D. HUMPHREY.

ELEVATED RAILWAY.

APPLICATION FILED JULY 24, 1918.

1,306,225.

Patented June 10, 1919.

3 SHEETS—SHEET 1.

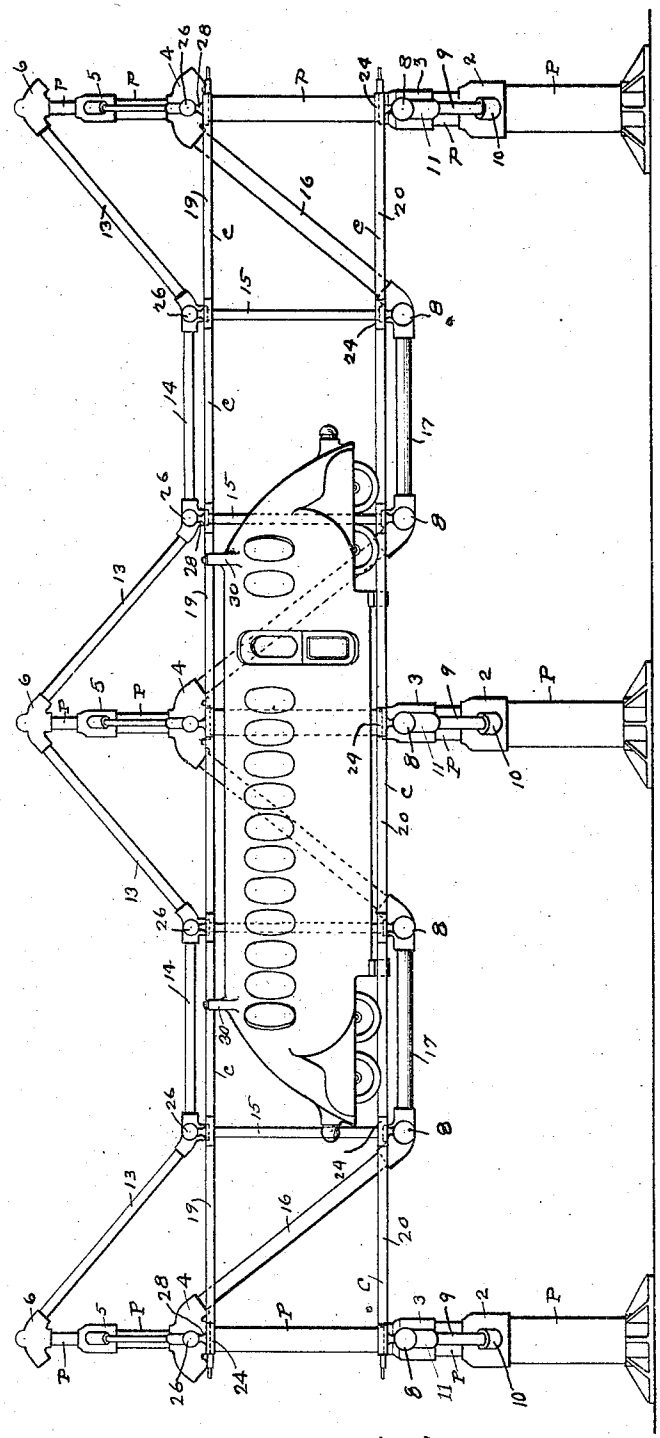


Fig. 1

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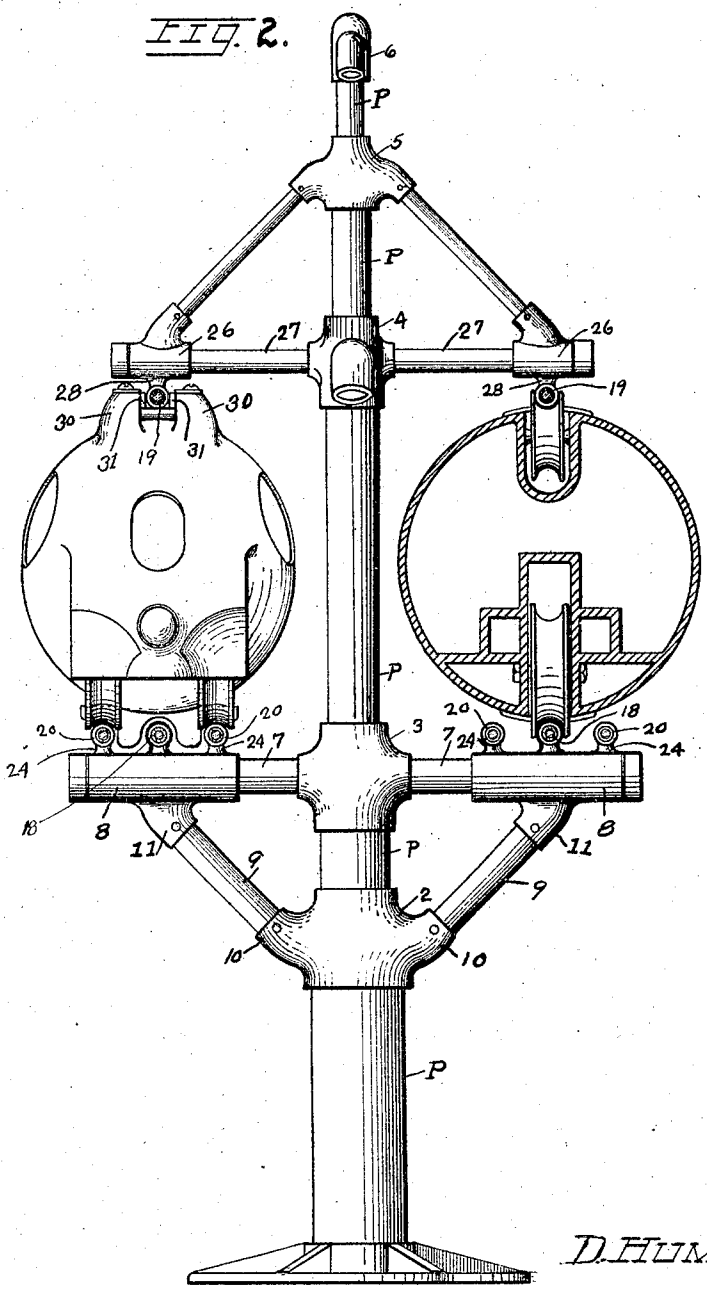
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3 SHEETS—SHEET 2.

Fig. 2.



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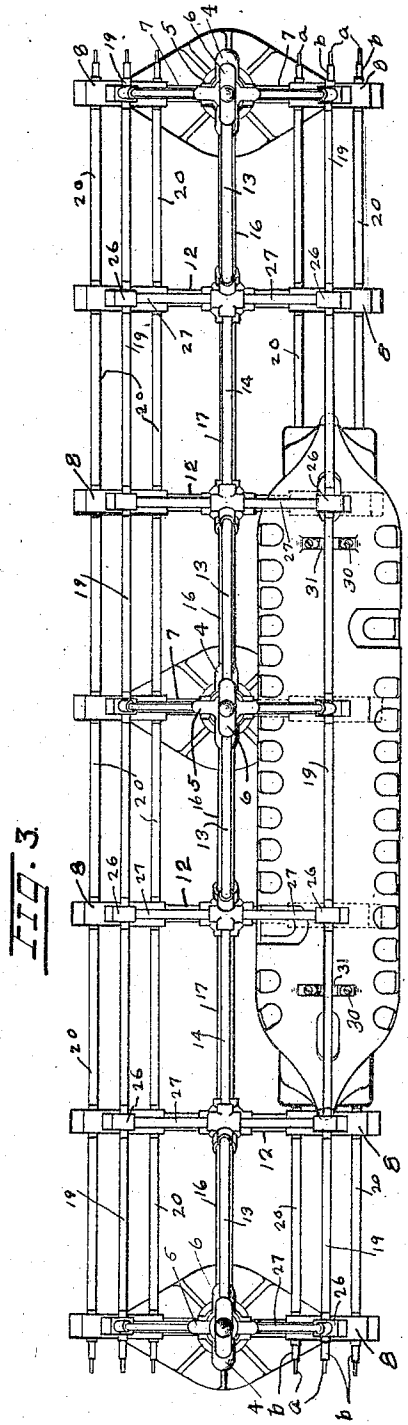


FIG. 3.

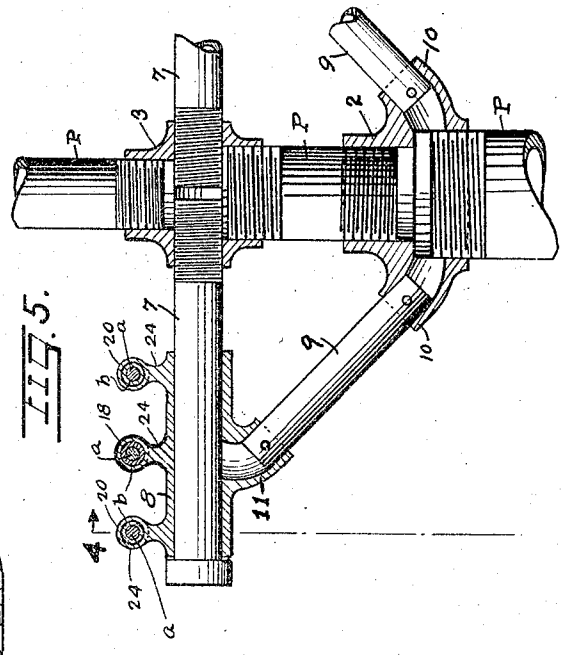


FIG. 5.

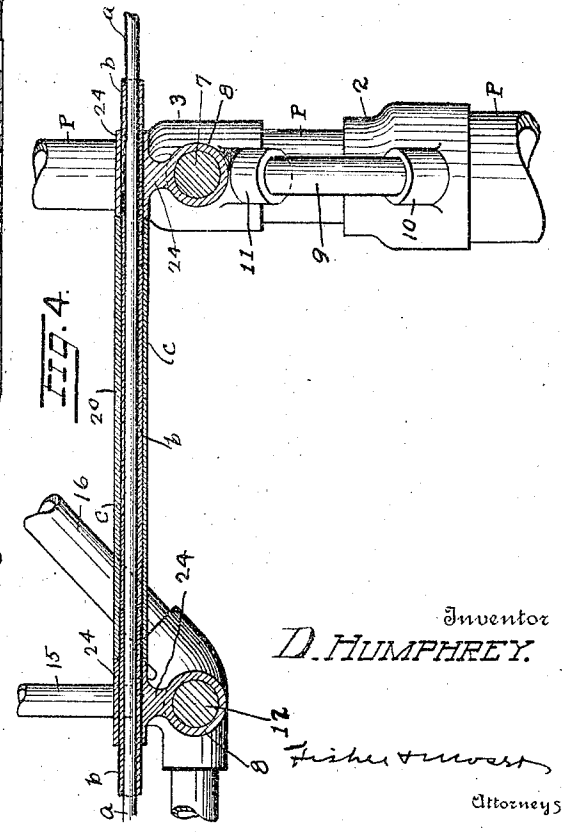


FIG. 4.

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DAVID HUMPHREY, OF CLEVELAND, OHIO.

ELEVATED RAILWAY.

1,306,225. Specification of Letters Patent. Patented June 10, 1919.

Application filed July 24, 1918. Serial No. 246,443.

To all whom it may concern:

Be it known that I, DAVID HUMPHREY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Elevated Railways, of which the following is a specification.

This invention pertains to elevated railways, and consists in an improvement on the construction shown in Letters Patent issued to me September 19, 1905, and numbered 799,908, all substantially as shown and described and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a side elevation of my improved railway, and of a car thereon. Fig. 2 is a cross section of the structure and end views of two different styles of cars on the sides thereof. Fig. 3 is a plan view of a section of the structure corresponding substantially to Fig. 1. Fig. 4 is an enlarged sectional elevation of portions of the structure including a portion of one of the tracks. Fig. 5 is an elevation in section of a portion of one of the posts and parts immediately connected therewith.

In so far as the frame-work of the structure is concerned the material difference over the corresponding frame-work in the above mentioned patent lies in the construction providing for a plurality of tracks for different kinds of cars, and by which the utility and availability of the road have been enlarged or amplified so that now there is provision for both passenger and express traffic, whereas the original road as set forth in said patent was limited to a single style of car for express traffic.

Respecting the structural work of the road, the supports or posts P are designed to be tubular throughout, as also indicated in said patent, and are located about twenty four feet apart. Preferably they are in sections graduated in cross section from say fourteen to twenty inches across at the bottom to a relatively reduced size at the top, and may be reinforced internally by cement or other means if deemed necessary for purposes of strength. Said sections are connected by collars or joints 2, 3, 4, 5 and 6, respectively, from bottom to top, and the said collars are also provided with suitable sockets for braces here and there as needed. The arms 7 which carry the rail supporting tubes 8 at the posts have inclined braces 9 engaged at their bottom in the sockets 10 and at their top in sockets 11 in said tubes and are secured by being driven into the sockets and pinned or secured by screw threads, as preferred. The said rail supporting members 8 are repeated at intervals along the line between the posts on the ends of cross-bars or pipes 12 which serve as supports corresponding to the arms 7 and are carried at their middle by the girders and struts indicated in Fig. 1 by 13, 14, 15, 16 and 17 and located directly in the line of the posts and firmly jointed together at their ends from said posts to form a practically rigid continuous skeleton frame of all tubular parts adapted to accommodate the sets of tracks along each side. Thus, what may be termed a road-bed is constituted along each side of the elevated structure having two or more rail tracks each.

The original patent above mentioned provided a single or mono-rail track along each side of the road for a car with a line of carrying wheels at its center, as seen at the right in Fig. 2, and adapted to express traffic with a high speed, but the present invention is based on the conception of a double track road at each side, and which comprises the original single track or rail 18 with its upper guide rail 19 directly above the same, and the other or added double track 20 at the sides of track 18 and especially adapted to cars with side wheels for passenger traffic.

I have found that by adding the double or two rail track 20 I can utilize the single upper or guide rail 19 for the cars thereon as well as for the express cars, and thus correspondingly increase the utility and traffic of the road. As to this dual function of the guide rail it will not be overlooked that while I employ a double carrying track for the passenger service and thereby effectively balance the car laterally, especially on straight trackage, I retain the principle of a top or upper guide for these cars, also for safety and speed.

The said several carrying tracks 19 and 20 are alike constructed of pipes *a*, *b* and *c*, sleeved and telescoped one upon the other and engaged as a unit through or in a substantially T-shaped support 24 cast integral with the tube 8 as shown herein, but which might be a separate part secured or clamped on said tube or equivalent member 8, and which has a tubular head adapted to receive the pipes *a* and *b* in sleeved and close fitting

relation therein, while the outer pipe *c* is sleeved over the pipe *b* between the said support 24, as seen in Fig. 4. This makes a track which accommodates itself to expansion and contraction of the metal and possesses the exceptional strength and firmness which this style of road requires. The tracks 19 and 20 are on the same horizontal plane and of such strength as the service of each may require.

The upper or guide tracks 19 are built of a series of pipes telescoped and sleeved after the manner of the carrying tracks below and the tubes 26 on the lateral arms 27 have T-shaped supports 28 at their bottom corresponding in all respects to the supports 24 below and adapted to receive the track 19 in like manner.

The essential novelty herein lies in the construction of a road-bed which has three active carrying rails adapted to different styles of cars along with a single guide rail over head adapted to cars running on either the mono-rail track 18 at the middle of the road-bed or to cars running on the double or side tracks 20.

The collars or joints which connect the tubular sections of the posts are especially adapted to accommodate curves in the road by being turned more or less on the posts according to the curvature wanted.

In the case of the double wheeled car, particularly, the said car is so well supported laterally on its wheels that the danger of tilting, even on curves, is minimized, and yet for perfect safety I provide the car with projections 30 on its ends and top adapted to run at the sides of the guide rail 19 and provide these projections with rubber bearings or blocks 31 adapted to take whatever wear and tear there may be at these points in the service. The contacts should not be close which will permit ordinary swaying of the car without creating unnecessary friction on the rail 19 or wear on the rubber. For various reasons I regard rubber for this purpose decidedly better than antifriction wheels or rollers could be.

What I claim is:

A single and a double track railroad as described, comprising three tracks on the same horizontal plane, the said single track serving for single track cars and the side tracks serving for double track cars, and a single guide rail for both kinds of cars centrally over said single track, whereby cars of different makes and for different service can be run over the same road bed at the same time.

Signed at Cleveland, in the county of Cuyahoga, and State of Ohio, this 13th day of July, 1918.

DAVID HUMPHREY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."