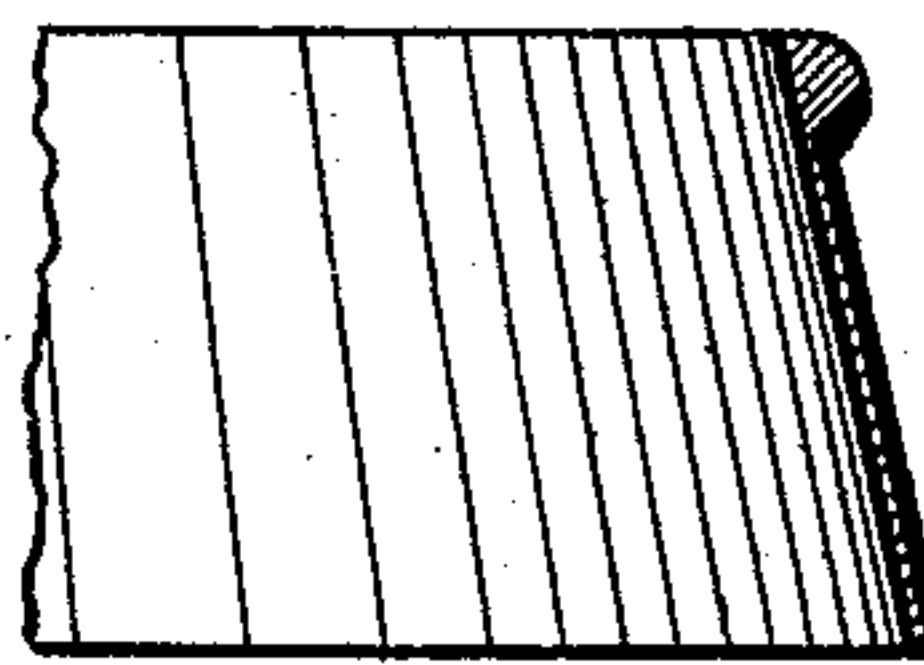


Fig. 4.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

HENRY S. HOPPER, OF DETROIT, MICHIGAN.

## HOOP FOR BARRELS, &c.

SPECIFICATION forming part of Letters Patent No. 523,281, dated July 17, 1894.

Application filed October 19, 1893. Serial No. 488,601. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY S. HOPPER, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Hoops for Barrels, Wooden Ware, and Cooperage Generally, of which the following is a specification.

My invention relates to metallic hoops for barrels, woodenware and cooperage generally, but more particularly to the chine or end hoops for barrels.

The object of my invention, is to provide a hoop of proper shape to not only hold the ends of the staves together against or around the head of the barrel, but also to provide a support and protection to the ends of the staves which project beyond the head, thereby preventing them from being broken down in ending up the barrel, or in chining same, *i. e.*, in rolling upon the edge.

It consists essentially in a hoop having a rounded projection or bead, formed in one edge and extending the whole length of the hoop and entirely around the barrel at the end of the staves as will be more particularly described in the following specification and claims.

In the drawings Figure 1, is a perspective view of a hoop embodying my invention. Fig. 2, is a full size sectional view of a portion of a barrel, showing section of hoop of preferred form as applied. Fig. 3, is a view of a barrel provided with chine hoops embodying my invention. Fig. 4, is a section of another form of a hoop.

In Fig. 2, "A" is the end of a stave. "B" is a portion of the head, and "C" a section of the hoop in place.

In forming the croze to hold the heads of barrels and the bottoms of pails and tubs, a considerable portion of the staves is cut away, thereby weakening them at a most critical point. This weakness is most noticeable in flour and other stack barrels, which are usually made of very light thin material and in the process of ending them up, and in rolling them upon the chine, the whole weight of the barrel and contents is thrown upon the pro-

jecting ends of the staves, which already weakened by cutting the croze, are too light to withstand the strain, and break off at the croze, thereby releasing the head.

As will be seen in Fig. 2, I propose to first turn the edge of the hoop outward and then inwardly again until it comes in line with the flat part of the hoop, thereby forming a projecting ridge or bead upon one edge having curved surfaces both crosswise of the hoop, and also lengthwise of it. This practically double arched form makes the otherwise flexible hoop very rigid and forms a solid support upon which to roll or chine the barrel without causing undue strain upon the projecting ends of the staves. In practice this form is given to the hoop which is preferably of a uniform thickness at the same time it is splayed or rolled to give it the proper taper to fit the barrel, the rolls for that purpose being formed so as to shape one edge as described while the opposite edge is stretched to give the hoop the necessary taper, though it would come clearly within the scope of my invention to form the hoop as described by pressing it between dies or otherwise.

The raw or sharp edge of the hoop being turned inwardly against the end of the staves, only smooth curved surfaces come in contact with the floor, in rolling upon the chine. Consequently barrels or tubs provided with this hoop do not damage the floors and benches as does ware having the ordinary iron hoops.

It will also be noticed in Fig. 2, that this form of hoop, can be driven on farther in case the ware shrinks as with ordinary hoops, for the edge of the hoop turned inwardly comes just in line with the flat part of the hoop.

While I prefer to form this hoop from metal strips of a uniform thickness throughout, as it is usually found in commerce, it may also be formed in the process of manufacturing the metal strips of the section shown in Fig. 4, *i. e.*, with a solid projecting ridge or bead upon one edge and a perfectly flat inner surface.

In Figs. 1 and 3, I show the ends of the hoop joined by rivets which is at the present time the most practical mode of securing



them. However, they may be welded or otherwise united without departing from the scope of my invention.

What I claim as new, and desire to secure  
5 by Letters Patent, is—

1. As a new article of manufacture, a metallic hoop for barrels consisting of a flat metallic strip having a continuous rounded projection or ridge formed in one edge, substantially as and for the purpose described.  
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2. As a new article of manufacture, a hoop for barrels consisting of a flat metallic strip of uniform thickness throughout and having a continuous rounded projection or corruga-  
15 tion bent in one edge, whereby it is stiffened transversely and the ends of the staves are protected, substantially as described.

3. As a new article of manufacture, a metallic hoop for barrels consisting of a flat me-

tallic strip having a rounded projection or  
ridge formed in one edge and extending the  
whole length of the hoop, whereby the pro-  
jecting ends of the staves are afforded in-  
creased protection, substantially as described. 20

4. As a new article of manufacture, a metallic hoop for barrels consisting of a flat metallic strip having its outer edge turned inwardly against the staves and presenting only rounded surfaces to come in contact with exterior objects, substantially as described. 25

In testimony whereof I have hereunto set  
my hand in presence of two subscribing witnesses. 30

HENRY S. HOPPER.

Witnesses:

G. H. WALDO,  
JOHN COYNE.