

No. 871,232.

PATENTED NOV, 19, 1907.

E. K. MORSE.
RAILWAY TRACK CONSTRUCTION.
APPLICATION FILED MAR. 14, 1907.

Fig. 1.

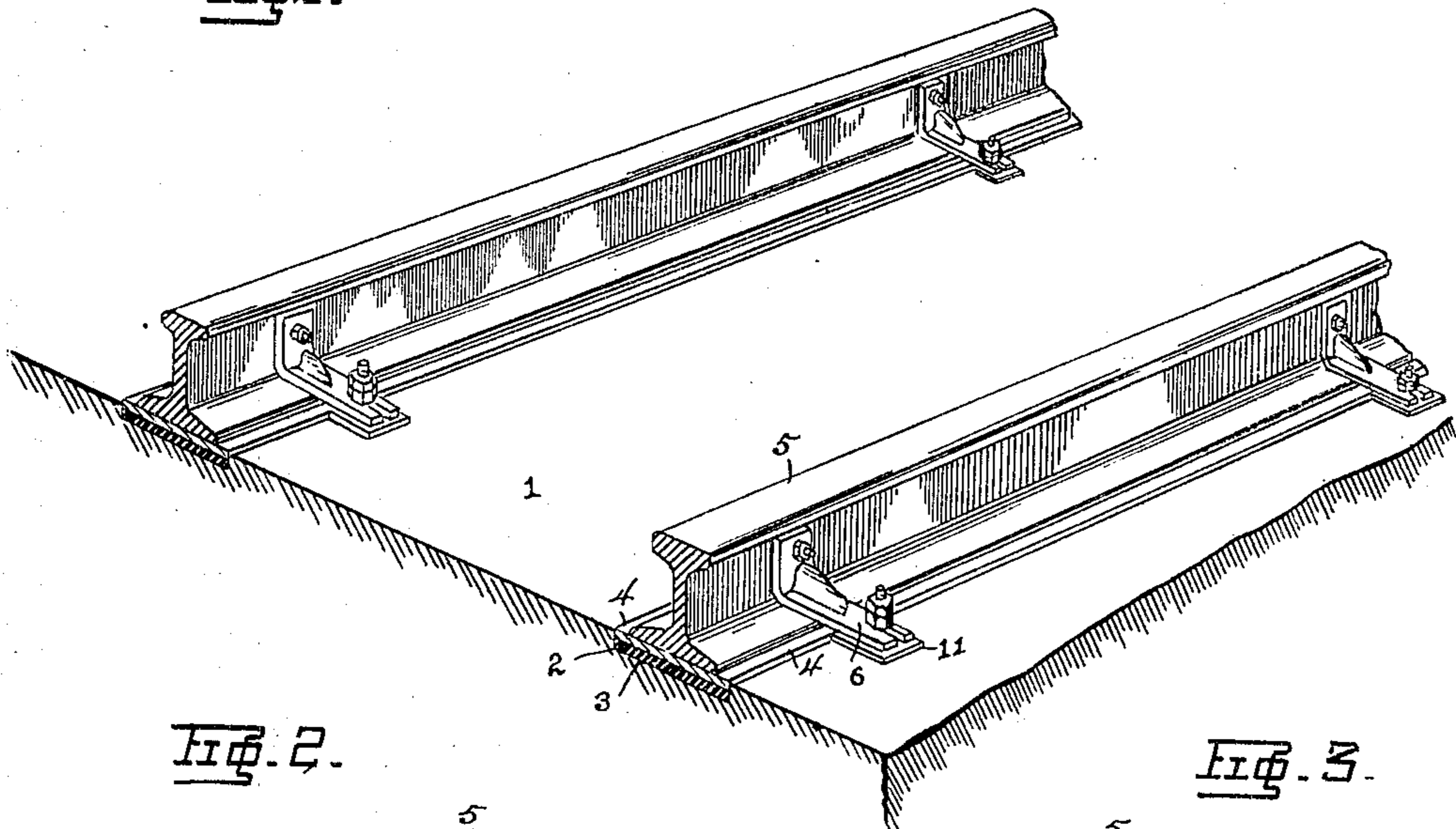


Fig. 2.

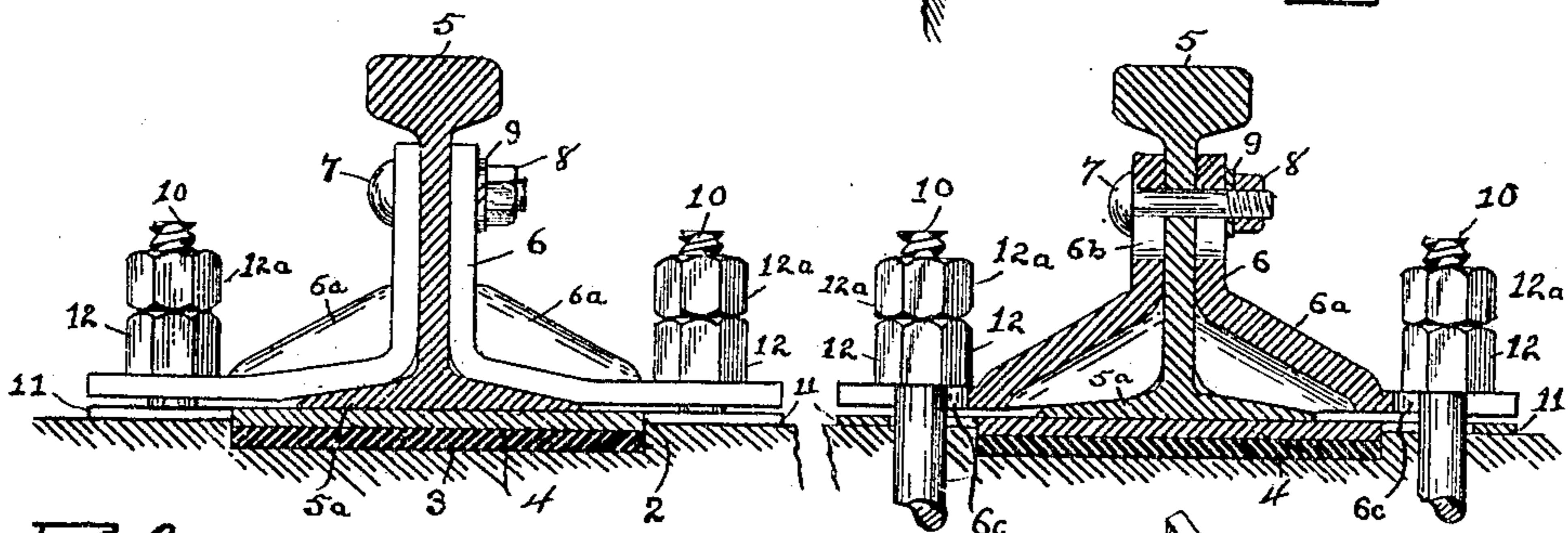


Fig. 3.

Fig. 4.

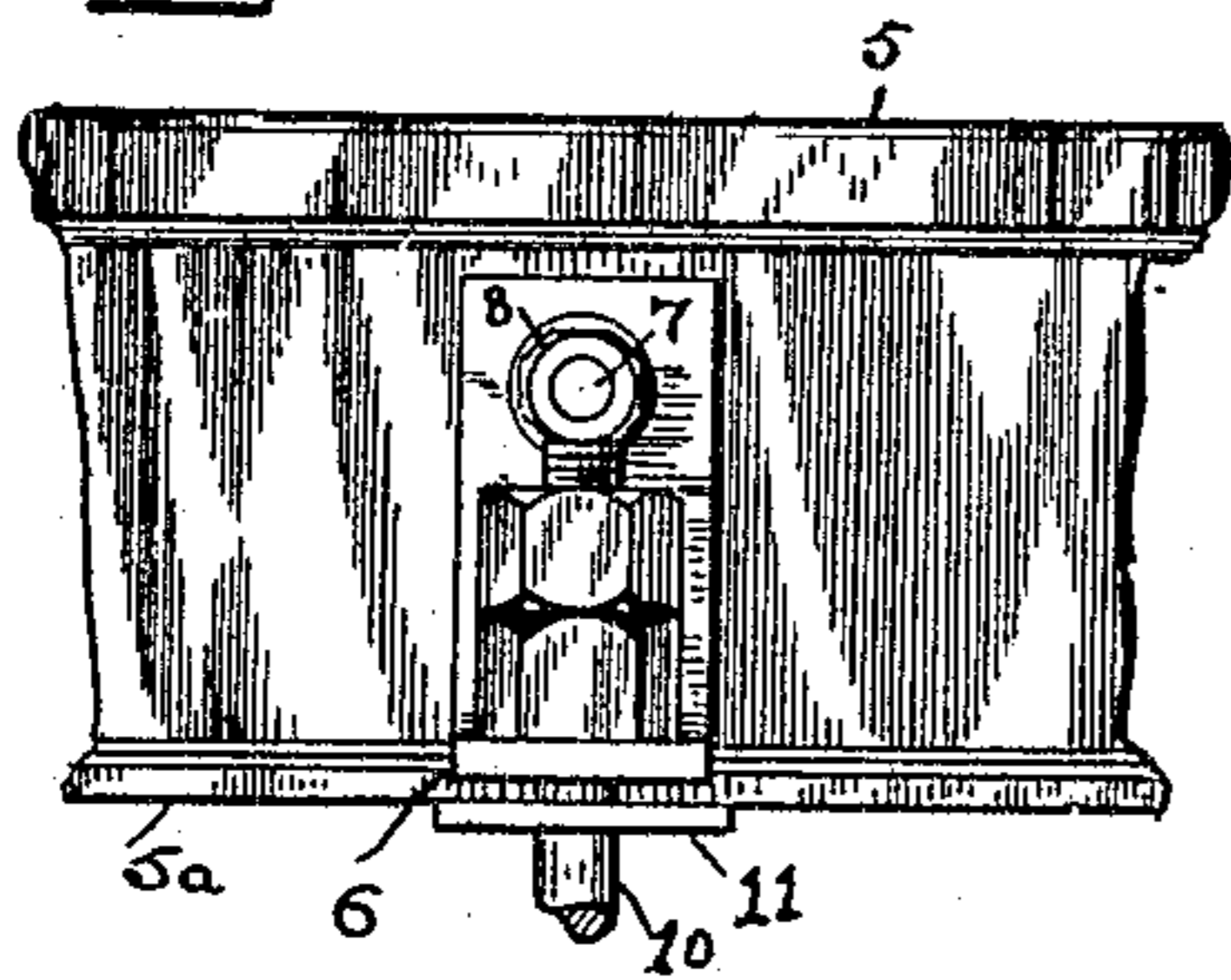
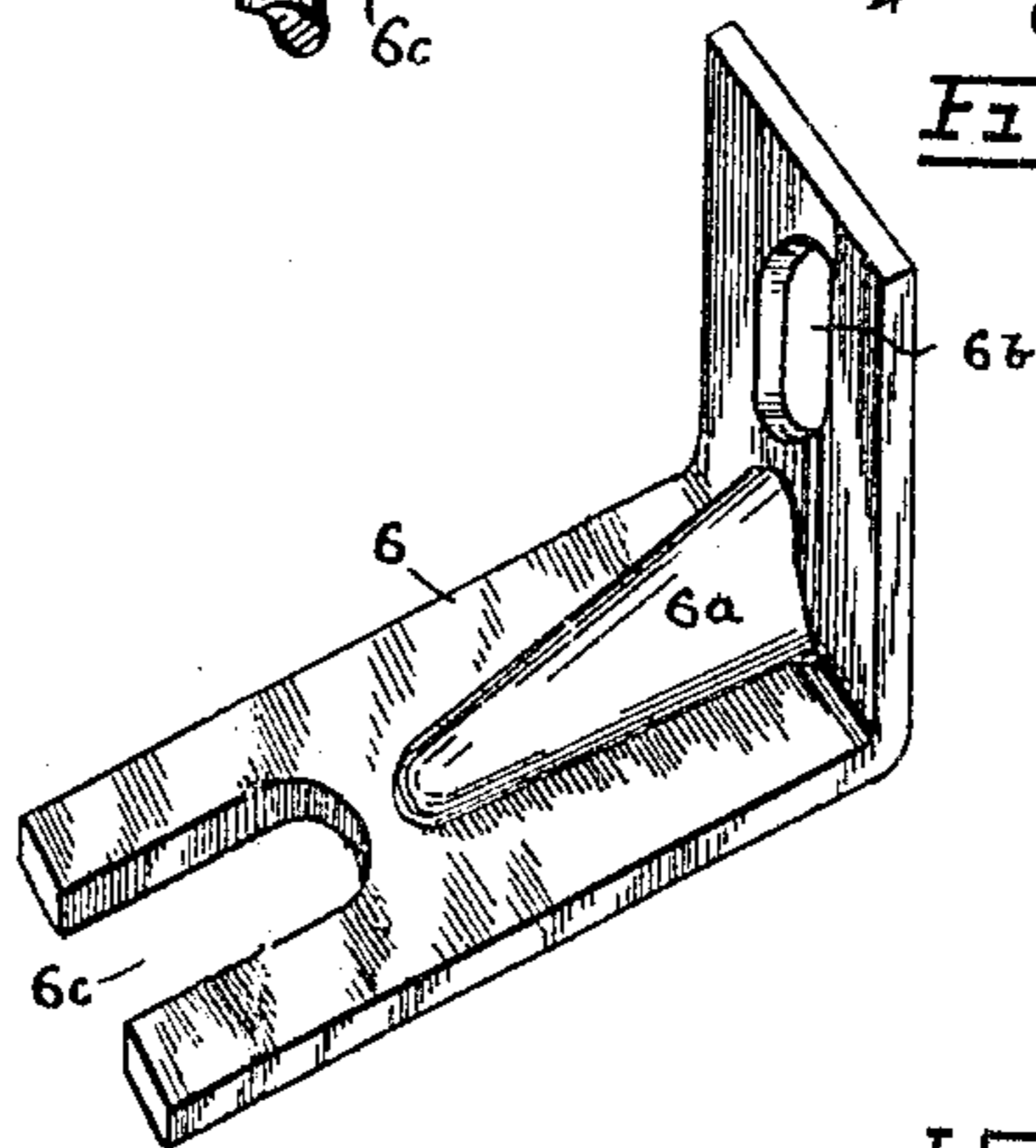


Fig. 5.



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RAILWAY-TRACK CONSTRUCTION.

No. 871,232.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed March 14, 1907. Serial No. 362,296.

To all whom it may concern:

Be it known that I, EDWIN K. MORSE, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Track Construction, of which the following is a specification.

My invention relates to railway track construction and particularly to that class of railway tracks adapted to high speeds and heavy traffic and in which the necessity for cross-ties and ballast may be eliminated.

The object of my invention is to avoid the use of wooden or other forms of cross-ties by substituting therefor a construction which will provide sufficient resiliency or cushioning for the rails so as to be suitable for trains running at a high rate of speed and for heavy traffic.

Another object of my invention is to provide such a track construction as will tend to materially reduce the noise of the rolling stock thereon.

Another object is to provide a method and means of attaching the rails to their bed whereby a section of the track or a single rail may be rapidly and inexpensively removed and replaced with minimum interruption to traffic, and whereby quick and facile re-alignment of the track may be made.

A further object of my invention is to provide a practically smooth surface between the rails which may readily be kept clean.

My invention is especially adapted for use in rapid transit subways and tunnels, wherein the requirements peculiar to this class of construction correspond with the objects of this invention as briefly set forth above.

In the subsequent description I will, therefore, describe my invention as particularly applied to rapid transit subways, it being understood that I in no way limit myself to that particular application.

In the accompanying drawings which form part of this specification: Figure 1 shows a perspective view of a section of track constructed in accordance with my invention. Fig. 2 is a detailed cross section thereof at one of the rails. Fig. 3 is a similar cross section passing through the middle of a pair of the rail supporting clamps. Fig. 4 is a side view of a rail showing a method of clamping; and Fig. 5 is a perspective view of a convenient form of the clamp member.

Referring again to the drawings for a detailed description of my invention: 1 represents the surface of the road bed, of concrete, or similar paving material, preferably finished smooth. Continuous channels 2 are formed in this road bed 1 and are finished with considerable nicety and precision to form a receptacle for the cushioning material or packing 3. This cushion I prefer to make of some fibrous material, possessing considerable toughness; asbestos or similar material being particularly well adapted for this purpose by reason of its capacity for manufacture into belts of great length with the suitable width and thickness so as to be readily laid in the said channels 2. Plates 4 are laid upon the cushion 3, forming a practically continuous cover for the cushioning material, and fit snugly in the channel 2 so as to prevent the squeezing of the cushioning material from out of the channel 2. The depth of the channel 2 is so proportioned that the cushioning material and its cover plates normally fill the said channel so that the surface of the plate 4 shall not, after final adjustment, be below the surface 1.

The rail 5 has its base 5^a resting longitudinally upon the plate 4 and it is also preferable that this base 5^a be rather wider than the base of the present standard rails. Angular clamp plates 6, which I have shown with a reinforcing web 6^a forged therein but which may be of any other desirable construction, have openings 6^b and 6^c in the vertical and horizontal members thereof. These clamp plates 6 are adapted to be connected in pairs with the web of the rail by suitable bolts 7 and nuts 8 and, if desired, suitable nut locks 9.

Comparatively heavy bolts 10 are set rigidly in the concrete road bed 1 at suitable intervals on either side of the channel 2 and are adapted to engage the openings 6^c in the clamps 6. These openings 6^c may be round holes or may be elongated to permit of slight lateral adjustment of the rail when alining, but I prefer to have these openings 6^c slotted as shown in Fig. 5 to afford more rapid and facile substitution of a new rail when necessity requires; or it would be probably preferable for this purpose to have the clamps 6 on the inner side of the rail provided with a hole with only sufficient play for alinement and to have the clamp on the outer side of the rail provided with a slot so that in re-

placing a rail it would be only necessary to remove the nuts on the inner bolts and merely loosen those on the outer bolts, the clamps being already attached to the rail
5 before setting in place.

Washer plates 11, preferably slotted so that they may be readily slipped into or out of place, are placed on the bolts 10 between the concrete surface and the horizontal
10 member of the clamps 6. When the clamps 6 are bolted to the rail the horizontal member of the clamps 6 is somewhat above the washer 11 and the tightening of the nuts 12 draws down the clamp plates 6 thereby com-
15 pressing the cushioning material 3 and seating the rail firmly. Extra nuts 12^a or other suitable nut locking means may be employed to secure the nuts 12.

If necessary, after the cushioning material
20 has become packed down, the washer plates 11 may be slipped out and dispensed with or thinner ones substituted.

Briefly stated the advantages of my improved construction of track are: the dispensing altogether with cross-ties and bal-
25 last; a smooth surface between the rails which may be readily cleaned; a sufficiently resilient rail bed to meet the requirements of high speed and heavy traffic; a deadening of
30 the noise, rapid alining and replacing of the rails; insurance against spreading of rails; and a durable and long-lived construction.

Having thus fully described my invention,

I claim as novel and desire to protect by Letters Patent of the United States —

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1. In a railway track, the combination with a flat concrete road bed surface having parallel channels in said surface, of cushion-
ing material in said channels, plates closing
40 said channels and supported upon the cushioning material, rails resting upon and along said plates, and angle clamps attached to
said rails and bolted to said concrete road bed, substantially as described.

2. In a railway track, the combination of
45 a flat concrete road bed having longitudinal channels, bolts fixed in said concrete road bed adjacent to said channels, rails mounted
on cover plates snugly fitting in said channels, fibrous belting inclosed within said
50 channels beneath said cover plates, and slotted angle clamps attached to said rails and engaged by the aforesaid bolts, substantially as and for the purposes set forth.

3. In a rail fastening, the combination
55 with the rail, and bolts fixed in the road bed, of angle clamps adapted to be bolted to the web of the rail and having slots to engage the said fixed bolts, substantially as described.
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In testimony whereof I have affixed my signature in presence of two witnesses.

EDWIN K. MORSE.

Witnesses:

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