May 15, 1923.

1,455,128

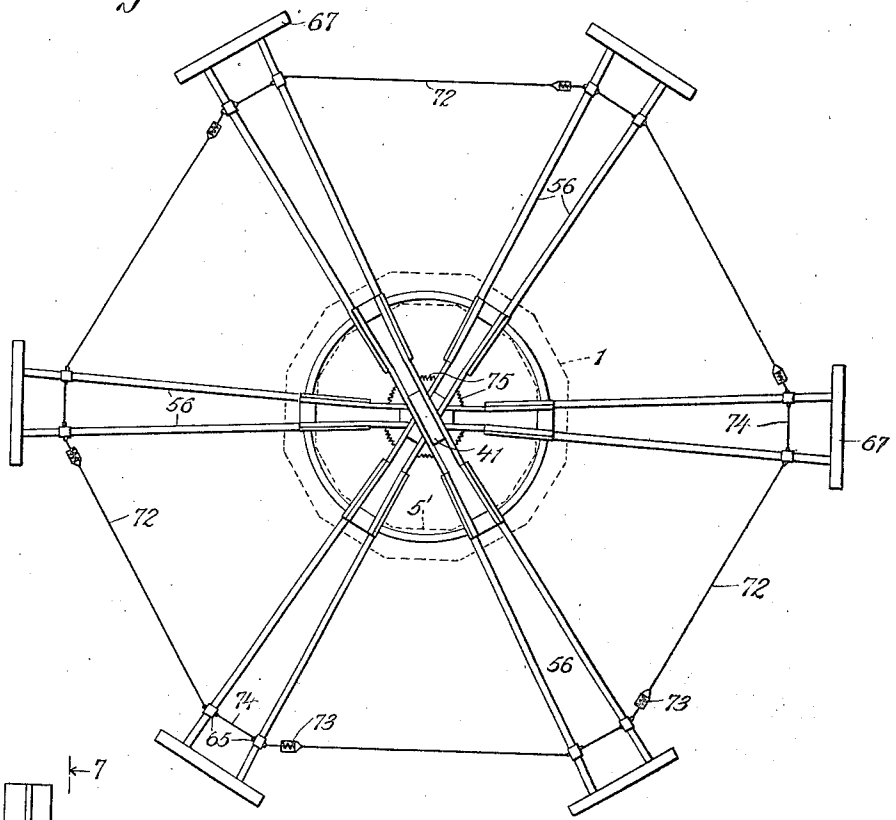
R. S. UZZELL

CARROUSEL

Filed June 17, 1920

4 Sheets-Sheet 1

Fig. 1.



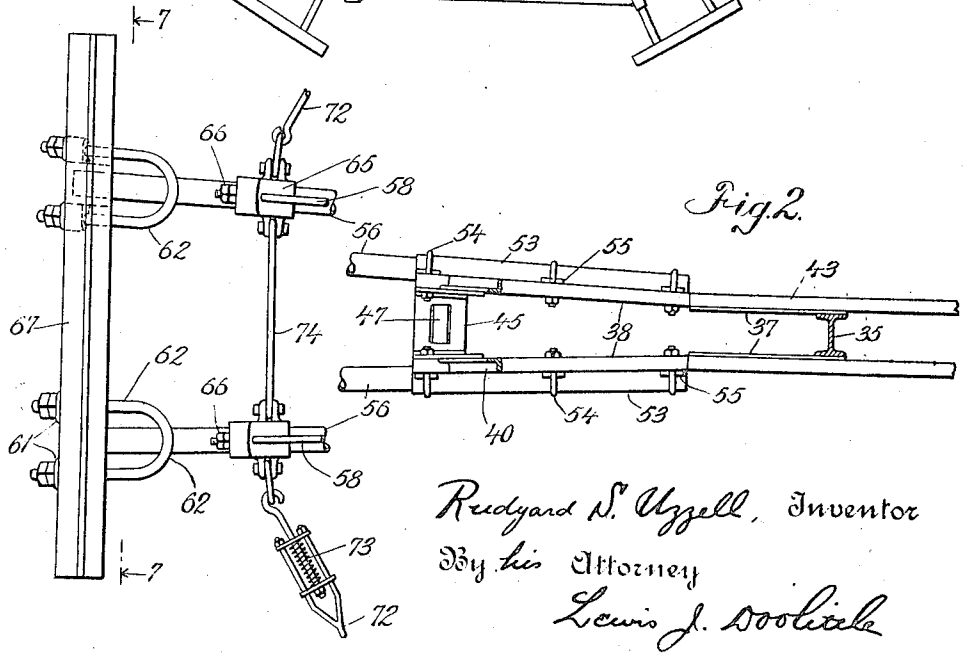


Fig. 2.

Reedyard S. Uzzell, Inventor

By his Attorney

Lewis J. Doolittle

May 15, 1923.

1,455,128

R. S. UZZELL

CARROUSEL

Filed June 17, 1920

4 Sheets-Sheet 2

Fig. 3.

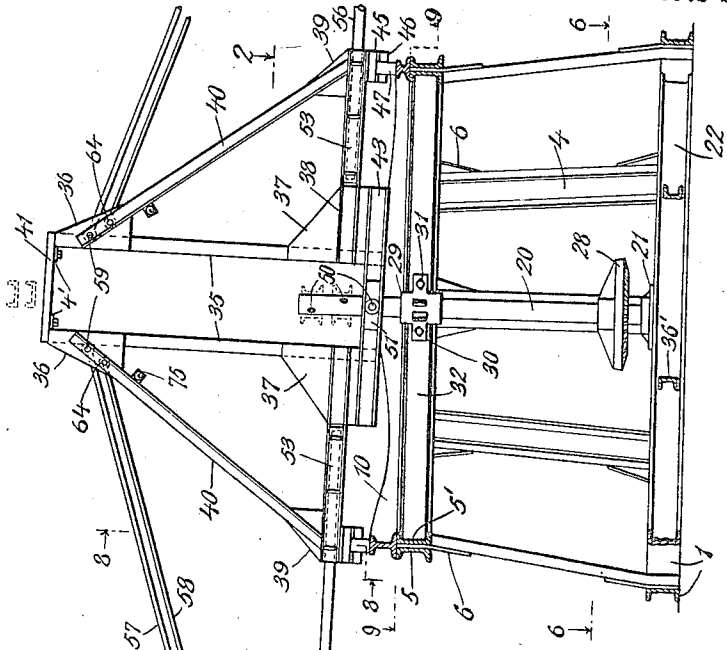


Fig. 5.

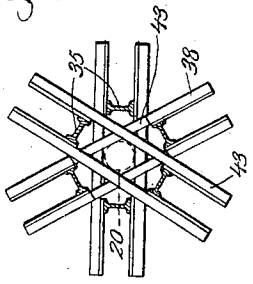
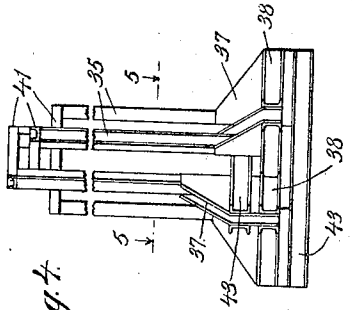


Fig. 4.



Rudyard S. Uzzell, Inventor

By his Attorney

Lewis L. Doolittle

May 15, 1923.

1,455,128

R. S. UZZELL

CARROUSEL

Filed June 17, 1920

4 Sheets-Sheet 3

Fig. 6.

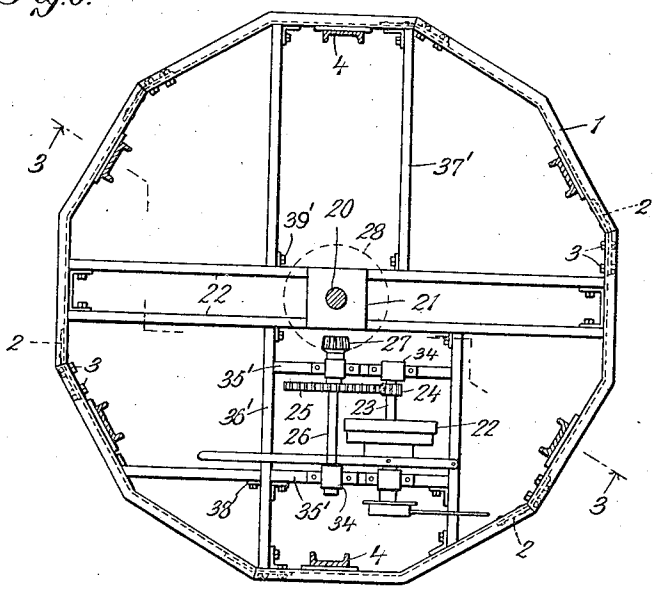


Fig. 7.

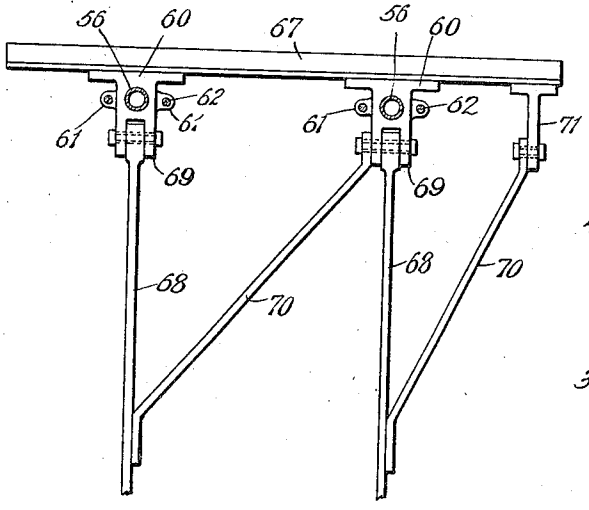
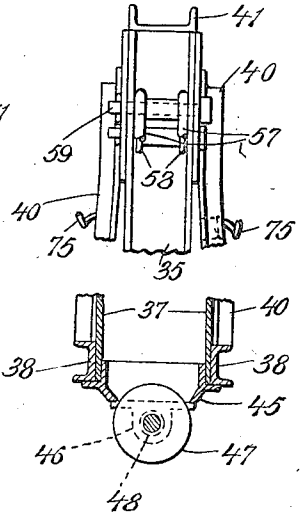


Fig. 8.



Reidyard S. Uzzell Inventor

By his Attorney

Lewis J. Doolittle

May 15, 1923.

1,455,128

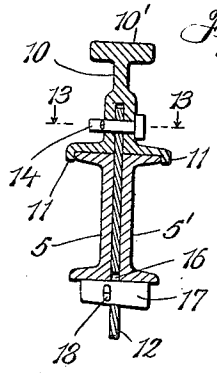
R. S. UZZELL

CARROUSEL

Filed June 17, 1920

4 Sheets-Sheet 4

Fig. 12.



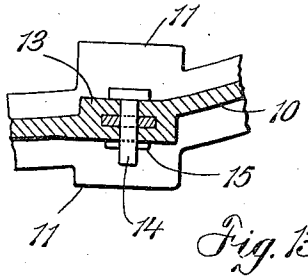


Fig. 13.

Fig. 9.

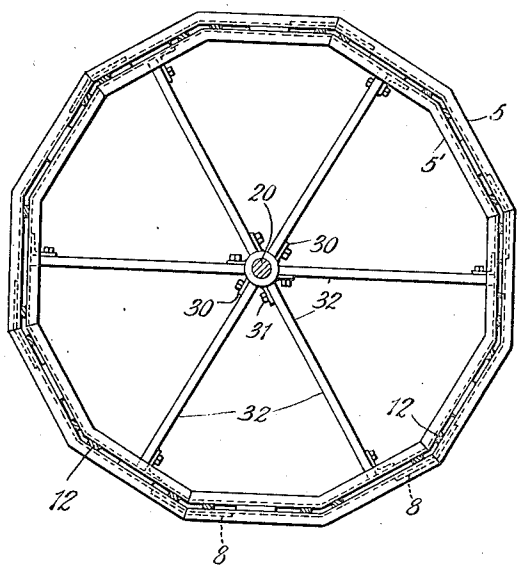
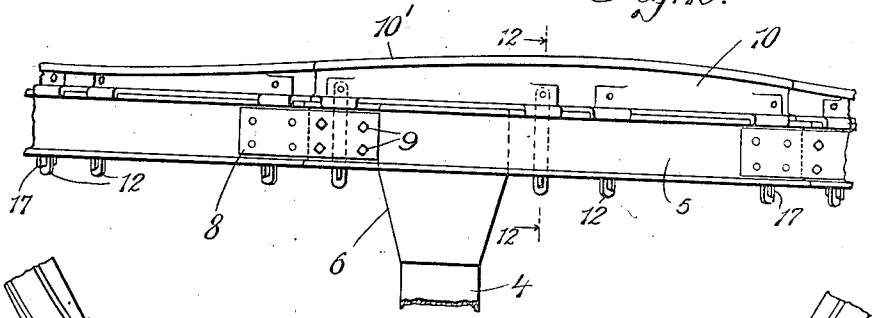


Fig. 10.



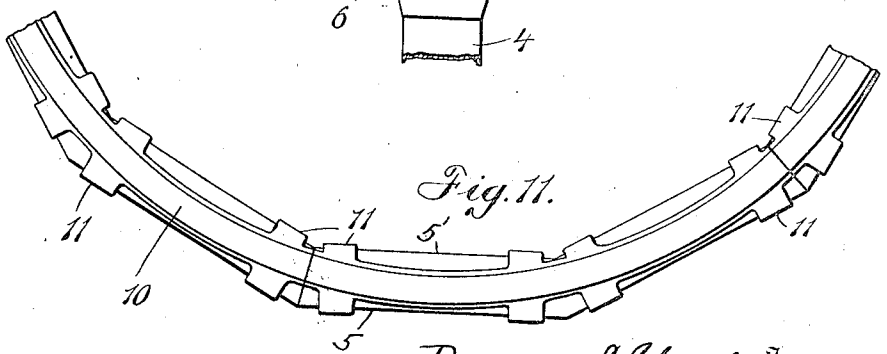


Fig. 11.

Rudyard S. Uzzell, Inventor

By his Attorney

Lewis J. Doolittle

Patented May 15, 1923. 1,455,128

UNITED STATES PATENT OFFICE.

RUDYARD S. UZZELL, OF JAMAICA, NEW YORK.

CARROUSEL.

Application filed June 17, 1920. Serial No. 389,786.

To all whom it may concern:

Be it known that I, RUDYARD S. UZZELL, citizen of the United States, and resident of Jamaica, in the county of Queens and State of New York, have invented certain new and useful Improvements in Carrousels, of which the following is a specification.

This invention relates to carrousels, having more particular reference to a carrousel in which the cars or the like for passengers are suspended from above.

The present invention has for an object to provide an improved arrangement whereby a combination movement is imparted to the cars.

A further object is to provide a simple construction which combines the features of strength, lightness and ease of assembly and disassembly.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

Fig. 1 of the drawings is a general plan view of the carrousel.

Fig. 2 is a detail horizontal section on an enlarged scale of one half of one of the car supporting arms, this view being taken on the line 2—2 of Fig. 3.

Fig. 3 is a vertical sectional view of the carrousel showing, however, only one of the car supporting arms, this view being taken on the line 3—3 of Fig. 6.

Fig. 4 is a detail elevation of the central portions of the car supporting arms.

Fig. 5 is a horizontal section on the line 5—5 of Fig. 4.

Fig. 6 is a horizontal section on the line 6—6 of Fig. 3.

Fig. 7 is a transverse section on the line 7—7 of Fig. 2.

Fig. 8 is a detail fragmentary transverse section on the line 8—8 of Fig. 3.

Fig. 9 is a detail horizontal section on the line 9—9 of Fig. 3.

Fig. 10 is a fragmentary elevation illustrating particularly the method of mounting the circular track.

Fig. 11 is a fragmentary plan view of the track.

Fig. 12 is a transverse section on the line 12—12 of Fig. 10.

Fig. 13 is a detail horizontal section on the line 13—13 of Figure 12.

As here shown, the main frame of the carrousel comprises a tower-like structure which may rest upon the ground or upon a suitable foundation. As seen in plan view this tower is preferably of polygonal shape, being here in the form of a dodecagon divided into six units or sections, the various sections being capable of easy assembly or disassembly for purposes of transportation, each section comprising two sides of the dodecagon.

In constructing the tower I provide a sill member, indicated generally at 1, which conforms to the outline of the tower, as shown most clearly in Fig. 6, and is made up of a series of preferably channel irons, being divided into six sections. The adjacent ends of the different sections are joined together by means of plates 2 which overlap the two sections and are riveted to one section and bolted to the other section, as at 3.

Extending upwardly from the sill 1 are a series of posts 4, of which there is one for each section, these posts converging slightly inwardly and rigidly connected at their upper ends by a cap member which is also divided into six sections corresponding to the six sections of the sill and shaped also to the form of a dodecagon. This cap member is preferably formed of a pair of channel irons 5, 5′ arranged with their flanges turned away from each other, these channel irons being secured to the posts 4 by means of gusset plates 6 which project therebetween and to which they are riveted, these gusset plates projecting below the channel irons and having the tops of the posts 4 riveted thereto. The adjacent ends of the different sections of the cap member are secured together by means similar to that described in connection with the sill sections and comprising plates 8 riveted to one section and bolted, as at 9, to the adjacent section. It will be apparent from the above that each unit of the tower comprises a sill element, a post and a cap element, and that the different units may be readily taken apart by loosening the bolts 3 and 9.

Upon the cap member is supported an

annular track rail 10 which is also divided into six sections. This track preferably is removably mounted on the cap member by the following means. Each section of the track has projecting from opposite sides of the base flange thereof a series of claws 11 which clasp the top flanges of the channel irons 5, 5′, thus rigidly holding the track against lateral movement. The track sections are anchored to the channel irons by means of a series of flat vertical bars 12 whose upper ends are engaged in suitable sockets extending upwardly from the base of the track sections, the webs of which latter are thickened, as at 13, to provide the walls for these sockets, the bars 12 being removably secured in the sockets by pins 14 passing therethrough and through the thickened walls 13 of the web of the track section and locked against displacement by cotter pins, such as 15. These bars 12 extend downwardly between the channel irons 5 and 5′ the lower ends projecting below the channel irons and being each vertically slotted, as at 16, to receive keys 17, which latter are held against displacement by cotter pins, such as 18. As will be apparent, the track rail is securely locked to the cap member while at the same time it may be readily removed by simply removing the keys 17 and lifting the sections off, while each section may be independently secured to one of the tower units. The tread 10′ of this track rail is vertically undulating for a purpose to be pointed out later, the undulations being preferably arranged to make each section of alternating convex and concave form.

This track rail 10 serves as a support for the frames from which the cars are suspended, these frames being connected midway between their ends to and rotated by a vertical shaft 20 arranged axially of the carrousel. The lower end of this shaft is set in a bearing box 21 supported on a pair of parallel beams 22 extending across between the opposite sides of the sill 1, this bearing box being provided with any suitable anti-friction means. The shaft 20 may be rotated by means of a suitable motor, not shown, supported within the confines of the frame of the carrousel and connected by a belt with a clutch controlled pulley 22 on a horizontal shaft 23 on which is fixed a spur pinion 24 engaging a gear 25 on a second horizontal shaft 26. This shaft 26 has fixed on one end thereof a bevel pinion 27 meshing with a bevel gear 28 on the main shaft 20. This shaft is journaled adjacent its upper end in a bearing 29 which is provided with integral lugs 30 whereby it is bolted as at 31 to the inner ends of a series of radial beams 32 which are secured at their outer ends to the cap member, the top of the shaft 20 projecting upwardly beyond this bearing. The shafts 23 and 26 are supported in suitable bearings 34′ carried by auxiliary beams 35′ extending between a pair of transverse stiffening beams 36′ connecting one of the beams 22 with one side of the sill 1, a second pair of stiffening beams 37′ connecting the opposite side of the sill to the other beam 22. To enable this base or joist structure to be easily taken apart the various beams are connected to the sill and to one another by angular brackets 38′ each having one flange riveted to one of the elements it connects and the other flange bolted thereto, as at 39′.

The projecting upper end of the shaft 20 has connected thereto a series of three truss frames or rocker frames which are supported on the rail 10, as will be presently set forth, and which carry the arms from which the cars are suspended. These rocker frames are, in the main, of similar construction, differing only in the arrangement of their bottom beams whereby the frames are enabled to cross one another. As here shown, each of these frames consists of a pair of I-shaped uprights or posts 35 having upper and lower pairs of gusset plates 36 and 37 respectively, riveted to the opposite sides thereof. The lower gusset plates serve as the medium for attachment of the oppositely projecting pairs of channel bars 38, to the outer ends of which are fixed, by means of gusset plates 39, the inclined angle bars 40, whose upper ends are riveted to the upper gusset plates 36. The upper ends of the uprights 35 of each frame are connected by a short horizontal channel bar or chord 41 bolted to angle plates 41′ riveted to the uprights. The respective uprights 35 of each rocker frame are spaced one on each side of the main shaft 20 and are connected to each other at the lower ends of the frames by means of pairs of channel beams 43 which are riveted to the lower gusset plates 37 and extend across opposite sides of the shaft 20. In order to enable these beams to cross each other they are given a different vertical spacing on the different truss frames, as clearly shown in Figs. 3 and 4, the upper beams passing between the space between the uprights carrying the lower beams. The chord members 41, above referred to, are also vertically spaced to clear one another, as shown.

As will be apparent from the foregoing, the beams 43 are rigidly braced together at their inner ends by the uprights 35, their outer ends being rigidly braced together by means of castings 45 which are riveted thereto. The lower faces of these castings 45 have fixed thereon bearing brackets 46 in which are journaled wheels 47 which rest on the rail 10. To reduce friction the trunnions of these wheels are preferably engaged by brass bushings, such as 48, in the bearing brackets 46. The beams 43 are connected to the main shaft

20, to be rotated thereby, by means of pins 50 passing through the shaft and through blocks, such as 51, on the beams, these pins being removably held in place by suitable means, such as cotter pins. As above pointed out, the track 10 is of undulating formation and it will be apparent that as the rocker frames are rotated by the main shaft they will be caused to rock on the pivot pins 50.

Carried by these rocker frames are a series of arms which support the cars at their outer ends, these arms being detachably secured to the frames. To this end each of the bars 38 has fixed to the flanged face thereof a tubular socket member 53 having its inner end closed. As here shown these socket members are secured to the bars 38 by means of U-bolts 54 which straddle the same, the ends of these U-bolts extending through the webs of the bars, and saddle blocks 55 being interposed between the socket members and the beam elements.

These socket members have inserted thereinto the inner ends of tubular arm elements 56 which project horizontally outward, the bars 38 being bent slightly to cause the elements 56 to diverge slightly away from one another. The outer ends of these arm elements are supported by tie rods of which there is a main or upper 57 and an auxiliary or lower one 58 to each element. The main tie rods 57 are connected at their inner ends to pins 59 carried by the upper plates 36, and at their outer ends to socket heads 60 in which the outer ends of the tubular arm elements 56 engage. As here shown, the connection between the rods 57 and socket heads 60 is effected by providing perforated ears 61 on opposite sides of the socket heads to which are connected the legs of short U-rods 62, which are connected in turn to the tie rods by shackles, such as 63. The auxiliary tie rods 58 are connected at their inner ends to pins 64 below the pins 59, their outer ends passing freely through the extended upper parts of blocks 65 clamped on the elements 56, and having nuts 66 threaded thereon.

The socket heads 60 are rigidly connected by bars 67 and also serve as suspension brackets for the car hangers 68, having integral downwardly projecting ears 69 to which the upper ends of the car hangers are pivotally connected. These car hangers are braced by a pair of diagonal straps 70 which are connected at their lower ends to the hangers and at their upper ends, one to one of the ears 69 and the other to a depending bracket 71 on the bar 67. The cars may be constructed in any suitable manner to receive the passengers and connected in any suitable way to the hangers 68, one of the cars being indicated at 70'.

The different arms may be connected to one another near their outer ends by tie rods 72 in which are placed springs 73, to render them longitudinally resilient, these rods connecting at opposite ends to the blocks 65, short rods 74 extending between the blocks on adjacent arm elements 56. The rocker frames may also be connected by tension springs 75.

As will be apparent, the rocker frames and the arms carried thereby will be caused to swing when shaft 20 is rotated, carrying the cars around in a circular path. By reason of the undulating nature of the track the arms will rock vertically on the pivot pins 50 as they swing and the up and down motion of their outer ends will cause the cars to swing in and out as they travel.

For purposes of transportation the carrousel can be easily taken apart into comparatively small units. The rods 57 and 58 can be removed and the arm elements disengaged from the socket members 53 and 60. The rocker frames can be removed and separated by loosening the pins 50 and top bars 41, while the tower can be separated into its six units by removing the bolts 3 and 9 which engage the plates 2 and 8 securing the different sections of the sill and cap members together.

What I claim is as follows:—

1. In a carrousel, a tower, a rotatable car supporting frame on said tower, socket elements arranged in pairs on said frame, arms arranged in pairs and inserted freely at their inner ends in said socket elements, the respective arms of each pair diverging from one another from their inner to their outer ends, pairs of socket heads in which the outer ends of said arms engage freely, and bars rigidly connecting the respective socket heads of each pair, said socket heads and bars jointly forming car supporting elements.

2. In a carrousel, a tower, a rotatable car supporting frame on said tower, socket elements arranged in pairs on said frame, arms arranged in pairs and inserted freely at their inner ends in said socket elements, the respective arms of each pair diverging from one another from their inner to their outer ends, pairs of socket heads in which the outer ends of said arms engage freely, bars rigidly connecting the respective socket heads of each pair, said socket heads being adapted to have cars suspended therefrom, U-rods straddling said socket heads and secured to opposite sides thereof, and diagonal guy rods extending between said U-rods and said frame.

3. In a carrousel, a central supporting tower-like frame, car holding devices on said frame, said frame being divided circumferentially into a series of separable units, each unit comprising a sill element, a post, and a cap element, plates riveted to the respective

sill and cap elements and overlapping adjacent sill and cap elements, and bolts passing through said plates and the said adjacent sill and cap elements to detachably hold the different sections of the tower together.

4. In a carrousel, a tower, a series of rotatable car supporting frames separably mounted on said tower, arms extending outward from said frames, and longitudinally resilient rods connecting said arms together, said rods being arranged to expand or contract independently of one another.

5. In a carrousel, a tower, a series of rotatable car supporting frames, separably mounted on said tower, arms extending outward from said frames, and longitudinally resilient rods connecting said arms together and tension springs connecting said frames to one another.

6. In a carrousel, a tower-like supporting frame in the form of a polygon, an annular track supported by said frame, said frame being divided into separable sections each of which comprises two sides of the polygon, said track being also divided into sections each of which extends around two sides of the polygon.

Signed at New York city, in the county of New York and State of New York, this ninth day of June, A. D. 1920.

RUDYARD S. UZZELL.