

A. E. DAVIS.
 TRACK FOR SINGLE RAIL VEHICLES.
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928,184.

Patented July 13, 1909.

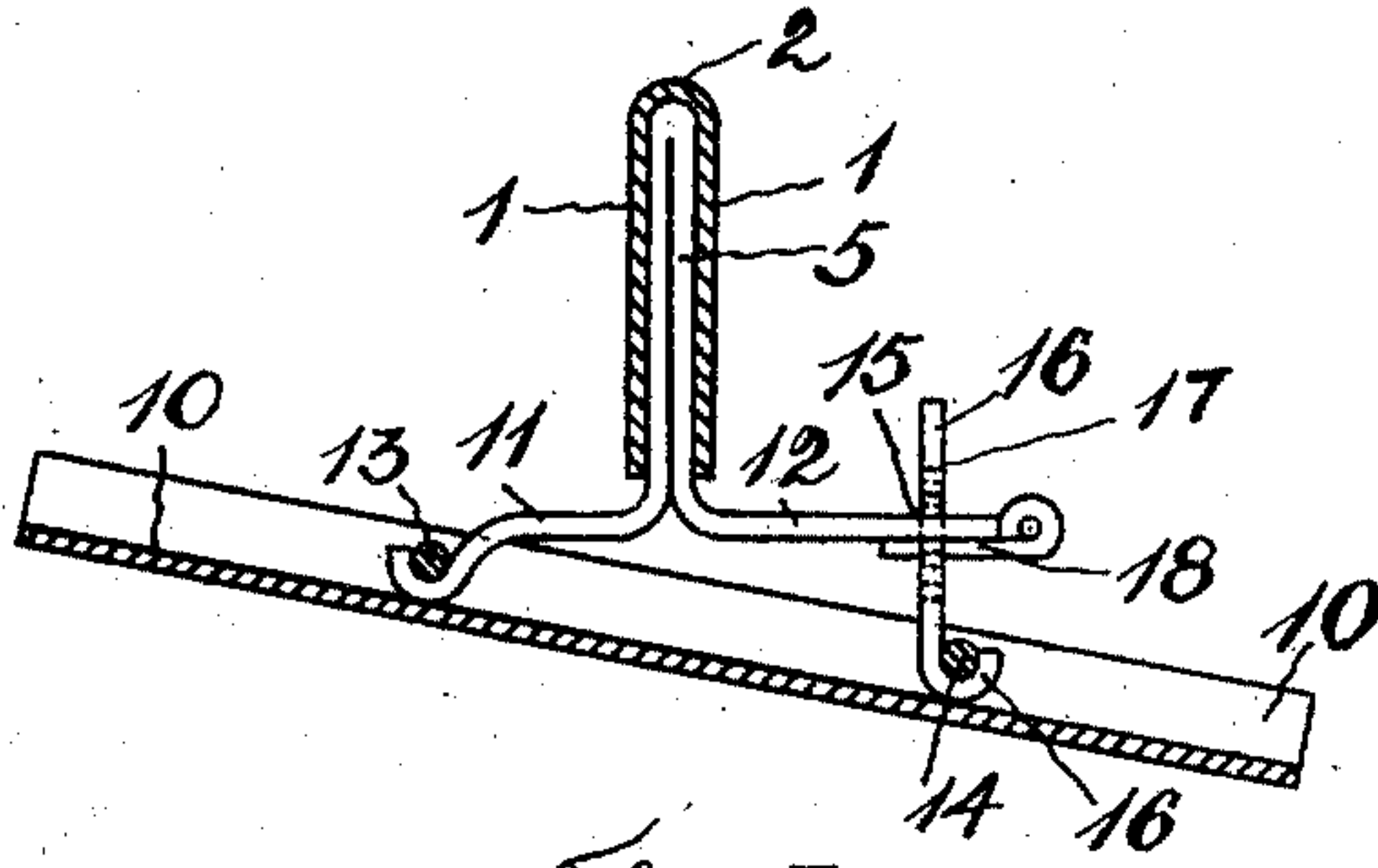


Fig. 3.

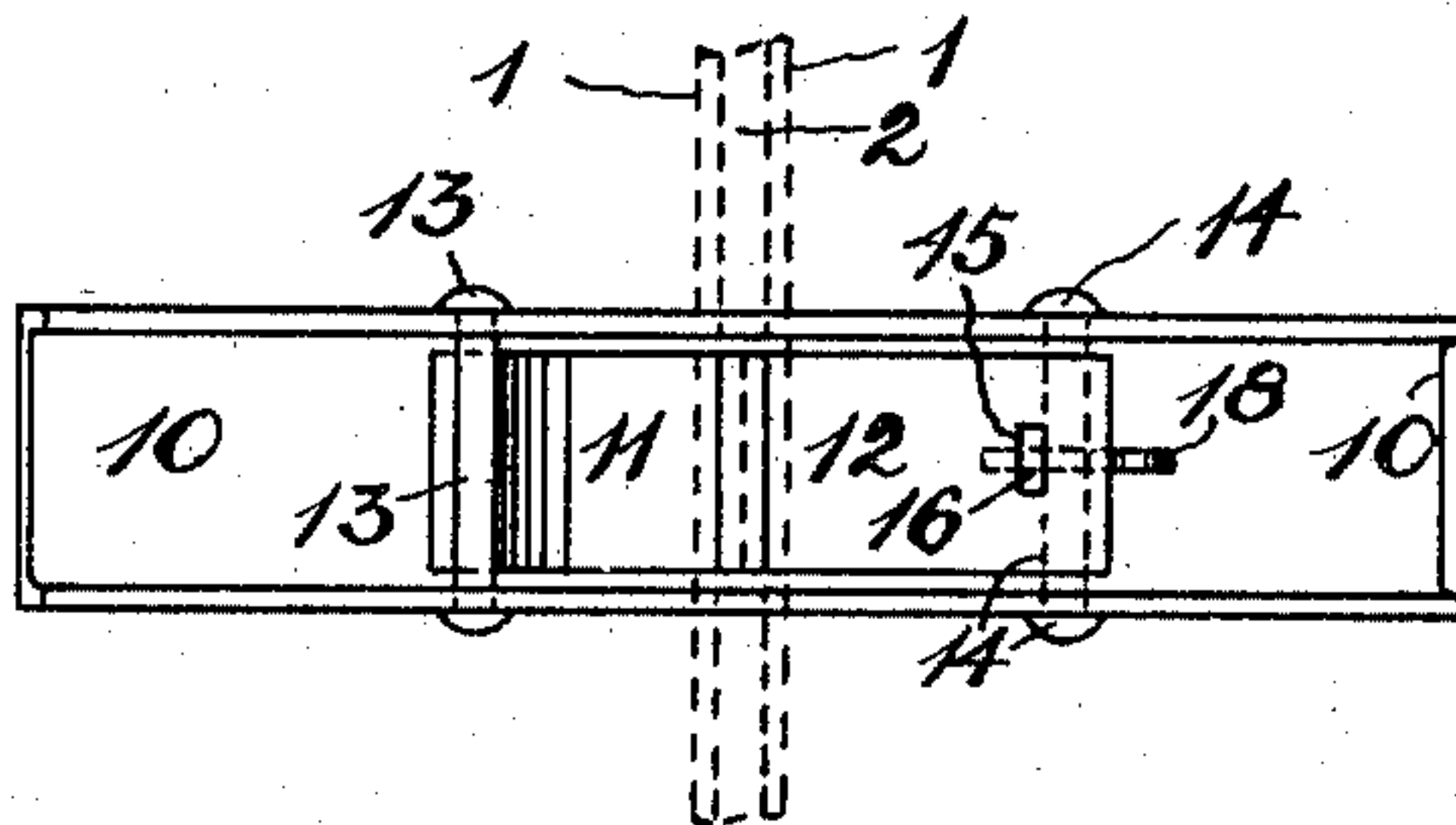


Fig. 4.

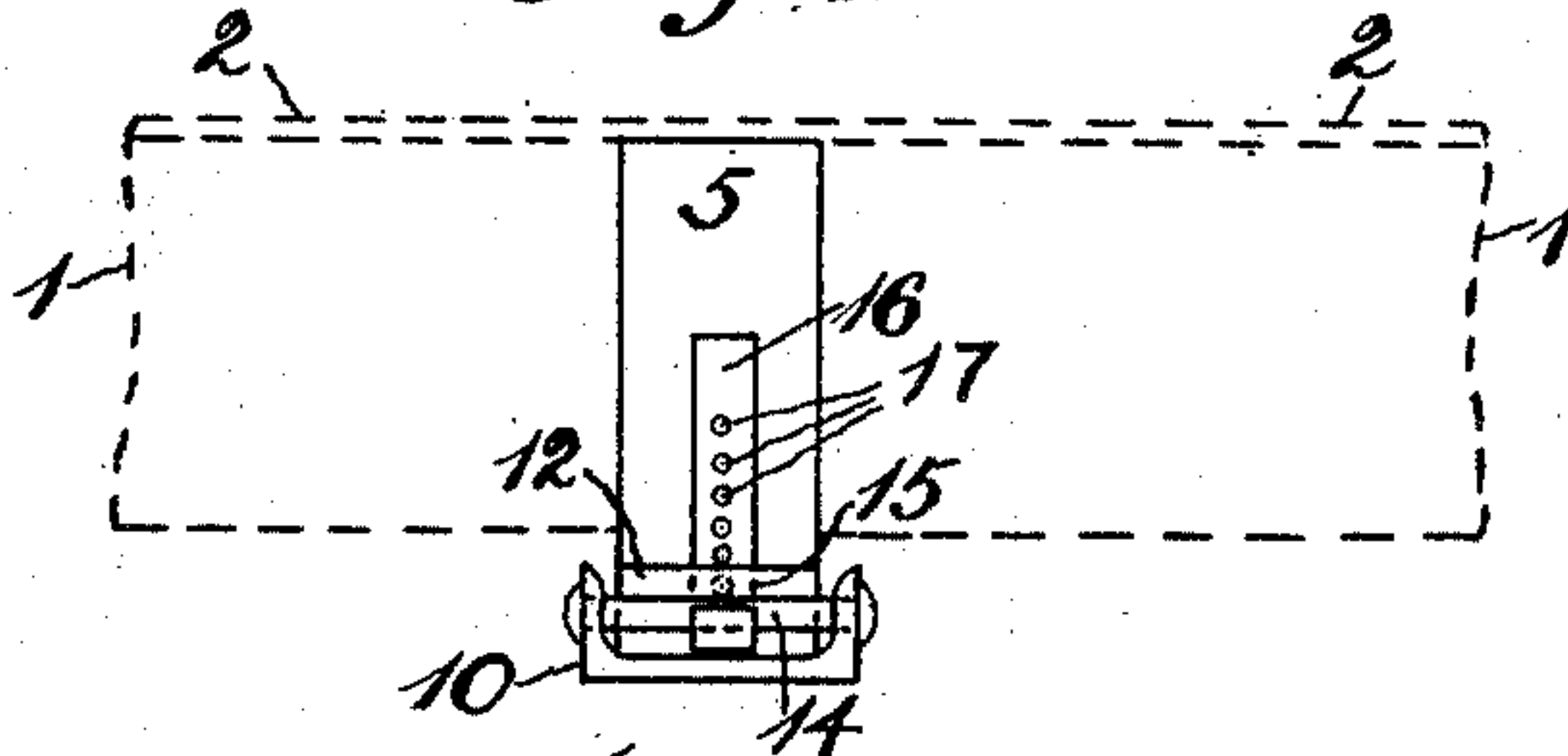


Fig. 5.

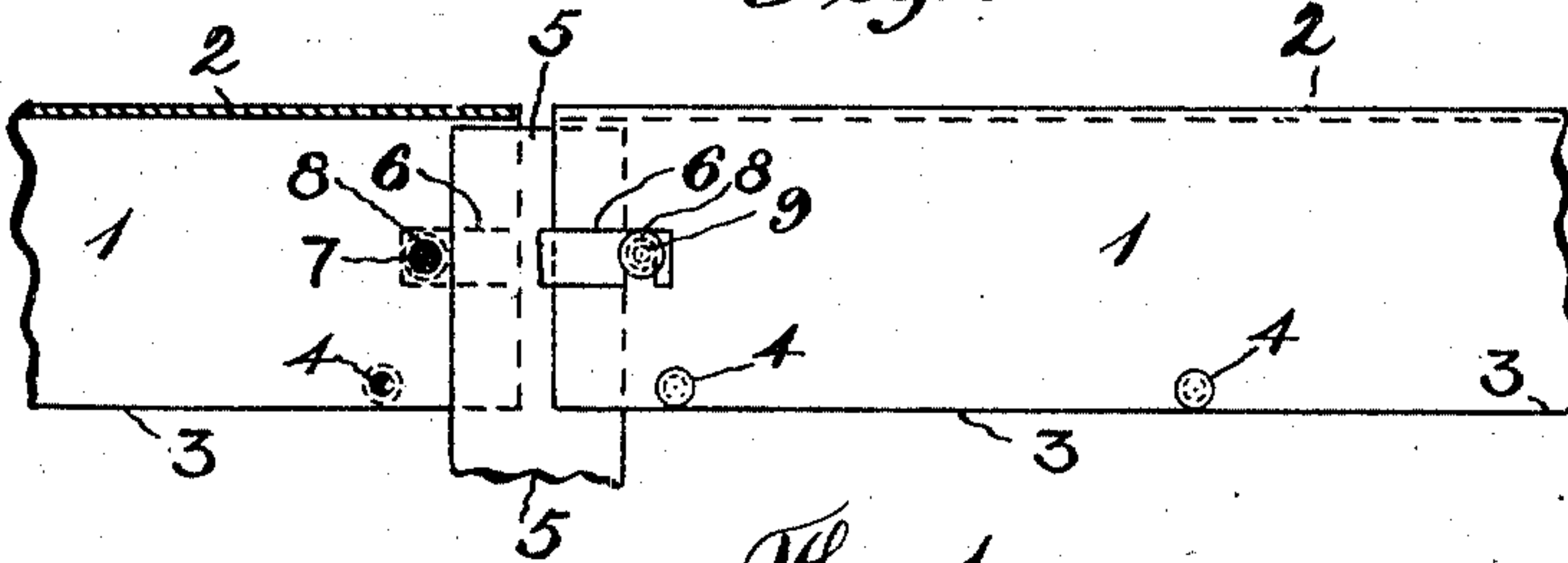


Fig. 1.

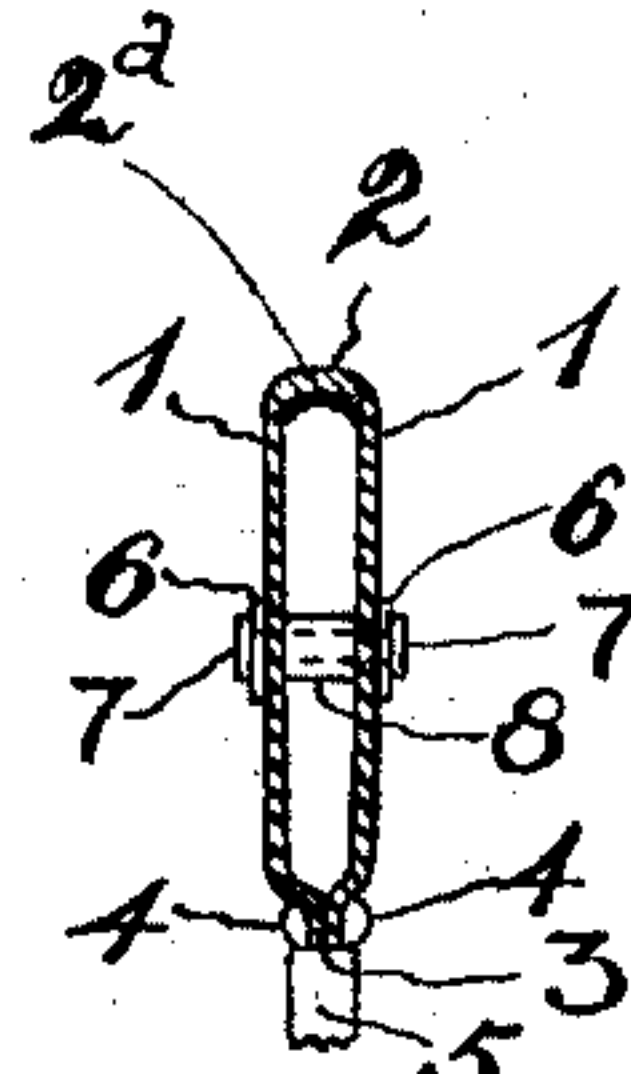


Fig. 2.

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UNITED STATES PATENT OFFICE.

ALFRED EDWIN DAVIS, OF JOHANNESBURG, TRANSVAAL.

TRACK FOR SINGLE-RAIL VEHICLES.

No. 928,184.

Specification of Letters Patent.

Patented July 13, 1909.

Original application filed September 30, 1907, Serial No. 395,198. Divided and this application filed October 10, 1908. Serial No. 457,159.

To all whom it may concern:

Be it known that I, ALFRED EDWIN DAVIS, a subject of the King of Great Britain, and resident of Johannesburg, Transvaal, have invented certain new and useful Improvements in Tracks for Single-Rail Vehicles, of which the following is a specification.

This invention relates to the track or permanent way of mono-rail railways and is designed for use in transporting apparatus for mines.

The present application is a division of a prior application filed by me on the 30th September, 1907 under Serial Number 395198.

The invention relates to the construction of the rails; to means for connecting the contiguous extremities of successive lengths of rail; to means for supporting the rails, and to means for adjusting the rail support or carrier in relation to the sleeper.

It is requisite that the rails forming the track shall be light, strong, easily handled and capable of being easily and expeditiously moved from place to place and re-erected; that there shall be no detachable parts to get loose or mislaid; that they shall be stiff vertically so as to carry the necessary load with as few sleepers as possible; that they shall be flexible to some extent at the supporting joints; that they shall always be maintained truly vertical and that it shall be possible to swing one length of rail up and down, and to some extent laterally or sidewise relative to the next length so as to follow any inequalities or undulations of an uneven floor. Each length of rail is preferably supported at or in proximity to each extremity only. It is requisite that these supports and sleepers provide for the fastening of one length of rail to the next in such manner as to prevent mutual longitudinal displacement; to secure each length of rail to the rail support to keep the rail in a vertical position independently of the angle at which the sleeper rests upon the ground; to provide such joints between successive lengths of rail and the supports as to allow each length to be moved up or down in a vertical plane so that the angle of inclination between any two adjacent lengths may be altered in order that the rail may

adjust itself to the varying inclination of the floor; and to provide that each length of rail may be capable of being bent to some extent in a horizontal plane at the joint or point of connection with the support to allow of the track being bent as may be desired, without permanent set.

The invention will be further described by aid of the accompanying sheet of drawings, in which—

Figure 1 is an elevation, partly in section, illustrating means for making the connection between two consecutive lengths of rail and the rail carrier or horn provided on the sleeper. Fig. 2 is an end elevation of Fig. 1. Fig. 3 is a longitudinal sectional elevation of a sleeper and the rail illustrating means for adjusting the position of the rail carrier or horn in relation to the sleeper. Fig. 4 is a plan of the sleeper and adjustable rail carrier or horn illustrated in Fig. 3 with a portion of the rail in dotted lines in position on the horn and Fig. 5 is an end elevation of Fig. 4.

The rails, see more particularly Figs. 1 and 2, are manufactured in suitable lengths from sheet steel or other suitable metal of the necessary width. The sheet is bent to form the two vertical and parallel sides 1 and the top or tread 2 of the rail. In rolling the plates for the manufacture of these rails it will be possible, if desired, to make that portion which forms the tread 2 thicker than those portions which form the sides 1, as indicated at 2^a in Fig. 2, and thus provide for the wearing away of the tread. To make the rail stiff the sides 1 are bent inward at the bottom to form the flanges 3 which are connected by rivets 4.

5 is the carrier or horn for supporting the rails 1 at or in proximity to their extremities. The flanges 3 do not extend to the end of the rail but terminate at a point some distance from the end of the rail so as to allow the ends of the rails to be placed over the horn 5 until the upper end of the latter contacts with the underside of the tread 2 to support the rail as shown in Fig. 1.

The means for connecting the contiguous ends of successive lengths of rail upon the horn 5 consist of latches or pivoted hooks 6.

7 is a pin fixed between the sides 1 near

the end of one length of rail. This pin 7 at its extremities serves as a pivot about which the hooks or latches 6 may hinge or swing. Round the pin 7 between the sides 1 a tubular distance piece 8 may be placed. 9 is a similar pin fixed between the sides 1 near the end of the other length of rail. A tubular distance piece may also be placed around the pin 9 between the sides 1. The ends of the pin 9 form studs or projections which are adapted to be engaged by the hooked extremities of the latches 6. It will be evident that instead of hinging both catches on the pin 7 one may hinge about each of the pins 7 and 9 so that the hooked extremity of the one latch will engage the pin 7 at one side of the rail and the hooked extremity of the other latch will engage the pin 9 on the other side of the rail. The horn 5 projects up between the pins 7 and 9 thereby preventing longitudinal displacement of the end of either length of rail. By this construction I obviate the employment of loose parts, all the parts being permanently fixed to the rails. This construction allows sufficient play at the joints to permit of the adjacent lengths of rail being raised or lowered in a vertical plane. If the sides of the rail are made of sufficiently thin material at the ends it is found in practice that this provides sufficient flexibility at the joint to allow of the rails being placed at a considerable angle to one another in a horizontal plane.

In Figs. 3, 4 and 5 I illustrate the means for adjusting the horn 5 in relation to the sleeper 10 or for making the horn or rail carrier 5 truly vertical, while obviating or reducing to a minimum the labor necessary for packing up or raising one end or other of the sleeper 10 to suit varying inclinations when the track is moved from place to place. In this construction the lower ends 11, 12 of the horn 5 are turned outward in opposite directions in the form of flanges which constitute the base of the horn. The sleeper 10 which is shown consisting of a suitable short length of channel iron has fixed in suitable positions between its parallel and vertical sides two transverse bolts 13, 14. The end of the flange 11 is bent or curved as shown and projects underneath the bolt 13 so that the horn 5 may hinge or move about the bolt to vary its inclination to the plane of the sleeper 10. The other flange 12 is constructed near its outer end with a slot 15. 16 is a bar which as shown is curved at its lower extremity and fits underneath the other bolt 14 about which it may hinge or move. The bar 16 is adapted to be projected up through the slot 15 in the flange 12 and has formed through it a number of holes 17, see Fig. 5. 18 is a pin which upon being passed through any one of the holes 17 in the bar 16 supports the horn or carrier 5 in the desired position. The pin 18 is preferably connect-

ed by means of a chain or other flexible connection with the sleeper 10, to prevent it being lost or misplaced. This construction obviates the necessity for the use of any nuts and spanners in the operation of adjusting the horn.

What I claim as my invention and desire to protect by Letters Patent is:—

1. A mono-rail track consisting of rails each comprising a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, the sides of said rails being bent inward at the bottom to form flanges and means for connecting the flanges as set forth.

2. A mono-rail track consisting of a plurality of lengths of rail each comprising a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, the sides of said rails being bent inward to meet at the bottom and rivets connecting the inwardly bent portions of the sides as set forth.

3. A mono-rail track consisting of a plurality of lengths of rail each length comprising a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, the tread portion being made thicker than the sides, the sides of said rails being bent inwardly to meet at the bottom and rivets connecting said inwardly bent portions as set forth.

4. A mono-rail track comprising a plurality of lengths of rail each length consisting of a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, the sides being bent inwardly to meet at the bottom and rivets connecting the inwardly bent portions and a rail carrier for supporting the contiguous extremities of successive lengths of rail, the inwardly bent portions of the sides being omitted at the ends of the rail to admit of the carrier being projected between the sides as set forth.

5. A mono-rail track comprising a plurality of lengths of rail each length consisting of a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, the sides of said rails being bent inward at the bottom to form flanges, rivets connecting said flanges, and a rail carrier for supporting the contiguous extremities of successive lengths of rail and means for connecting the contiguous extremities of the successive lengths of rail, as set forth.

6. A mono-rail track comprising a plurality of lengths of rail each length consisting of a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, the sides of said rails being bent inward at the bottom to form flanges, rivets connecting said flanges, and a rail carrier for supporting the contiguous extremities of successive lengths of rail and

latches for connecting the contiguous extremities of the successive lengths of rail as set forth.

7. A mono-rail track comprising a plurality of lengths of rail each length consisting of a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, the sides of said rails being bent inward at the bottom to form flanges, rivets connecting said flanges, and a rail carrier for supporting the contiguous extremities of successive lengths of rail, pins fixed between the sides of the rail at the ends and latches pivoted at one end and adapted at the other end to engage the other pin as set forth.

8. A mono-rail track comprising a plurality of lengths of rail each length consisting of a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, the sides of said rails being bent inward at the bottom to form flanges, rivets connecting said flanges, and a rail carrier for supporting the contiguous extremities of successive lengths of rail, pins fixed between the vertical sides at the ends of the rails between which pins the rail carrier projects so preventing longitudinal displacement of the rails and a latch at each side of the rail joint, said latches being movable at one extremity about the one pin and adapted at the other extremity to engage the other pin for connecting the contiguous extremities of successive lengths of rail as set forth.

9. A mono-rail track comprising a plurality of lengths of rail each length consisting of a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, the sides of said rails being bent inward at the bottom to form flanges, rivets connecting said flanges, and a rail carrier for supporting the contiguous extremities of successive lengths of rail, pins fixed between the vertical sides at the ends of the rails, distance pieces around said pins between which pieces the rail carrier is projected so as to prevent longitudinal displacement of the rails and means for connecting the contiguous extremities of the successive lengths of rail as set forth.

10. A mono-rail track consisting of a plurality of lengths of rail each length consisting of a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, a rail carrier the horn or vertical member of which is pro-

jected between the parallel sides at the contiguous extremities of successive lengths of rail so that the ends of the lengths of rail rest upon the top of the horn the side plates having holes, pins in said holes in the end of each length of rail and latches pivoted on the extremities of one pin at the outside of the side plates and adapted to engage studs formed on the extremities of the other pin at the outside of the side plates as and for the purpose set forth.

11. A mono-rail track comprising a plurality of lengths of rail each length consisting of a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, a sleeper and an adjustable rail carrier hinged to the sleeper and means for securing the rail carrier in its adjusted position.

12. A mono-rail track comprising a plurality of lengths of rail each length consisting of a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, a sleeper and an adjustable rail carrier having a base portion hinged at one side to the sleeper and means engaging the other side of the base portion for securing the horn in its adjusted position.

13. A mono-rail track comprising in combination a plurality of lengths of rail each length comprising a sheet of metal bent to form two parallel and vertical sides and a tread joining the sides at the top, a sleeper and an adjustable rail carrier comprising a horn, the lower ends of which are turned outward in opposite directions to form a base portion, two transverse bolts fixed to the sleeper the end of one flange of the horn being curved and projected underneath the one bolt around which it may hinge and the other flange of the horn being constructed with a slot, a bar curved at its lower extremity and adapted to fit under the other bolt, about which it may hinge, and formed with a row of holes, which bar projects up through the slot in the flange of the horn and a pin which is adapted to pass through any one of the holes in the bar to support the horn, as and for the purpose set forth.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALFRED EDWIN DAVIS.

Witnesses:

CHAS. OVENDALE,
F. A. OVENDALE.