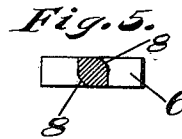
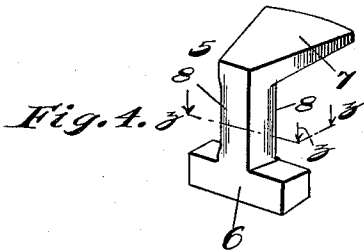
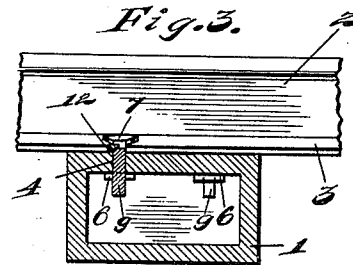
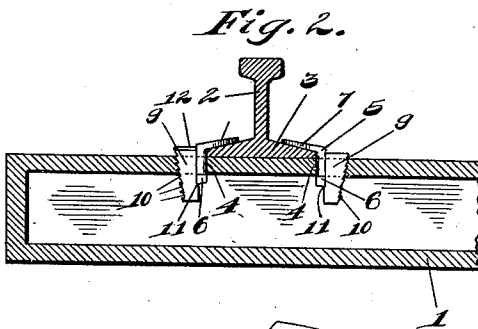
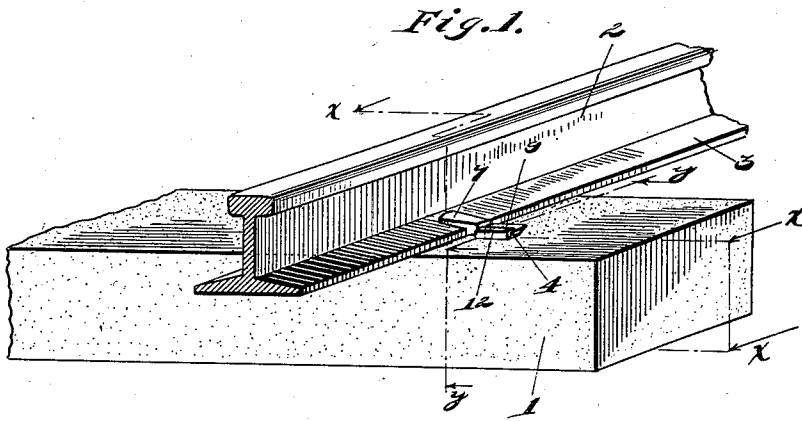


H. E. ZIMMERMAN.
RAIL FASTENING DEVICE.
APPLICATION FILED MAR. 8, 1911.

1,009,007.

Patented Nov. 14, 1911.



Witnesses:
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UNITED STATES PATENT OFFICE.

HARRY EUGENE ZIMMERMAN, OF HARTSTOWN, PENNSYLVANIA.

RAIL-FASTENING DEVICE.

1,009,007.

Specification of Letters Patent.

Patented Nov. 14, 1911.

Application filed March 8, 1911. Serial No. 613,147.

To all whom it may concern:

Be it known that I, HARRY E. ZIMMERMAN, a citizen of the United States, and a resident of the city of Hartstown, county of Crawford, and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Fastening Devices, of which the following is a specification.

My invention relates to improvements in rail fastening devices and has for its object the production of a fastening by means of which a rail may be securely fastened to its tie without necessitating the use of nails or spikes such as are now generally used for this purpose.

A further object is the production of a rail fastening by means of which a rail may be readily and expeditiously secured to a tie and as readily demounted when desired.

A still further object is the production of a fastening of the character mentioned which will be of durable and economical construction and efficient in use.

Other objects will appear hereinafter.

With these objects in view my invention consists in a rail fastening characterized as above mentioned and in certain details of construction and arrangements of parts all as will be hereinafter fully described and more particularly pointed out in the appended claims.

My invention will be more readily understood by reference to the accompanying drawing forming a part of this specification, and in which,

Figure 1 is a perspective view of the end portions of a tie and rail illustrating the preferred form of my construction for fastening the rail to a tie, Figs. 2 and 3 are sections taken on substantially lines $x-x$ and $y-y$ of Fig. 1, Fig. 4 is a perspective view of one of the rail fasteners included in the invention, detached, and Fig. 5 is a transverse section on line $z-z$ of Fig. 4.

The preferred form of my construction as illustrated in the drawing comprises a tie 1 preferably of the hollow metallic type upon which is mounted a rail 2, 3 indicating the base of said rail. Provided in the upper side of the tie 1 in registration with the opposite longitudinal edges of the base 3 are openings 4 preferably in staggered relation, that is, the opening provided at one side of the rail is arranged adjacent one of the longitudinal edges of the tie, the opening arranged at the opposite side of the rail being

positioned adjacent the opposite longitudinal edge of the tie.

Removably arranged in the openings 4 are rail securing devices 5 the lower end portions of said members 5 passing through said openings 4 as clearly illustrated in Fig. 2. Said lower ends of said members 4 are of inverted T-form, as shown in the several views, the laterally projecting portions of said ends being adapted to engage against the under side of the upper wall of the tie, when said securing devices are properly positioned, to lock the latter against upward movement when their upper enlarged or laterally projecting ends 7 are resting in engagement with the upper sides of the opposite edge portions of the rail base 3. The openings 4 are of such a width as to be adapted to snugly receive the central portions of the members 4, and of a length such as to permit of the passage of the lower ends of said members 5 when the latter are turned to position said ends thereof in registration or in parallelism with said openings. In arranging said securing devices then in the tie, the lower ends thereof are first inserted into the openings 4 with said ends disposed relative to said openings as just mentioned. Upon being inserted into said openings, said members 5 are then turned through ninety degrees in order to effect the engagement of the ends 7 thereof with the rail base 3 and also the engagement of the laterally projecting portions of the lower ends thereof with the under side of the upper wall of the rail at opposite sides of the openings 4. In order to permit of such rotary movement of said members 5 in the openings 4 opposite corners of the central portions of said members are rounded as at 8, such rounding evidently permitting of the rotary adjustment of said securing members in the manner described.

The members 5 are held in operative position by means of wedge members 9 which are driven into the openings 4 outward of said members 5 as clearly shown in Fig. 2, said wedge members in addition to serving as a means of preventing rotary movement of the members 5 in the openings 4 also serving as is obvious as a means of preventing outward movement of said securing devices in said openings. In order to prevent displacement of the wedge members, that is outward or upward movement thereof, the outer longitudinal edges of the lat-

ter are provided with teeth or serrations 10 which are adapted to co-act with the adjacent sides of the openings 4 as will be readily understood. The opposite or inner edges 5 of said wedge members are provided with offsets or shoulders 11 which engage against the adjacent lower edges of the securing members 5, such construction further aiding in preventing displacement of said wedge 10 members. To still further aid in such prevention ears 12 are formed upon the upper side of the tie adjacent to openings 4 therein, said ears, when the wedges are in operative position, being bent over the upper 15 extremities thereof, as clearly shown in Fig. 3.

A rail fastening of the construction as set forth is durable and economical and is adapted to securely and positively hold the 20 rail in position upon the tie. The same, because of its simplicity may be manufactured at a very low cost and is not susceptible to readily becoming inoperative.

While I have illustrated and described the 25 preferred construction for carrying my invention into effect this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction as set forth, but 30 desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I 35 claim as new and desire to secure by Letters Patent is:

1. The combination with a rail of a tie upon which said rail is mounted, said tie 40 being provided in its upper side with openings registering with the opposite edges of the base of said rail and extending transversely thereof; means for securing said rail to said tie, said means comprising angular 45 securing members having substantially inverted T-formed lower ends, and laterally projecting heads at their upper ends adapted to engage against the upper side of the base of the rail, said lower ends of said engaging members being adapted, when the 50 upper ends thereof are in inoperative position, to be inserted into said openings, and, when said upper ends of said members are

turned to engaging positions, to engage against the under side of the portions of the tie engaged by said securing members; 55 wedge members arranged in said openings outward of said securing members for holding the latter in operative position; teeth on one edge of each of said wedge members adapted to engage against the adjacent side 60 of the opening engaged thereby to prevent accidental displacement of said wedge members; and means on said tie adapted to be bent over the upper ends of said wedge members to prevent upward movement 65 thereof, substantially as described.

2. The combination with a rail of a tie upon which said rail is mounted, said tie being provided in its upper side with openings registering with the opposite edges of 70 the base of said rail and extending transversely thereof; means for securing said rail to said tie, said means comprising angular securing members having substantially inverted T-formed lower ends, and laterally 75 projecting heads at their upper ends adapted to engage against the upper side of the base of the rail, said lower ends of said engaging members being adapted, when the upper ends thereof are in inoperative position, to be inserted into said openings, and, 80 when said upper ends of said members are turned to engaging positions, to engage against the under side of the portions of the tie engaged by said securing members; 85 wedge members arranged in said openings outward of said securing members for holding the latter in operative position; teeth on the outer edge of each of said wedge members adapted to engage against the adjacent side of the opening engaged thereby 90 to prevent accidental displacement of said wedge members; and means on said tie adapted to be bent over the upper ends of said wedge members to prevent upward 95 movement thereof, substantially as described.

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

HARRY EUGENE ZIMMERMAN.

Witnesses:

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