July 4, 1950 W. J. DRUCKER 2,514,154

CARROUSEL

Filed June 21, 1947 3 Sheets-Sheet 1

FIG. 1.

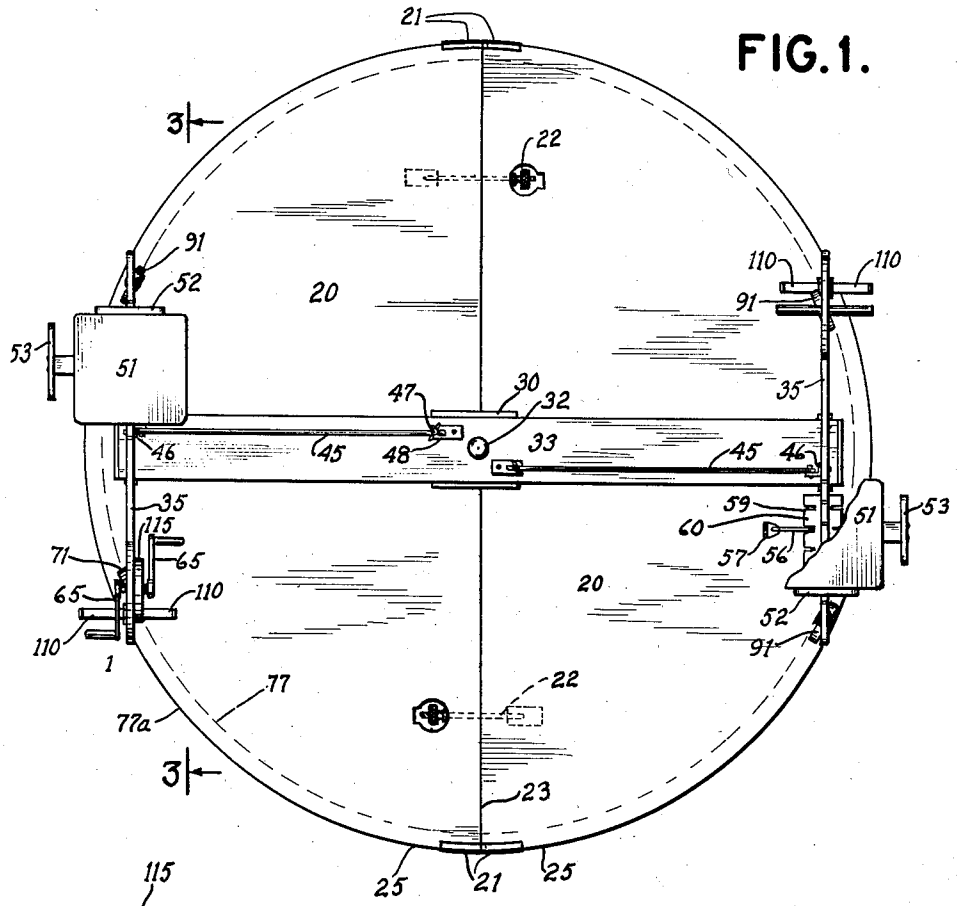
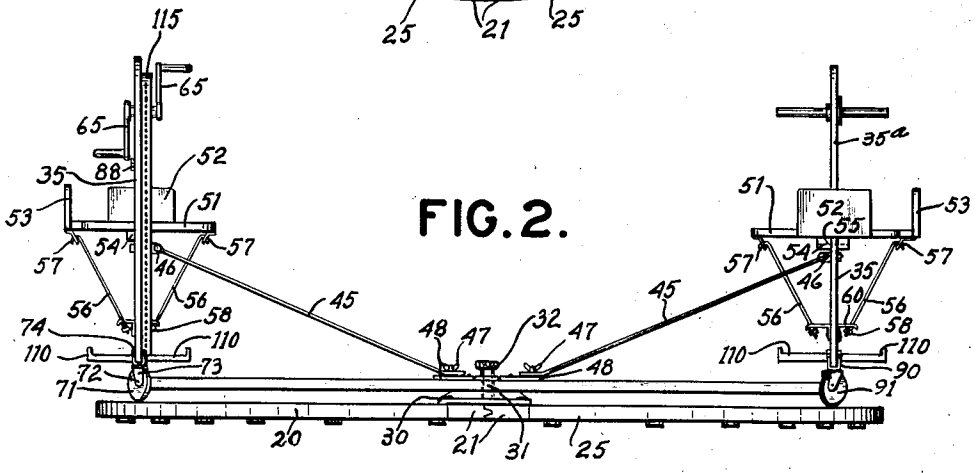


FIG. 2.



INVENTOR.

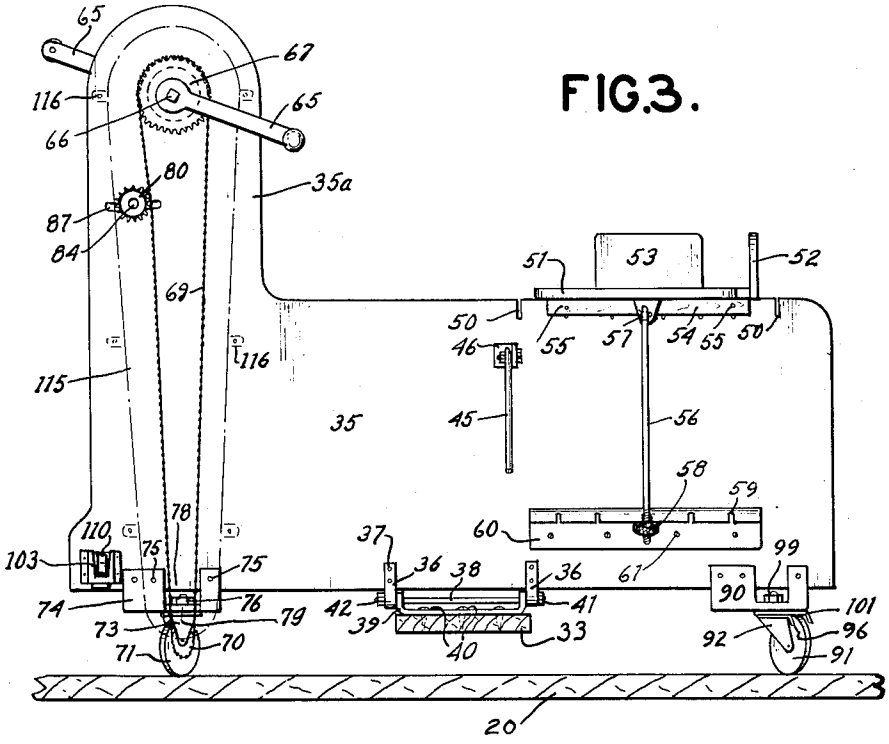
William J. Drucker

July 4, 1950 W. J. DRUCKER 2,514,154

CARROUSEL

Filed June 21, 1947 3 Sheets-Sheet 2

FIG. 3.



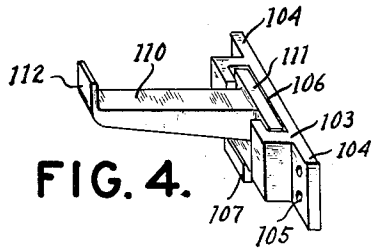


FIG. 4.

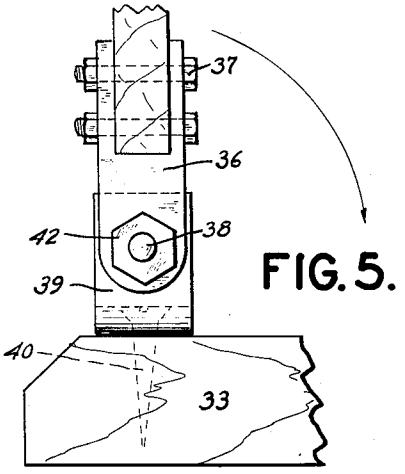


FIG. 5.

FIG. 7.

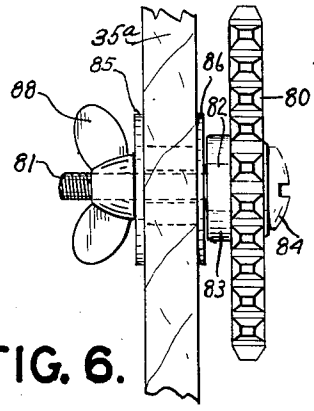
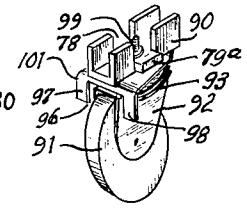


FIG. 6.



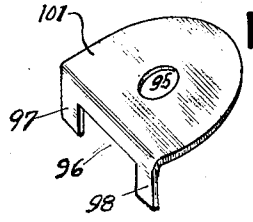


FIG. 7a.

INVENTOR.

William J. Drucker

July 4, 1950 W. J. DRUCKER 2,514,154

CARROUSEL

Filed June 21, 1947 3 Sheets-Sheet 3

FIG. 8.

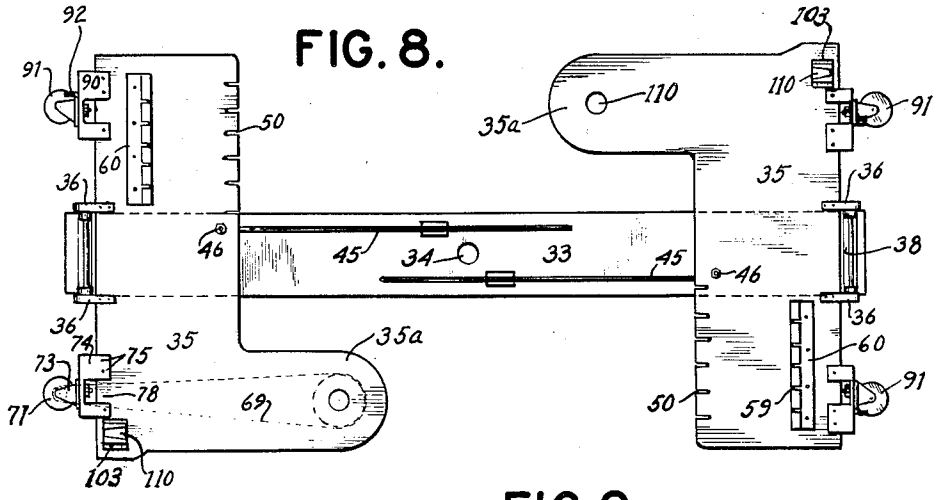
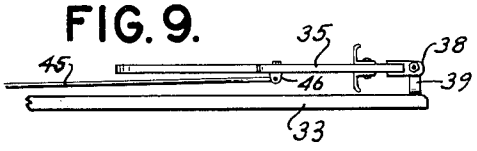


FIG. 9.



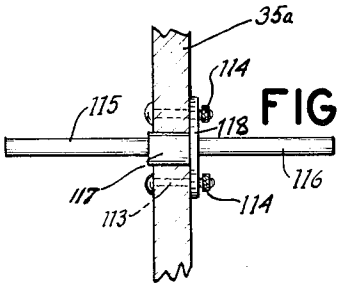
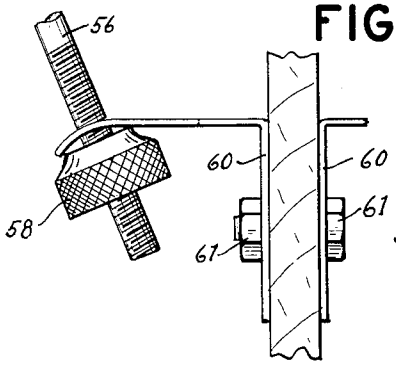


FIG. 10.

FIG. 11



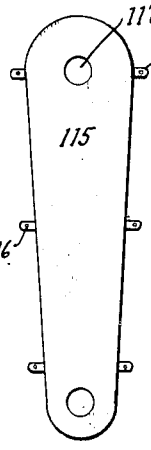


FIG. 12.

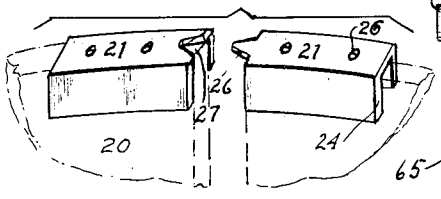


FIG. 14.

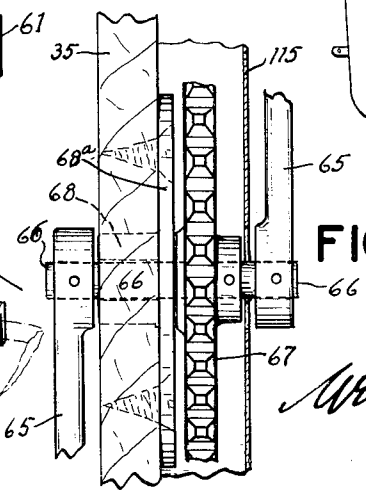


FIG. 13.

INVENTOR.

William J. Drucker

Patented July 4, 1950

2,514,154

UNITED STATES PATENT OFFICE

2,514,154

CARROUSEL

William J. Drucker, Richmond Hill, N. Y.

Application June 21, 1947, Serial No. 756,195

4 Claims. (Cl. 272—33)

1

This invention relates to amusement devices of the carrousel type, and more specifically, to an improvement over my co-pending application of January 9, 1947, Serial No. 721,009, for a so-called "Whirlmobile."

One object of the present invention is the provision of an improved construction for folding the carriage assembly, seat arrangement, and seat moving features to accommodate smaller and larger riders, improvement for quicker and simpler collapsing or dismounting of other units for a ready out of the way storing, and to facilitate the packing of the device.

Another object is the provision of a device of the character described showing substantial improvements in the foot rest assembly, in the manual drive, in the wheel assembly and mounting, in the guard cover for the drive, and in the locking means for the sectional runway base.

A further object of the present invention is the provision of a device of the character described having two rider carriages only one of which has a manual drive, the other being a trailer carriage.

These and other improvements embodying the present invention will now be described in some detail, references for this purpose being had to the accompanying drawings, in which:

Figure 1 is a plan view of a complete preferred embodiment of my invention.

Figure 2 is a side elevation of the embodiment of Figure 1.

Figure 3 is a sectional view on the line 3—3 of Figure 1 showing a drive carriage with the chain guard removed.

Figure 4 is a perspective view of a foot rest assembly.

Figure 5 is a fractional front view of the carriage folding hinge arrangement.

Figure 6 is a chain spanner front view.

Figure 7 is a perspective view of a swivel wheel with control means.

Figure 7*a* is a perspective view of a swivel control bracket.

Figure 8 is a plan view of the carriage assembly as it appears when it is folded.

Figure 9 is a fractional side view of the folded carriage assembly of Figure 8.

Figure 10 is a detailed side view of dismountable carriage handle assembly, fractionally in section.

Figure 11 is a detailed side view of a seat rod anchor.

Figure 12 is an elevation of the drive chain guard.

Figure 13 is a fractional vertical section of the drive sprocket assembly.

2

Figure 14 is a perspective view of a pair of lock sleeves for the runway base.

Similar reference characters refer to similar parts throughout the several views.

In the drawing the numerals 20 denote a pair of semi-circular runway sections 20, whose straight edges 23 are adjacent one another and which are connected to each other by any suitable locking means 22. A pair of lock sleeves 21 (Figure 14) are attached to the peripheral portions of the runway sections 20 adjacent the straight edges 23. These sleeves are U-shaped and have flange portions 24 for embracing portions of the peripheral edges 25 of the runway sections 20. The sleeves 21 are secured to each section 20, and the web portions of the sleeves 21 on one section 20 have tongue portions 26, while the web portions of the sleeves 21 at the other section 20 have groove portions 27. Thus after the locking of the two runway sections 20 by the locking means 22, a tongue portion 26 on one sleeve end will engage a fitting groove portion 27 on the other sleeve end, with the result, that the sleeves 21 will hold the runway base against vertical displacement of the two sections 20. To the center of the runway base there is secured an axle stud plate 30, from which extends vertically, and to which is stationarily secured, an axle stud 31, whose upper end is threaded and has screwed thereupon a knurled nut 32. The axle stud 31 is extended through a bearing hole 34 (Figure 8) of a horizontal arm or torque member 33, which is parallel to the top surface of the runway base sections 20. To the ends of the torque member 33 there are hingedly attached two carriages 35, each of which has a neck portion 35*a*. These carriages are flat, and substantially L-shaped, made preferably of plywood, and they normally extended upwardly from and right angularly disposed to the top surface of the torque member 33. The means of hinging of carriages 35 to torque member 33 are shown in Figures 3 and 5. Said hinging means comprise hinge brackets 36 attached to each carriage 35 by bolts 37 and nuts, and a hinge shoe 39, screwed to the torque member 33 at 40; the hinge pin 38 has a head 41 at one end, and a nut at the opposite end; this pin 38 extends through holes in the shoe 39 and the brackets 36, and is secured in that manner by a nut 42. This arrangement provides hinging means, to fold the carriage 35 parallel to member 33, making the unit primarily flat and easy to pack in a narrow space. A connecting rod 45 is hinged with one end to each carriage 35 at 46 and has at its other end a lug shaped portion through which extends a pin that is secured to the torque mem-

ber 33 at 48 and is provided with a thumb nut 47. This arrangement provides the means for rigid erection, substantially vertical, of the carriages also may be set in this manner slightly inclined to the horizontal, toward the center of torque member 33, as a matter of counteracting the ensuing centrifugal force occurring upon the rider with the circular run of the carriages. This is accomplished by a predetermined length of rod 45.

That edge portion of the carriages 35 which is opposite the hinging means is provided with a plurality of equally spaced notches 53, which are adapted to be engaged by the carriage seats 51. Each seat 51 has a back 52, and a side support 53 and is provided with two brace members 54, one of which is to engage one side portion of a carriage 35, at the upper edge of the region of the notches 50. Two pins 55 (Figures 2 and 3) are crosswise extended through each pair of said brace members 54. The location of said pins in said members 54 is such, that, with the attachment of the dismountable seat to the carriage 35 two notches 50 will be engaged, one each by a pin 55. This arrangement, in addition to two connecting rods 56 which are hinged to each seat 51 at 57 and which engage notches 59 of seat rod anchor 60, and which also are provided with knurled nuts 58 at their lower ends, serves as a means to secure each seat 51 to one of the carriages 35 and for holding the same in place. Since each pair of pins 55 can be inserted into various notches 50, and each pair of rods 56 can be inserted into various notches 59, the seat can be shifted upon the carriage, providing comfort for a smaller or larger rider. Seat anchors 60 are secured to the carriage 35, one on each side of the carriage, by means of bolts and nuts, as at 61.

In Figures 1, 2, 3, 8 and 9 there are shown two carriages, one with a manual drive, namely the drive carriage, and one without drive, namely the trailer carriage. The left hand carriage in Figures 1 and 2 is the drive carriage. The drive means comprise two hand cranks 65, secured to an axle 66; a drive sprocket 67 (Figure 13) is secured with its hub to shaft 66. A bushing 68 is affixed to the carriage portion 35*a* by its integral flange 68*a*. Shaft 66 can be rotated in a bushing 68, by means of the cranks 65, manually operated. A chain 69 connects the upper drive sprocket 67 to a lower sprocket 70 which is secured to one side of a wheel 71. This wheel 71 is rotatable by means of its bearing on an axle 72 which is attached to the carriage 35 by means of screws as at 75. The wheel bracket 74 has a recessed portion, as at 78, a plate-like section 79 which is provided with a hole (not shown) for extending therethrough a bolt 76 of the fork 73. The wheel 71, set at the proper angle, and held fixed in place by bolt and nut as at 76, is to follow a circular runway path 77 when the carrousel is in operation.

The rear wheel 91 of this drive carriage is of a swivel type, as indicated at 92. The bracket 90 is the same type as bracket 74 and the mounting method of the wheel upon the bracket 90 is like that of the wheel 71, namely by a fork 92, bolt and nut 79*a*.

The two wheels of the right hand carriage (Figure 1) which carriage is the trailer carriage without drive, are as to brackets 90 and wheels 91 the same as the rear wheel 91 and the bracket 90 of the drive carriage, namely swivel wheels, as at 92, Figure 3.

All three swivel wheels are self-aligning upon

the runway path 77, however, they are limited in the range of their swivel action. This limitation is accomplished by interposing a swivel control bracket 101 (Figures 7 and 7*a*) between the upper portion 93 of the swivel wheel 91, and the under side of the bracket 90. The swivel control bracket 101 is on L-shaped plate (Figure 7*a*). One of this plate portion has a hole 95 through which is extended the stud 99 of said bracket 90, and the other portion has a clearance 96 between fork members 97 and 98. The bracket 101, after it has been mounted in place, can be turned about the axle stud 99; thereupon the stud nut is tightened. This enables a proper setting of the wheel 91 to the rear, within the scope of self-alignment of radial pathway 77. The clearance portion 96, in coaction with its fork members 97 and 98, will limit the swivel turn of the wheel 91 to the clearance distance of clearance 96. This arrangement will retain the wheel 91 set to the rear, and hold the wheels always close to the middle of the pathway 77, preventing their extending over the runway edge 77*a* (Figure 1). Furthermore, in setting the work member 98 to hold the wheel 91 controlled to a minimum clearance to runway 77, it will swivel toward the fork member 97, in the direction of the center of the carrousel, when the forward drive is reversed to backward. In that case a brake action will result from the wheel 91, since it is being forced to run out of radial alignment, backward; and the operator will be warned to discontinue an attempt to run the carrousel backward.

To adjust the tension of chain 69, a chain spanner (Figure 6) has a sprocket 80 idling on a bolt, a spacing washer 83, and a screw 84, threaded into the shoulder portion 82. Washers 85 and 86, interposed on both sides of the carriage portion 35*a*, serve to hold the bolt 81 which is extended through a slot 87 (Figure 3) when said bolt 81 is tightened by a thumb nut 88. In unscrewing the thumb nut 88, this assembly can be shifted in the slot 87 to either loosen or tighten chain 69; the sprocket 80 engaging the chain, and the thumbnut 88 are to be tightened again after an appropriate setting.

The foot rest assembly (Figure 4) comprises a socket 103 with two lug extensions 104, having screw holes 105, and a pocket 106 with a stop lug 107. This socket 103 is attached to the lower front portion of carriage 35, one on each side. A foot rest 110 with an integral socket plate 111, and a foot brace portion 112, is inserted in said pocket 106. The foot rest, when inserted, will extend perpendicularly to the socket. In folding the carriage assembly said foot rest is removed by lifting it out of the socket.

Figure 10 shows a two-handle unit dismountably extended through a hole 110 (Figure 8) on the portion 35*a* of the trailer carriage 35. To a bushing 117 are firmly attached two handles 115 and 116. The bushing 117 is extended through the hole 110, and has a flange 118 which is secured to the portion 35*a* by means of bolts 113. Thumb nuts 114 preferably are provided on the bolts 113, so that by unscrewing said thumbnuts the handles can be dismounted.

Figure 12 shows a chain guard 115 with lugs 116 and with a hole 117. The chain guard is attached to the drive carriage 35 by screwing lugs 116 to the carriage side.

Having thus disclosed the detailed structural description of this invention, the function of the same is similar to that of my co-pending application previously referred to. A rider after placing

himself upon the seat 51 and his feet upon the footrests 110 can rotate manually the handles of cranks 65 for revolving the drive wheel, which in turn will circulate the carriage seats over the prescribed runway.

This carrousel, arranged for two riders, may be made for a larger number of riders, according to the constructive principles disclosed in this invention. Likewise, a drive may be arranged for in each carriage employed.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent in the United States is:

1. In a carrousel which comprises a plurality of arms joined at one end and radiating horizontally from a journal which is secured to the center of a collapsible horizontal runway base, the combination of L-shaped plates each of which having a horizontal portion and an upwardly from the horizontal portion extending vertical portion and having the lower horizontal edge of its horizontal portion hinged to an extremity of one of the arms which radiate from said journal and being provided with a row of notches in the upper edge portion of its horizontal portion as well as with horizontal longitudinal angular members having notched horizontal portions and being attached to opposite sides of each plate beneath said row of notches, with a seat having attached to the center portion of its lower side a pair of parallel brace members connected to each other by cross pins which are in spaced relation to the lower side of said seat and adapted for engaging said notches in the upper horizontal edge portion of said L-shaped plate, and longitudinal link members each of which has one extremity pivotably connected to the upper section of said L-shaped plates while its other extremity is detachably secured to the center portion of that one of said arms to which the L-shaped plate is hinged, a connecting rod having a threaded lower end portion being with its upper extremity pivotably secured to each lateral extremity of said seat while its lower end portion is extended through the notched horizontal portion of one of said angular members and secured thereto by means of a nut, the lower extremities of each L-shaped plate being provided with casters, and angular members stationarily secured to each L-shaped plate having downwardly projecting bifurcated vertical portions whose prongs extend laterally beyond the upper sections of said casters for limiting the angular swivel movement of the latter.

2. In a carrousel which comprises horizontal arms connected to each other and radiating from a journal which is secured to the center of a collapsible horizontal runway base, the combination of L-shaped plates each of which has a horizontal portion and an uprightly from the horizontal portion extending vertical portion and each plate having the lower horizontal edge center portion of its horizontal portion hinged to the outer extremity of one of said arms, said arms provided with detachably secured means for holding said plates in upright position, and a seat whose center rests horizontally adjustable upon the upper edge of the horizontal portion of each L-shaped plate and whose lateral extremities are provided with means for connecting said extremities to both vertical sides of the L-shaped plate, casters provided with means for limiting their angular swivel movements being provided at both lower extremities of each L-shaped plate, and at least one of said L-shaped plates having on its vertical portion a crank for rotating mechanical means driving one of the casters.

3. A collapsible carrousel of the character described comprising a circular horizontal flat base which consists of two semi-circular sections whose straight edge portions are adjacent each other, interlocking U-shaped members being secured to sections of the peripheral edge portions of said semi-circular sections adjacent said straight edge portions, a plurality of horizontal arms joined to each other at one end and radiating from a journal which is secured to the center of said base, L-shaped plates each having a horizontal portion and an upwardly from the horizontal portion extending vetrical portion and each plate having the lower horizontal edge of its horizontal portion hinged to an outer extremity of one of the arms and having a notched upper edge section in its horizontal portion, angular members having notched horizontal portions attached to opposite sides of each plate beneath said notched edge section, a seat having attached to the center portion of its lower side a pair of parallel brace members connected to each other by cross pins which are in spaced relation to the lower side of said seat and adapted for engaging said notched edge section of the plate, longitudinal link members each of which has one extremity pivotably connected to the upper section of one of said L-shaped plates while its other extremity is detachably secured to the center portion of that one of said arms to which the L-shaped plate is hinged, means for detachably connecting the lateral extremities of each seat with said angular members, casters provided with means for limiting their angular swivel movements provided at both lower extremities of each L-shaped plate, brackets secured to both sides of the lower portion of each L-shaped plate beneath its vertical section, a foot rest detachably secured to each of said brackets, and at least one of said L-shaped plates having on its vertical portion a crank for rotating mechanical means driving one of the casters.

4. A collapsible carrousel of the character described comprising a horizontal circular flat base which consists of two semi-circular sections whose straight edges are adjacent one another, U-shaped members whose web portions interlock with each other being secured to sections of the peripheral edge portions of said semi-circular sections adjacent their straight edges, a plurality of horizontal arms joined to one another at one end and radiating from a journal which is secured to the center of said base, L-shaped plates each of which having a horizontal portion and an upwardly from the horizontal portion extending vertical portion and having the lower horizontal edge of its horizontal portion hinged to an outer extremity of one of the arms and being provided with a row of notches in the upper edge portion of its horizontal portion, longitudinal angular members having notched horizontal portions and being attached to opposite sides of each L-shaped plate beneath said row of notches, a seat having attached to its center portion of its lower side a pair of parallel brace members connected to each other by cross pins which are in spaced relation to the lower side of said seat and adapted for engaging said notches in the upper edge section of the horizontal portion of said L-shaped plate, longitudinal link members each of which has one extremity pivotably connected to the upper section of one of said L-shaped plates

while its other extremity is detachably secured to the center portion of that one of said arms to which the L-shaped plate is hinged, a connecting rod having a threaded lower end portion with its upper extremity pivotably secured to one lateral extremity of said seat while its lower end portion is extended through the notched horizontal portion of one of said angular members and secured thereto by means of a nut, casters provided at the lower extremities of each L-shaped plate, angular members stationarily secured to each L-shaped plate, said angular members having downwardly projecting bifurcated vertical portions whose prongs extend laterally beyond the upper sections of said casters for limiting the angular swivel movement of the latter, brackets being secured to both sides of the lower portion of each L-shaped plate beneath its vertical section, a foot rest being detachably secured to each of said brackets, and at least one of the said L-shaped plates having on its vertical portion a crank for rotating mechanical means driving one of the casters.

WILLIAM J. DRUCKER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
524,292	Ward	Aug. 7, 1894
1,791,678	McClellan	Feb. 10, 1931

FOREIGN PATENTS

Number	Country	Date
39,794	Norway	Jan. 12, 1923