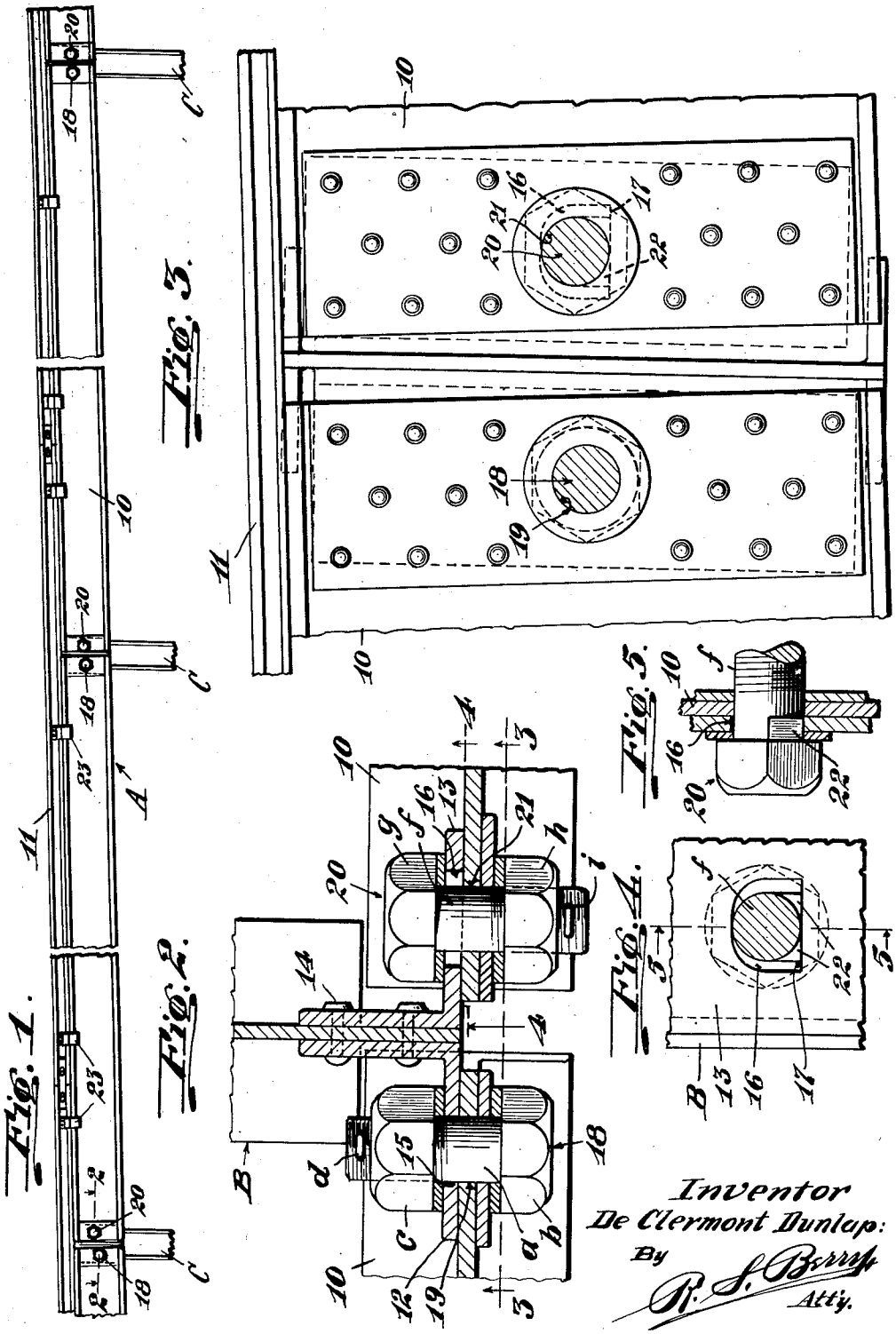
June 22, 1937. DE CLERMONT DUNLAP 2,084,610

MONORAIL TRACK SUPPORT

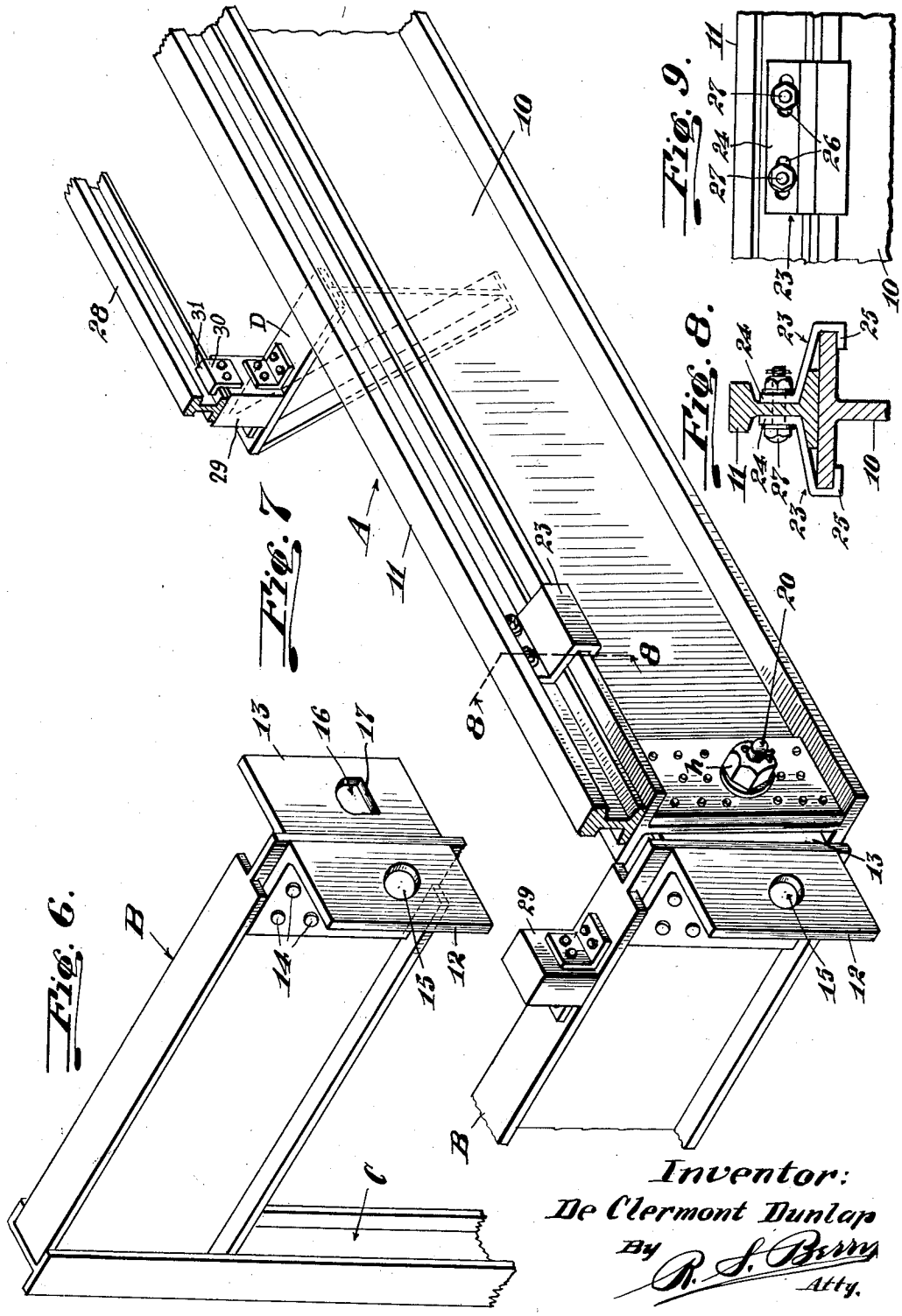
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MONORAIL TRACK SUPPORT

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2,084,610

MONORAIL TRACK SUPPORT

De Clermont Dunlap, Newark, N. J.

Application January 3, 1934, Serial No. 705,056

1 Claim. (Cl. 104—93)

This invention relates to overhead monorail railway systems and more particularly pertains to an overhead monorail track adapted to be traversed by trucks carrying suspended coaches arranged to travel beneath the tracks.

An object of the invention is to provide an overhead monorail track including means for supporting same whereby contiguous rail sections may be readily assembled on their supports and positioned in various longitudinally extending angular relations to each other on a vertical plane so as to facilitate the construction of a monorail track with various grades.

Another object is to provide a construction which will permit longitudinal expansion and contraction of contiguous sections or lengths of monorail tracks relatively to each other and to overhead supports on which they are carried.

Another object is to provide a mounting for overhead monorail tracks which is so constructed as to enable rapid assemblage of the track.

With the foregoing objects in view together with such other objects and advantages as may subsequently appear the invention resides in the parts and in the combination, construction and arrangement of parts hereinafter described and claimed and illustrated by way of example in the accompanying drawings in which:

Figure 1 is a view in side elevation illustrating a fragmentary portion of a monorail track as constructed in accordance with the present invention;

Figure 2 is a detail in horizontal section taken on the line 2—2 of Figure 1 showing the expansion connection between contiguous ends of adjacent track girders and their overhead supports;

Figure 3 is a view in section and elevation as seen on the line 3—3 of Figure 2;

Figure 4 is a detail in section taken on the line 4—4 of Figure 2;

Figure 5 is a view in section as seen on the line 5—5 of Figure 4;

Figure 6 is a perspective view of the track girder support, showing it with the track girder as removed;

Figure 7 is a perspective view showing the manner of assembling the monorail track and of connecting it to the overhead supporting brackets;

Figure 8 is a detail in cross section taken on the line 8—8 of Figure 7 illustrating the rail clamp;

Figure 9 is a view in side elevation of the structure shown in Figure 8.

Referring to the drawings more specifically, A indicates generally a monorail overhead track which is formed of a series of longitudinally aligned girders 10 here shown as formed of I-beams and on the upper margins of which is mounted a rail 11 arranged to form a continuous track adapted to be traversed by monorail trucks from which are suspended by hangers cars or coaches disposed beneath the track.

The track A is supported in an overhead position, that is, in spaced relation to the ground, on brackets B carried on suitable supports here shown as comprising uprights or columns C and which brackets B and columns C are here shown as formed of I-beams.

In carrying out the present invention, the outer ends of the brackets B are fitted with laterally projecting flanges 12 and 13, the front faces of which extend vertically on a plane with each other. The flanges 12 and 13 are here shown as formed of angle plates secured to the opposite sides of the upright web of the brackets B by rivets 14. The flange 12 is formed with a circular opening 15, and the flange 13 is formed with an elongated slot 16 having a straight bottom wall 17. The flange 12 with its circular opening 15 is designed to afford a pivotal support for one end of a track girder 10, and for which purpose a bolt 18 is arranged with the shank portion *a* thereof extending through an opening 19 in the upright web of the girder and through the opening 15 in the flange 12; the bolt being provided with the usual head *b* and nut *c* which latter is screwed on the shank *a* and is held in place thereon by a cotter pin *d* or in any other desired manner. The bolt 18 is formed of such dimensions as to carry the loads imposed on the monorail track without shearing.

The flange 13 with its elongated slot 16 is designed to afford an expansion joint connection between one end of the girder 10 and its associated bracket B and at the same time afford a pivotal connection between the flange 13 and the end of the girder carried thereon. In effecting connection between the girder and the flange 13 a bolt 20 is provided which bolt includes a shank *f*, and a head *g*, and has a threaded end portion on which is screwed a nut *h* held in place by a cotter pin *i* or other suitable fastening.

The shank *f* of the bolt 20 is passed through the elongated slot 16 and through a circular opening 21 in the upstanding web of the girder as particularly shown in Figure 2. The shank *f* of the bolt 20 is formed adjacent the head *g* with a shoulder 22 which projects on opposite sides of the vertical center of the bolt shank and is arranged to seat on the flat, straight surface 17 forming the lower margin of the elongated slot

16. By the provision of the shoulder 22 a broad bearing surface is afforded for the bolt which will serve to minimize wear due to shifting of the bolt longitudinally of the slot 16.

Each girder 10 is here shown as connected at one end by a pivot bolt 18 to a flange 12 on a supporting bracket B and as connected at its other end by the slidable bolt 20 to the flange 13 of another supporting bracket B. A supporting bracket B is thus provided at the contiguous ends of adjacent girder sections.

By employing a single bolt connection between the ends of the girders and the supporting brackets articulate joints are formed at each end of each girder so that contiguous girders may be disposed at various longitudinal inclinations relatively to each other thus facilitating assemblage of the monorail tracks at the end of grades, and by the provision of the slidable connection between the bolt 20 of one end of the girder and its supporting bracket B an expansion joint is effected which will permit longitudinal expansion and contraction of the girder without distortion of the track and without subjecting the brackets B to lateral strain as would ordinarily result from a rigid connection between each end of a girder and the brackets.

The rails 11 are secured to the upper flanges of the girders 10 at suitable intervals by means of rail clamps 23 arranged in pairs on opposite sides of the rail 11 and which clamps include upstanding flanges 24 arranged to abut against the web of the rail 11 and also include downwardly and inwardly turned end portions 25 adapted to engage the margins of the top flange of the girder as particularly shown in Figure 8. The upstanding webs of the flanges 24 are formed with elongated slots 26 through which are passed bolts 27 extending through the rail 11. The elongated slots 26 serve as a means for permitting longitudinal expansion and contraction of the rails 11 relatively to the girder 10.

Extending parallel with the monorail track A is an electrically conductive rail 28 which is supported on insulating blocks 29 carried on the brackets B and on brackets D projecting laterally from the girders 10 on the side thereof presented to the brackets B. The conductor rail 28 is supported on the insulating block 29 and is held in place thereon by angle plates 30 having inturned end portions 31 which slidably contact the base flanges of the rail 28 in such manner as to permit longitudinal expansion and contraction of the latter.

I claim:

In a monorail track support, a bracket, a vertical flange carried by said bracket formed with an elongated slot, a track girder, a single bolt extending through said girder and through said elongated slot and relatively to which said girder is adapted to be swung radially of the bolt to adjust its inclination to the horizontal on initially affixing one end of the girder to a bracket, said slot being formed with a straight bottom wall, and a shoulder on said bolt seating on said wall to afford a broad bearing surface between said bolt and said flange.

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