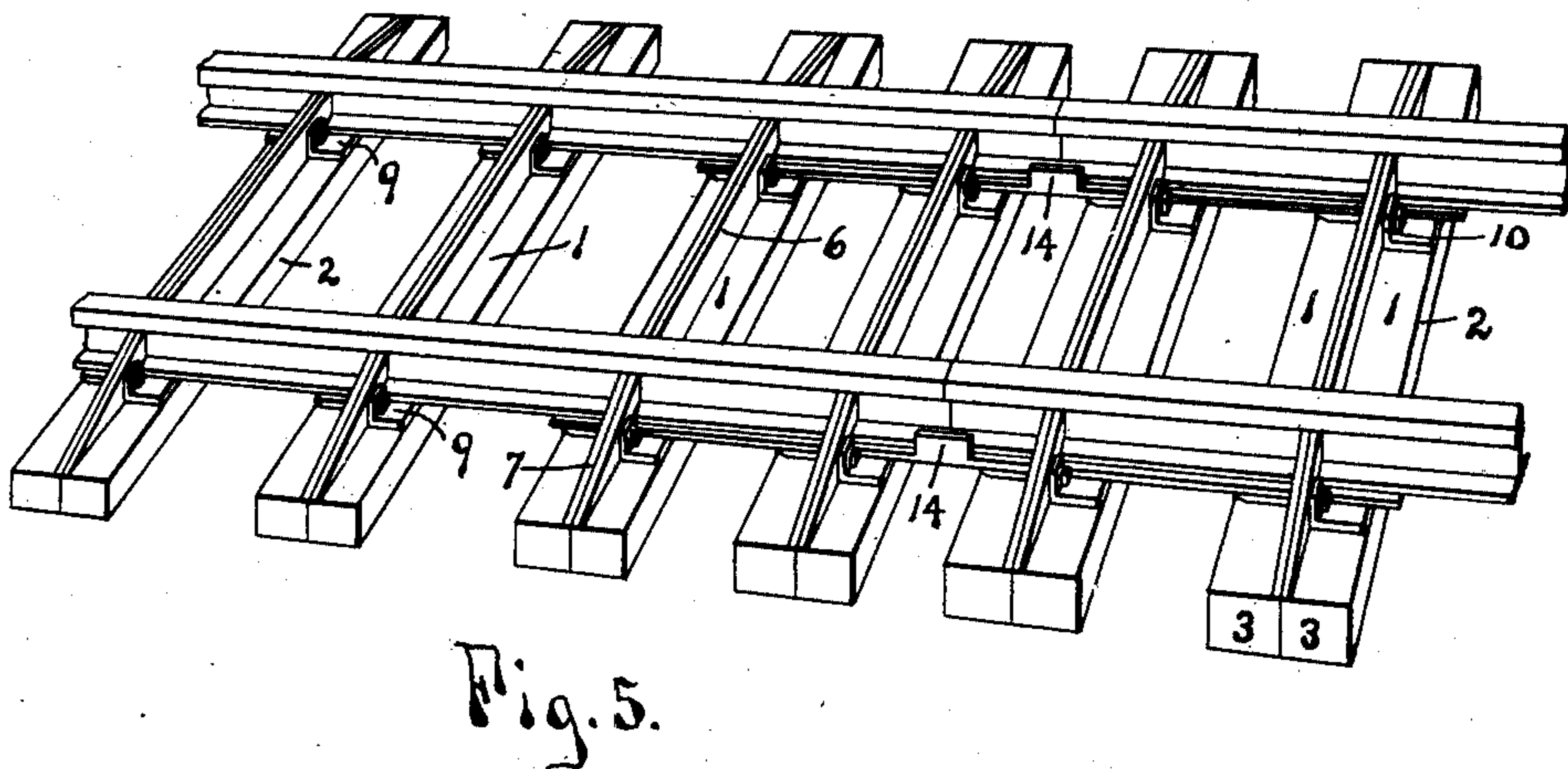
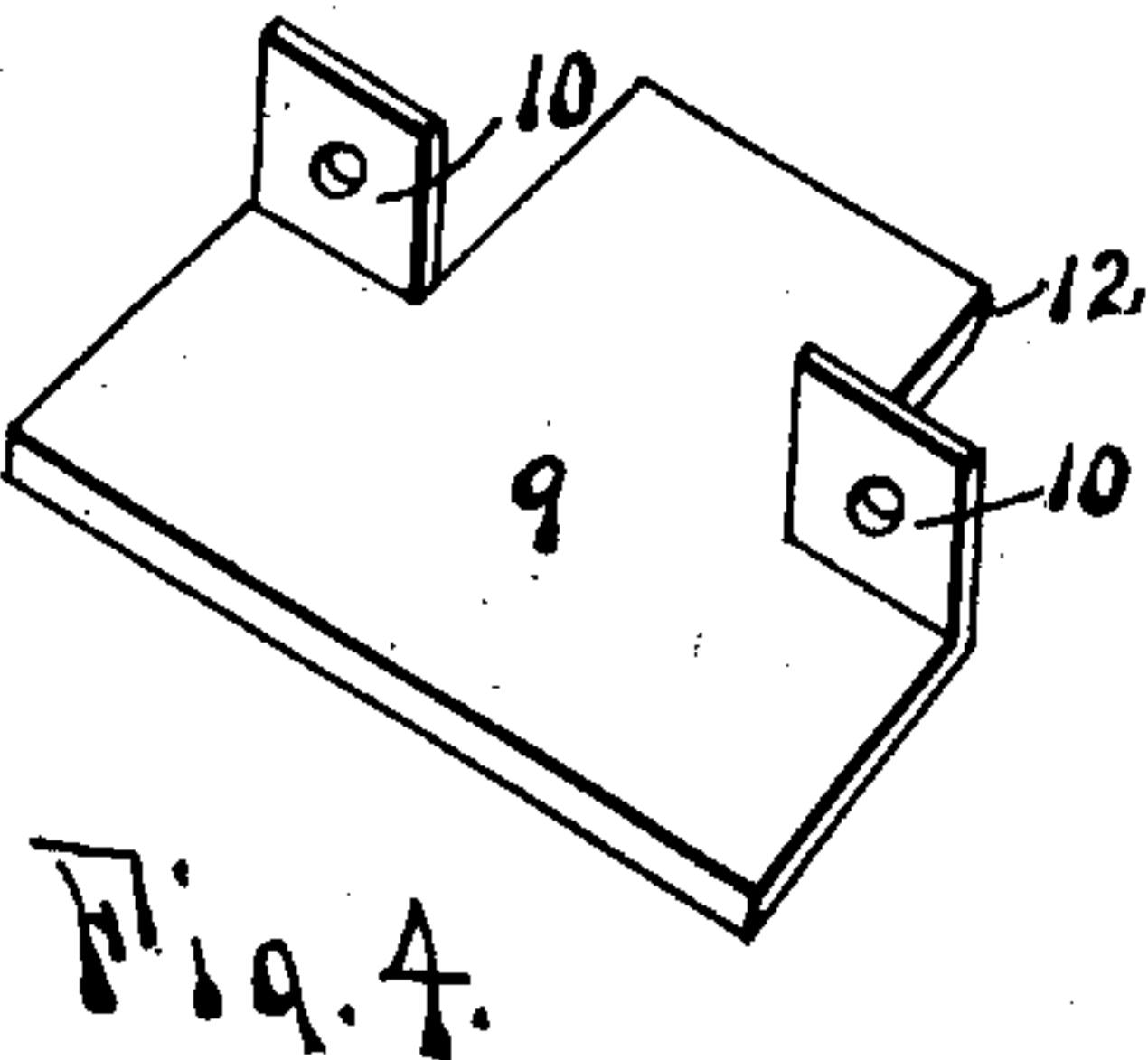
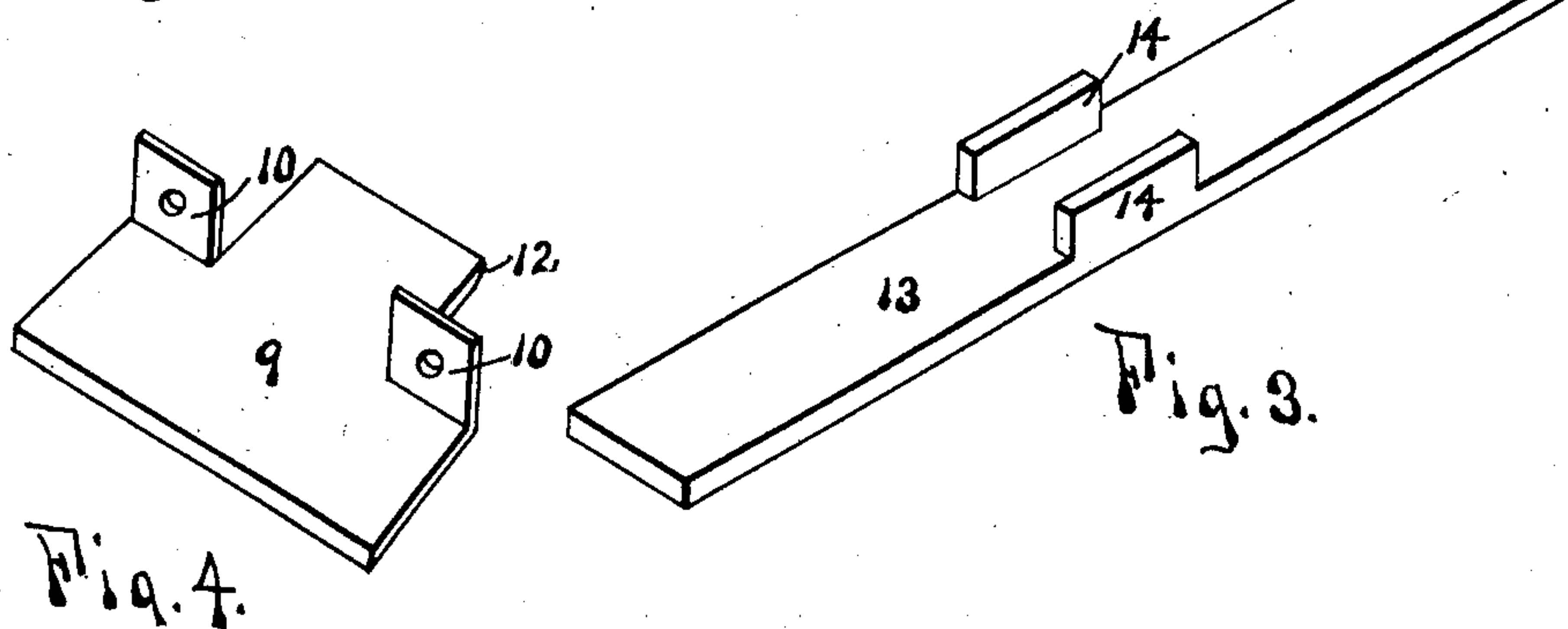
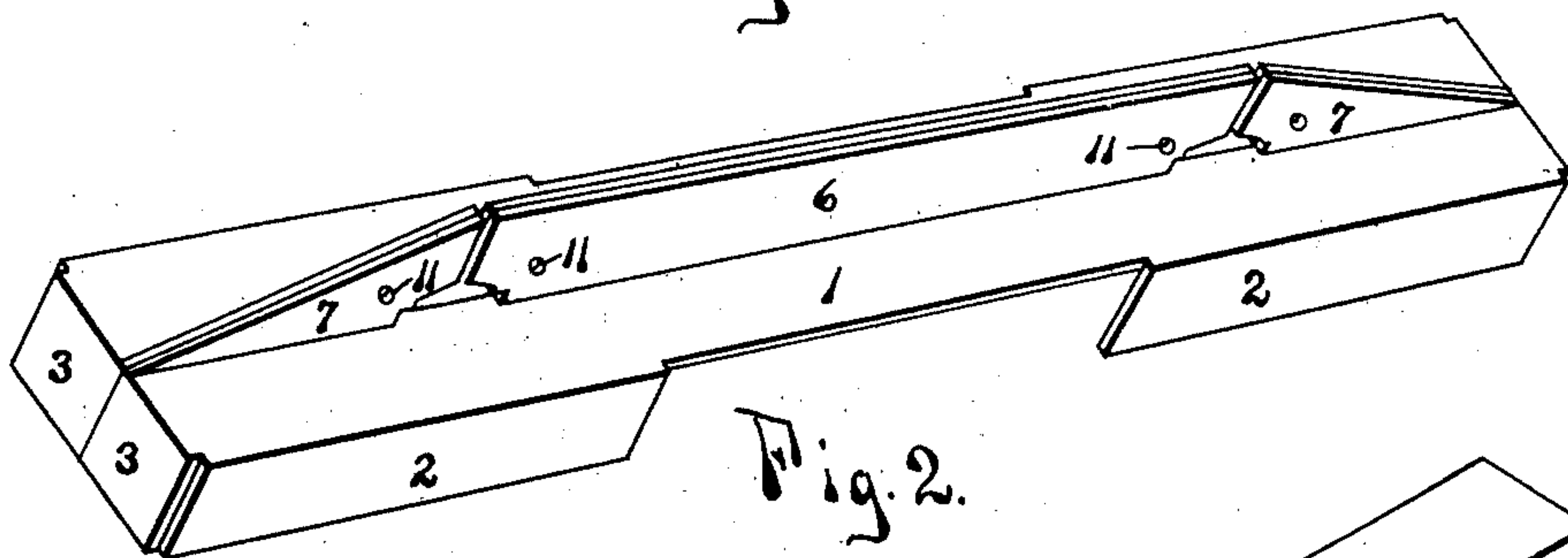
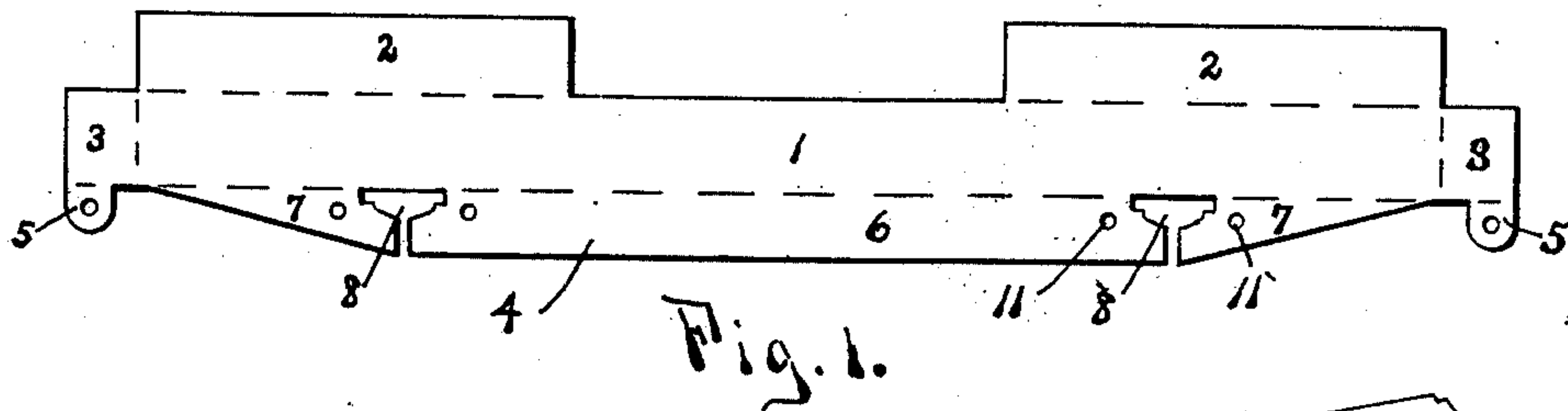


No. 826,566.

PATENTED JULY 24, 1906.

J. M. GRISWOLD.
RAILWAY CROSS TIE.
APPLICATION FILED NOV. 25, 1905.



Witnesses:

N. B. Hudson
Geo. W. Barrow

By his Attorney

J. M. Griswold. Inventor
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UNITED STATES PATENT OFFICE.

JOSEPH M. GRISWOLD, OF DETROIT, MICHIGAN.

RAILWAY CROSS-TIE.

No. 826,566.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed November 25, 1905. Serial No. 289,032.

To all whom it may concern:

Be it known that I, JOSEPH M. GRISWOLD, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Railway Cross-Tie, of which the following is a specification.

This invention consists in a metal cross-tie formed of two equal symmetrical parts, each part being composed of a flat plate having a flange turned down at one side and at the ends and also having an upturned flange at the other side, the tie being formed when the two upturned flanges are secured together to form a stiff central rib.

The invention consists, further, in providing the central strengthening-rib with slots adapted to receive the lower flange and web of the rails.

The invention consists, further, in providing flat slightly-tapering plates which are adapted to pass into the slots in the rib of the cross-tie and to force the rail upward, so as to firmly hold the same between the walls of the slots and the plate; and the invention consists also in a flat stiffening-bar adapted to extend through the slots in the ribs of a plurality of ties underneath the ends of adjacent rails and on the bearing-plates to render the ends of the rails less liable to spring down as the load passes over them.

The invention is embodied in a construction illustrated in the accompanying drawings, in which—

Figure 1 is a view of the metal for one half-tie before it is bent, the dotted lines indicating the lines where the metal is to be bent. Fig. 2 is a perspective of a complete tie. Fig. 3 is a view of the strengthening-bar. Fig. 4 is a perspective of a bearing-plate on a slightly-larger scale. Fig. 5 is a perspective of a section of track equipped with my entire invention.

Similar reference characters refer to like parts throughout the several views.

The railway-tie shown in the drawings is made up of two halves, each of which is formed of a flat plate of sheet-steel of preferably uniform thickness shaped as shown in Fig. 2. The portions 2 and 3 of this plate are bent downward from the part 1 and the part 4 is bent upward. The lugs 5 are then bent inward parallel to the flanges 2, so that when two halves are placed together they may be secured together by means of bolts or rivets passing through the holes in the

lugs. The flanges 6 and 7 are turned up and form the central rib and the side braces for the rails. The slots 8 are formed to fit the lower flange of the rail and to receive the bearing-plate 9. This plate has upturned lugs 10, provided with holes which correspond with the holes 11 in the parts 6 and 7 when the plate is in place, through which holes bolts may pass to hold all the parts together. The plates 9 have a slight taper generally and at the edge 12 are provided with a wedge, so that the plate may be easily driven under a rail that lies on the body of the tie in the slot 8. It will be noticed that the plate 9 extends across both halves of the tie, and so transmits the pressure of the rail evenly to both halves.

At the joints of the rails the ties are formed with the slots 8 large enough to receive the strengthening-bars 13 in addition to the plates 9. These bars have upwardly-projecting flanges 14, which are separated the width of the lower flange of the rail, so that when the parts are in place the flanges 14 will prevent the ends of the rails from moving sidewise. These flanges also serve to render the bar more rigid against bending under the load on the rails, and so serve to make the track very stiff.

While this style of cross-tie will require more labor to place than a wood tie, still its great life will render the cost of laying track a matter of less importance. The flanges 2 may be in sections, as in Fig. 2, or entire, as in Fig. 5. The various parts of the tie will vary in size according to the service.

Having now explained my improvements, what I claim as my invention, and desire to secure by Letters Patent, is—

1. A metal railway-tie comprising a flat plate and upward-extending projections formed with slots, the walls of which are adapted to fit the lower flanges of rails, and tapering bearing-plates adapted to pass through said slots beneath said rails.

2. A metal railway-tie comprising a flat plate and an upwardly-extending longitudinal rib, said rib formed with slots, the walls of said slots adapted to hold the rail firmly in place, and bearing-plates adapted to extend through the slots and to be secured to the rib.

3. A metal railway-tie comprising two equal parts and formed with a central rib having slots, and bearing-plates adapted to extend through the slots and to be secured to

the rib, the slots in the rib being so formed that rails may rest on the bearing-plates and be securely held by the rib.

4. A metal support for rails comprising
5 cross-ties formed with upwardly-extending
slotted ribs, bearing-plates extending across
said ties through the slots in the ribs, and
strengthening-bars extending across through
the slots of a plurality of ribs, the slots in the
10 ribs being so formed that rails may rest on
the strengthening-bars and be securely held
by said ribs.

5. A metal support for rails comprising
cross-ties formed with upwardly-extending

slotted ribs, bearing-plates extending across 15
said ties through the slots in the ribs, and
strengthening-bars extending across through
the slots of a plurality of ribs, the strength-
ening-bars being formed with upwardly-ex-
tending flanges to hold adjacent ends of rails 20
from lateral displacement.

In testimony whereof I have signed this
specification in the presence of two subscrib-
ing witnesses.

JOSEPH M. GRISWOLD.

Witnesses:

W. B. HUDSON,
E. N. PAGELSEN.