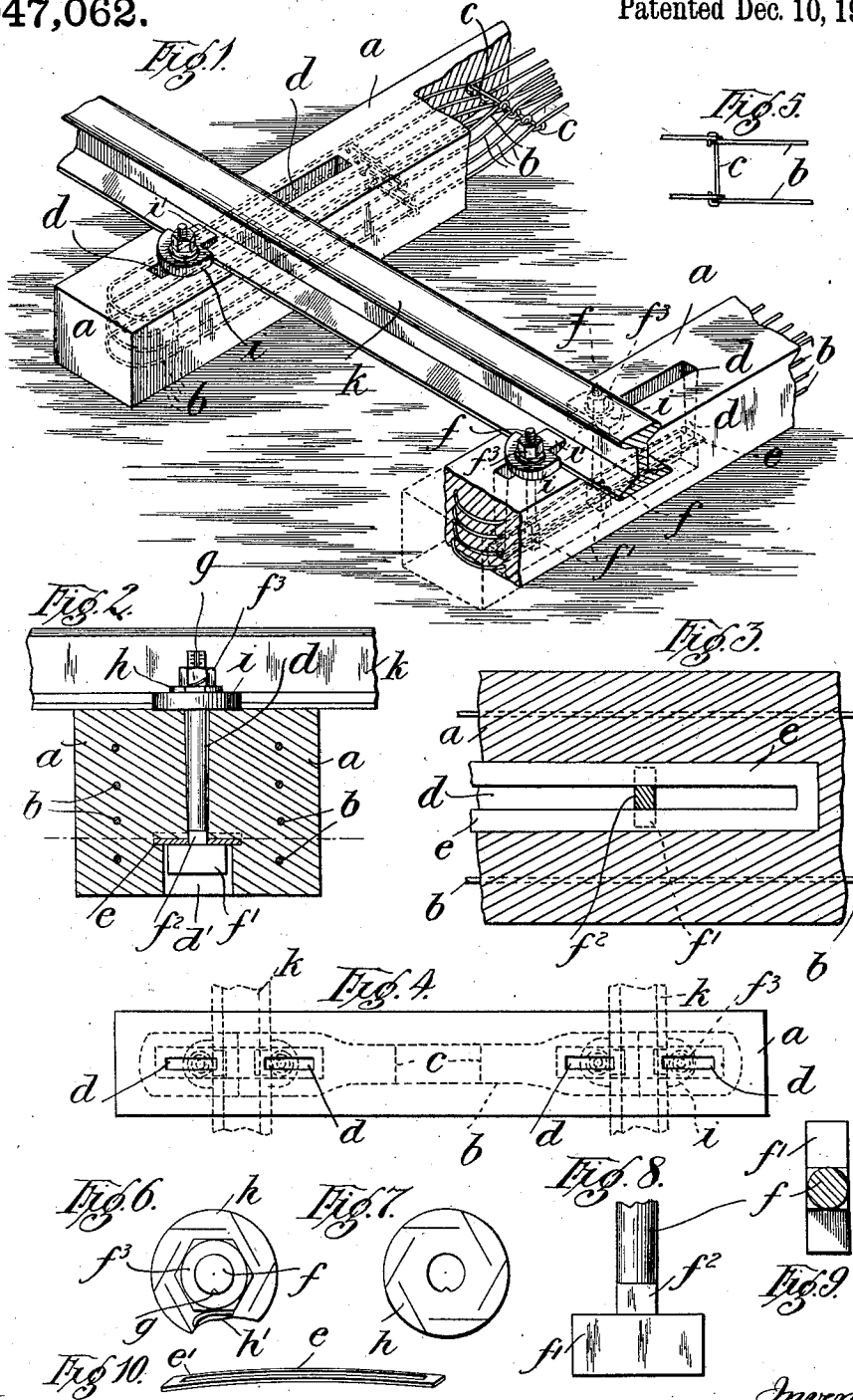


W. R. D. INNES.
RAILWAY SLEEPER.
APPLICATION FILED SEPT. 22, 1911.

1,047,062.

Patented Dec. 10, 1912.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM ROBERT DRAYTON INNES, OF SOUTH MELBOURNE, VICTORIA, AUSTRALIA.

RAILWAY-SLEEPER.

1,047,062.

Specification of Letters Patent.

Patented Dec. 10, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM ROBERT DRAYTON INNES, a subject of the King of Great Britain, residing at Moore street, South Melbourne, in the State of Victoria, Australia, have invented certain new and useful Improvements in Railway-Sleepers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has been devised to provide improvements in the sleepers used in the permanent way of railways, that is to say in the member to which the parallel rails are fixed.

A sleeper embodying my improvements is so constructed as to require a minimum of future attention and from the nature of the composition of the material used in its construction will not decay or become otherwise injured by exposure to the air and weather.

In order that the invention may be the more easily understood, reference may be made to the accompanying drawings, in which—

Figure 1 is an illustration of a rail fixed in position upon two sleepers embodying the improvements. Fig. 2 a sectional end elevation showing one of the holding down bolts in its fixed position. Fig. 3 is a plan of that part of one of the sleepers shown in Fig. 1 and illustrating the plate and a section of the base of one of the holding down bolts. Fig. 4 is a plan showing the longitudinal arrangement of the reinforcing means. Fig. 5 is a plan view of a detail showing the method of stirruping the reinforcing metal rods. Figs. 6 and 7 show a locking washer and nut when in their fastened position upon a holding down bolt. Figs. 8 and 9 illustrate the head and base of shank of one of the said holding down bolts, and Fig. 10 shows a cambered bar or plate hereinafter described.

In these drawings *a* is a sleeper constructed of reinforced concrete the said concrete being compounded preferably from an aqueous admixture of basaltic stone chips, crushed basaltic matter and Portland cement (with or without some sand), and reinforced by metal longitudinal rods *b* joined or looped to stirrups *c* of similar rod metal. In the sleepers shown I employ preferably but not arbitrarily eight of these

eyeletted longitudinal rods and six sets of stirrups, the whole forming a homogeneous reinforced mass.

In the sleeper *a* I arrange a full depth slotted opening *d* running parallel with the plane of the sleeper. The slotted opening *d* (see Fig. 2) commences in a widened portion *d'* for a short distance in the underside of the sleeper and contains a cambered metal plate *e* (see Fig. 10) to take the strain of a bolt head *f'* of the bolt *f*. The slotted opening *d* is tapered slightly inward at its bottom so as to receive a squared butt end *f²* of the shank of bolt *f* and enable the said bolt *f* to rock for a slight distance for adjusting it in its true position before the nut *f³* is screwed home.

A V-shaped incision *g* is cut vertically in the threaded end of the bolt *f* to hold a toothed washer *h* the exterior of which latter on being bent at *h'* (as shown in Fig. 6) locks the nut in its adjusted and tightened position.

e is the cambered plate through which is a perforation allowing the bolt *f* to pass, the camber being to provide against the slipping outwardly of the bolt head *f'* by vibration and outward thrust of the rail *k*. The holding plate *i* has a forwardly projecting presser foot *i'* which latter is beveled off to meet the corresponding contour of the base of the rail *k* and when held tightly in place by the bolt *f* and its nut forms a grip to prevent the said rail *k* from moving. In some cases the under surface of *i'* may be serrated or roughened to increase its gripping capacity. Two of these bolts *f*, plates *i* and their parts are placed opposite one another at each end of the sleepers for holding the rail *k* between them (see Fig. 4).

Referring to the slotted opening *d* I may in some cases shorten the length of such opening on one end of a sleeper or may employ two short openings each of sufficient capacity only to admit the bolt head to rigidly fix the rail at that end of the sleeper and leave the adjustment of gage between the two rails *k* to be performed by the alterable bolts *f* working in an extended slot *d* at the other end.

It will be noticed that the bolt I employ has a head *f'* of an oblong section and that it is placed in position by being lowered into the slotted opening with the length of the head in line with such slotted opening *d* and when it has been sufficiently lowered

so as to come below the cambered plate *e* it is given a half turn, this brings the said head *f'* at right angles across the width of opening in the plate *e* and slotted passage *d*.

5 It will also be noted that the bottom of the bolt shank at *f*² (see Fig. 8) is squared thus preventing the said bolt from turning in the plate *e* if it is desired to tighten or loosen the nut *f*³.

10 In Fig. 1 is shown an end of the sleeper *a* torn off to lay bare the peculiar arrangement of the reinforcing rods *b*.

I claim as my invention:

15 1. An improved sleeper for railways comprising a body having a plurality of slots running longitudinal thereof and extending entirely through the sleeper, each slot being widened at the under side of the sleeper and the sides of each slot converging from the
20 upper face of the sleeper to the point at which the shoulder is formed between the same and the said widened portion at the under side of the sleeper.

25 2. An improved sleeper for railways comprising a body having a plurality of slots running longitudinal thereof and extending entirely through the sleeper, each slot being widened at the under side of the sleeper and the sides of each slot converging from the
30 upper face of the sleeper to the point at which the shoulder is formed between the same and the said widened portion at the under side of the sleeper, and a slotted plate set into the sleeper at the base of the said
35 widened portion of the slot therein.

3. An improved sleeper composed of composition materials for railways comprising a body having a plurality of slots running longitudinal thereof and extending entirely

40 through the sleeper, each slot being widened at the under side of the sleeper and the sides of each slot converging from the upper face of the sleeper to the point at which the shoulder is formed between the same and the said
45 widened portion at the under side of the sleeper, a plurality of reinforcing bars arranged in tiers, and a plurality of cross members connecting said reinforcing bars.

4. The hereindescribed improvement in railway equipment comprising a sleeper
50 having a plurality of slots running longitudinal thereof and extending entirely through the sleeper, each slot being widened at the under side of the sleeper and the sides
55 of each slot converging from the upper face of the sleeper to the point at which the shoulder is formed between the same and the said widened portion at the under side of the sleeper, a slotted plate at the base of the widened recess, a bolt having an elongated head adapted when placed longitudinally of the slots in the said sleeper to
60 pass through the slot in the said slotted plate, the said bolt having a square portion adjacent to the head thereof adapted to fit
65 within the said slot in the slotted plate when the bolt is in position, a holding plate, a presser foot connected therewith adapted to engage the base of the rail, and a nut for
70 securing the said bolt holding plate and presser foot in position.

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

WILLIAM ROBERT DRAYTON INNES.

Witnesses:

ALICE HARKER,

FLORENCE SINCLAIR.