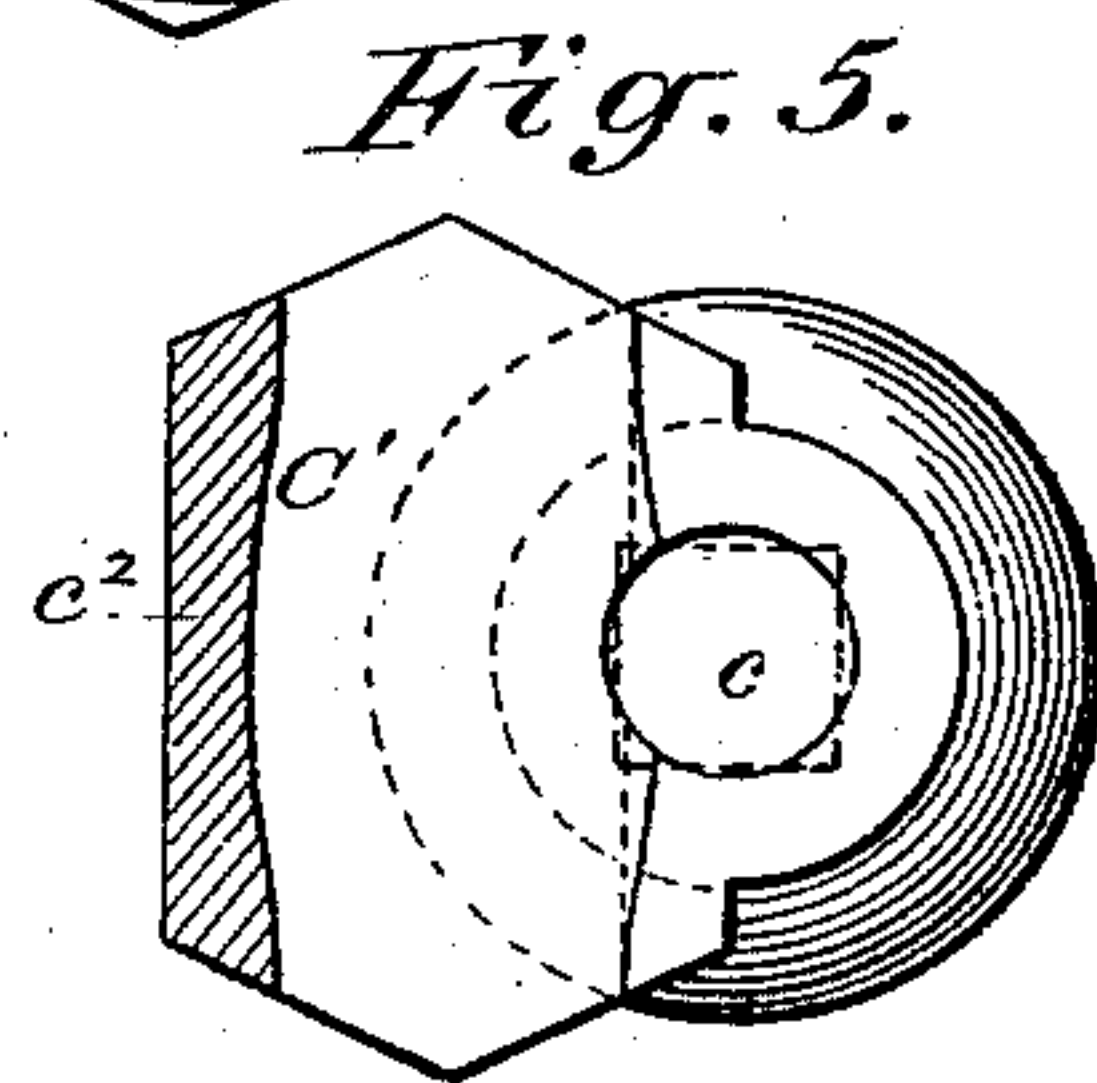
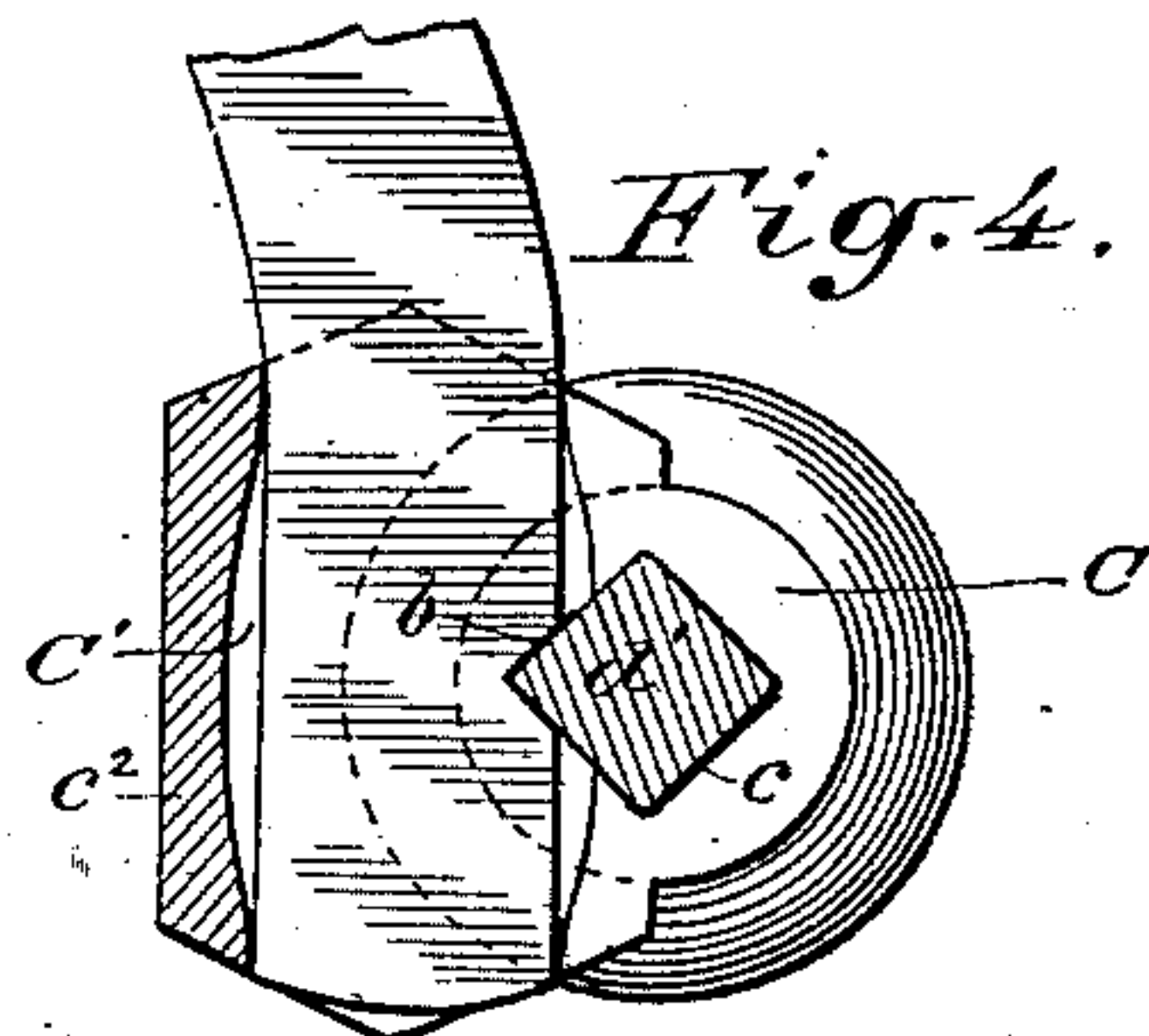
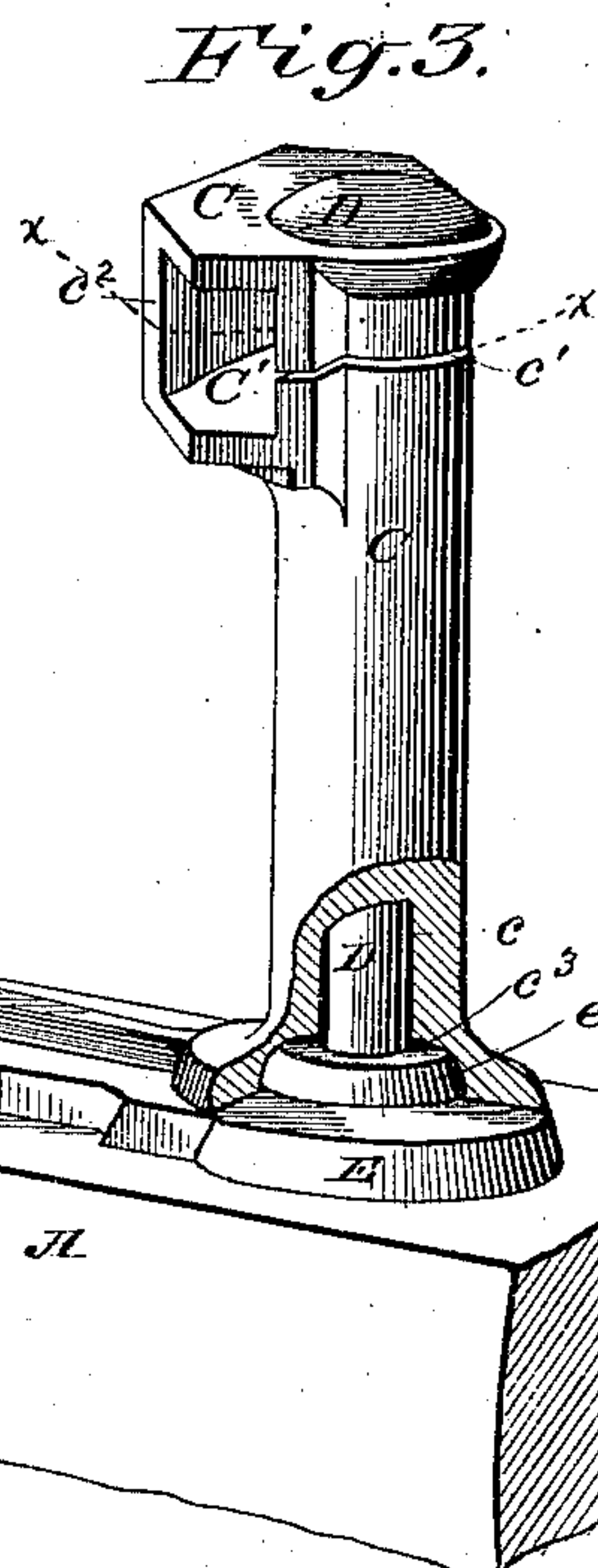
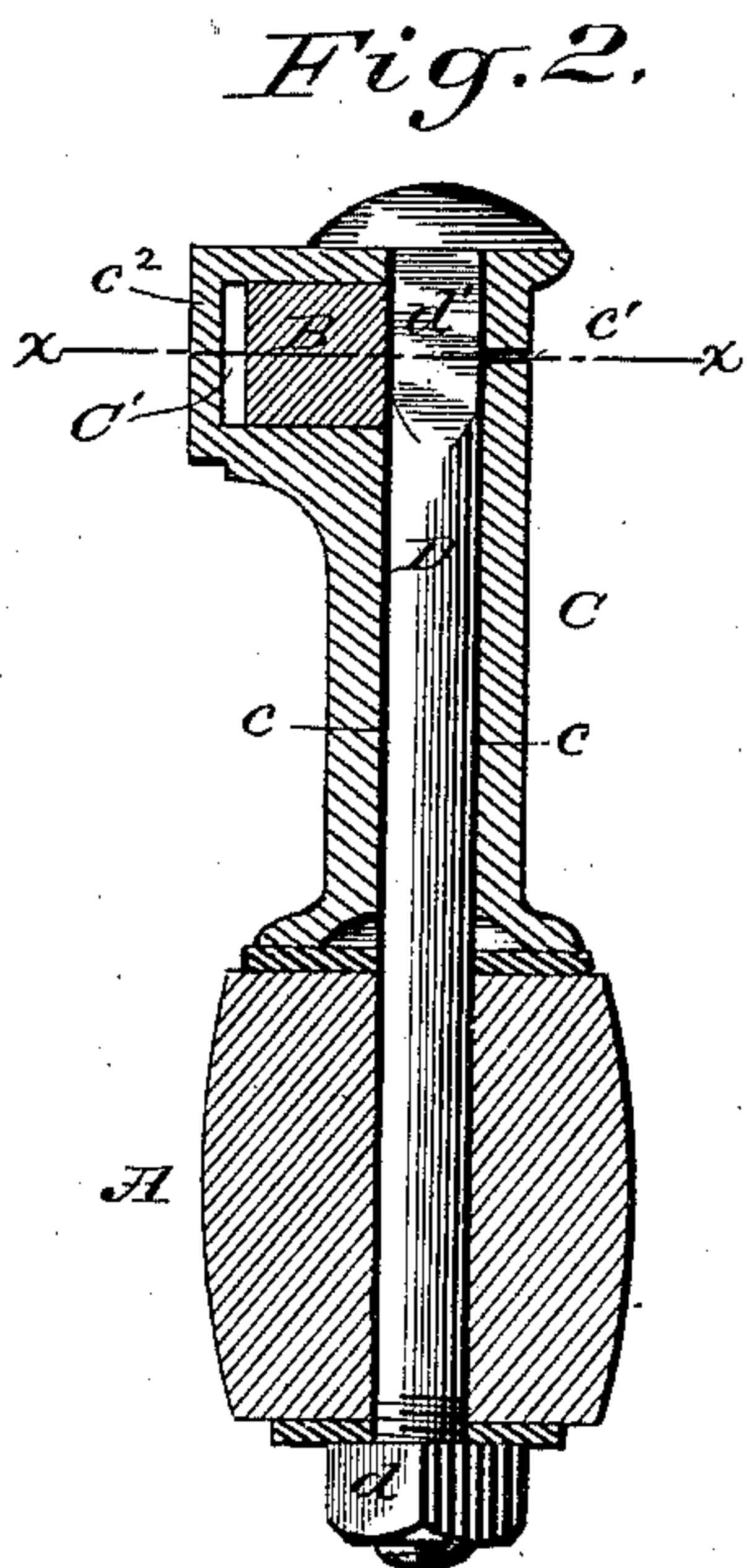
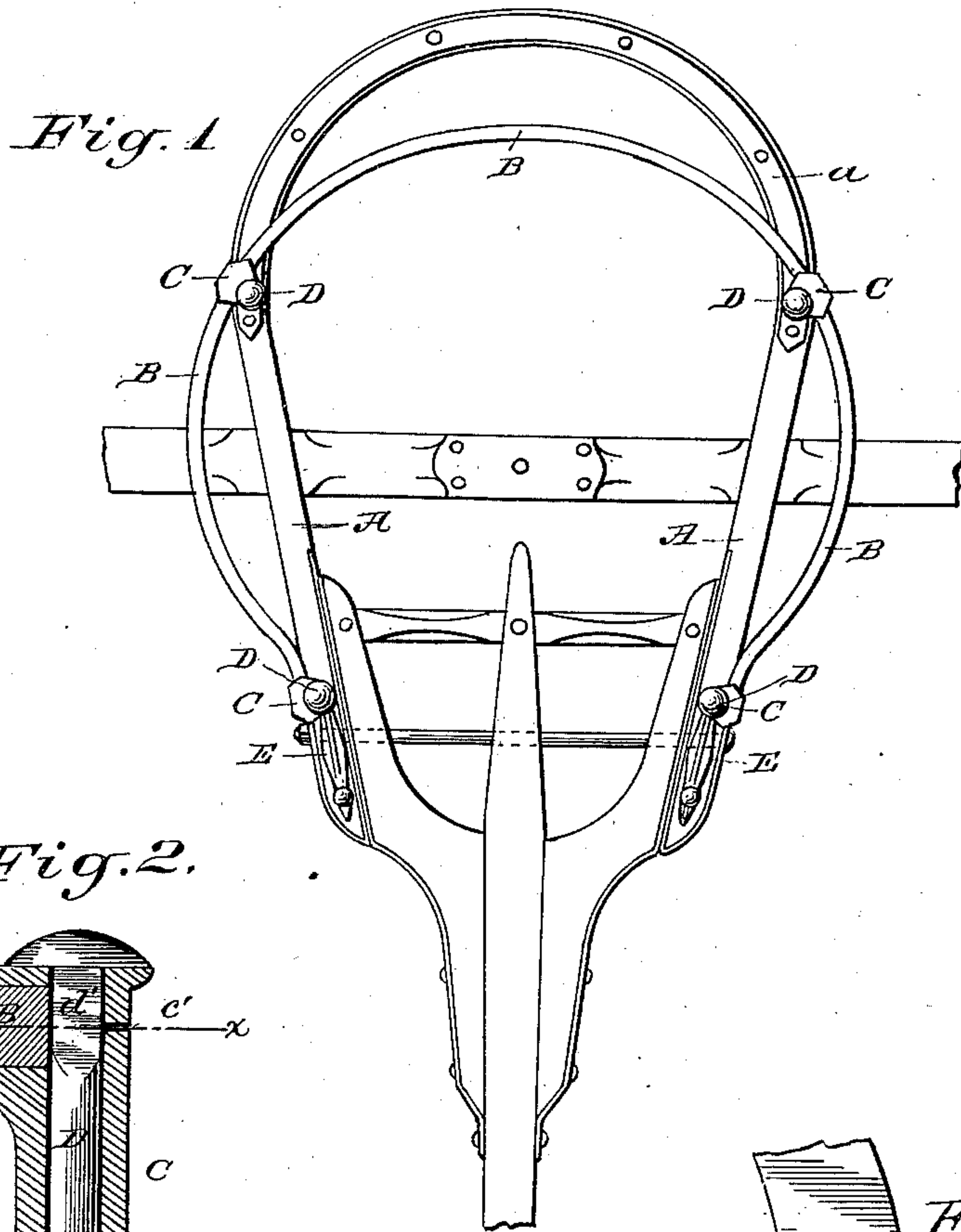


(No Model.)

N. L. HOLMES.
CIRCLE POST FOR WAGONS.

No. 311,000.

Patented Jan. 20, 1885.



Witnesses:
Jno. H. Crockett
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UNITED STATES PATENT OFFICE.

NATHAN L. HOLMES, OF RACINE, WISCONSIN.

CIRCLE-POST FOR WAGONS.

SPECIFICATION forming part of Letters Patent No. 311,000, dated January 20, 1885.

Application filed May 17, 1884. (No model.)

To all whom it may concern:

Be it known that I, NATHAN L. HOLMES, of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Wagons; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to the construction of the circle-posts of wagons, but incidentally embraces improvements in the combination of posts and the irons connected therewith.

The invention consists in the matters hereinafter fully set forth, and pointed out in the claims.

The principal characteristics of my improved circle-post are, first, that the circle is held thereby in a position at one side of the vertical bolt which secures the post to the hound, and, second, that the circle is clamped between parts of the post which are drawn together upon it by the action of the said holding-bolt.

The drawings illustrate what I now consider the best form of device embodying these distinctive features, together with certain novel features of construction peculiar to this particular embodiment of the invention.

The drawings also illustrate the novel features referred to as belonging to the combination of the post with the circle and other irons with which it is connected.

Figure 1 of the drawings is a plan view of the axle-hounds and circle of a wagon connected by posts constructed in accordance with my invention. Fig. 2 is a central vertical section of the post as applied to the rear or intermediate points of the circle and hounds. Fig. 3 is a perspective view of the post detached from the circle, but in place upon the hound, and top strap upon the forward end of the hound. Fig. 4 is a horizontal section of the post through the horizontal slit therein, or through $x x$ of Fig. 3, the said figure also showing one of the front ends of the circle, and a device by which the bolt which secures the post to the hound also retains the circle longitudinally in place more perfectly than by clamping action merely. Fig. 5 is also a hori-

zontal section of the post through the slit, or through $x x$ of Fig. 2, this figure showing by dotted lines the arrangement of the square part of the bolt in the post when applied to the rear part of the circle and hounds.

A A are the axle-hounds, which, in this instance, are of bent wood and continuous with the sway-bar. B is the circle, preferably square in cross-section. C C are the posts which support the circle from the hounds, and which are principally concerned in my present invention. D D are bolts which pass longitudinally through the posts and hold them to the hounds, and which also clamp the circle within the horizontal apertures of the post.

The post C is usually and preferably of malleable iron, and is provided with a longitudinal hole, c , for the admission of the headed bolt D.

For the attachment of the post to the circle B a horizontal passage, C' , is provided in the post, near the top thereof and at one side of the bolt-passage c .

To enable the bolt D to firmly clamp the circle within the passage C' , a narrow slit, c' , is cut or cast in the post, extending from said circle-passage C' across the body of the post and intersecting the bolt-passage, thus severing the post, except that the top or cap thereof is movably held to the body by the outer wall, c^2 , of the circle-passage. This opening or slit c' is usually not more than a thirty-second of an inch wide, and may be formed by a metal core in casting, or cut with a saw after the post is cast and annealed. The passage C' should be of such size and shape as to freely admit but to closely embrace the circle-iron B, and after the post has been adjusted to its proper position on the hound and circle the bolt D, in being drawn down by the nut d upon its lower end, both clamps the circle within the passage C' and secures the post upon the hound. In thus securing the post the slit c' will be partially closed, leaving an opening that will be filled in painting, but sufficient to allow the circle to be further tightened, should it ever become loose in the long-continued use of the wagon. The passage C' is preferably made larger or broader between that at its ends, as indicated in Figs. 4 and 5, the expansion of said aperture at both

sides, as shown in said figures, being for the purpose of allowing the passage to be readily dressed out or trued, if required, and also to permit the post to be slid along past the curves of the circle when outwardly bent at its ends, as shown in Fig. 1.

It is common in previous constructions to employ but two posts for the support of the circle, these being placed behind the axle, or in the positions of the rear posts of Fig. 1. The front ends of the circle are in that case attached directly to the hounds, being bent downward to meet the hounds, and flattened to form straps, through which fastening bolts or rivets pass into the hounds. In this construction the circle is usually forged in halves and fitted to place, and after the posts or their eyebolts have been slipped over the rear ends the said rear ends of the halves are welded together.

I propose, as an improvement in the circle itself, in connection with the post described, to support the ends of the circle in the same plane with its body and to support said ends by the posts.

In order to more securely hold each end of the circle from longitudinal movement within the passage C' of the post, I prefer to set the square part d' of the bolt with one of its angles entering the said passage C' , and to provide a corresponding notch, b , in the circle to admit said angle of the bolt. The bolt-passage c in the post being cast or otherwise formed at its upper end to fit the square of the bolt, the latter is held from turning and permanently holds the circle from longitudinal movement. The bolt should also be preferably so set as to crowd the circle against the opposite wall, c^2 , of the passage C' .

In the post as intended for a rear position upon the hounds and circle I prefer to arrange the bolt D , with one flat face of the square part d' of its shank in broad bearing against the side of the circle, as indicated in Fig. 5. In this case, particularly, the bolt and circle passages should preferably be arranged to cause the bolt to crowd the circle closely against the opposite wall, c^2 , as also indicated in Fig. 5. This being done, when the bolt is tightened, said outer wall of the circle-passage is drawn inward against the bolt and the circle is compressed upon its sides as well as upon its upper and lower surfaces, and is therefore held more firmly.

In supporting the ends of the circle in the same plane with its body by means of the posts, the curve or curves of said circle will be exclusively in a horizontal direction, and the circle may be cheaply and quickly formed, and may be entirely completed before the posts are applied thereto, thereby materially facilitating and cheapening the manufacture of this part of the wagon.

In shaping the circle over a former or in a bender the extreme ends are naturally left straight or tangent to the general curve of the circle. This is not a neat form for said ends,

and I prefer to bend them outwardly to the general form shown in Fig. 1. This makes two double curves in the circle, and to allow the rear posts to be slid to place the passage C' in the post should be laterally broadened between its ends on both sides somewhat, as shown in Figs. 4 and 5.

Still further, in supporting the ends of the circle by posts, I may provide light malleable-iron straps E , which take the place of the flattened ends of the circle when the latter is bent down to rest directly upon the hounds, and which meet the demand of the eye accustomed to such former construction. These straps are at their rear ends preferably made of the same thickness as the friction-strap upon which rest the rear posts, C , and, extending beneath the posts, give the same length or height to said posts and to the circle at the rear and front. Said straps E are cast with a hole to admit the bolt D , and also, desirably, with a shallow boss, e , about the said hole. A corresponding recess, c^3 , is cast in the foot of the post to admit the boss e . This separate construction of the strap and post enables each to be rotated upon the other, as required by the relative and variable directions of the circle ends and hounds, and thus quickly adjusted to its proper position. The front end of the strap E is held down upon the hound by a light bolt, as shown in Fig. 1.

Use has demonstrated that the circle may be held with the utmost firmness by the post and bolt described, and it is obvious that said post is capable of being applied with facility to the previously-finished circle. It is also manifest that the support of the circle by posts at its front ends greatly facilitates the construction of said circle by rendering all forging thereon unnecessary.

Manifestly the cap of the post may be entirely severed from the body of the post without departure from the broader scope of my invention, though such construction is found in practice inferior to that shown in the drawings, in which the cap and body of the post are permanently joined by the flexible wall c^2 .

As a means for holding the circle from longitudinal movement, the bolt D is not necessarily square, but it may be cylindric and so placed with reference to the circle-passage as to require the latter to be notched for its admission. Any form of the bolt entering a notch at b in the circle will obviously prevent the latter from slipping under all circumstances.

I claim as my invention—

1. A circle-post constructed with a longitudinal passage for the fastening-bolt, a horizontal passage for the circle located at one side of the bolt-passage, and a vertically-movable cap apertured to give passage to the bolt, substantially as set forth.

2. A circle-post provided with a longitudinal passage for the fastening-bolt, a horizontal passage for the circle located at one side of the bolt-passage, and a slit extending from

the circle-passage through the part pierced by the bolt-passage, substantially as described, and for the purpose set forth.

5 3. The combination, with the curved circle and the hound, of a vertically-apertured post provided with a laterally-arranged interiorly-enlarged circle-passage, C', and a slit, c', located as shown, and a bolt, D, substantially as described, and for the purpose set forth.

10 4. The combination, with the hound and the circle provided with a notch at b, of a vertically-apertured post and a bolt, D, projecting into the notch of the circle, substantially as described, and for the purpose set forth.

15 5. The combination, with the circle, the hound, and the holding-bolt, of a post provided with circle and bolt passages C' and c, communicating with each other, and a slit, c', the said passages C' and c being arranged to
20 cause the bolt to crowd the circle against the outer wall of the circle-passage, substantially as described.

6. The combination, with the axle-hounds, of a circle having its ends in the same plane with its body, posts supporting said circle ends 25 from the hounds, and means, substantially as described, for holding said ends of the circle longitudinally in place.

7. The combination, with the hounds and the circle, having its ends in the same plane 30 with the body thereof, of posts supporting said ends of the circle, through-bolts securing the posts to the hounds, and straps E, separate from the posts, but extending beneath them and held by the through-bolts, substantially 35 as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

NATHAN L. HOLMES.

Witnesses:

M. E. DAYTON,
OLIVER E. PAGIN.