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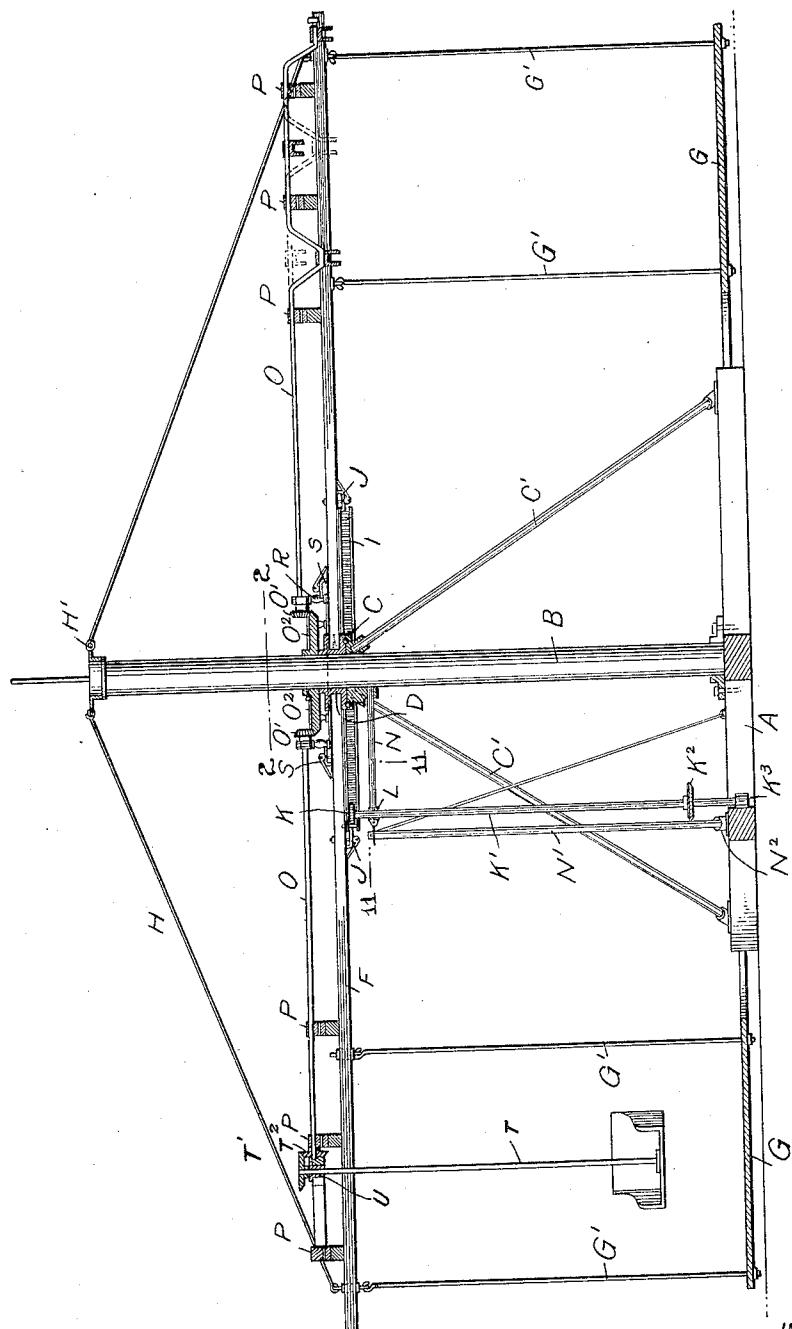
S. W. BRUNDAGE.
KNOCKDOWN CAROUSEL.

APPLICATION FILED JUNE 13, 1913.

Patented July 7, 1914

3 SHEETS-SHEET 1.

FIG. 4.



WITNESSES

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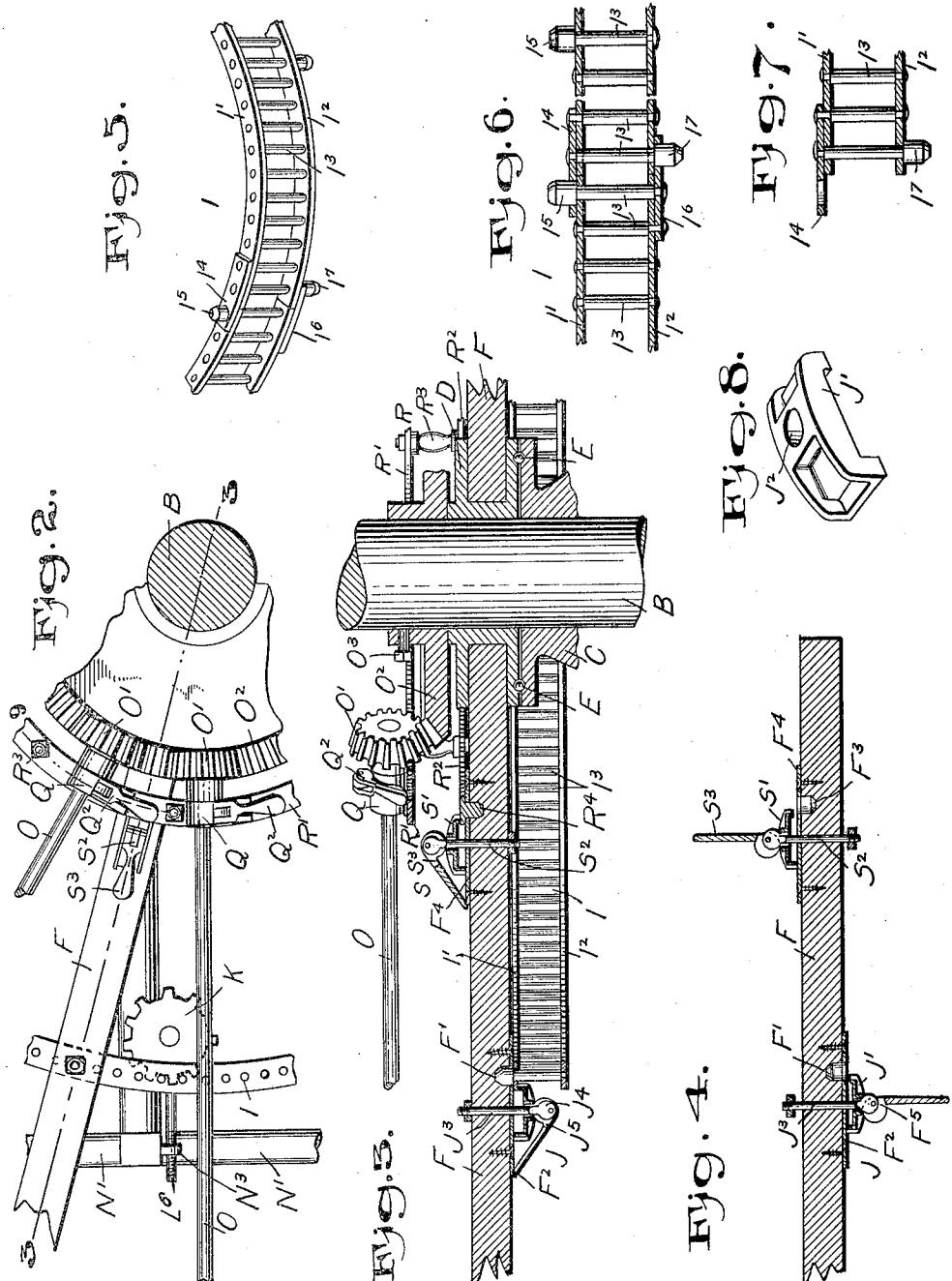
ATTORNEYS

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3 SHEETS—SHEET 2.



WITNESSES

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Fig. 11.

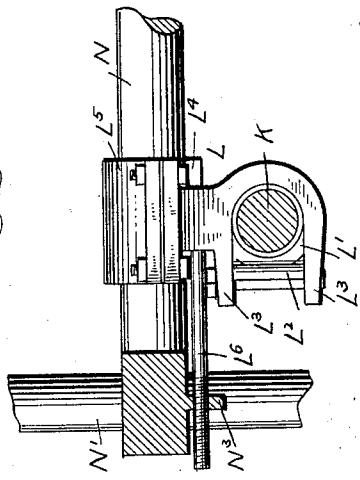


Fig. 15.

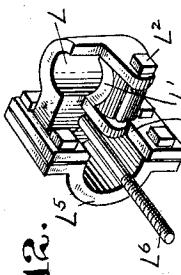
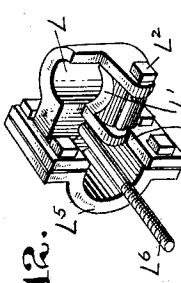


Fig. 12.



3 SHEETS-SHEET 3.

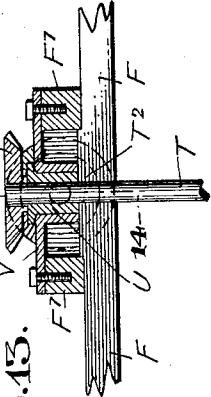
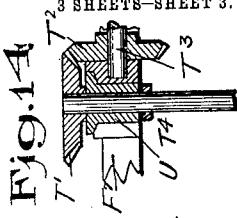


Fig. 13.

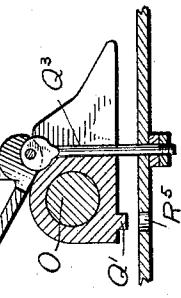


Fig. 10.

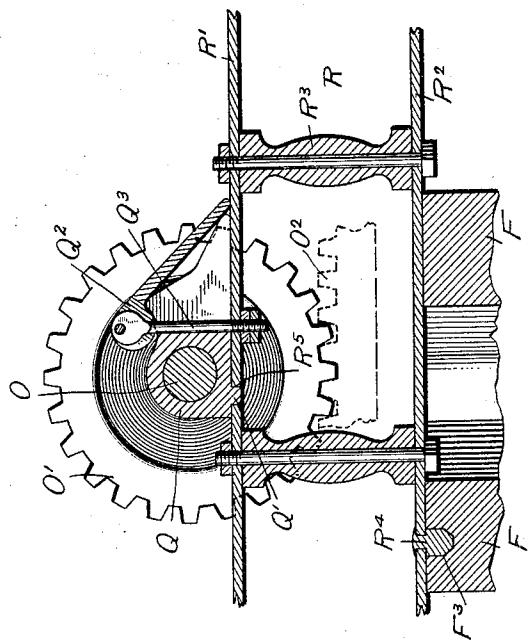
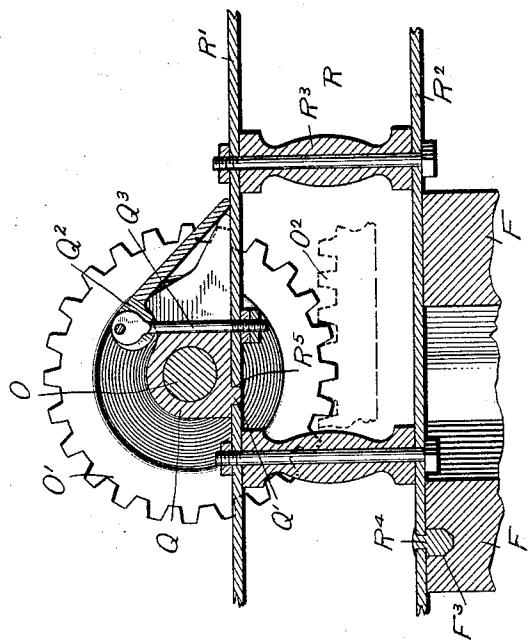


Fig. 9.



WITNESSES

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UNITED STATES PATENT OFFICE.

SETH WILLIS BRUNDAGE, OF LEAVENWORTH, KANSAS, ASSIGNOR TO CHARLES W. PARKER, OF LEAVENWORTH, KANSAS.

KNOCKDOWN CAROUSEL.

1,102,866.

Specification of Letters Patent.

Patented July 7, 1914.

Application filed June 13, 1913. Serial No. 773,411.

To all whom it may concern:

Be it known that I, SETH W. BRUNDAGE, a citizen of the United States, and a resident of Leavenworth, in the county of 5 Leavenworth and State of Kansas, have invented new and useful Improvements in Knockdown Carousels, of which the following is a full, clear, and exact description.

The object of the invention is to provide 10 certain new and useful improvements in knock-down carousels or merry-go-rounds, whereby the parts can be conveniently and quickly assembled and securely fastened in place when setting up the carousel, and the 15 parts can be quickly disassembled whenever it is desired to take the carousel apart for shipping or storing purposes.

In order to accomplish the desired result 20 use is made of clamping devices for clamping the driven pin wheel in place on the superstructure and also fastening the annular frame carrying the bearings for the crank shafts in position on the superstructure by the use of clamping devices.

25 A practical embodiment of the invention is represented in the accompanying drawings forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views.

30 Figure 1 is a central section of the carousel; Fig. 2 is an enlarged sectional plan view of part of the same on the line 2-2 of Fig. 1; Fig. 3 is a sectional side elevation of the same on the line 3-3 of Fig. 35 2; Fig. 4 is a sectional side elevation of part of the superstructure and the top and bottom clamping devices in open position; Fig. 5 is a perspective view of part of the driven pin wheel; Fig. 6 is an enlarged sectional 40 side elevation of the same showing more particularly the means for fastening the sections together; Fig. 7 is a similar view of one end of a section of the pin wheel; Fig. 8 is a perspective view of one of the clamping 45 blocks; Fig. 9 is an enlarged sectional side elevation of part of the annular frame, a bearing block, crank shaft and portion of the superstructure supporting the frame; Fig. 10 is a similar view of a bearing block 50 in raised disengaged position relative to the annular frame; Fig. 11 is a sectional plan view of part of the driving mechanism for the superstructure, the section being on the line 11-11 of Fig. 1; Fig. 12 is a perspec-

tive view of the bearing for the upper end 55 of the driving shaft; Fig. 13 is a sectional side elevation of part of the driving means for rotating a figure, carriage or a similar device on the platform; Fig. 14 is a cross section of the same; and Fig. 15 is a perspective view of the bearing for the said 60 shaft.

On the base A is removably mounted a mast B provided with a support C for a turntable D to travel on by the use of suitable ball bearings E, as indicated in Fig. 3, the said turntable D being mounted to rotate on the mast B and being provided with radial arms F so as to provide a removable superstructure for suspending the figures, 70 carriages and the like in the usual manner, the arms F also supporting a platform G by the usual rods G', and the outer ends of the arms F being connected by braces H with a removable ring H' mounted to turn on the top of the mast B, as plainly indicated in Fig. 1. The support C is connected by removable braces C' with the base A so as to give the desired stability to the mast B and the superstructure rotating thereon. 80

To the under side of the arms F is clamped a pin wheel I by the use of clamping devices J, and the pin wheel I is in mesh with a pinion K secured at the upper end of a vertically-disposed driving shaft K' provided near its lower end with a bevel gear wheel K² (see Fig. 1) connected by a similar gear wheel (not shown) with the shaft of a suitable motor so that when the motor is running a rotary motion is transmitted to 85 the shaft K' which by the pinion K and the pin wheel I imparts the desired rotary motion to the superstructure. The pin wheel I is made in sections, as plainly shown in Figs. 5, 6 and 7, the pin wheel having a top 90 ring I', a bottom ring I² and pins I³ connecting the rings I', I² with each other. Both rings I' and I² are made in sections 95 having abutting ends, and one end of the top ring I' is provided with a splice bar I⁴ 100 projecting onto the adjacent section and engaging a head I⁵ held on the upper end of the last pin I³ of this section. A similar splice bar I⁶ is attached to the end of the bottom ring I² to engage the head I⁷ of the 105 last pin I³ in this section so that the two sections are fastened together securely, and the sections can be detached by lifting the sec-

tions so as to disengage the splice bars I^4 and I^6 from the heads I^5 , I^7 of the corresponding pins I^3 . The heads I^5 project above the splice bars I^4 and engage recesses or sockets F' formed in the under side of the arms F , as plainly indicated in Fig. 3, so that the pin wheel I is held concentric relatively to the turntable D . The upper ring I' is engaged at the under side by the inner ends of the clamping blocks J' of the clamping devices J , each block resting with its outer end on a socket plate F^2 secured to the under side of the corresponding arm F . Each clamping block J' is provided with a central opening J^2 through which extends a bolt J^3 , held on the corresponding arm F and provided at its lower end with a head J^4 on which is fulcrumed a cam lever J^5 adapted to engage the under side of the clamping block J' so as to move the latter in firm clamping contact with the ring I' and the socket plate F^2 , as will be readily understood by reference to Figs. 3 and 4. It will be noticed that when the cam levers J^5 are swung downward into vertical position as shown in Fig. 4 then the clamping blocks J' move out of engagement with the ring I' and the socket plates F^2 to allow turning of the clamping blocks J' on the bolts J^3 with a view to completely disengage the pin wheel I whenever it is desired to disconnect the pin wheel from the superstructure.

The vertical driving shaft K is journaled at its lower end in a bearing K^3 attached to the base A , and the upper end of the said shaft K' is journaled in a bearing L shown in detail in Figs. 11 and 12. The bearing L is provided with a removable cap L' held in place by a bolt L^2 carried by lugs L^3 arranged on the bearing L . When the bolt L^2 is removed the cap L' can be taken out of the bearing L so as to allow of conveniently placing the upper end of the shaft K' in position in the bearing L , after which the cap L' is inserted and fastened in place by the bolt L^2 . The bearing L is provided with a supporting bearing L^4 extending horizontally and having a removable cap L^5 to permit of engaging the bearing L^4 with a horizontal rod N supported at its inner end on the support C , as plainly indicated in Fig. 1. The outer end of the rod N is attached to a vertically disposed frame N' removably held in sockets N^2 attached to the base A , and the frame N' is provided with a lug N^3 in which screws a bolt L^6 held on the bearing N . By screwing up the bolt L^6 the bearing L is moved outwardly on the rod N until the pinion K is in proper mesh with the pin wheel I so that when the shaft K' is rotated, as previously explained, then a rotary motion is transmitted to the pin wheel I and the superstructure. When it is desired to disassemble the parts the bolt L^6 is un-

screwed in the lug N^3 so as to move the bearing L inwardly until the pinion K is out of mesh with the pin wheel I , and then the bolt L^2 is removed to allow of removing the cap L' so that the shaft K can be disconnected from the bearing L .

The crank shafts O for imparting the up and down movement to the horses, boats and other figures used in the carousel above the platform G are journaled at their outer ends in suitable bearings P and the inner ends of the said crank shafts O are journaled in suitable bearings Q removably secured to the upper ring R' of a ring frame R having a lower ring R^2 connected by posts R^3 with the upper ring R' , as plainly indicated in Fig. 9. The ring frame R is concentric with the turntable D and is removably secured by clamps S to the top of the arms F of the superstructure, the clamps S being similar to the clamps J previously described and used for removably fastening the pin wheel I in place on the under side of the arms F . The bottom ring R^2 of the ring frame R is provided with depending lugs R^4 (see Fig. 9) engaging recesses or sockets F^3 formed in the tops of the arms F . Each clamp S is provided with a clamping block S' , a bolt S^2 held on the corresponding arm F and a cam lever S^3 fulcrumed on the upper end of the bolt S^2 and engaging the top of the clamping block S' to bear the latter downward into firm contact with the bottom ring R^2 and a plate F^4 held on the corresponding arm F . It is understood that by the arrangement described the ring frame R can be quickly fastened in place on the arms F and by the use of the lugs F^3 the ring frame is held concentrically relative to the turntable D carrying the arms F . Each bearing Q is provided at the under side with a depending lug Q' engaging an aperture R^5 in the top ring R' of the ring frame R , and the top of the bearing Q is engaged by a cam lever Q^2 fulcrumed on the upper end of a bolt Q^3 removably held on the top ring R' , as plainly indicated in Figs. 9 and 10. When the cam lever Q^2 is swung upward into the position shown in Fig. 10 then the bearing Q can be raised to disengage the lug Q' from the aperture R^5 to disconnect the bearing from the ring frame R . By swinging the cam lever Q^2 downward the bearing Q is firmly seated on the top ring R' of the ring frame R to securely hold the bearing locked in place. It is understood that in this assembling of the parts each bolt Q^3 is removed to allow of removing the bearings Q and the shafts O from the superstructure. The inner end of each shaft O is provided with a pinion O' in mesh with a gear wheel O^2 secured by set screws O^3 to the mast B , so that when the superstructure is rotated the pinions O' are turned to rotate the crank shafts O simultaneously.

For imparting rotary movement to a figure or similar devices above the platform G use is made of a vertically disposed shaft T (see Figs. 1, 13 and 14) adapted to support a figure or similar device at its lower end directly above the platform G and provided at its upper end with a bevel gear wheel T' in mesh with a bevel gear wheel T² attached to a horizontal shaft T³ mounted on a superstructure similar to the crank shafts O, and driven from the fixed gear wheel O² by providing the inner end of the shaft T³ with a pinion O⁴ similar to the pinion O' and likewise in mesh with the fixed gear wheel O². The shaft T is journaled immediately below the bevel gear wheel T' in a bearing U fitting into a bracket V secured to beams F' held on the adjacent arms F. The bracket V has a seat V' open at one side to allow the shaft T to pass through this opening on lifting the shaft T and with it the bearing U until the latter is above the bracket V. The shaft T is provided immediately below the bearing U with a collar T⁴ so that when the shaft T is lifted the bearing U is likewise lifted to disengage the bracket V and to allow sidewise swinging of the shaft T until the latter has passed out of the bracket V.

From the foregoing it will be seen that by the arrangement described the several parts of the carousel can be conveniently and quickly assembled and securely fastened in place when setting up the carousel, and the parts can be readily disassembled whenever it is desired to take the carousel apart for shipping or storing purposes.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a carousel, the combination of a revoluble superstructure provided with sockets, a pin wheel having sundry of its pins provided with heads engaging the said sockets, and clamping devices removably held on the superstructure and engaging the pin wheel to clamp the latter to the superstructure.

2. In a carousel, the combination of a revoluble superstructure provided with sockets, a pin wheel having sundry of its pins provided with heads engaging the said sockets, and clamping devices removably held on the superstructure and engaging the pin wheel to clamp the latter to the superstructure, each clamping device consisting of a bolt held on the superstructure, a cam lever fulcrumed on the bolt, and a clamping block through which passes the bolt and engaged by the said cam lever.

3. In a carousel, a sectional pin wheel comprising sectional rings, pins connecting the ring sections with each other, the end pins being provided with heads, and splice bars on the ends of the ring sections and

projecting beyond the same, the projecting portions of the splice bars having openings engaging the said heads.

4. In a carousel, a sectional pin wheel comprising sectional rings, pins connecting the ring sections with each other, the end pins being provided with heads, the heads at adjacent ends of the ring sections being located one on the top ring of one section and the other on the bottom ring of the other ring section, and top and bottom splice bars secured to the top and bottom rings of the adjacent ring sections and projecting beyond the same, the top splice bars engaging the said top ring head and the bottom splice bar engaging the said bottom ring head.

5. In a carousel, a sectional pin wheel comprising sectional rings, pins connecting the ring sections with each other, the end pins being provided with heads, the heads at adjacent ends of the ring sections being located one on the top ring of one section and the other on the bottom ring of the other ring section, and top and bottom splice bars secured to the top and bottom rings of the adjacent ring sections and projecting beyond the same, the top splice bar engaging the said top ring head and the bottom splice bar engaging the said bottom ring head, the said top ring heads projecting above the top splice bar.

6. In a carousel, the combination of a revoluble superstructure provided on the top with sockets, an annular frame having a bottom ring, a top ring and posts connecting the rings with each other, the bottom ring resting on the said superstructure and having depending lugs engaging the said sockets, clamping blocks clamping the said bottom ring to the superstructure, bolts held on the said superstructure and passing through the said blocks, and cam levers fulcrumed on the said bolts and engaging the said clamping blocks.

7. In a carousel, the combination with crank shafts, a revoluble superstructure on which the outer ends of the said crank shafts are journaled, an annular frame held on the said superstructure and provided on top with apertures, bearings for the inner ends of the said crank shafts and resting on the said top, the said bearings having depending lugs engaging the said apertures, bolts held on the said frame and engaging the said bearings, and cam levers held on the said bolts, and engaging the said bearings to clamp the latter in place on the frame.

8. In a carousel, the combination of a pin wheel, a pinion engaging the said pin wheel, a driven shaft carrying the said pinion, a shaft bearing for the upper end of the said shaft and having an adjusting bolt at a right angle to the said shaft bearing, a supporting bearing carrying the said shaft

bearing and arranged at a right angle thereto, a frame having a threaded lug engaged by the said adjusting bolt, and a guide rod for the said supporting bearing to slide on.

9. In a carousel, the combination of a pin wheel, a pinion engaging the said pin wheel, a driven shaft carrying the said pinion, a shaft bearing for the upper end of the said shaft and open at one side, a cap for the said shaft bearing, a cap bolt on the said shaft bearing for removably holding the said cap in place, an adjusting bolt on the said shaft bearing and extending at a right angle thereto, a supporting bearing carrying the said shaft bearing and arranged at a right angle thereto, a frame having a threaded lug engaged by the said adjusting bolt, and a guide rod for the said supporting bearing to slide on.

10. In a carousel, the combination of a vertical shaft having a collar, a bevel gear wheel on the upper end of the said shaft, a bearing for the said shaft intermediate the said gear wheel and the said collar, and a fixed bracket having a seat for the said bearing, the seat being open at one side for the passage of the said shaft when the latter is raised and the bearing is lifted out of the seat of the said collar.

10. In a carousel, the combination of a 20 vertical shaft having a collar, a bevel gear wheel on the upper end of the said shaft, a bearing for the said shaft intermediate 25 the said gear wheel and the said collar, and a fixed bracket having a seat for the said bearing, the seat being open at one side for the passage of the said shaft when the latter is raised and the bearing is lifted out of the seat of the said collar.

In testimony whereof I have signed my 30 name to this specification in the presence of two subscribing witnesses.

SETH WILLIS BRUNDAGE.

Witnesses:

H. V. JONES,
B. R. PARKER.

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