

(No Model.)

H. D. CONE.

DEVICE FOR FASTENING RAILWAY RAILS TO THEIR TIES.

No. 377,191.

Patented Jan. 31, 1888.

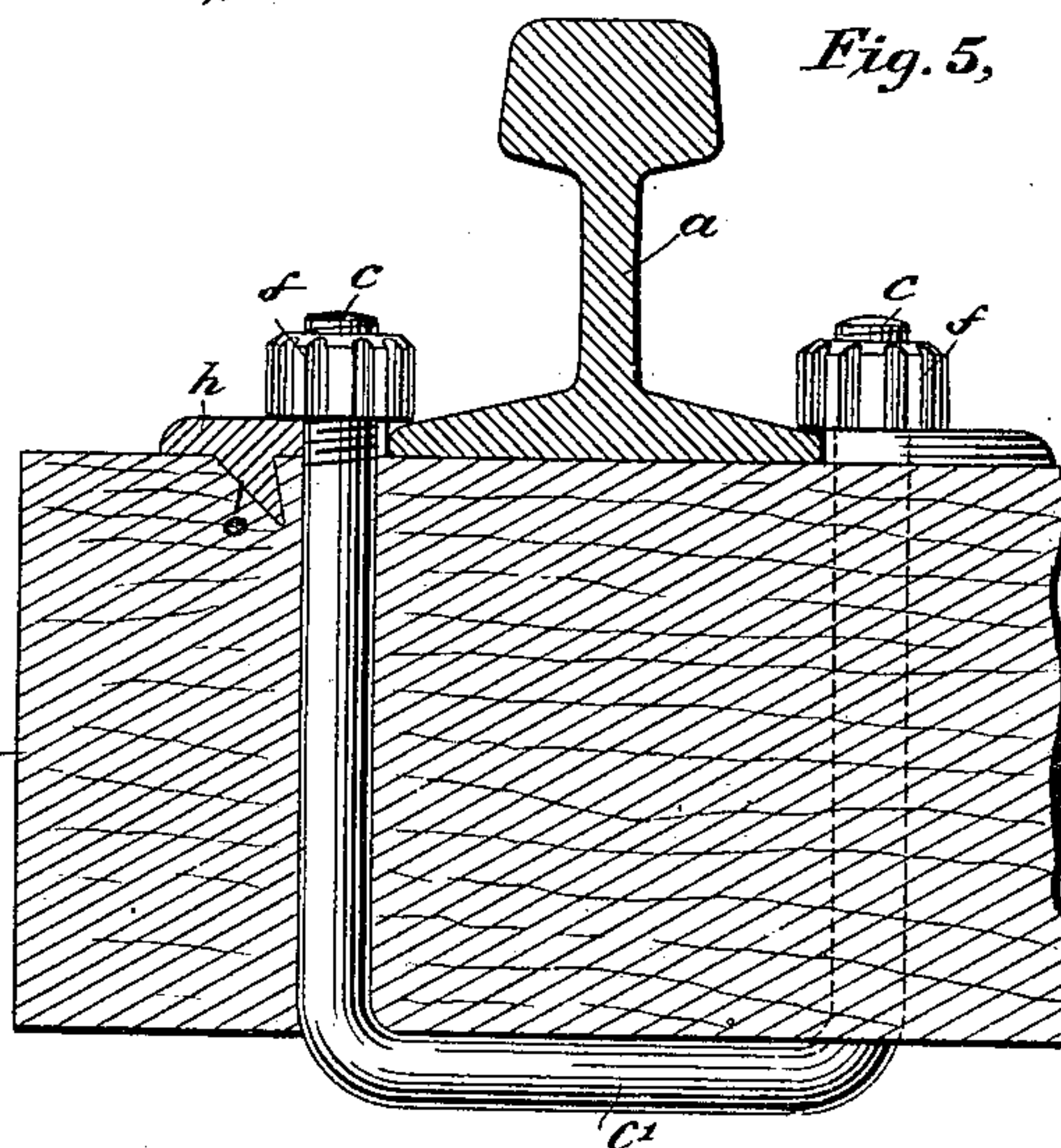
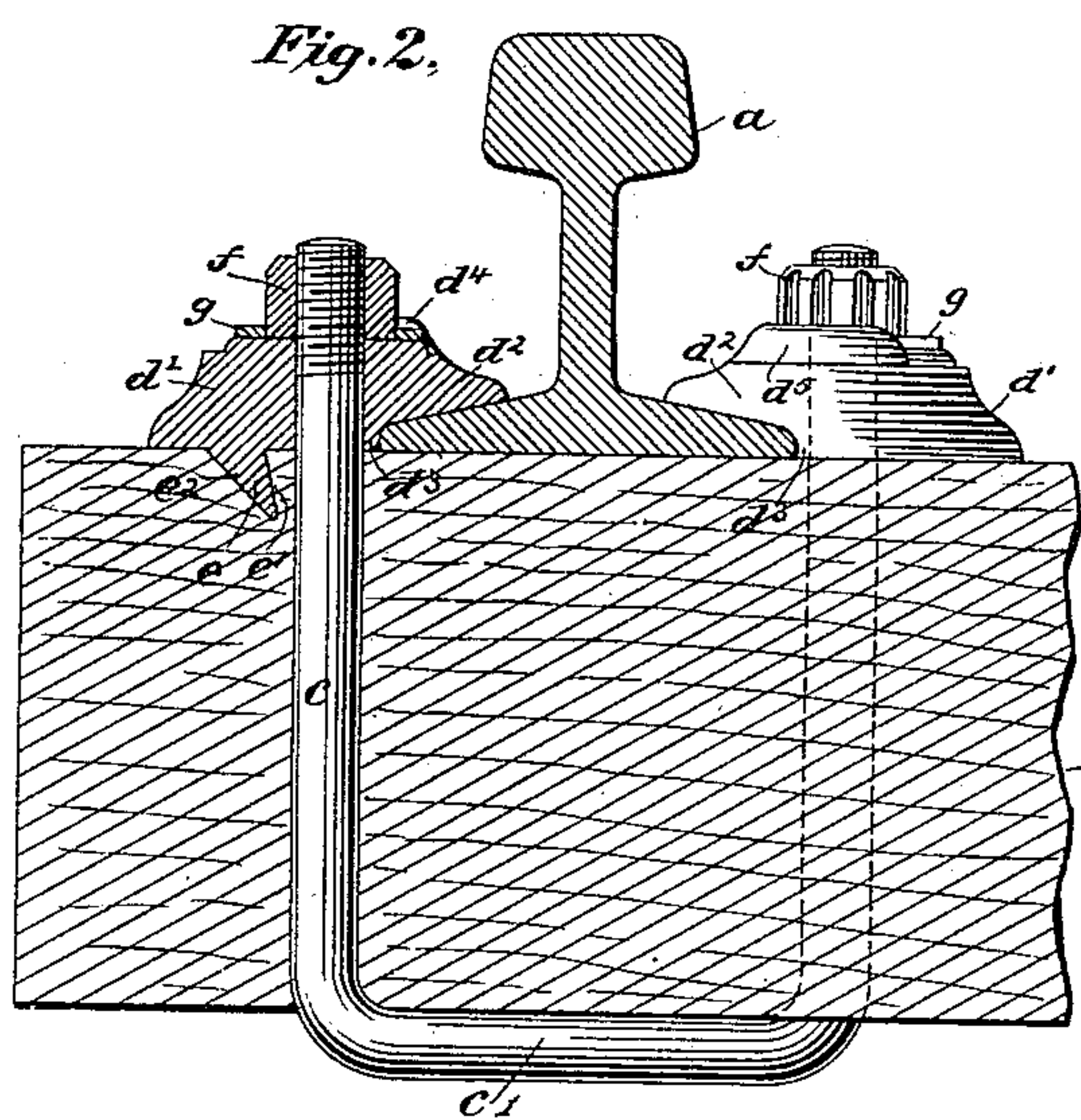
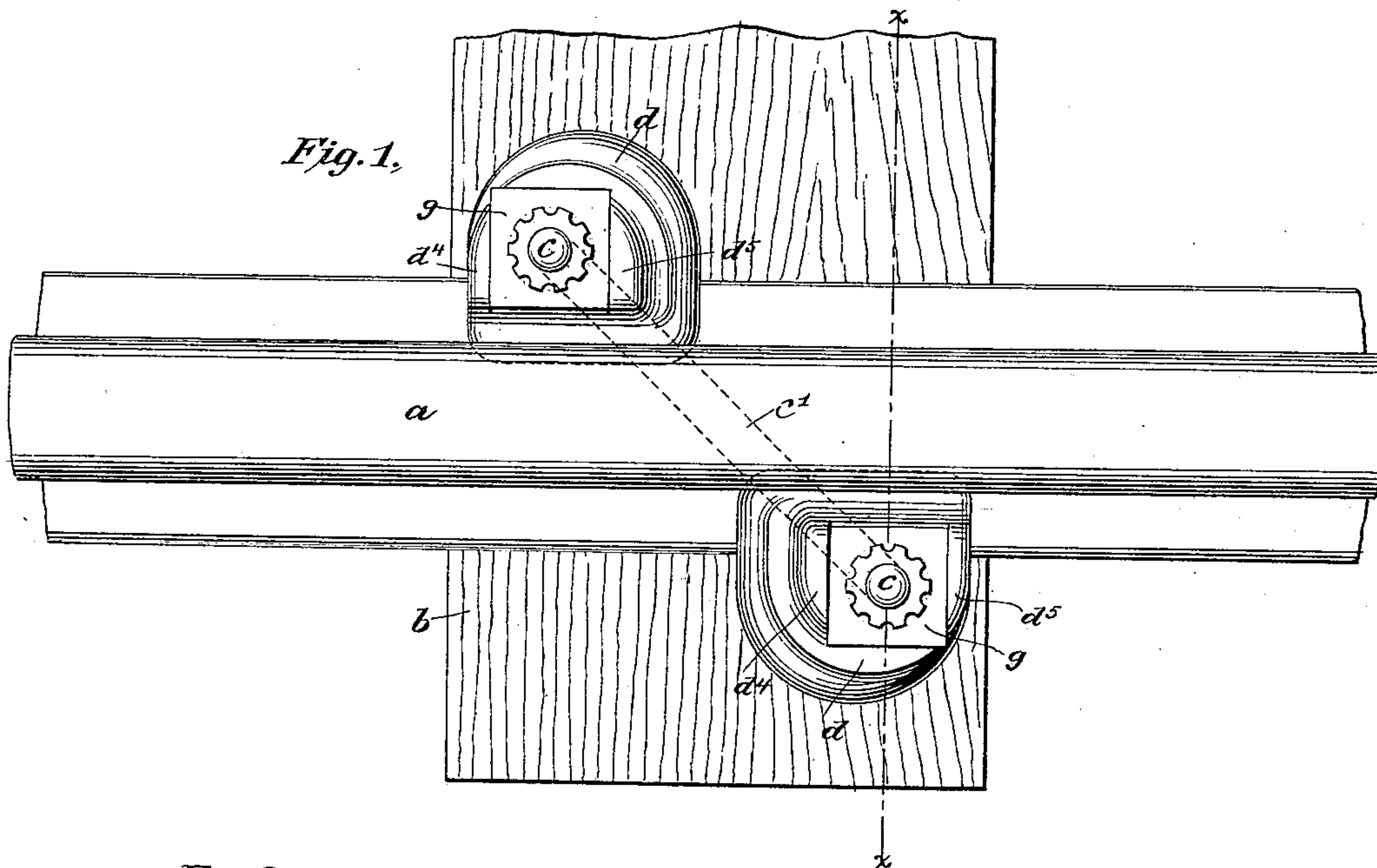


Fig. 3.

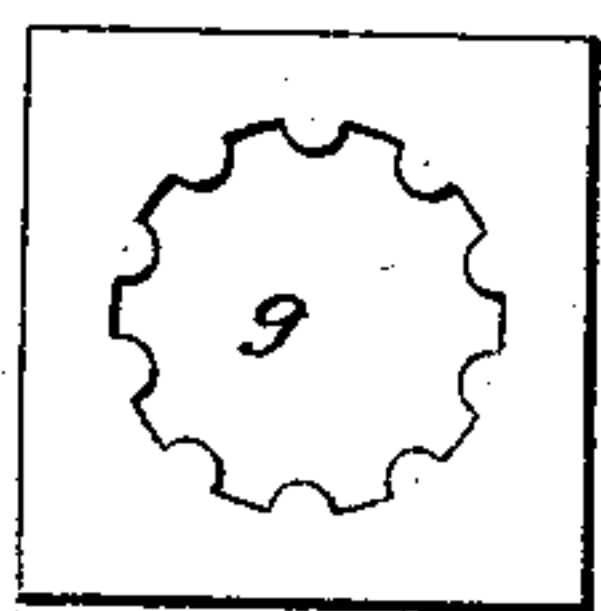
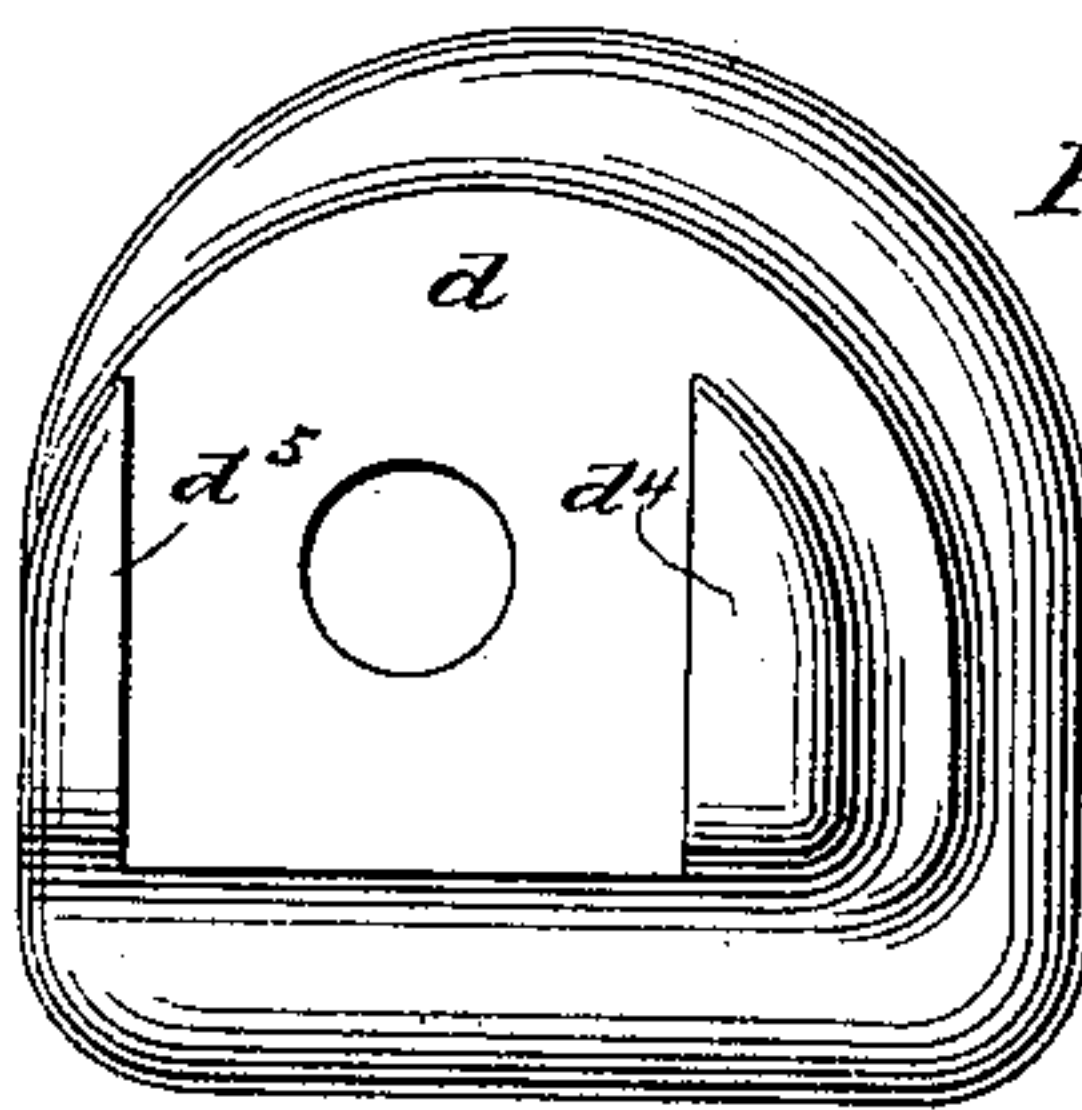


Fig. 4.



Witnesses

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HENRY D. CONE, OF STOCKBRIDGE, MASSACHUSETTS.

DEVICE FOR FASTENING RAILWAY-RAILS TO THEIR TIES.

SPECIFICATION forming part of Letters Patent No. 377,191, dated January 31, 1888.

Application filed June 10, 1887. Serial No. 240,886. (No model.)

To all whom it may concern:

Be it known that I, HENRY D. CONE, a citizen of the United States, residing in Stockbridge, in the county of Berkshire and State of Massachusetts, have invented a new and useful Improvement in Devices for Fastening Railway-Rails to their Ties; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, which form a part of this specification.

In the ordinary method of fastening the rails of a railroad-track to the wooden ties or sleepers the rails are held in place by common spikes, which are driven into the ties so that the heads of the spikes bear upon the flanges of the rail. As the spikes are held in the tie merely by friction, the severe strains that are brought to bear upon the rails soon loosen the spikes. Hence it is necessary, in order to keep the tracks in a safe condition, to be constantly driving the old spikes in again or replacing them with spikes driven into a new part of the tie.

The object of my complete invention is, principally, to fasten the rails to wooden ties or other sleepers with a strong and durable fastening device that can be made tighter and firmer with greater accuracy and ease than any fastener hitherto known; secondly, to provide a fastening which, when once secured in place, will not be loosened by the jars and shocks to which it is subjected, but will remain firm and solid for a long period of time without any additional tightening; and, thirdly, to provide an improved bearing between the rail and the fastening-bolt.

A further advantage of my invention is that the ties upon which it is employed can be used for a much greater length of time, and thus economy secured.

The invention consists of various devices and combinations, which are specified in the claims at the close of this specification.

In order that they may be fully understood, I have represented in the accompanying drawings and will proceed to describe the mode in which I prefer to embody them for practical use.

In the accompanying drawings, showing my complete rail-fastening, Figure 1 is a plan view

of the same. Fig. 2 is a vertical sectional view of the same at the line *x x* of Fig. 1. Fig. 3 is a plan view of my lock-plate, and Fig. 4 a plan view of my clamp. Fig. 5 shows a modification of my invention.

Similar letters indicate similar parts in the various figures.

Referring to the drawings, *a* is a rail of any desired construction.

b is a wooden tie.

c is a yoke-bolt, the threaded ends of which pass up through holes in the tie, and the connecting-arm *c'* of which bears against the underside or portion of the tie, or is drawn somewhat into the under side of the tie.

d d are two clamp-bearings or clamps which are placed one on each side of the rail, preferably in a diagonal position, as shown. Each of these clamps consists, mainly, of two portions—viz., a bearing portion or bearing, *d'*, fitted to bear upon the surface of the wooden tie and protect it from injury by the nut *f* of the bolt, and an offset, *d²*, which is fitted to project over the flange of the rail for the purpose of holding it down to the tie, while the shoulder *d³* at the side of the bearing bears against the edge of the flange of the rail and holds it from moving laterally. Each clamp is provided with at least one lug, and preferably with two lugs, *d⁴ d⁵*, projecting from its upper face. Each clamp also has a hole to receive the threaded arm of the yoke-bolt. On the under side of the clamp is a wedge-formed stud or projection, *e*, designed to be forced down into the tie when the clamp is being secured in its place, and in order that the clamp may be caused to press laterally toward the rail-flange as the clamp is being pressed down upon the tie the face *e'* of the stud, which is nearest the offset *d²* of the clamp, is constructed of steeper inclination than the other face, *e²*, of said stud.

f f are nuts, preferably fluted, which are screwed onto the arms of the yoke-bolt *c*.

g g are lock-plates having holes or apertures made to correspond in shape with the exterior of the nuts, so that the plates can be slipped down over the nuts.

I do not herein claim the form of nut shown, as I have reserved that claim for a separate application.

The plate *g* is so made that it will bear against the lug or lugs of the clamps, so that the lug or lugs prevent the lock-plate and the nut from turning. These lock-plates can be
5 made of any suitable material and thickness. I prefer to pass the bolt through the tie in a diagonal direction, as shown, as the tie is in this way inclosed or clasped by the bolt, and even if the tie splits or cracks the fastening
10 will still remain firm.

By employing my improved fastening the tie can be used for a much greater length of time than with other fastenings, for as the tie wears or becomes softened by age, and thus
15 loosens the bearings of the yoke-bolts, the nuts on those bolts can be screwed farther on, so as to draw the yoke-bolt up into the tie until it again has a firm and complete bearing in the wood of the tie.

20 In place of the clamps *d d* being constructed with offsets, portions of my invention may be used by using bearings *h* without offsets, as shown in Fig. 5, in which case the nuts bear also against the rail-flange, but I prefer to employ my improved clamps.

Certain parts of my invention can be used separately or in other combinations, so I do not limit my claims to the entire combination shown in the drawings.

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

1. The combination, substantially as before set forth, of the railroad-rail, the wooden cross-tie, the yoke-bolt passed through said
35 cross-tie, and metallic bearings between the nuts of said bolt and said cross-tie.

2. The combination, substantially as before set forth, of the railroad-rail, the wooden cross-tie, the yoke-bolt passed through the said cross-tie, and the clamps bearing upon
40 the opposite sides of said rail.

3. The clamp constructed, substantially as before set forth, with a lug projecting from its upper face integral therewith to hold a detach-
45 able locking device from turning.

4. The clamp constructed, substantially as before set forth, with a lug integral therewith projecting from its upper side to hold a detach-
50 able locking device from turning and a stud projecting at its under side.

5. The clamp constructed, substantially as before set forth, with an offset at one side and with a wedge-formed stud at its under face, having that face of the stud which is nearest
55 the offset of steeper inclination than the other face of said stud, whereby the said clamp is pressed laterally in the direction of said offset when the stud is forced into yielding material.

6. The clamp constructed, substantially as before set forth, with a wedge-formed stud at
60 its under face, having that face of the stud which is nearest the bearing side of the clamp of steeper inclination than the other face of said stud, whereby the said clamp is pressed
65 laterally in the direction of said bearing side when the stud is forced into yielding material.

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Witnesses:

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