

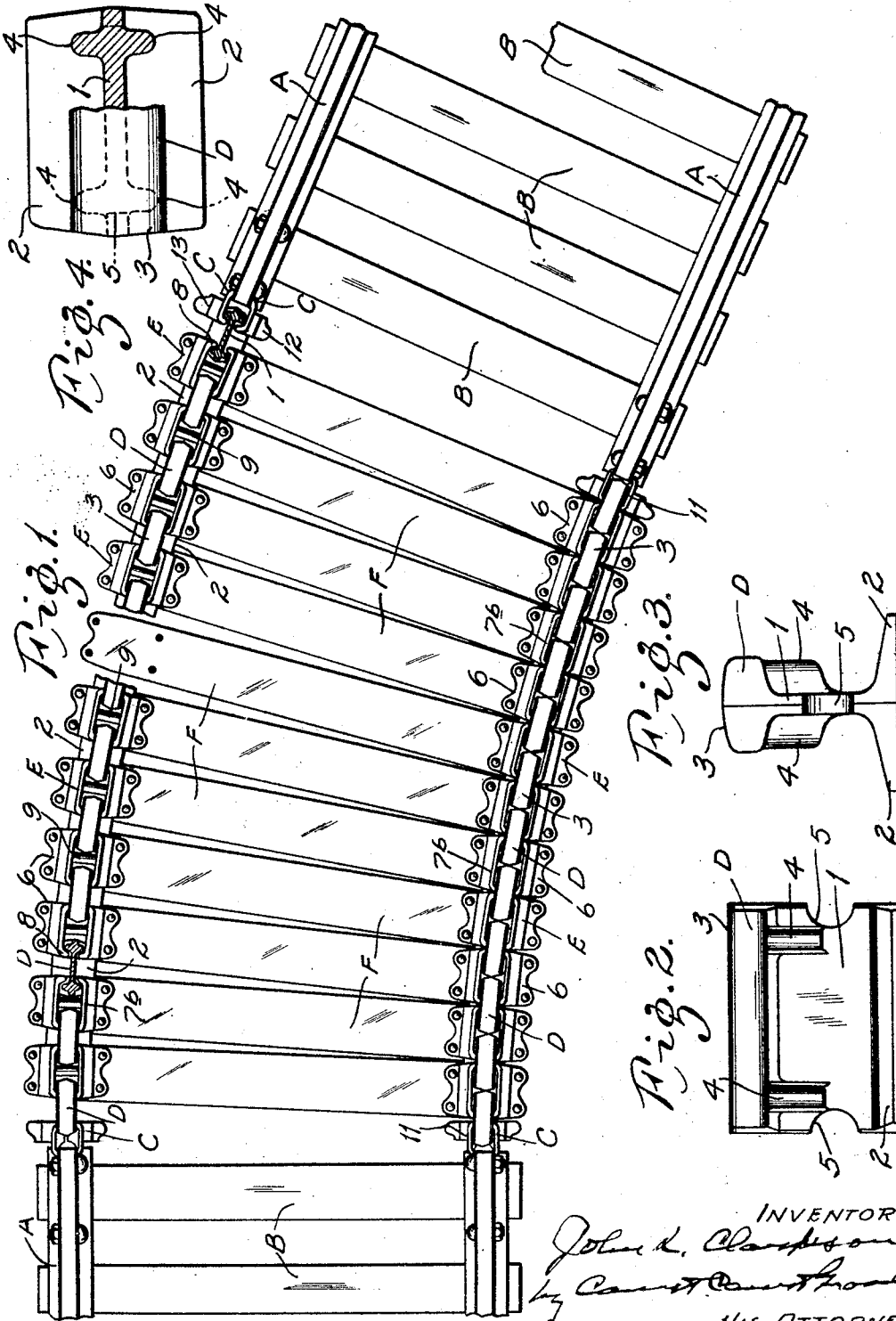
Dec. 11, 1928.

1,694,528

J. L. CLARKSON
FLEXIBLE RAILWAY TRACK

Filed July 18, 1928

2 Sheets-Sheet 1



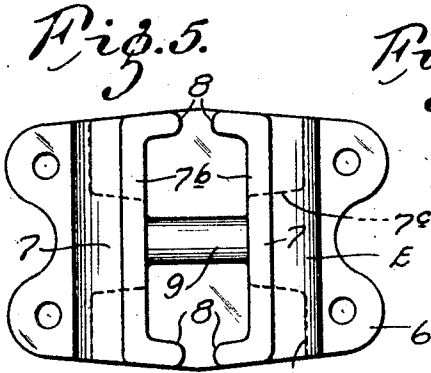
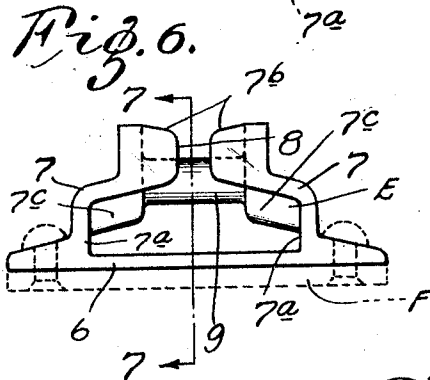
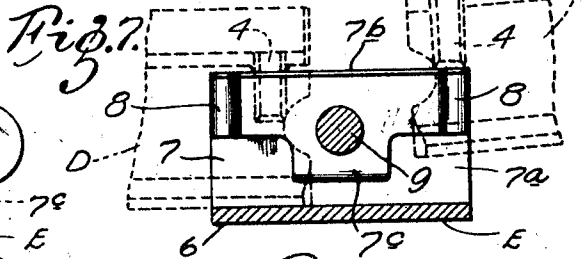
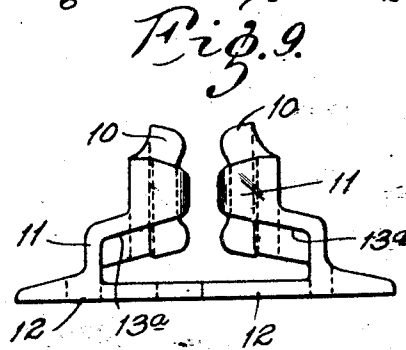
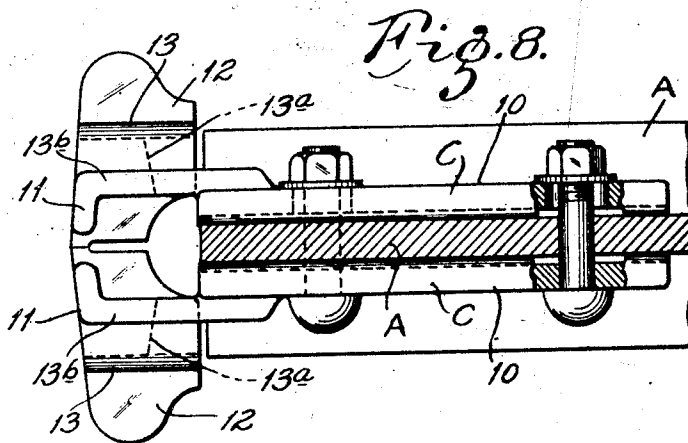
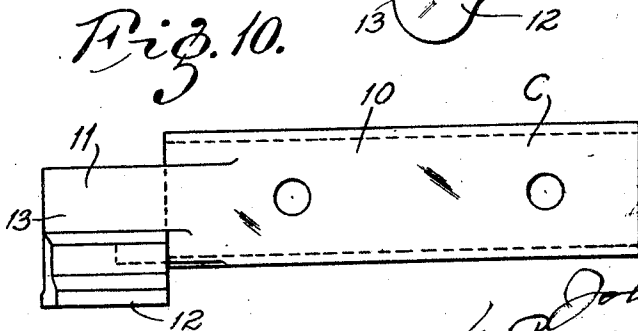
Dec. 11, 1928.

1,694,528

J. L. CLARKSON
FLEXIBLE RAILWAY TRACK

Filed July 18, 1928

2 Sheets-Sheet 2



INVENTOR:

John L. Clarkson
By [Signature]
HIS ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN L. CLARKSON, OF NASHVILLE, ILLINOIS.

FLEXIBLE RAILWAY TRACK.

Application filed July 18, 1928. Serial No. 293,619.

In mining and excavation work, especially where loading machines are used, it is common practice to provide railway tracks for the cars that receive the mineral or other material; and during the operation of loading it is desirable for the car to stand on a side track alongside the loading machine. The principal object of the present invention is to enable such car track to be readily shifted as a unit without disconnecting any of its component parts, to enable such track to be curved horizontally and vertically to conform to the side walls and floor of the mine or pit or other surroundings, and also to make it capable of being readily lengthened or shortened by the addition or removal of component units. The invention consists mainly in a car track wherein the lengths or sections of rails are loosely connected together by joint members that are readily attachable and detachable and that permit limited movement of the individual rail sections lengthwise and crosswise horizontally and vertically. It also consists in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawing, wherein like reference numerals refer to like parts wherever they occur,

Fig. 1 is a plan view of a railway track embodying my invention;

Fig. 2 is a side elevation of one of the rail sections;

Fig. 3 is an end view of said rail section;

Fig. 4 is a plan view of said rail section with one end portion thereof shown in horizontal section;

Fig. 5 is a plan view of one of the rail chairs;

Fig. 6 is an end view of said rail chair;

Fig. 7 is a vertical longitudinal section through said rail chair, the adjacent ends of the rail sections cooperating therewith being shown in dotted lines;

Fig. 8 is a horizontal section through the web portion of one of the rails of the permanent track, showing the splice members bolted thereto;

Fig. 9 is an end view of the rail receiving end portion of the splice bars; and

Fig. 10 is a side elevation of one of the splice bars.

The main body of the track is of usual construction comprising two ordinary rails A arranged parallel with each other on cross ties B, to which they are secured in any suitable manner. The flexible track which embodies my invention, is a continuation of such usual track, to which it is secured by fish plates or splice bars C that are bolted to the ends of the rails A of the normal track.

My flexible track comprises two parallel rails, each made with a multiplicity of short rail sections D, rail chairs or joint members E therefor, and wide metal ties F that connect the respective rail chairs of one rail with the rail chairs of the opposite rail. Each pair of rail chairs E, together with their connecting ties F, constitutes a constructional unit.

Each rail section D comprises a web portion 1, a base portion with lateral flanges 2 and a head 3, all of usual form. Each end of each rail section D is preferably convexed. Near each end of each rail section, and on opposite sides thereof, is a lug 4 that extends outwardly from the side of the web and downwardly from the top of the rail. In each end of the rail is a horizontally disposed semicircular notch 5.

Each of the rail chairs E comprises a base portion 6, which is riveted or otherwise secured to the top of an end portion of each metal tie F, a similar rail chair E being likewise secured to the other end of said tie. Obviously the ties F may be secured to the sides of the chairs E, in which case the base portion of the chair should be of ample area to afford a proper bearing on the ground. Extending upwardly from the upper surface of the base portion 6 of the rail chair are two side members 7 whose lower portions 7^a are spaced apart slightly more than the width of the base 2 of a rail section D and whose upper portions 7^b are spaced apart (except at their ends) slightly more than the overall distance between the outer surfaces of the hereinbefore mentioned lugs 4 on opposite sides of the web 1 of said rail section. The upper portions 7^b of the side portions 7 of the rail chair D are designed to be substantially in contact with the under surface of the head 4 of the rail section, when the bottom of said rail section is seated in the chair. At their ends, the upper portions 7^b of said sides 7 have inwardly projecting lugs or ribs 8 that are spaced apart slightly more than the thickness of the web 1 of the rail section and are of less depth vertically than the space between the base 2 of the rail section and the bottoms of the lugs 4. In the

central portion of the rail chair, the offsetting portions 7^c of the sides 7 intermediate the top and bottom portions thereof are spaced to slidably overlap the lower flanges 5 3 of the rail sections.

The upper portion 7^b of the sides 7 of the rail chair are connected midway of the ends of said chair by a strengthening or tie member in the form of a horizontal cross-bar 9 of 10 circular cross-section which cooperates with the semicircular notches 5 in the opposing ends of said rail sections. The notches 5 in the rail sections are adapted to loosely embrace or straddle the cross bar 9 of the chair 15 when the adjacent ends of the rail sections cooperating therewith are slid together with the convexed ends in abutting relation. With the rail sections seated in the chair, the lugs 8 of the rail chair are disposed in abutting 20 relation to the lugs 4 of the rail sections and thus limit endwise sliding movement of the rail sections in one direction while the cross bar 9 is disposed in abutting relation to the ends of the rail sections and thus serves 25 to limit endwise sliding movement thereof in the opposite direction. At the ends of the rail chair the offsetting portions 7^c of the sides 7 thereof are high enough to permit the end portion of the rail section entered 30 therein to be raised high enough for its side lugs 4 to clear the end lugs 8 of the chair and thus permit the rail section to be moved endwise far enough for said side lugs 4 to pass said end lugs 8 and then let the rail section 35 be lowered onto the base of the rail chair. In this position the rail section and the rail chair are mechanically interlocked in such manner that they are capable of sliding endwise and of swinging horizontally and vertically 40 relative to each other.

The splice bar C, which flexibly connects the ends of the rails A of the normal track with the end rail sections D of the flexible track, are made in rights and lefts and are 45 disposed one on each side of said rails A. Each of said splice bars comprises a shank portion 10, which is bolted flatwise to one side of the web of the rail A of the normal track, and a head portion 11, which extends 50 beyond the end of said rail and is shaped to co-operate with the head of the splice bar on the opposite side of said web of said rail to form a chair for the endmost rail section of the flexible track. The head portion 55 of each splice bar comprises a downwardly offset base portion or flange 12 and a longitudinal side flange 13 whose lower portion is offset outwardly, as at 13^a, to accommodate one of the base flanges 2 of the rail sections 60 D. At its outer end, the upper portion 13^b of the flange 13 of the head portion of the splice bar has an inwardly projecting lug that is of less depth vertically than the base between the base flange of the rail section 65 and the bottoms of the lugs 4 of said section.

The splice bars, when attached to the opposite sides of the rails A of the normal track cooperate to form rail seats similar to those formed in the rail chairs; and the outer ends of the laterally offset lower portions 13^a of 70 the flanges 13 of said cooperating splice bars are high enough to permit the rail section to be entered therein in the same manner in which the ends of the rail sections are interlocked with the chairs. 75

By the arrangement described the flexible track may be quickly and easily shifted as a unit and shaped to conform to the side walls and floor of the mine without disconnecting 80 any of the sections thereof. It is noted that when the flexible track is curved horizontally the sliding connections between the rail sections and chairs permit the rail having the greater radius of curvature to automatically 85 lengthen or elongate to correspond to the length of the larger curve and thus eliminate the necessity for using a greater number of chairs and rail sections in the outer rail of the curved track.

Obviously, the hereinbefore described flexible rail construction admits of considerable 90 modification without departing from the invention, and I do not wish to be limited to the precise arrangement shown and described. 95

What I claim is:

1. A flexible railway comprising rail sections, rail chairs interposed between adjacent rail sections, and means for mechanically interlocking said chairs with the adjacent ends of said rail sections, whereby 100 said rail sections and said rail chairs are capable of relative endwise sliding and vertical and horizontal swinging movement.

2. A flexible railway comprising spaced 105 rails each made up of a multiplicity of relatively short rail sections, and detachable joint members connecting the ends of adjacent rail sections of the respective rails and permitting relative endwise sliding and horizontal and vertical swinging movement of 110 the cooperating joint members and rail sections.

3. A flexible railway comprising spaced 115 rails each made up of a multiplicity of relatively short rail sections, detachable joint members connecting the ends of adjacent rail sections of the respective rails and permitting relative endwise sliding and horizontal and vertical swinging movement of the 120 cooperating joint members and rail sections, and means on said rail sections cooperating with means on said joint members for limiting the relative endwise sliding movement 125 thereof.

4. A flexible railway comprising spaced 130 rails each made up of a multiplicity of relatively short rail sections, detachable joint members connecting the ends of adjacent rail sections of the respective rails and permitting

relative endwise sliding and horizontal and vertical swinging movement of the cooperating joint members and rail sections, and tie members connecting the respective joint members of one rail with the joint members of the opposite rail.

5 5. A flexible railway comprising rail sections having lugs on their webs, rail chairs having sides spaced apart far enough to slidably receive said lugs and having lugs inwardly extending at their ends for engaging the lugs of said rail sections.

10 6. A flexible railway comprising rail sections having lugs on their webs, rail chairs having sides spaced apart far enough to slidably receive said lugs and having lugs inwardly extending at their ends for engaging the lugs of said rail sections, and cross members connecting the spaced sides of a rail chair intermediate the ends thereof for engaging the adjacent ends of the rail sections cooperating therewith.

15 7. A rail chair comprising a base portion, inwardly offset side portions extending upwardly from such base portion and having inwardly extending lugs at the upper portion of their ends, the offsetting portions being slightly more than the thickness of a rail base flange above the base of said chair at the central portion of said chair, and at the ends thereof being at least the vertical depth of said end lugs above said base.

20 8. A rail chair comprising a base portion, inwardly offset side portions extending upwardly from such base portion and having

inwardly extending lugs at the upper portion of their ends, the offsetting portions being slightly more than the thickness of a rail base flange above the base of said chair at the central portion of said chair, and at the ends thereof being at least the vertical depth of said end lugs above said base, the inwardly offset side portions of said rail chair being connected intermediate the ends thereof by a cross member.

25 9. A flexible railway comprising rail sections having convex ends and lugs on their webs, rail chairs having sides spaced apart far enough to slidably receive said lugs and having lugs inwardly extending at their ends for engaging the lugs of said rail sections.

30 10. A flexible railway comprising rail sections having lugs on their webs, rail chairs having sides spaced apart far enough to slidably receive said lugs and having lugs inwardly extending at their ends for engaging the lugs of said rail sections, and splice members for flexibly connecting the endmost rail sections to the ends of the rails of an ordinary track, said splice members being rigidly secured one on each side of each rail of said ordinary track and having head portions spaced far enough apart to slidably receive the lugs of the rail sections and having lugs inwardly extending at their ends for engaging the lugs of said rail sections.

Signed at Nashville, Illinois, this 14th day of July, 1928.

JOHN L. CLARKSON.