

J. M. VAIL.

RAIL CLAMP.

APPLICATION FILED JULY 13, 1908

904,820.

Patented Nov. 24, 1908.

Fig. 1.

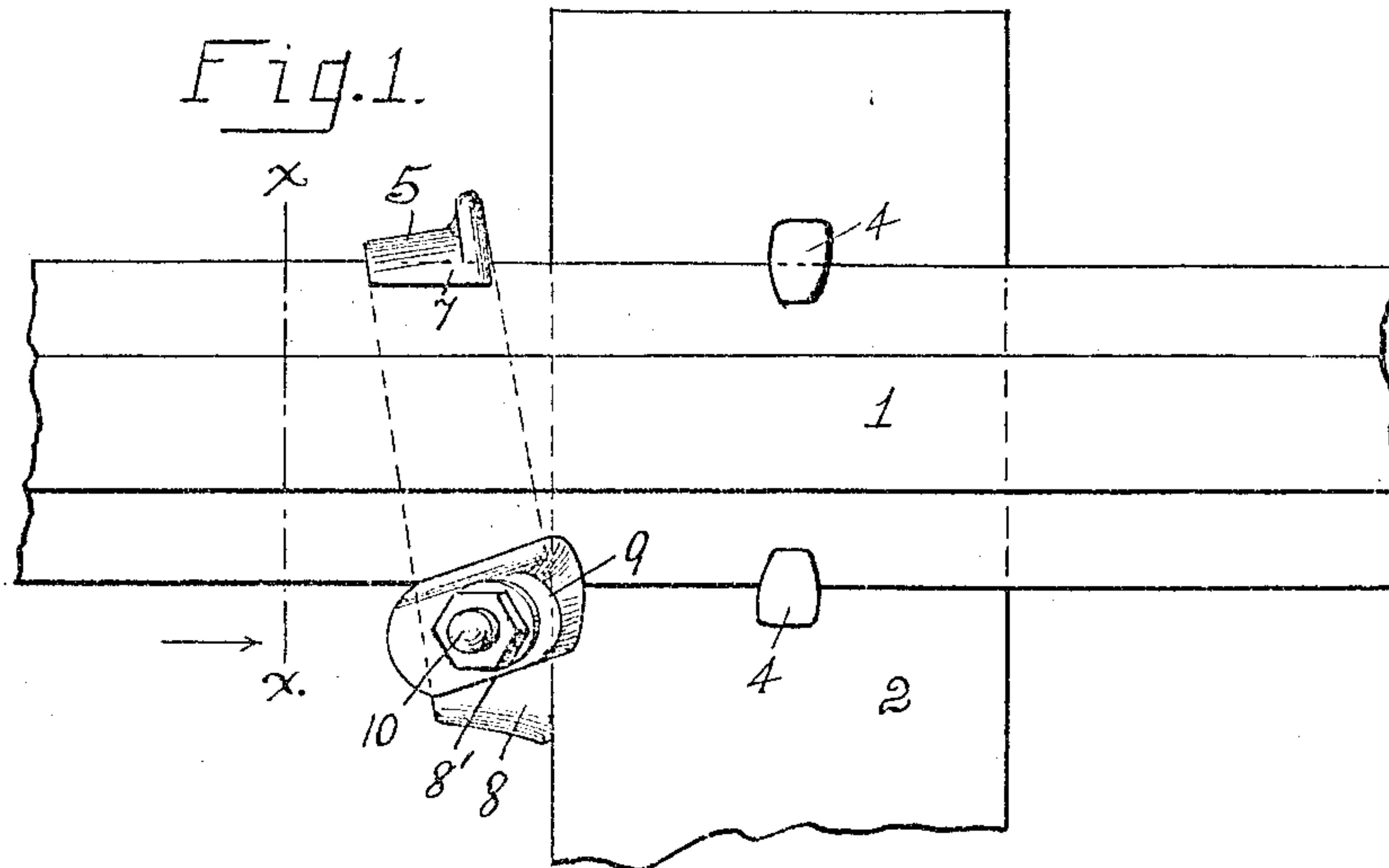


Fig. 2.

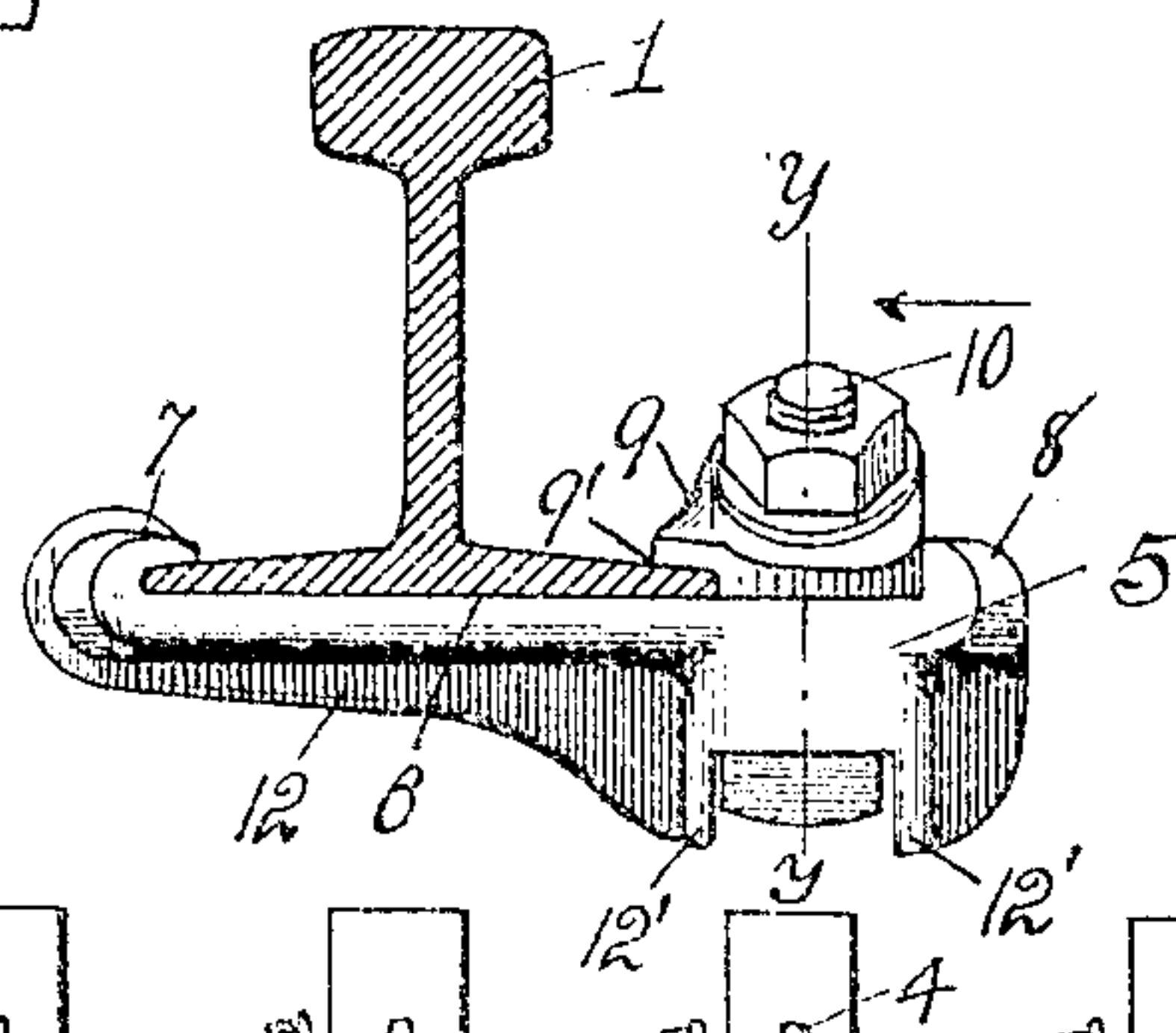


Fig. 3.

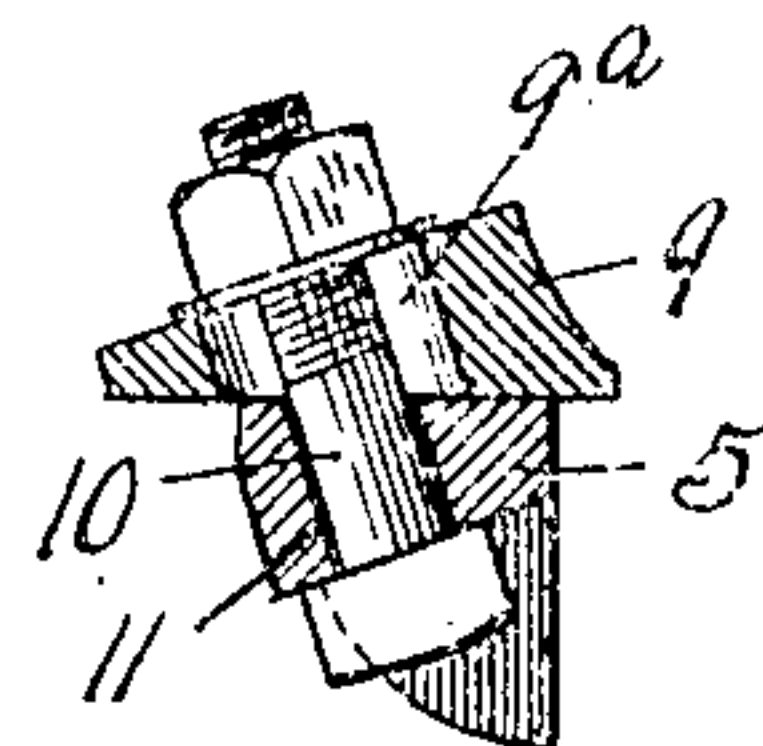
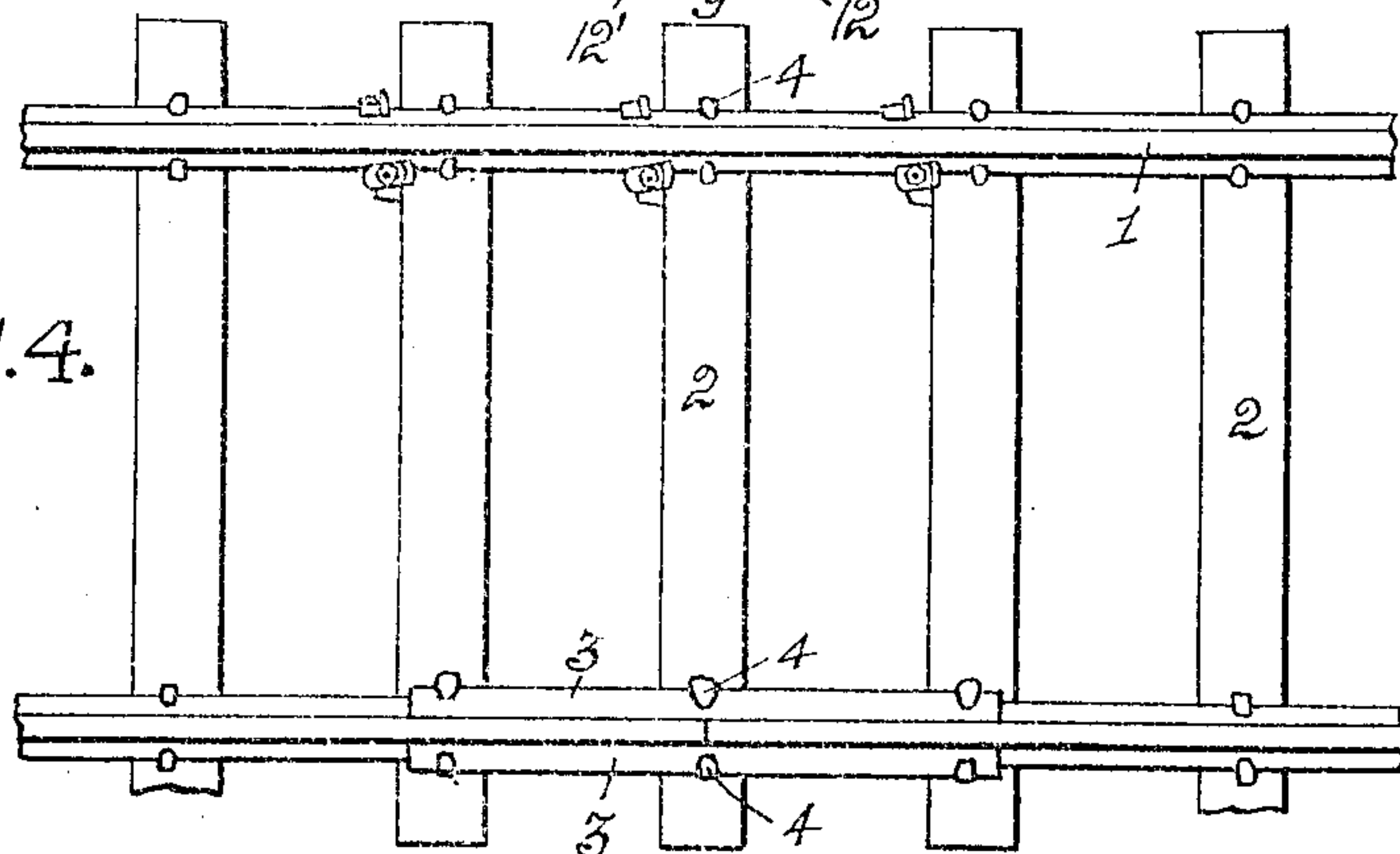


Fig. 4.



WITNESSES:

D. C. Walter
Connel Schreiber

INVENTOR.

Joseph M. Vail,
By Owen & Owen,
His attys.

UNITED STATES PATENT OFFICE.

JOSEPH M. VAIL, OF BRYAN, OHIO.

RAIL-CLAMP.

No. 904,320.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed July 13, 1908. Serial No. 443,287.

To all whom it may concern:

Be it known that I, JOSEPH M. VAIL, a citizen of the United States, and a resident of Bryan, in the county of Williams and State of Ohio, have invented a certain new and useful Rail-Clamp; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to railway appliances, and has particular reference to rail-clamps adapted to prevent a relative slipping of rails and the ties with which they engage. Considerable trouble has been experienced by railroads due to the tendency of the rails of tracks to creep in the direction in which the trains run thereover. This creeping of the rails causes the ends of the ties to which the fish-plates connecting the ends of abutting rails are spiked to creep with the rails due to the fish-plates being bolted to the rails and the spikes passing through slots or notches in their edges, while the opposite ends of such ties are permitted to remain stationary due to the supported rail sliding relative thereof, thus resulting in the ties to which the fish-plates are spiked being twisted out of parallelism with the other ties and tending to weaken the track at such points. The creeping of the rails of tracks over which trains run in both directions also frequently causes a spreading of the rails due to unequal strain being applied thereto.

The object of my invention is the provision of simple, efficient and improved means for attaching to the rails of a track and connecting with the ties in such manner as to cause the opposite ends thereof opposed to those to which the fish-plates are attached to creep with the supported rail, whereby to prevent the ties from being twisted out of parallelism with the other ties of the track.

The operation, construction and arrangement of the parts of the invention are fully described in the following specification and illustrated in the accompanying drawings, in which,—

Figure 1 is a plan view of a rail and tie with the device comprising my invention in engagement therewith. Fig. 2 is a section on

the line *x x* in Fig. 1. Fig. 3 is a section on the line *y y* in Fig. 2, and Fig. 4 is a plan of a section of track having my invention associated therewith.

Referring to the drawings, 1, 1 designate the two rails of a track, 2 the ties supporting them, 3 the usual fish-plates joining the ends of the abutting rails together, and 4 the rail-spikes.

The device comprising my invention is intended to be clamped to the base of a rail 1, and consists of the clamp-bar or block 5, which has its top 6 adapted to rest against the under side of the rail-base and one end formed with an upwardly and inwardly projecting hook 7 for engaging over one flange or side of the rail-base, as shown. The other end of the clamp-bar 5 is formed with an upwardly projecting lug 8, which has its inner vertical face inclined or tapered transversely of the block, as shown at 8', to adapt it to cooperate with a wedge or key-block 9 to cause the latter to firmly grip the rail-flange in opposition to the hook 7 to hold the block or bar 5 thereto. The wedge-block 9 has its inner or rail-coacting edge provided with an undercut 9' to receive the rail flange, as shown, and has the base or inner wall of such undercut inclined relative to the outer or lug-coacting side thereof to adapt such wall to stand in parallelism with the rail edge when the outer side of the wedge-block is in contact with the lug.

The wedge-block 9 has its top preferably forwardly inclined and is provided therethrough with the longitudinally-extending slot 9" for receiving the shank of a clamping-bolt 10, which passes through a registering aperture 11 in the bar or block 5, said aperture having its axis disposed at right-angles to the inclined top of the wedge-block 9. The purpose of inclining the top of the block 9 and also disposing the bolt 10 at an incline relative to a vertical is to tend to move the wedge-block forward to more tightly grip the rail-base when the nut on the bolt 10 is tightened.

The clamp-bar 5 is shown as being longitudinally strengthened by a base flange 12 and as having the two transverse flanges 12' at opposite sides of the bolt aperture 11 to coact with the bolt head to prevent a turning thereof with the nut.

For the purpose of causing the clamp to more firmly grip or tighten upon the rail-base when force is applied thereto longi-

tudinally of the rail, as is the case when the rail and clamp-abutting tie have relative movements in one direction, the clamp-bar 5 has its tie abutting side longitudinally angled so that one end portion only thereof (preferably the wedge-block carrying end) is adapted to have contact with the side of a tie when the clamp is in position on the rail, the other end portion of the clamp-bar diverging from the tie side, as shown in Fig. 1.

In practice, the clamps comprising my invention are secured to the base of a rail in position to abut against the side of each tie the opposite end portion of which is spiked to a fish-plate, so that the rail supported by such end and to which the fish-plate is bolted is prevented from creeping relative to such tie. The clamps are placed on the sides of the ties from which the creeping force is applied, or in other words, if the rails creep to the right the clamps are placed at the left of the coacting ties. It is apparent that to secure a clamp in position on a rail it is only necessary to engage the clamp-bar hook 7 with one base-flange of a rail and then secure the wedge-block 9 in binding engagement with the other base flange by a tightening of the bolt 10. Any creeping tendency of the engaged rail will now be communicated to the tie or ties against which the clamp or clamps abut, thus causing both ends of a tie to which a fish-plate is spiked to have uniform creeping movements with the rails.

It will be noted that the inclined face of the lug 8 is so disposed as to coact with the wedge-block to effect a tightening thereof against the rail-base when said block has a forward movement relative to the clamp-bar, as is the case when the rail creeps and the movement of the attached clamp-bar is resisted by the associated tie.

I wish it understood that I do not desire to be restricted to the exact details of construction and arrangement of the parts of

my invention shown and described, as obvious modifications will be apparent to persons skilled in the art.

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

1. A rail-clamp of the class described comprising a clamp-bar adapted to underlie a rail-base and having a rail-flange engaging-hook at one end and an upwardly-projecting lug at the other end, a wedge-block secured to the clamp-bar top in abutment with said lug and adapted to cooperate with said clamp-bar hook to grip the opposed flanges of a rail-base, said wedge-block having a forwardly-inclined top, and a bolt passing through the wedge-block and clamp-bar at right-angles to the plane of the wedge-block top, substantially as described.

2. A rail-clamp of the class described comprising a clamp-bar adapted to underlie the rail-base transversely thereof and having one end formed with an upwardly and inwardly projecting rail-flange engaging-hook and its other end provided with an upwardly projecting lug having an inner tapered surface, said clamp-bar having one side thereof longitudinally angled, a wedge-block carried by said clamp-bar and adapted to abut against the inclined surface of said lug and to cooperate with the clamp-bar and its hook to secure the clamp to a rail-base, said wedge-block having its top forwardly-inclined and being provided with a bolt-receiving slot, and a bolt passing through said slot and one end portion of the clamp-bar and having its axis disposed at right angles to the inclined top of the wedge-block, substantially as described.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH M. VAIL.

Witnesses:

C. W. OWEN,

CORNELL SCHREIBER.