

No. 671,734.

Patented Apr. 9, 1901.

J. M. SPAULDING.

RAIL FASTENER.

(Application filed Oct. 1, 1900.)

(No Model.)

Fig. 1.

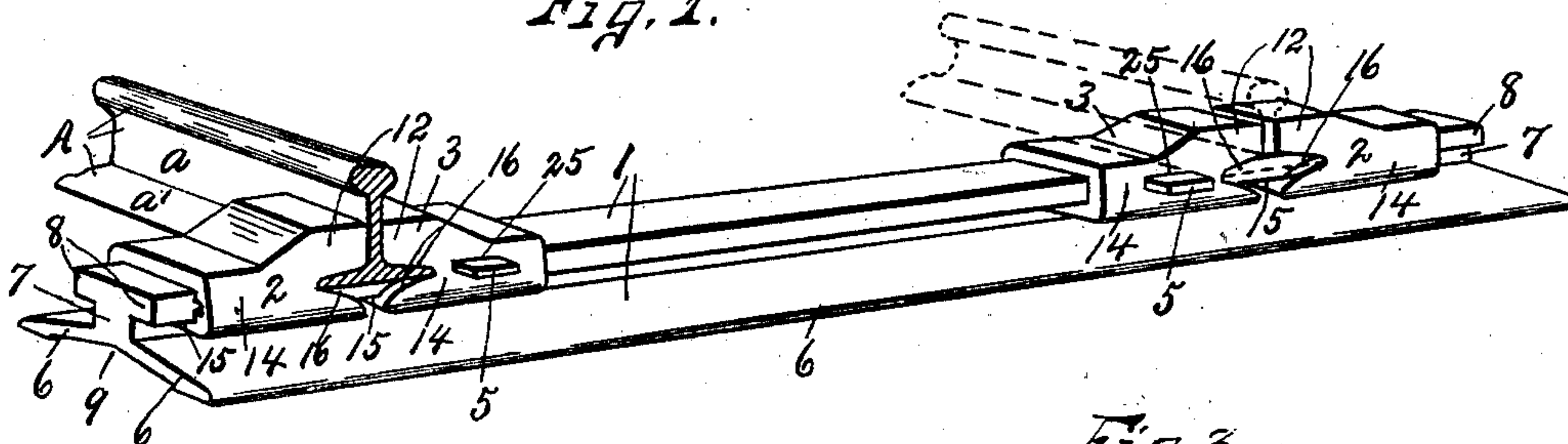


Fig. 2.

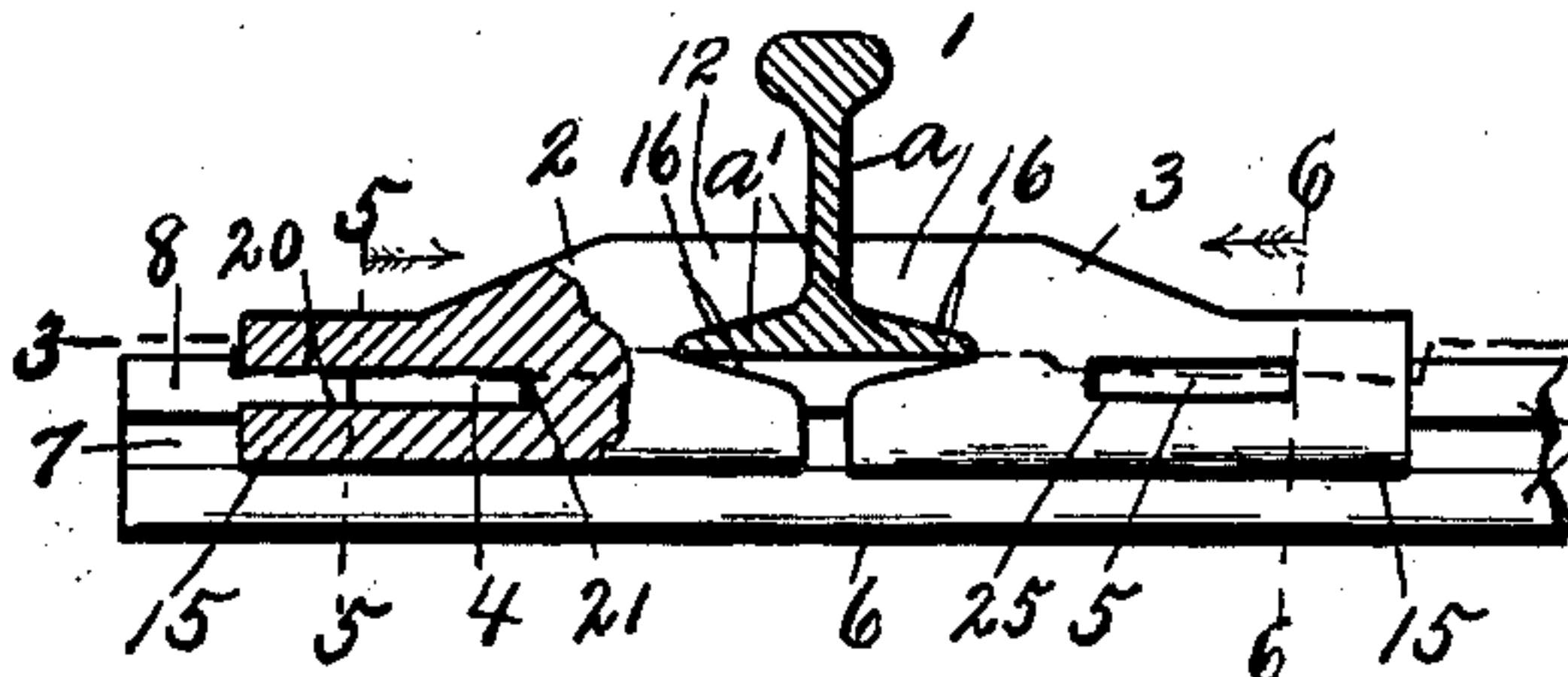


Fig. 3.

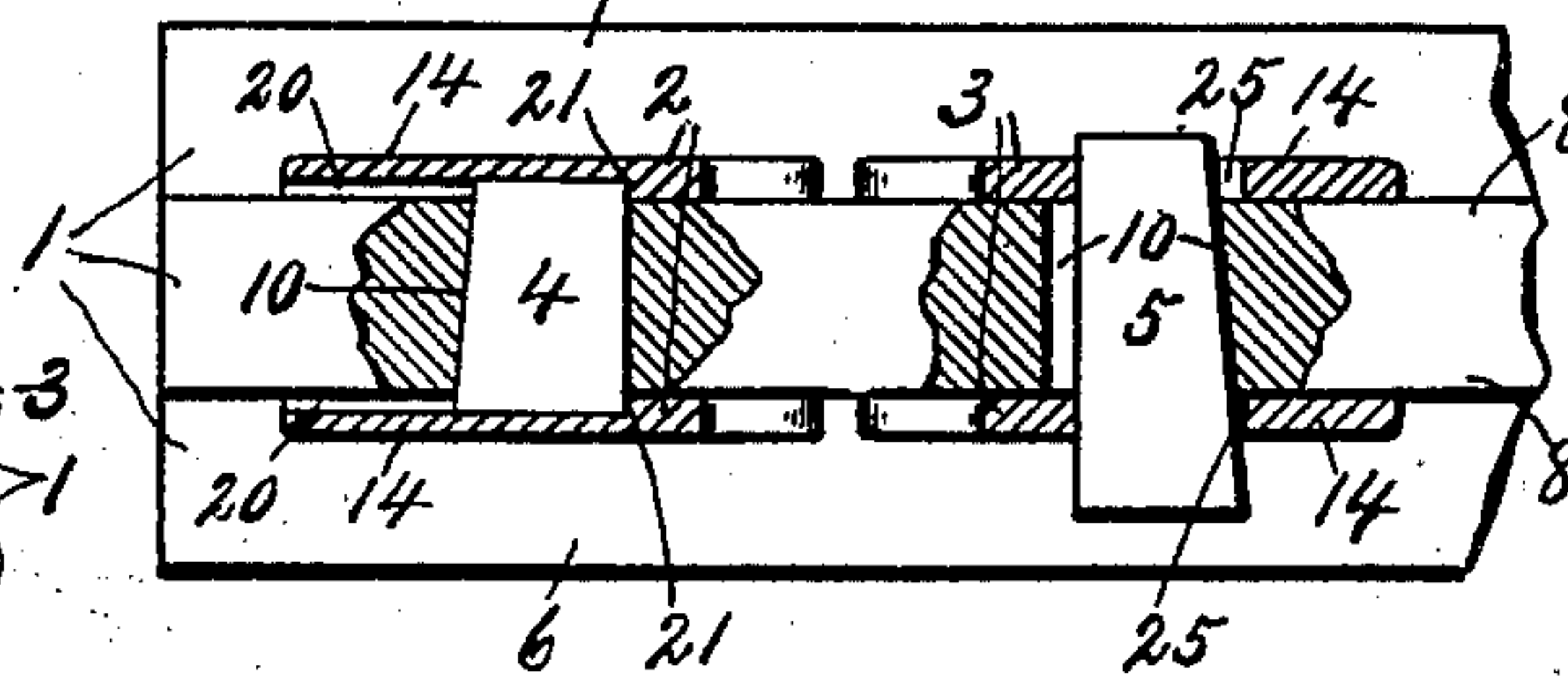


Fig. 4.

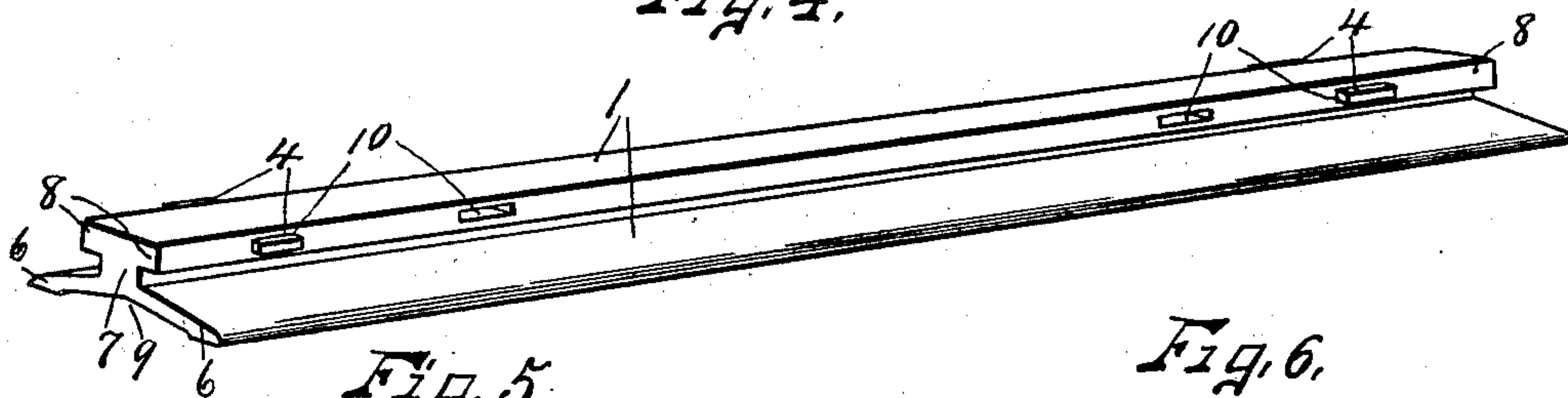


Fig. 5.

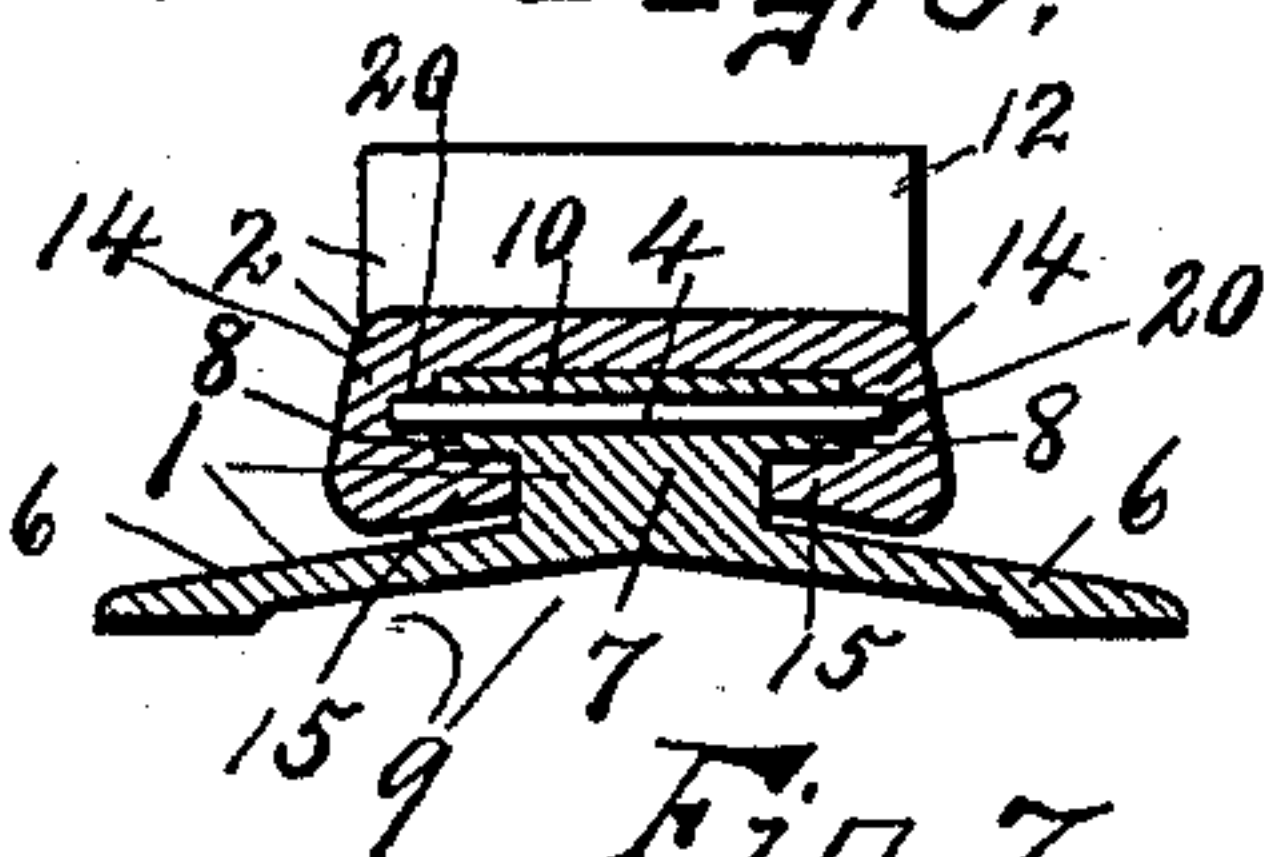


Fig. 6.

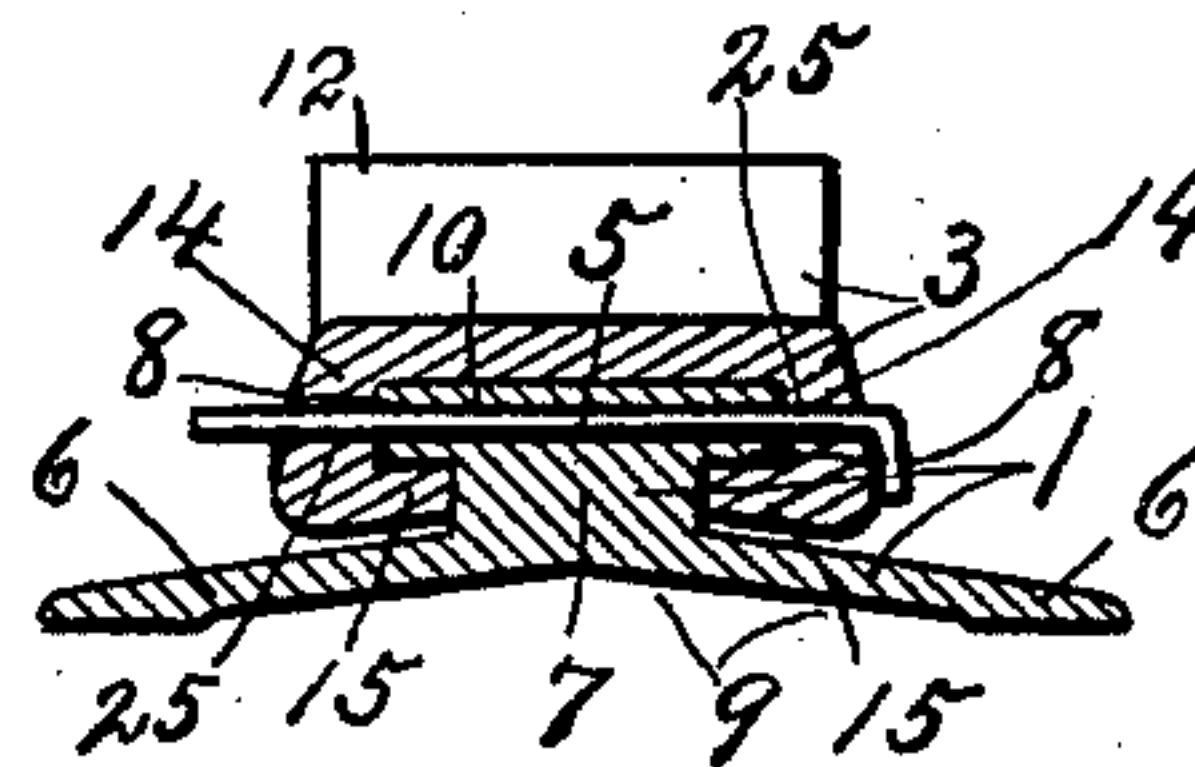


Fig. 7.

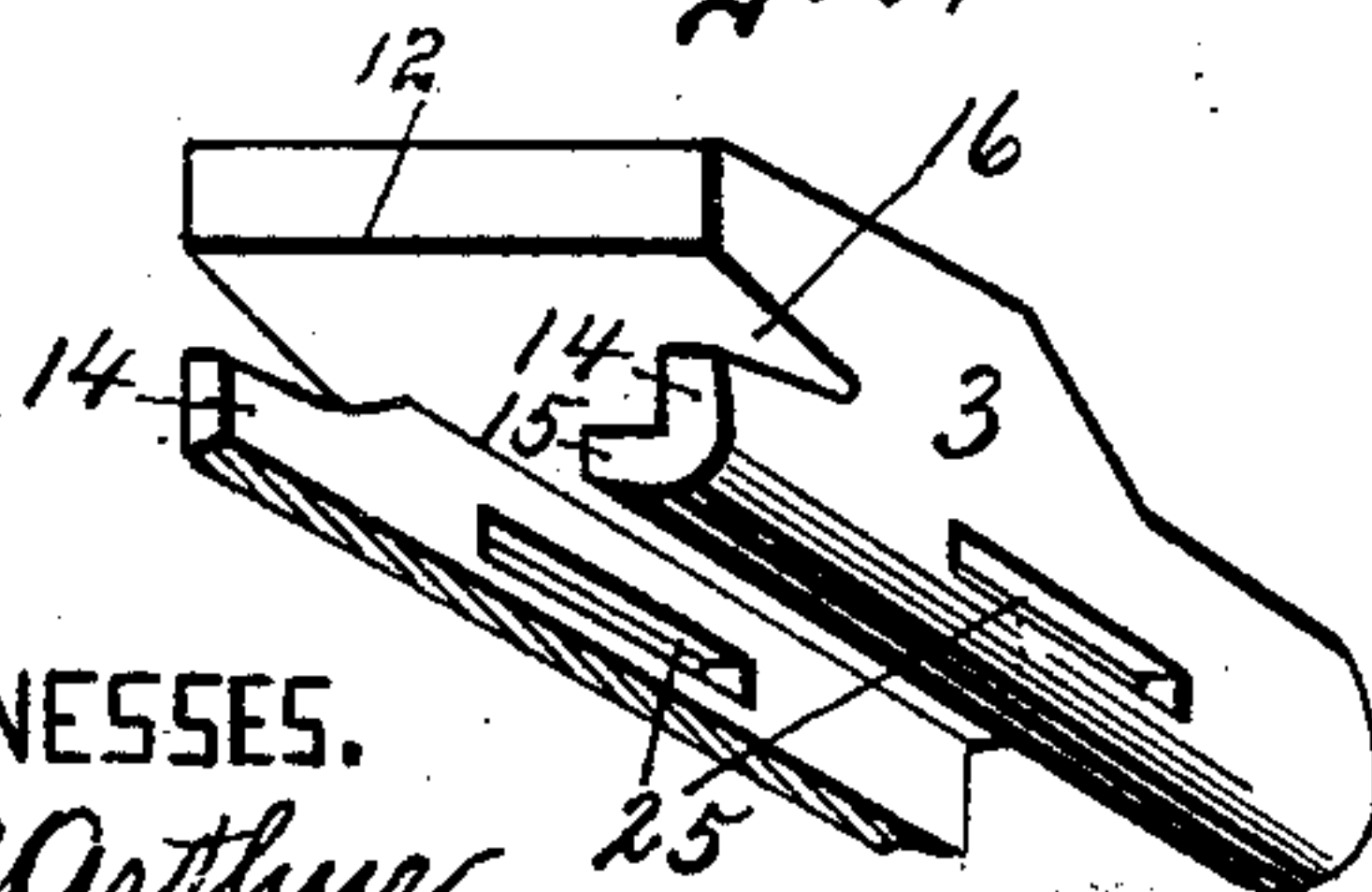
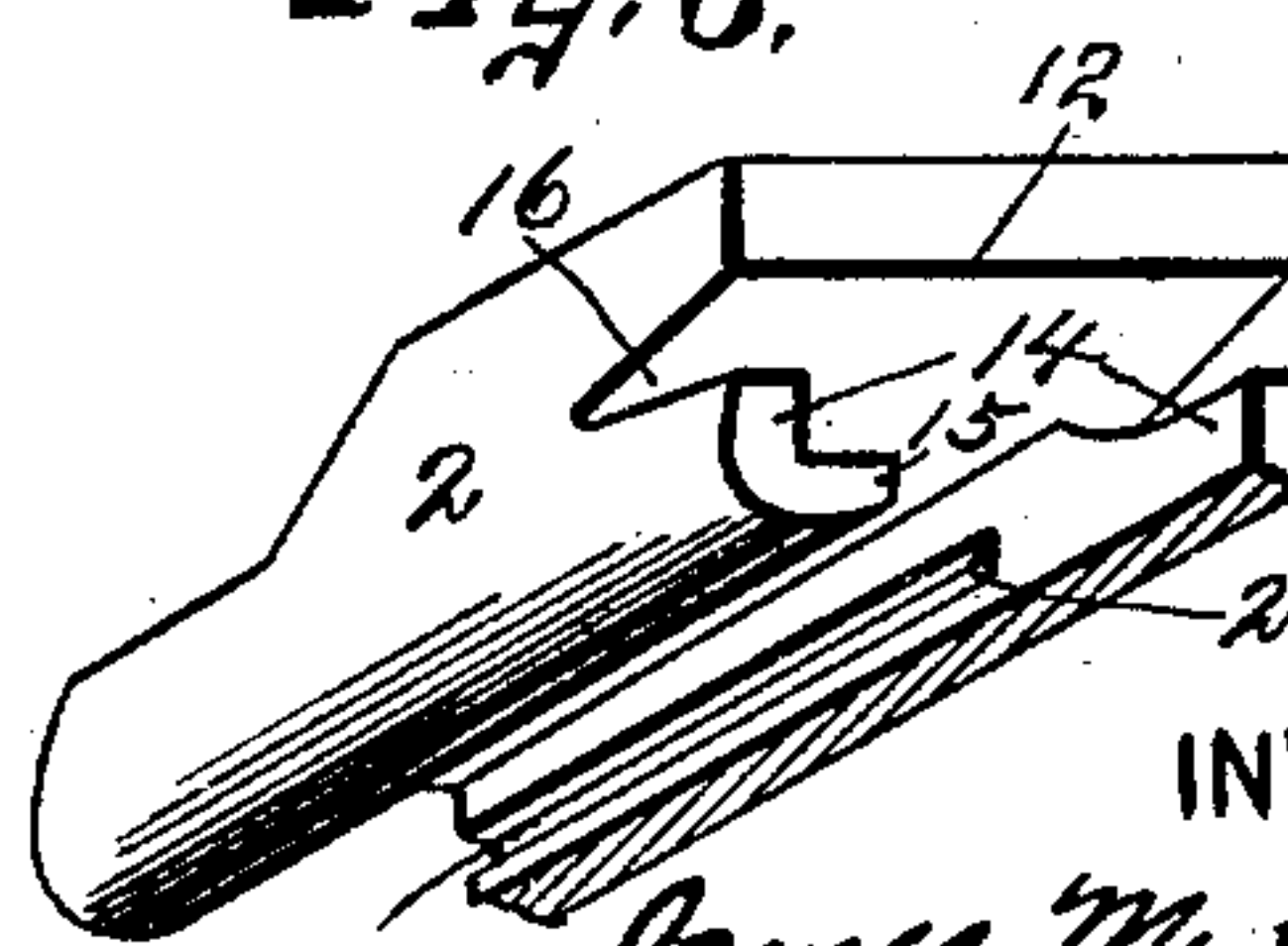


Fig. 8.



WITNESSES.

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RAIL-FASTENER.

SPECIFICATION forming part of Letters Patent No. 671,734, dated April 9, 1901.

Application filed October 1, 1900. Serial No. 31,620. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. SPAULDING, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Rail-Fasteners, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in rail-fasteners, one object being to provide a simple and practical device which is light and durable and whereby one or more rails may be speedily and economically placed in operative position and securely held from being displaced or tampered with.

A further object of this invention is to provide the device with broad ground and rail-bearing faces for the rails, thereby necessitating a less number of the supports than has heretofore been required.

To this end the invention consists in the construction, combination, and arrangement of the parts of a rail-fastener, as hereinafter fully described, and pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of my invention and a pair of rails operatively mounted therein, one of the rails being shown by the dotted lines. Fig. 2 is a detail view of a portion of the support-tie and the fastening members for securing one of the rails thereto, said rail being shown in its operative position and one of the fastening members being partly broken away for disclosing the stop or abutment therefor. Fig. 3 is a sectional view taken on line 3 3, Fig. 2. Fig. 4 is a perspective view of the detached tie, showing the removable abutments or stops in operative position. Figs. 5 and 6 are sectional views taken, respectively, on lines 5 5 and 6 6, Fig. 2. Figs. 7 and 8 are perspective views, respectively, of the detached inner and outer locking members for engaging the opposite sides of the rail.

My invention consists, essentially, of a support or tie 1, oppositely-arranged fastening or locking members 2 and 3, and keys 4 and 5 for holding the members 2 and 3 in position.

The support or tie 1 preferably consists of an elongated bar of steel or similar material, which may be readily rolled or pressed into the desired form and which is generally provided with oppositely-arranged base-flanges

6 6, a web 7, projecting upwardly from the base, and oppositely-arranged lengthwise flanges 8 8, projecting from the upper edge of the web 7. The base or the flanges 6 6 of the tie preferably incline downwardly from the web 7 for forming a lengthwise recess 9 in its lower face, and thereby lessening the weight of the tie and bracing the same against any superimposed load. The lower faces of the outer edges of the flanges 6 6 are usually flat and disposed in substantially the same horizontal plane and, together with the upper walls of the recess, form a wide and ample bearing for the tie and permit the gravel or ballast to be tamped or worked into the ends of the recesses for leveling or lining up the rails. The ballast thus filled in beneath and between the flanges forms a broad bearing for the tie and serves to prevent undue lateral movement or displacement thereof. The web 7 is usually of just sufficient height between the upper and lower flanges 6 and 8 to permit the fastening members 2 and 3 to be readily and easily placed or moved into operative position and may be of any desired thickness to meet the requirements of its function, the purpose being to make the tie as light as may be consistent. The flanges 8 serve the purpose of forming a suitable seat for the rails and cooperate with the fastening members 2 and 3 for holding the rail in a fixed position. The opposite ends of the tie 1 are formed with transverse slots 10 10, preferably extending through the flanges 8 on opposite sides of the rail-seat for receiving the keys 4 and 5, presently described. These slots are generally formed of substantially the same width and are slightly wider than the key 5 for a purpose hereinafter mentioned. One of the side walls of each of the slots 10, and preferably the walls more remote from the rail-seat, are inclined from one end to the other for forming bearing-faces for the keys throughout the width of the flanges or upper portion of the tie, and thereby distributing the lateral strain upon said keys which may be transmitted from the rails and through the fastening members.

The fastening members 2 and 3 serve to firmly hold the rail in its operative position and permit the same to be readily adjusted or more securely fastened should the contiguous parts become worn or battered in use

and are movable along the upper face of the tie in engagement with the flanges 8. Each of these fastening members preferably consists of a block or body of suitable metal, such as malleable or cast iron, having a jaw or transverse flange 12 and a T-shaped recess extending upwardly from its lower face from end to end for forming suitable depending lengthwise flanges 14 and ribs or shoulders 15 projecting inwardly toward each other from the lengthwise lower edges of said flanges. The jaws 12 are adapted to engage the opposite faces of a web a of a rail A and also the upper faces and lengthwise edges of the opposite base-flanges a' of said rail and are therefore formed with suitable engaging faces shaped to conform to the flanges and web of any form of rail. The flanges 14 preferably extend beneath and beyond the adjacent edges of the flanges a' of the rail for forming as long a bearing upon the flanges 8 as possible and, being slightly separated at their jaw ends from the jaws, form a transverse recess 16 for receiving the flange a' of the rail A.

The T-shaped recess of the fastening member 2 is of substantially the same form and size in cross-section as the upper portion of the web 7 and flanges 8 of the tie, the upper wall of said recess normally resting upon the upper face of the tie and the ribs 15 being engaged with the lower faces of the flanges 8. The flanges 14 of the members 2 are formed with lengthwise grooves 20 upon their inner faces and extending inwardly a limited distance from their outer ends for forming suitable stop-shoulders 21, which engage the keys 4 and limit the outward movement of said members 2 and rails A.

The members 3 are of substantially the same form as the members 2, except that their flanges 14 are not provided with the lengthwise inner grooves and are formed with transverse slots 25, (not seen in the members 2,) but which may be formed in said members 2, if desired, in which instance either of the keys 4 or 5 may be used for holding the member 2 in operative position.

The key 4 is adapted to be used in connection with the member 2, which is provided with the lengthwise grooves in the inner faces of its lengthwise flanges, and the key 5 is constructed to be used in conjunction with the member 3, having the transverse slots 25. Both of these keys are preferably formed wedge-shaped or provided with one inclined side edge arranged to engage the inclined wall of either of the slots 10, the key 5 being formed of greater length than the key 4 in order that when placed in operative position its opposite ends will extend beyond the outer faces of the member 3. When this key 5 is thus placed in operative position and driven or forced in the direction of its taper, its inclined edge engages the inclined wall of the corresponding slot 10 and its opposite edge engages the inner walls of the slots 25, thereby forcing the jaws of the member 3 into firm

engagement with the contiguous parts of the rail and also forcing the rail firmly against the jaw of the member 2, it being understood that said member 2 is held from further movement by the shoulders 21 engaging with the projecting ends of the key 4.

When the key 5 is sufficiently forced through the slots 10 and 25 for firmly clamping the rail in position, the smaller end of the key 5 is bent or lapped upon the adjacent outer face of the member 3, Figs. 3 and 6, thereby insuring a permanent lock for the key and rail and making it extremely difficult to tamper with or displace the rail or any of the fastening means therefor.

It will be noted that the key 2 is entirely concealed, and owing to the fact that the outer portion of the track or rail is the most conspicuous and the outer fastening member the most liable to be tampered with I preferably use this concealed key for the outer fastener, although it is apparent that the position of these fastening members 2 and 3 may be interchanged, if desired—that is, the member 2 and its key 4 may be placed at the inside of the rail and the member 3 and key 5 may be used at the outer side of said rail—and it will be further noted that the member 2 and key 4 may be entirely dispensed with and substituted by members 3 and keys 5, and it is for this purpose that I form the slots of substantially the same width and provide both with an inclined side wall.

In the operation of my invention the members 3 are slipped over the ends of the flanges of the tie in the relation seen in Fig. 1, with their jaws arranged toward the opposite ends of the tie and moved toward the center of said tie. The members 2 are then registered with the opposite ends of the flanges, with their jaws projecting toward each other and slid along said flanges until they pass the outer slots 10. The keys 4 are then inserted in the outer slots of the tie, with their ends projecting beyond the side faces of the flanges. The members 2 are then moved toward their respective keys 4 until the shoulders 21 engage the projecting ends of said keys and check the further outward movement of the members 2. The rails A are then placed in position against the inner faces of the members 2. Then the members 3 are moved into engagement with the inner faces of their respective rails and the keys 5 are inserted into the slots 10 and 25 and their narrow ends bent upon the adjacent portions of the members 3.

When desired to remove the rail for any sufficient cause, it is necessary to employ a special tool for straightening the bent ends of the keys 5, which may then be driven or forced out of the slots 10 and 25 and the member 3 moved inwardly out of engagement with the rail, whereby said rail may be readily taken out and a new one placed in position.

The operation of my invention may now be readily understood upon reference to the foregoing description and the accompanying

drawings, and it will be noted that the members 2 and 3 may be interchanged and that the detail construction of the various parts may be somewhat changed without departing from the spirit thereof. Therefore I do not limit myself to the precise construction shown and described.

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

1. A rail - fastener comprising a support having a lengthwise flange and a removable key having its ends projecting laterally from the flange, and a fastening member movably interlocked with the flange and provided with opposed faces engaged respectively with the rail and key, said fastening member being extended beyond the ends of the key for concealing said ends and preventing the endwise displacement of the key.

2. A rail-fastener comprising a tie, a fastening member movable lengthwise of the tie from end to end without removal therefrom, a key interlocked with the tie and movable transversely thereof for engaging the fastening member and limiting its lengthwise movement, said member being arranged to overlap one end of the key for preventing its endwise movement.

3. A rail - fastener comprising a support having an upper laterally-projecting lengthwise flange provided with a transverse slot, a rail-engaging member movable along the flange from end to end without removal and provided with a rib interlocking with the flange for preventing its removal except at the ends of the flange, and a key movable in the slot and having a portion thereof projecting into the path of said member for limiting its lengthwise movement in one direction, said member being free to move in the reverse direction and adapted to overlap the end edges of the key for preventing endwise movement of the key.

4. A rail - fastener comprising a support having upper laterally-projecting lengthwise flanges provided with transverse slots arranged in pairs, keys movable within the slots and fastening members arranged in pairs corresponding to the pairs of slots, each pair of fastening members having adjacent rail-engaging faces and shoulders engaged with adjacent keys for the purpose described.

5. A rail - fastener comprising a support having a T-shaped head provided with a transverse slot, a key removably mounted in said slot and projecting laterally from the head of the support, a rail-engaging member movable lengthwise of the support and provided with a T-shaped recess for receiving said head, said member being formed with an engaging shoulder for engaging the projecting end of the key for limiting the movement of the member in one direction.

6. A rail - fastener comprising a support having an upper laterally-projecting length-

wise flange provided with a transverse slot, a rail-engaging member movable lengthwise of the support and formed with a rib interlocking with the flange of the support, and a removable key inserted in the slot for engaging said member and limiting its lengthwise movement in one direction, said fastening member having its side walls projecting beyond the ends of the key and adapted to conceal said projecting ends.

7. A rail - fastener comprising a support having opposite lengthwise flanges, and a transverse slot extending through said flanges, a key removably supported within the slot and having its opposite ends projecting beyond the flanges, a fastening member movably mounted on the support and provided with opposite depending flanges having lengthwise ribs engaged with the lower faces of the flanges of the support, said member having its flanges provided with lengthwise grooves extending inwardly from their end faces a limited distance for receiving the projecting ends of the keys and forming a shoulder for engaging said projecting ends, the opposite end of said member being adapted to engage the rail.

8. A rail-fastener comprising a T-shaped head having a removable stop-shoulder and a slot, oppositely-arranged fastening members movably mounted on the support and provided with flanges interlocking with the T-flanges of the support, one of said members being movable into and out of engagement with said shoulder on the support for limiting its movement and a key removably mounted in the slot and engaged with the other member.

9. A rail - fastener comprising a support having a T-shaped head formed with a transverse slot, oppositely-arranged rail-engaging members movable lengthwise of the head from end to end and provided with ribs interlocked with the flanges of the support, a removable shoulder mounted on the head for engaging one of the members and limiting its lengthwise movement and a tapering key movable in the slot for engaging the other member and forcing the same toward the former member.

10. A rail-fastener comprising a T-shaped support having its upper flange provided with a transverse slot, oppositely-arranged rail-engaging members mounted on the head of the support and movable lengthwise thereof from end to end for engaging opposite faces of one of the rails, one of said members being provided with a transverse slot adapted to register with the former slot, a removable shoulder mounted on the support for engaging the other member and limiting its lengthwise movement and a tapering key movable in the slots of the support and member for forcing said slotted member toward the other member.

11. A rail - fastener comprising a flanged support having separated transverse slots, independently-movable rail-engaging members

mounted on the support and provided with ribs interlocking with the flange of the support, one of said members being provided with a transverse slot adapted to register with the slot of the support the other member being provided with an engaging shoulder projecting from its inner face, a tapering key mounted in one of the slots and having its opposite ends extending through the slot in the adjacent member and a second key mounted in the other slot and projecting into the path of the shoulder of the other member, said latter key being normally concealed by the member adjacent thereto.

12. In a rail-fastener, the herein-described support having a substantially central lengthwise rib and opposite base-flanges inclining downwardly from the lower end of the web, the upper end of the web being formed with laterally-projecting lengthwise ribs or flanges having transverse slots arranged in pairs and extending therethrough for the purpose described.

13. In a rail-fastener, the herein-described support or tie having opposite laterally-projecting lengthwise flanges provided with removable keys arranged in pairs and projecting laterally from the side faces of said flanges in combination with rail-engaging members adapted to be engaged by said keys for the purpose described.

14. In a rail-fastener, the herein-described tie or support, consisting of a central web, oppositely-arranged base-flanges inclining downwardly from the lower ends of the web for forming a lengthwise recess in the base of the support, the upper end of said web being formed with oppositely-projecting flanges having each of its opposite ends provided with

separated transverse slots extending there- through for the purpose described.

15. In a rail-fastener, the herein-described rail-engaging member having a transverse slot and a lengthwise substantially T-shaped recess extending upwardly from its lower face, and communicating with the slot.

16. In a rail-fastener, the herein-described rail-engaging member having a transverse recess in one end and a transverse slot through its body, said member being formed with separated lengthwise flanges provided with inwardly-projecting lengthwise ribs.

17. In a rail-fastener, the herein-described rail-engaging member having separated lengthwise flanges provided with inwardly-projecting lengthwise ribs and transverse slots extending through the flanges above the ribs.

18. A rail-fastener comprising a T-shaped support or tie having its upper flanged portion provided with transverse slots arranged in pairs, keys movable in said slots, and fastening members arranged in pairs and provided with T-shaped recesses extending upwardly from their lower faces for receiving said upper flanges, each pair of said fastening members being provided with rail-engaging faces and shoulders for engaging adjacent keys, said fastening members being removable from the ends of the tie and adapted to be substituted one for the other.

In witness whereof I have hereunto set my hand this 27th day of September, 1900.

JAMES M. SPAULDING.

Witnesses:

H. E. CHASE,
MILDRED M. NOTT.