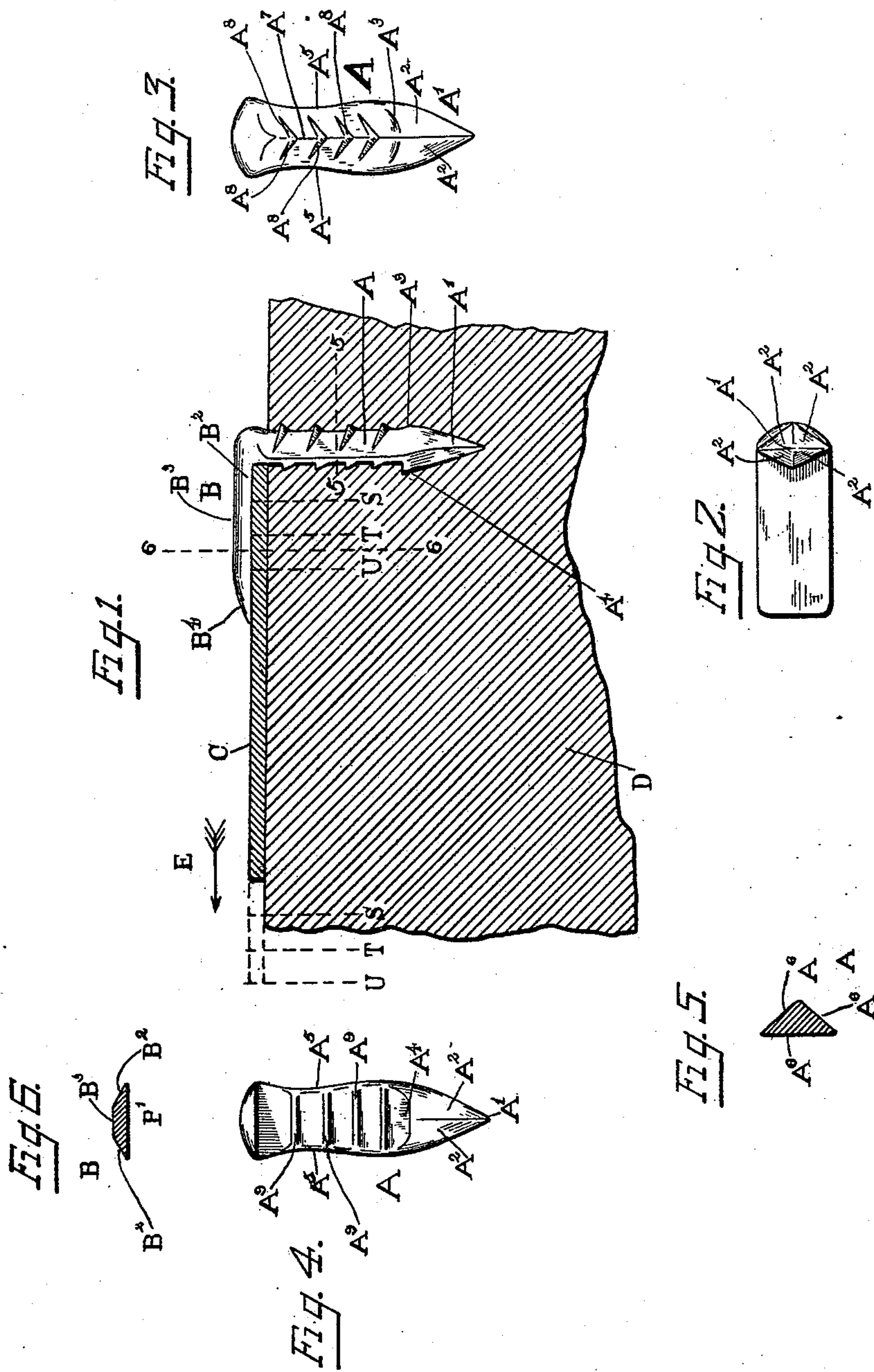


(No Model.)

W. F. ROBERTSON.
HOOP FASTENER.

No. 472,142.

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HOOP-FASTENER.

SPECIFICATION forming part of Letters Patent No. 472,142, dated April 5, 1892.

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To all whom it may concern:

Be it known that I, WILLIAM F. ROBERTSON, a citizen of the United States of America, and a resident of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Hoop-Fasteners, of which the following is a specification.

The several features of my invention and the various advantages resulting from their use, conjointly or otherwise, will be apparent from the following description and claims.

In the accompanying drawings, making a part of this specification, and to which reference is hereby made, Figure 1 shows in vertical section a portion of the side of a cask, and also shows a section of one of the hoops in place on the said cask, the section of the hoop being one transverse to the length of the latter. This figure also exhibits a side elevation of a hoop-fastener embodying my improvements, the leg portion of the fastener being driven to place in the cask and the hoop-retaining arm of the said fastener being shown in position against the hoop. Fig. 2 is a view of the under side of the hoop-fastener—that is, the view presented when one looks at the point of the leg portion thereof. Fig. 3 is an elevation of the front of the hoop-fastener—viz., of that side which faces toward the upper end of the drawing. Fig. 4 is that view or elevation of the hoop-fastener which is opposite to the one shown in Fig. 3. Fig. 5 is a sectional view of the leg portion of the hoop-fastener, the section being taken across said leg portion at the dotted line 5 5 of Fig. 1 and showing that side of the section which faces toward the left in Fig. 1. Fig. 6 represents a transverse section of that portion of the hoop-fastener which lies directly against the hoop, the section being taken in the plane of the dotted line 6 6 of Fig. 1, and that side of the section which faces toward the upper end of the sheet of drawings being the one shown. All the foregoing figures are on an enlarged scale.

A indicates in general the leg of the hoop fastener or keeper. The free or lower end A' of this leg A is pointed, and can thus be easily driven into the wood D of the cask. The pointed end usually has four faces A² A² A²

A². At the place where this end portion A' joins the remainder of the leg the end portion in front and rear is larger than the remainder of the shank. Thus in front is formed the shoulder A³, and at the rear the shoulder A⁴, also thus formed, is quite large and takes somewhat the form of a barb. Both of these enlargements, and particularly the rear one, assist in holding the leg A of the fastener in the wood and in preventing it being easily withdrawn therefrom. At the sides the leg is contracted at a little above its middle, these depressions or re-entering curved lines or edges being indicated by the character A⁵ A⁵. These depressions A⁵ A⁵ receive the adjacent wood of the cask, and thus assist in securing the leg A permanently in the stave of the cask. The leg is for the greater portion of its length of a shape triangular in cross-section, as shown in Fig. 5, each of the sides being indicated by the character A⁶ and the front edge or apex of the triangle by the character A⁷. This shape permits of the leg being easily driven into the wood of the cask and also prevents the leg being turned therein. On the front side is a series of barbs, preferably four in number. These barbs are of a ridge-like form. The middle of each ridge begins at the front vertical edge A⁷ of the leg and is there of the greatest width—that is to say, there the ridge projects the farthest from the face of the leg. The ridge extends from the said front edge A⁷ back on each of the two front faces of the leg, substantially as shown, and their direction is preferably inclined somewhat upward as they extend backward. On the rear face of the leg are rows of barbs A⁹, preferably horizontal. In these barbs A⁹ of the rear of the leg and the barbs A⁸ of the front of the leg the hook extends upward. As the leg is driven into the wood these barbs present no obstacle of any importance; but the wood expands behind them and holds the leg securely in place.

The arm B is at one end securely fastened to the leg A and is integral therewith. This arm B is thin in cross-section from top to bottom and in shape is flat on bottom B'. Its upper side is beveled or sloped toward each edge, as is shown by the bevels B² B² in Fig. 6. The top B³ is preferably flat, as shown in

said Fig. 6; but the entire top may in cross-section be rounded instead of being made up of faces. The upper surface B¹ of the free end portion of the arm is beveled or curved down toward the said free end, so that at the latter point the arm is of no appreciable thickness. The principal advantages of this shape of the arm B at said end and also of the shape in cross-section for the greater part of its length, as shown in Fig. 6, are that the arm, when in place over the hoop, presents very little obstructive edge and other surface as the keg or cask is rolled or slid along. Consequently but little force is brought to bear laterally against the arm D, and hence but little opportunity is afforded in the ordinary use of the cask to force the arm B sidewise and thus move it off of the hoop it holds in place. Consequently the hoop is thus very securely held in place. Because of the unobtrusive shape of the arm B, the hands of the man handling the cask on which the hoop-fastener is located are not injured by it. The arm B is made, preferably, as long as shown in proportion to the leg A for the following reason: As a cask or barrel is used it is found that the staves shrink slightly and the hoops thereon must be tightened by driving them toward the center of the cask, which center portion is, as is well known, of larger diameter than the end portions of the cask. Thus the hoop C will in tightening the staves be driven in the direction of the arrow E. (Shown in Fig. 1.) Thus the first time the hoop is driven to retighten the staves it will be driven, say, to the line S. After the lapse of time the hoop is again driven for a like reason farther on, say to the line T, and later to the line U. The arm B will still continue to cover a portion of the hoop and hold it in place. The arm B can be bent very tightly against the hoop C by a blow on the part B⁴.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a hoop-fastener, the combination, with the arm or head B, of the leg A, triangular in cross-section and provided on its front vertical center with the edge or ridge A⁷ and the enlargement or shoulder A³ and on its rear side with the barb or shoulder A⁴, said barbs or shoulders A³ and A⁴ being larger than the remainder of the leg and adapted to hold the same in the wood and prevent it from being easily withdrawn, substantially as described.

2. In a hoop-fastener, the combination of the head B, having the leg A united thereto and shaped triangular in cross-section, its free end terminating in the conical-shaped portion A' and provided at its front with the series or rows of barbs A⁸, extending from the front edge A⁷ back on each of the two front faces of the leg and reaching short of the

edges A⁵ thereof, substantially as and for the purposes specified.

3. The hoop-fastener having an arm and a leg, the free end portion of the leg being provided with a conical or tapering extremity, and a barb or shoulder A⁴, located at the back side or heel of the junction of the said tapering extremity with the main portion of the leg, substantially as and for the purposes specified.

4. The hoop-fastener consisting of the arm and leg united thereto at right angles, the latter being of triangular shape, its free end terminating in the conical-shaped portion A' and provided at front with the series or rows of barbs A⁸, lying at each side of and at the front ridge A⁷ of the leg and inclined upward and backward from the said ridge A⁷, substantially as and for the purposes specified.

5. The hoop-fastener having an arm and a leg, the latter of triangular shape in cross-section and provided in front with the barbs A⁸, extending from the front edge A⁷ back on each of the two front faces of the leg and inclined upward from the said ridge A⁷ and provided at its rear with the horizontal rows of barbs A⁹, substantially as and for the purposes specified.

6. The hoop-fastener having an arm and a leg, the latter of a triangular shape in cross-section and provided in front with the barbs A⁸ and at rear with the rows of barbs A⁹, and the horizontal shoulder or barb A⁴ just above the conical or pointed portion A' of the leg and projecting out beyond the barbs A⁹, substantially as and for the purposes specified.

7. The hoop-fastener having an arm and a leg, the latter of a triangular shape in cross-section and its sides formed with the re-entering curves A⁵, the front faces of the leg provided with the series of barbs A⁸, reaching short of the edges A⁵, and the rear side with the horizontal rows of barbs A⁹, and the rear shoulder A⁴ below, prominent beyond the barbs A⁹ and at the upper end of the terminal pointed portion of the leg, the front portion of the leg having the swell A³, substantially opposite to the shoulder A⁴, substantially as and for the purposes specified.

8. The hoop-fastener the leg of which is triangular in cross-section and having an enlarged terminal pointed portion A', of which the front faces A² A² correspond in general to the front faces A⁶ A⁶ of the main portion of the leg and having the rear faces A² A², the upper end of the ridge between them terminating in the shoulder or barb A⁴, substantially as and for the purposes specified.

WILLIAM F. ROBERTSON.

Attest:

F. W. BROWNE,
K. SMITH.