

(No Model.)

2 Sheets—Sheet 1.

J. E. HUBLEY.

SECTIONAL CIRCULAR RAILWAY FOR MECHANICAL TOYS.

No. 495,184.

Patented Apr. 11, 1893.

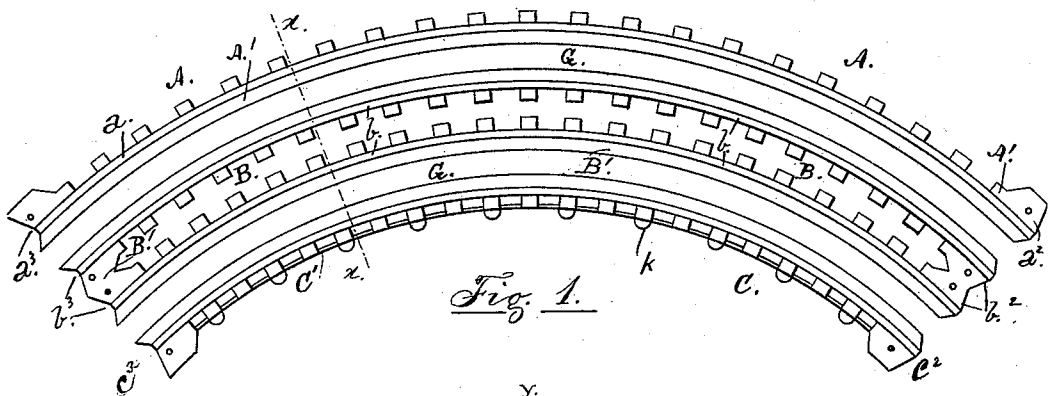


Fig. 1.

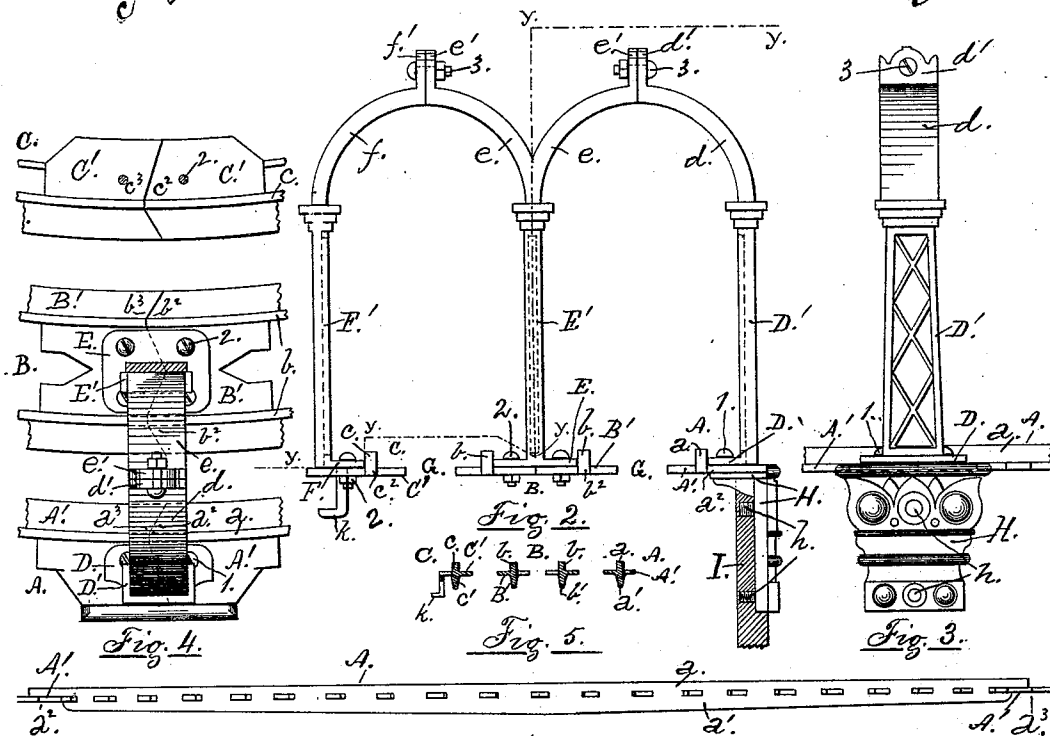


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Witnesses:
Chas. S. Burns
John Shaub

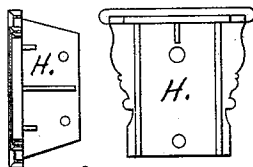


Fig. 8.

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(No Model.)

2 Sheets—Sheet 2.

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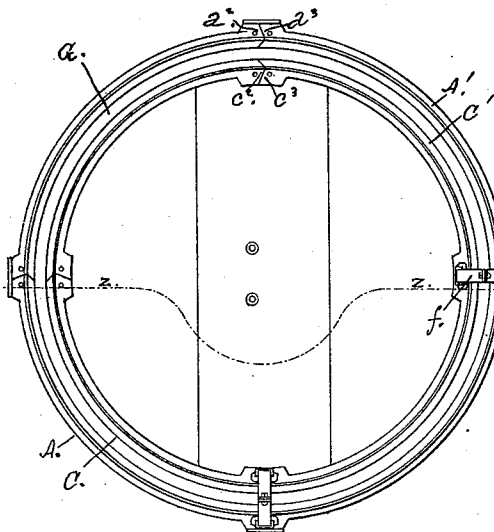


Fig. 9.

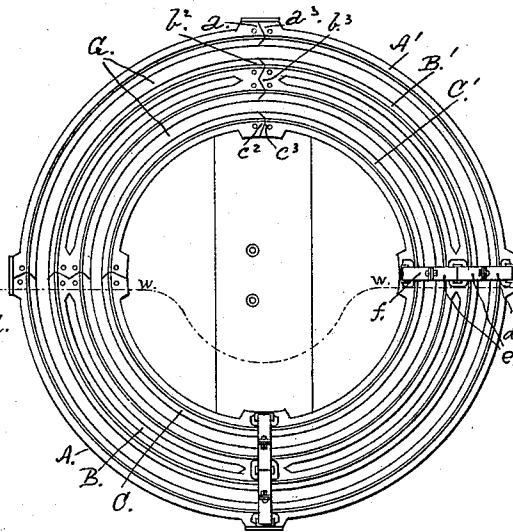


Fig. 10.

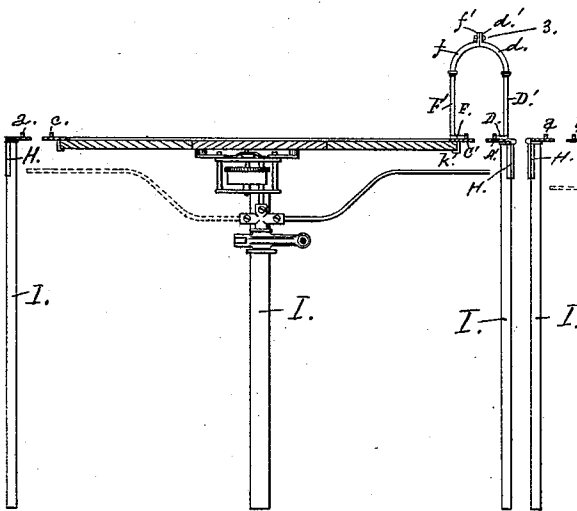


Fig. 11.

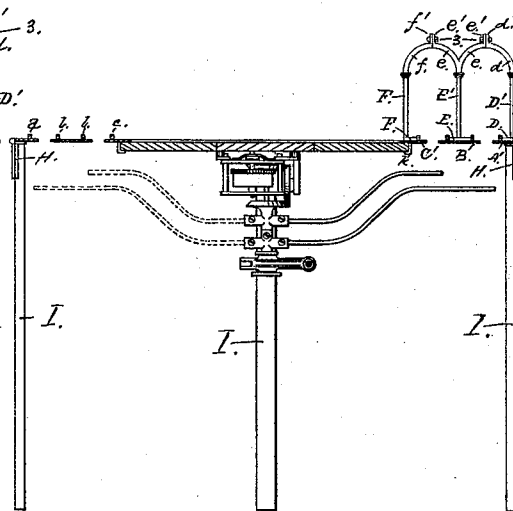


Fig. 12.

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UNITED STATES PATENT OFFICE.

JOHN E. HUBLEY, OF LANCASTER, PENNSYLVANIA.

SECTIONAL CIRCULAR RAILWAY FOR MECHANICAL TOYS.

SPECIFICATION forming part of Letters Patent No. 495,184, dated April 11, 1893.

Application filed March 20, 1890. Serial No. 344,658. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. HUBLEY, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Sectional Circular Railways for Mechanical Toys; and I do hereby 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.

My invention relates to improvements in mechanical toys of that class in which a train or trains of cars or other vehicles are run by means of a centrally located motor, in the same direction on a single elevated circular track; or in different directions, at the same time and by one motor on two or more such elevated but concentric tracks.

The subject of my invention is the construction of such track or tracks and its objects are:—first, to provide a series of concentric circular rails each consisting of the same number of equal circular sections made integral with annular plates having radial end edges made angular, projecting beyond the radial line at one end of each section and recessed within said radial line at the other end but so shaped that the projecting end of each section will exactly fit into the recessed end making all the sections of the same circle interchangeable; second, joining said sections by means of binding plates and bolts to form circular rails that may be readily taken apart; third, providing said binding plates with columns having at their upper ends right or left hand semi-arches provided with vertical plates for joining; fourth, joining two sets of semi-arches by means of bolts through said vertical plates to hold two concentric circular rails in the same plane and form a circular track, having an annular opening throughout midway between said rails; fifth, providing the inner edge of a circular track with pendent hooks or flanges to support the center covering to which is attached the motor to operate the toy; or, any other devices used in the construction of said toy may be placed thereon; sixth, providing the outer circle with downwardly projecting sockets or brackets to which are attached the standards or legs supporting the track, making an elevated railway; sev-

enth, supporting in a similar manner two or more concentric circular railway tracks; and, eighth providing a railway track for a mechanical toy that will be easy to put together and take apart for convenience in storing, packing and transporting. Heretofore tracks for toys of this class were made of entire circles, and the arches used to hold two such circles in the same plane were of one piece producing a toy that is very unwieldy and very inconvenient for storing, packing and shipping.

I attain the objects of my invention by the devices illustrated in the accompanying drawings, similar letters and figures referring to similar parts throughout the several views in which:—

Figure 1 is a plan of three concentric circular sections four segments being required to complete the circle and form my double track; Fig. 2, an enlarged end view of the same sections, showing the binding plates with supporting columns and semi-arches joined and leg bracket in place, the upper portion of a supporting leg appearing in section; Fig. 3, a view from the right of Fig. 2, with portions of the two outer sections in place and the supporting leg removed; Fig. 4, a top view of Fig. 3, showing the parts in place as they appear below the line *y, y, y, y, y*, in Fig. 2; Fig. 5, a cross section through the line *x x* in Fig. 1, showing strengthening ribs underneath the sections and a pendent hook or flange attached to the inner edge of the inner section; Fig. 6, a front elevation of an outer section showing ends of a semblance of ties in its vertical face; Fig. 7, an elevation of an inner section; Fig. 8, an inside elevation and bottom view of a leg supporting bracket; Fig. 9, a reduced plan of a single track circular railway as it appears with the binding plates and supporting arches removed from two sectional joints; Fig. 10, a reduced plan of a double track circular railway as it appears with the binding plates and supporting arches removed from two sectional joints; Fig. 11, a vertical section through the line *z z*, in Fig. 9, showing central covering, toy motor and propelling arm in place; and, Fig. 12, a vertical section through the line *w, w*, in Fig. 10, showing center covering, toy motor with direct and reverse motion propelling arms in place.

A, B and C, designate respectively an outer, a middle, and an inner section of a double track, concentric circular railway. In the outside A, *a* is the circular rail projecting upward from an annular plate A', plain along its concave edge and along its convex edge a semblance of the outer ends of cross ties, while *a'* is a strengthening rib projecting downward underneath the rail.

*a*² represents the projecting angular radial end and *a*³ the one that is recessed. It will be observed that this projecting end will fit closely into the recessed end when the sections are joined. In the middle section B, *b* and *b* are two circular rails projecting upward from an annular plate B' wide enough to allow sufficient space between two contiguous tracks; both, the outer convex and inner concave, edges of this plate are plain, while between the two rails are the projecting ends of a semblance to railway cross ties; projecting downward underneath these rails are strengthening ribs *b'* and *b'*.

*b*² represents the projecting angular radial end and *b*³ the one that is recessed. It will again be observed that this projecting end will fit closely into the one that is recessed when the sections are joined. In the inner section C, is a circular rail *c* projecting upward from an annular plate C', plain along its outer convex edge and along its inner concave edge are the projecting ends of a semblance to railway cross ties; which have projecting downward from the under side of their extremities a narrow strip provided at intervals with hangers having at their lower ends centrally projecting flanges forming hooks *k*, (Figs. 2, 5 and 7) adapted to support the central covering supporting the motor as is shown in Figs. 11 and 12; projecting downward underneath this rail is a strengthening rib *c'*.

*c*² designates the projecting angular radial end and *c*³ the recessed end. It will also be observed that this projecting end will fit closely into the recessed end when the sections are joined. These several sections are formed entire, being each an aliquot part of separate but concentric circles, and may be made of metal, fibrous pulp or any material having the requisite strength that may be cast, pressed or otherwise given the required shape.

D, E and F designate respectively outer, middle and inner binding plates adapted to be placed over the joints and on top of the annular plates of their respective sections A, B and C, while bolts 1 and 2 serve to bind said sections and plates together, forming three concentric circular portions of my double track circular railway. These binding plates form respectively the bases of perpendicular standards or columns D', E' and F', having attached to their upper ends right or left curving semi-arches *d*, *e*, *e* and *f* meeting in pairs each pair perpendicularly above the center line of a track, where said semi-arches are provided respectively with vertical

plates *d'*, *e'*, *e'* and *f'* through which bolts 3 serve to join said pairs of semi-arches holding the circular portions of the railway before mentioned in position in the same horizontal plane; and, G represents the annular opening in the center of each track through which the motor below may give motion to the toy above.

Underneath the section joints of the outer circle are placed the top plates of the post or leg brackets H, while the bolts 1 before mentioned serve to hold them in place. These plates rest on top of the upper ends of the posts or legs I, while screws *h* and *h* (Fig. 2) through the vertical plates of the brackets H, serve to firmly attach said legs to said brackets, completing my double track concentric circular elevated railway, Figs. 10 and 12.

It will be observed that the columns E', hold the middle circular sections in place, are each provided with two semi-arches *e* and *e* curving outward from the upper ends of said columns, and that four bolts 2 attach their bases to the sections. Now, dispensing with this middle circular portion, and increasing the radius of the inner portion to conform its rail to the gage of the track with the outer portion as described, binding the sections together as shown and joining the semi-arches *d* and *f*, by bolts 3 through the vertical plates *d'* and *f'*, will complete my single track circular elevated railway, Figs. 9 and 11. Of course the central covering will have to be increased in proportion. This central covering is also made in sections as shown in Figs. 9, 10, 11, and 12. It will also be observed that by using in a similar manner more than one middle circular portion a larger number of concentric railway tracks may be formed, and the number of such tracks will be limited by the size of the outer circle and the gage of the track; and, that tracks of different gages may be used in the same railway.

Now since the sections of each circle of my railway are interchangeable with reference to each other and can only be brought together in one way and are secured in place by screws, it evidently follows that my railway may be readily put together and taken apart, making it easy to handle, convenient to store, pack and transport.

Having now described my invention and set forth its merits, what I consider new, and desire to secure by Letters Patent of the United States, is—

1. In a circular railway for a mechanical toy, the sections A and C, composed: A, of the circular plate A' having the upwardly projecting rail *a* and the downwardly projecting rib *a'*, the plain inner concave edge and the outer convex edge having the projecting ends of a semblance to railway cross-ties, the angular radial end *a*² and the angular radial end *a*³, the end *a*² adapted to fit into the end *a*³ when a number of sections A are joined, and C, of the circular plate C' having the upwardly projecting rail *c* and the downwardly projecting rib *c'*, the plain outer convex edge

and the inner concaved edge having the projecting ends of a semblance to railway cross-ties, the downwardly projecting rib secured to the under side of the extremities of said ties, the hangers at intervals secured to the under edge of said rib and the inwardly projecting hooks k secured to the lower ends of said hangers to support the central platform as shown, the angular radial end c^2 and the angular radial end c^3 , the end c^2 adapted to fit into the end c^3 when a number of sections C are joined; the sections, A and C, being aliquot parts of separate but concentric circles, are adapted, when joined, to form said circles; all substantially as described and for the purpose hereinbefore set forth.

2. In a circular railway for a mechanical toy, the combination with a number of sections A and C, respectively composed: A, of the annular plates A' having the upwardly projecting rails a and the downwardly projecting ribs a' , the inner concaved plain edges and the outer convex edges having the projecting ends of a semblance to railway cross-ties, the angular radial ends a^2 to fit into the angular radial ends a^3 , and C, of the annular plate C' having the upwardly projecting rails c and the downwardly projecting ribs c' , the outer convex plain edges and the inner concaved edges having the projecting ends of a semblance to railway cross ties, the downwardly projecting ribs secured to the under side of the extremities of said ties, the hangers at intervals secured to the under edges of said ribs and the inwardly projecting hooks k secured to the lower ends of said hangers, to support the central platform as shown the angular radial ends c^2 to fit into the angular radial ends c^3 ; said sections A and C as described, placed together to form circles as shown, their respective radial ends a^2 and c^2 fitted into their respective radial end a^3 and c^3 ; of a number of binding plates D and F one plate to each joint, D to the joints of the plates A', and F to the joints of the plates C', said plates D and F placed over their respective joints and secured to said plates A' and C' respectively by the bolts 1 and 2,—the columns D' having their lower ends integral with the plates D and projected upward from said plates and the columns F' having their lower ends integral with the plates F and projected upward from said plates,—the radially and inwardly curved semi-arches d having their lower ends secured to the tops of the columns D', and the radially and outwardly curved semi-arches f having their lower ends secured to the tops of the columns F',—and the vertical joining plates d' and f' secured respectively to the upper ends of said semi-arches d and f ; all substantially as described and for the purpose hereinbefore set forth.

3. In a circular railway for a mechanical toy, the combination of an outer circular rail, consisting of a number of sections A, formed of plates A' having rails a , strengthening ribs a' , inner concaved edges plain and along the

outer convex edges the projecting ends of a semblance to crossties, the projecting radial ends a^2 fitted into the recessed radial ends a^3 and jointed by the binding plates D fastened thereto by the bolts 1; the plates D forming the bases of the columns D' having at their upper ends the inwardly curving radial semi-arches d provided at their upper ends with the vertical joining plates d' with the inner circular rail, consisting of the same number of sections C, formed of plates C', having rails c , strengthening ribs c' , outer convex edges plain and along the inner concaved edges the projecting ends of a semblance to railway crossties having under their inner extremities downwardly projecting joining ribs provided at intervals with hangers having at their lower ends hooks k supporting the central covering; the projecting radial ends c^2 fitted into the recessed radial ends c^3 and jointed by the binding plates F fastened thereto by the bolts 2; the plates F, forming the bases of the columns F' having at their upper ends the outwardly curving radial semi-arches f provided at their upper ends with the joining plates f' ; and, the joining plates d' as described securely attached to the joining plates f' as described by the bolts 3, completing a single track circular railway having an annular opening G the whole way around midway between the rails substantially as described and for the purpose set forth.

4. In a circular railway for a mechanical toy, the combination of an outer circular rail, consisting of a number of sections A, formed of plates A' having rails a , strengthening ribs a' , plain inner concave edges and a semblance to crossties on the outer convex edges, projecting radial end edges a^2 fitted into recessed radial end edges a^3 , the radial end edges jointed by means of bolts 1 through the binding plates D provided with columns D' having inwardly curving semi-arches d provided with vertical plates d' for joining, and an inner circular rail, consisting of a number of sections C, formed of plates C', having rails c , strengthening ribs c' , plain outer convex edges and a semblance to crossties on the inner concave edges, the under side of said ties at their extremities connected by downwardly projecting ribs provided at intervals with hangers having hooks k supporting the central covering; and, projecting radial end edges c^2 fitted into recessed radial end edges c^3 , the radial end edges jointed by means of bolts 2 through binding plates F, provided with columns F' having outwardly curving semi-arches f provided with vertical plates f' for joining; the two circles as described joined by bolts 3 through the plates d' and f' forming a circular railway track having an annular opening G throughout said track midway between the rails, with a number of supporting brackets H, one under each section joint and thereto attached by bolts 1 through the top plates of said brackets, having their ver-

tical plates attached to the upper ends of legs I by screws h and h , completing an elevated circular railway having a single track, substantially as described and for the purpose set forth.

5. In a circular railway for a mechanical toy, the sections A, B and C composed: A, of the circular plate A' having the rail a , the strengthening rib a' , the plain inner concaved edge and the outer convex edge having the semblance to railway cross-ties, the radial end a^2 and the radial end a^3 , the end a^2 adapted to fit to the end a^3 when a number of said sections are joined; B, of the circular plate B' having the rails b and b with sufficient space between to allow said rails to form portions of two contiguous tracks, the outer convex and the inner concave edges plain and the projecting ends of a semblance to railway cross-ties between said rails, the strengthening ribs b' and b' , the radial end b^2 and the radial end b^3 , the end b^2 adapted to fit to the end b^3 when a number of said sections are joined; and, C, of the circular plate C' having the rail c , the strengthening rib c' , the plain outer convex edge and the inner concaved edge having the semblance to railway cross-ties, the downwardly projecting rib secured to the under side of the extremities of these ties, the hangers at intervals secured to the edge of said rib and the hooks k secured to the lower ends of said hangers to support the central platform as shown, the radial end c^2 and the radial end c^3 , the end c^2 adapted to fit to the end c^3 when a number of said sections are joined; the sections A, B and C, being aliquot parts of separate but concentric circles, adapted, when joined, to form said circles, all substantially as described and for the purpose set forth.

6. In a circular railway for a mechanical toy, the combination with a number of circular sections A, B, and C, respectively composed: A, of the annular plates A' having the rails a , the ribs a' , the inner concaved plain edges and the outer convex edges with the projecting ends of a semblance to cross-ties, the radial ends a^2 to join the radial ends a^3 ; B, of the annular plates B' having the rails b and b with sufficient space between to allow said rails to form portions of two contiguous tracks, the outer convex and the inner concave plain edges and the projecting ends of a semblance to cross-ties between said rails, the ribs b' and b' , the radial ends b^2 to join the radial ends b^3 ; and, C, of the annular plates C' having the rails c , the ribs c' , the plain outer convex edge and the inner concaved edge having the projecting ends of a semblance to cross-ties, the downwardly projecting ribs secured to the under side of the extremities of these ties, the hangers at intervals secured to the under edge of said ribs, and the hooks k secured to the lower ends of said hangers to support the central covering as shown, the radial ends c^2 to join the radial ends c^3 ; said sections A, B, and C, as de-

scribed, placed together to form concentric circles as shown, their respective radial ends a^2 , b^2 , and c^2 , joined to their respective radial ends a^3 , b^3 , and c^3 ; of a number of binding plates D, E, and F, one plate to each joint; D to the joints of the plates A', E to the joints of the plates B', and F to those of the plates C'; said plates D, E, and F, placed over their respective joints and secured to the said plates, A', B', and C', respectively, by the bolts 1 and 2; the columns D', E', and F', projected upward respectively from said binding plates, and having at their upper ends respectively, the incurving semi-arches d , the out and incurving semi-arches e and e , and the outcurving semi-arches f , provided respectively at their upper ends with the vertical joining plates d' , e' and e' , and f' , by means of which and the bolts and nuts 3, as shown, said concentric circles are bound together, all substantially as described and for the purpose set forth.

7. In an elevated double track circular railway for a mechanical toy, the combination of an outer circular rail, consisting of a number of sections A, formed of plates A', having rails a and strengthening ribs a' , plain inner concaved edges, along the outer convex edges the semblance to cross-ties, projecting angular radial end edges fitted into recessed angular end edges radial end edges; the sections bound together by plates D one to each joint by means of bolts 1; the plates D provided with columns D' having at their upper ends radial and incurving semi-arches d , provided at their upper ends with vertical joining plates d' ; under the outer edges of the sectional joints, one to each joint, the supporting brackets H having their top plates attached by the bolts 1 as shown and their vertical plates by screws h and h attached to the upper ends of the supporting legs I; and, an inner circular rail consisting of sections C, formed of plates C', having rails c , strengthening ribs c' , plain outer convex edges, a semblance to cross-ties on their inner concaved edges, the extremities of said ties, on their under sides, connected by ribs provided at intervals with hangers having hooks k supporting the central covering, projecting radial end edges c^2 fitted into recessed radial end edges c^3 , the radial end edges joined by bolts 2 through binding plates F provided with columns F' having at their upper ends radial and outcurving semi-arches f , provided at their upper ends with vertical joining plates f' , with the middle circular rails, being respectively the inner rail of an outer circular track and the outer rail of an inner circular track, consisting of a number of sections B, formed of plates B', having rails b and b , strengthening ribs b' and b' , outer convex and inner concave edges plain, between the rails the projecting ends of a semblance to railway cross-ties, projecting angular radial end edges b^2 fitted into recessed angular radial end edges b^3 , the sections joined by bolts 2 through bind-

ing plates E, provided with columns E', having at their upper ends out and in curving radial semi-arches e and e, provided at their upper ends with vertical joining plates e' and
5 e'; the incurving semi-arches d and the out curving semi-arches e joined by bolts 3 through their respective joining plates d' and e'; also, the incurving semi-arches e and the out curving semi-arches f joined by bolts 3 through
10 their respective joining plates e' and f', and,

the two tracks having each an annular opening G the whole way around and midway between their respective rails, substantially as described and for the purpose set forth.

In testimony whereof I affix my signature in 15 presence of two witnesses.

JOHN E. HUBLEY.

Witnesses:

J. L. LYTE,

FRANK S. DEEN.