

(No Model.)

H. E. CROSSWELL.
RAIL FASTENING DEVICE.

No. 362,428.

Patented May 3, 1887.

Fig. 1.

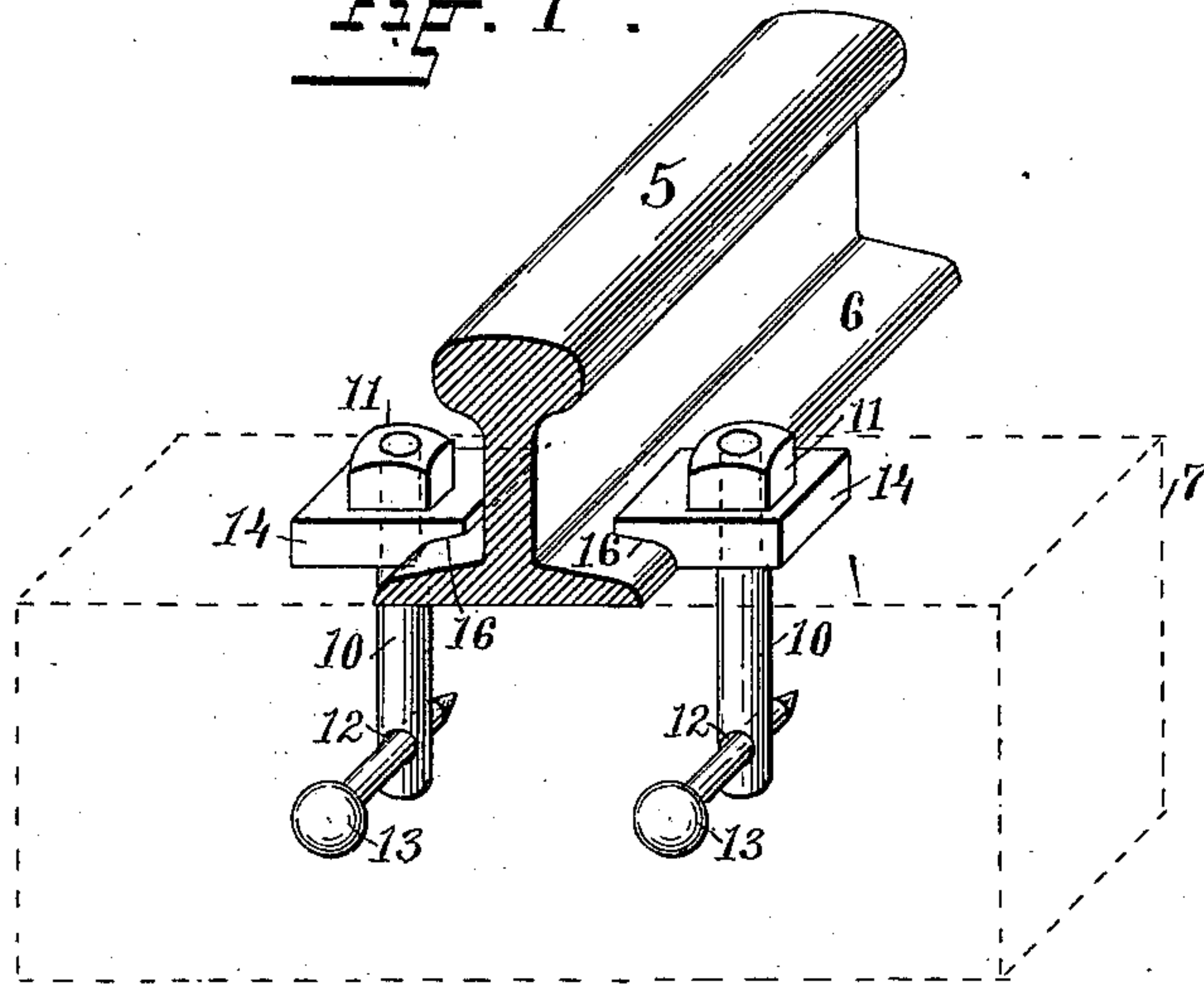


Fig. 2.

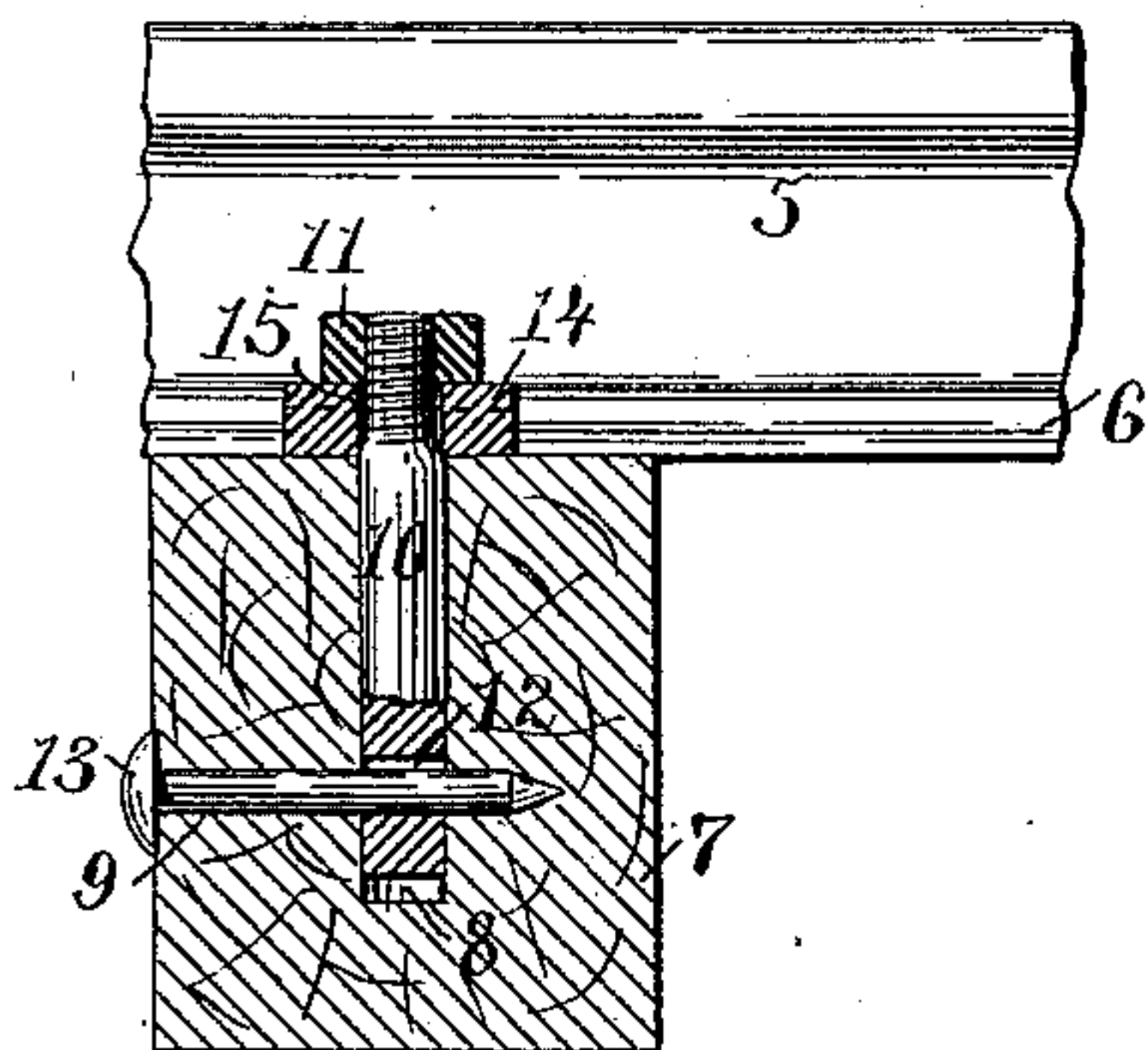
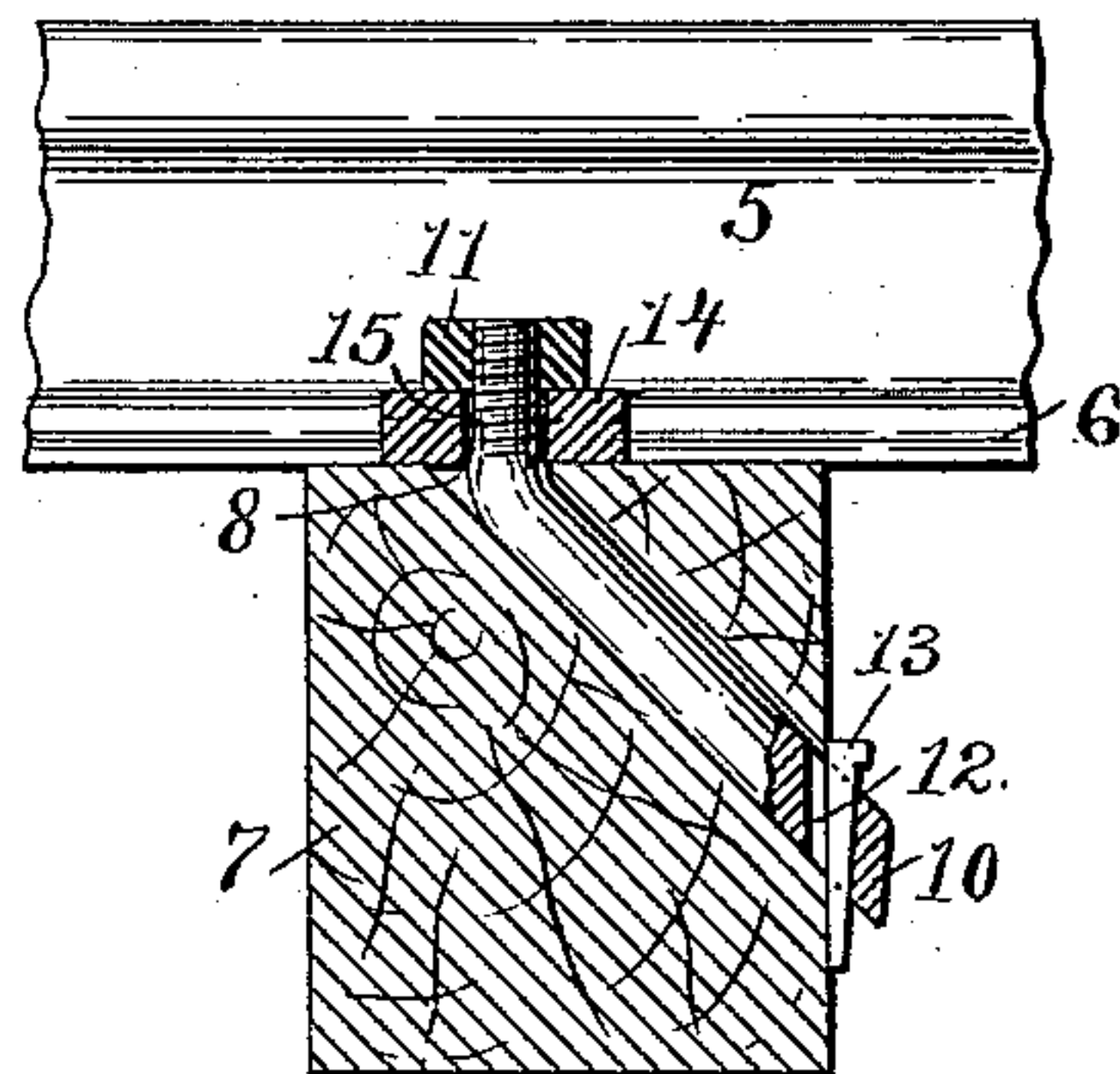


Fig. 3.



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UNITED STATES PATENT OFFICE.

HERBERT E. CROSSWELL, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF
ONE-HALF TO WALTER A. GRIFFITH, OF SAME PLACE.

RAIL-FASTENING DEVICE.

SPECIFICATION forming part of Letters Patent No. 362,428, dated May 3, 1887.

Application filed December 8, 1886. Serial No. 230,987. (No model.)

To all whom it may concern:

Be it known that I, HERBERT E. CROSSWELL, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Rail-Fastening Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

10 This invention relates to a device for fastening ordinary railway-rails in operative position upon the cross-ties and securely maintaining the same in place.

15 The method of fastening rails by driving spikes into the cross-ties is objectionable, for the reason that the frequent replacement of worn rails causes the ties to become too mutilated for use, thereby necessitating renewal, and moreover the spikes cannot be tightened
20 up as often as desired.

One object of my invention is to prevent mutilation of the cross-ties in replacing the rails and to permit of the same cross-ties being used a number of times.

25 Another object of my invention is to render the fastening device permanent and adjustable to take up any loosening.

Another object of my invention is to provide a fastening device that will lock the rail
30 immovably in position.

To the above purposes my invention consists in the novel constructions and arrangements of the several parts of the device, all as and for the purpose hereinafter fully described and claimed.
35

In the accompanying drawings, illustrating my invention, Figure 1 represents a perspective view of a section of a railway-rail provided at opposite sides of the base with my improved
40 fastening devices, the cross-tie being shown in relative position, as in portion and in broken lines. Fig. 2 represents a vertical cross-section of a cross-tie having a portion of a rail mounted thereon and provided with my fastening device. Fig. 3 represents a similar view
45 as shown in Fig. 2, with another form of my fastening device.

In the said drawings like numbers of reference designate corresponding parts throughout.
50 out.

Referring to the drawings, 5 designates a portion of an ordinary form of metallic railway-rail having a flat base, 6, extending to each side of the web of the rail. The rail is mounted across the upper face of the cross-tie 55 7, which is formed with a socket, 8, and a horizontal socket, 9, communicating therewith and extending to one of the side faces of the cross tie.

The screw-bolt 10 is a cylindrical bolt having the head thereof screw-threaded to receive the nut 11, and the foot thereof perforated, as at 12, to receive the locking-pin 13.

The clamp-plate 14 is a flat rectangular plate formed with the central opening, 15, to
65 receive the screw-bolt, and has one face cut away, as at 16, in order to snugly fit the convexity of the rail-base, as shown in Fig. 1.

The screw-bolt 10 is shown in Fig. 3 as having the main part inclined to the screw-threaded
70 head portion, and the socket 8 is formed accordingly inclined instead of vertical, as in Fig. 2. In this construction the perforated foot of the screw-bolt projects out of one of the side faces of the cross-tie, and is there held
75 by the locking-pin 13, which takes against the cross-tie, and thereby avoids the necessity of the horizontal socket 9 for the pin. The horizontal socket 9 is made of less diameter than
80 the locking-pin 13, so that when the pin is driven in the socket it may be tightly fixed therein.

The screw-bolt is first set down in the socket 8 until the perforation 12 registers with the horizontal socket 9, and then the locking-pin
85 13 is driven into position through the perforation and across the socket 8, as clearly indicated in Fig. 2. The screw-bolt and locking-pin are thus made permanent fixtures in the cross-tie, and the bolt is held rigidly in position. When the rail is placed in position, the
90 clamp-plate 14 is set down over the screw-bolt, so that the cut-away portion may engage the rail-base, and then the nut 11 is screwed down tightly against the plate 14, which will thereby
95 clamp and hold the rail as desired.

I prefer to locate the fastening devices in pairs on the cross-ties, as shown in Fig. 1, in order to clamp the rail at opposite points and securely hold it in position.

By virtue of my improved device the rails can be readily replaced by unscrewing the nut and removing the clamp-plate. When the clamp-plate becomes loose, the nuts may be
5 adjusted to make the plates bind the rail. The same cross-tie and set of fastening devices can be used for a number of renewed rails, and since the devices always remain in the same sockets the cross-ties do not become mutilated
10 in replacing the rails, and the fasteners will always be efficient.

My fastening device may be used with advantage at the rail-joints by broadening the clamp-plate, so that it may overlap each of
15 the abutting-rail ends of the joint, so as to bind equally on each rail and hold the rails in alignment.

There may be various modifications made in the principal parts of my invention without,
20 however, making a substantial departure from the spirit of the same, as herein fully described and claimed.

I am aware of the heretofore construction, wherein rail-chairs or clamping-plates are
25 clamped upon the rail by means of screw-bolts which interlock near their lower ends, so as to confine said bolts into fixed positions. I therefore disclaim, broadly, the use of screw-

bolts for holding clamping-plates in position; but,

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the cross-tie 7, provided with the socket 8, the rail 5, the screw-bolt 10, provided with the perforation 12 at
35 the foot thereof for the locking-pin, the clamp-plate 14, having the opening 15 to receive the screw-bolt, the nut 11, working on the screw-bolt and adapted to bind upon the clamp-plate, and the locking-pin 13, taking in the perfora-
40 tion 12, substantially as herein described.

2. The combination of the rail 5, the cross-tie 7, provided with the vertical socket 8 and the communicating horizontal socket 9, the screw-bolt 10, having the perforation 12 at the
45 foot thereof for the locking-pin, the clamp-plate 14, provided with the opening 15 to receive the screw-bolt, the nut 11, working on the screw-bolt and acting to bind upon the clamp-plate, and the locking-pin 13, substan-
50 tially as herein described.

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