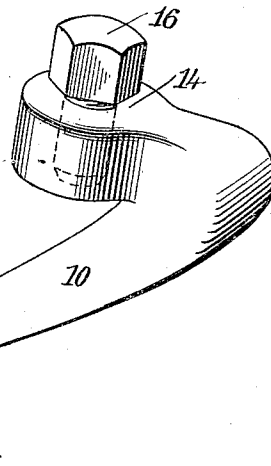
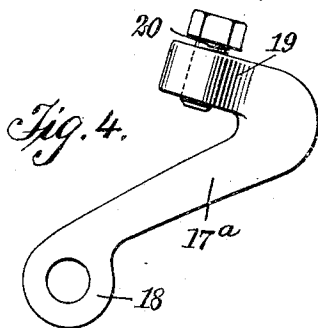
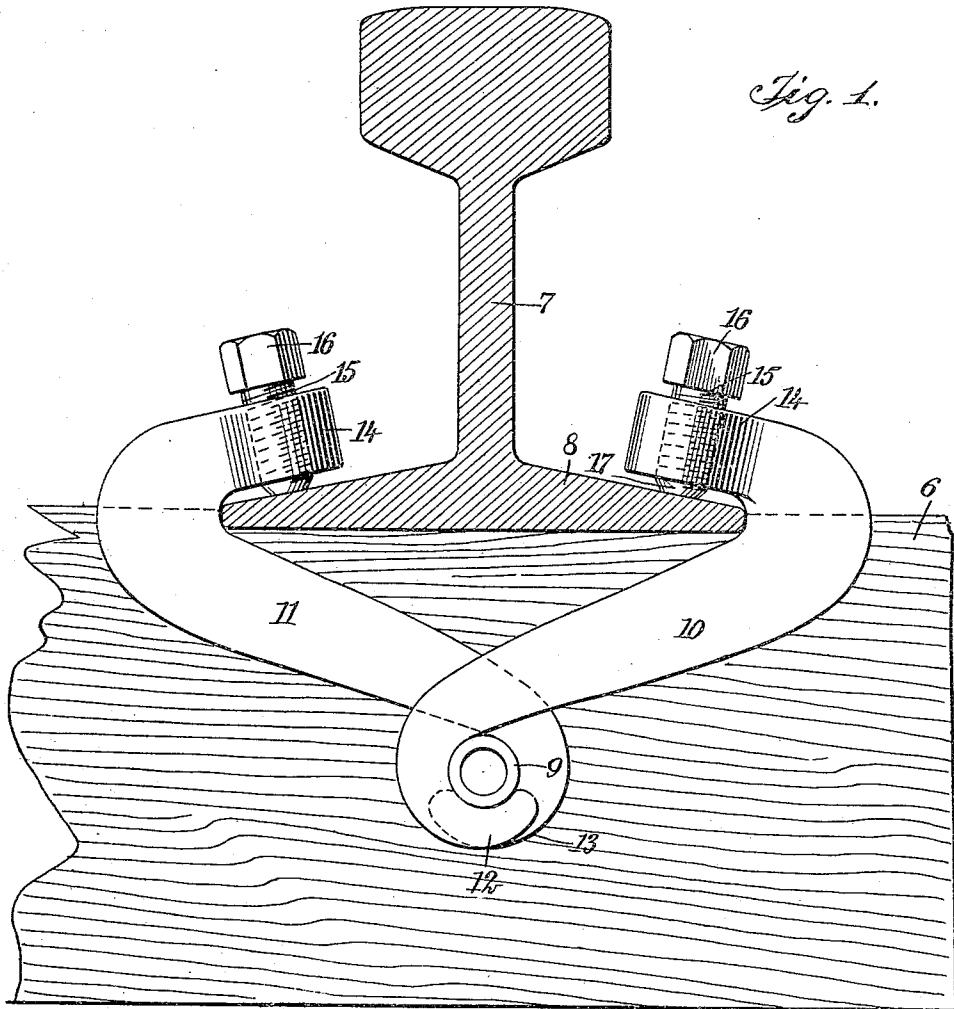


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Patented Aug. 24, 1909.
2 SHEETS—SHEET 1.



WITNESSES
L. Sanford Handy
Walton Harrison

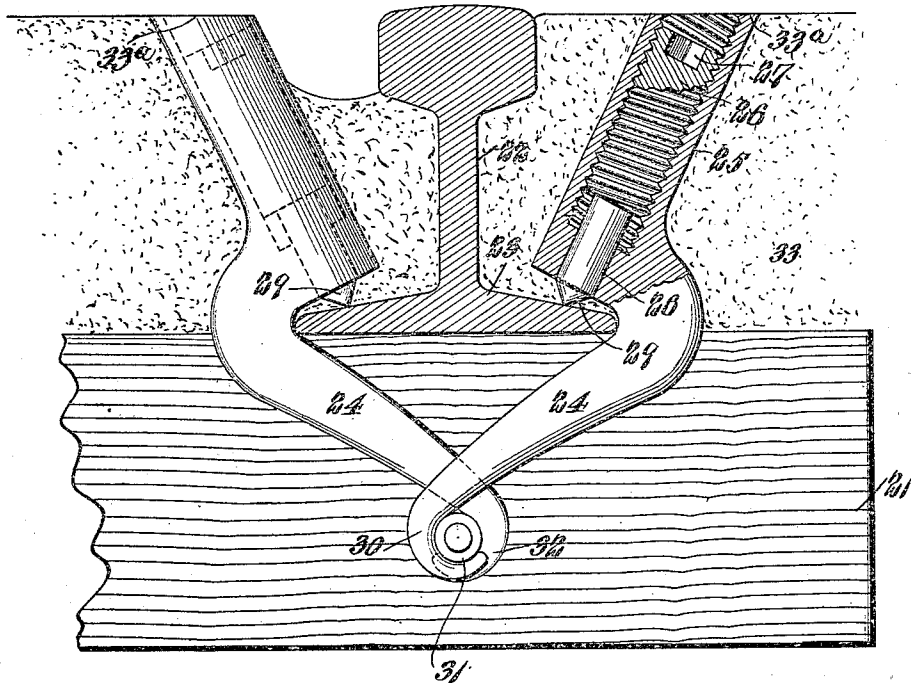
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Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE DORFFEL, OF FRUITVALE, CALIFORNIA.

RAIL-FASTENER.

931,737.

Specification of Letters Patent.

Patented Aug. 24, 1909.

Application filed November 18, 1908. Serial No. 463,191.

To all whom it may concern:

Be it known that I, GEORGE DORFFEL, a citizen of the United States, and a resident of Fruitvale, in the county of Alameda and State of California, have invented a new and Improved Rail-Fastener, of which the following is a full, clear, and exact description.

My invention relates to rail fastenings, my more particular purpose being to provide a type of fastening which can be used without spikes or hammers, and which is adjustable for the purpose of compensating for shrinkage in the ties, beams or sills used for supporting the rails.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an enlarged fragmentary section through a rail showing one form of my improved rail fastening as used for securing the rail upon a cross tie; Fig. 2 is a perspective view showing one of the arms constituting a part of the fastening, removed from the other mechanism; Fig. 3 is a section showing another form of my invention, the arms in this instance being provided with sleeves integral with them and containing bolts of considerable length, the sleeves containing the bolts being sunken flush with the surface of the rail and street; Fig. 4 is a detail showing a form of arm somewhat similar to those appearing in Fig. 1 but differing therefrom in having an eye instead of a hook upon its lower end.

Resting upon cross ties, one of which is shown at 6, is a rail 7 having a base portion 8, and extending directly through the cross tie is a tube 9 preferably of cast metal. Two arms 10, 11 cross each other and are provided at their lower ends with hooks 12, 13 which engage the tube 9. Each of these arms is provided at its upper end with a head 14 and extending through this head is a bolt 15 provided with an angular portion 16 and with a point 17, this point engaging the base 8 of the rail. The tube 9 may be fitted either loosely or tightly as desired, and within reasonable limits may be of any length. The tube 9 is mounted in a hole which is made in the tie 6 by a machine and it may therefore be placed in position with a considerable degree of exactness. The tube 9 being placed in the

hole, the arms 10, 11 are crossed and the hooks 12, 13 brought into engagement with the tube. Previous to doing this, the heads 14 are brought over the base 8 and the bolts 15 are then tightened securely in position. If desired, the arm 17^a, shown in Fig. 4, may be substituted for either of the arms 10, 11. This arm 17^a is provided with a head 19 and extending through this head is a screw bolt 20. The arm 17^a is further provided at its lower end with a closed eye 18 which is simply slipped over the end of the tube 9. Otherwise the construction and action of the arm 17^a is the same as that of the arms 10, 11.

In the form shown in Fig. 3 the cross tie appears at 21 and resting upon it is a rail 22 having a base portion 23. Two arms 24 are crossed as above described and used for securing the rail in position. Each arm 24 is provided with a sleeve 25 integral therewith and threaded internally. A screw plug 26 threaded externally is fitted into the sleeve 25. This screw plug is provided with an angular opening 27 whereby it may be turned, and is further provided with a smooth portion 28 terminating in a point 29 which engages the rail base 23. The arms 24 are provided with hooks 30, 32 which engage a tube 31 of cast metal. The arms are mounted in position substantially as above described with reference to the arms shown in Fig. 1, with the exception that the plugs 26 are screwed into the sleeves 25 by aid of the angular opening 27 and are completely inserted within the sleeves, a filling 33 of concrete or other road material being placed in position after the arms are fitted in place and secured by the screw plugs. Each sleeve 25 is provided at its upper end with a bevel 33^a which is flush with the upper surface of the filling 33 and of the rail 22. The screw bolt 38 being now turned is brought into engagement with the rail base and made tight. After any of the fastenings above described have been once placed in position, all that is necessary in order to keep them in proper condition is for the operator to occasionally turn the bolts 38, 38 and the screw plug 26, in order to compensate for any shrinkage which may take place in the ties or beams. This is easily accomplished, the operator merely carrying suitable means for the purpose in his pocket.

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

1. A rail fastening, comprising a tie, a metallic tube extending directly there-
through, a pair of crossed arms engaging
said tube and provided with upturned por-
tions disposed adjacent to a rail base, and
members mounted upon said upturned por-
tions and adjustable relatively to the same
for the purpose of engaging said rail base.

2. A rail fastening, comprising an arm
provided with a hook and further provided
with a sleeve threaded internally, and a bolt
threaded externally and mounted within
said sleeve, said bolt having a comparatively
long body portion and being completely
hidden within said sleeve.

3. A rail fastening, comprising an arm,
means for connecting the same to a cross tie,
a sleeve mounted upon said arm and ter-
minating in a bevel, and a plug mounted
within said sleeve and sunken below said

bevel, said plug being provided with a por-
tion projecting from said sleeve for the pur-
pose of engaging a rail base.

4. The combination of a tie, an arm con-
nected therewith and provided with a sleeve
terminating in a bevel, said sleeve being
slightly inclined relatively to the vertical
in order to bring said bevel into a horizontal
position, a rail provided with a base pro-
jecting under said sleeve, a plug mounted
within said sleeve and provided with a por-
tion engaging said base, and a filling en-
gaging said rail base and said sleeve, said filling
at its upper surface being substantially
flush with said bevel.

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

GEORGE DORFFEL.

Witnesses:

EDWARD M. SHAW,
R. E. SCHLOSS.