W. C. FARNUM.

CAROUSEL OR MERRY-GO-ROUND.

APPLICATION FILED APR. 3, 1913.

1,088,558.

Patented Feb. 24, 1914.

3 SHEETS—SHEET 1.

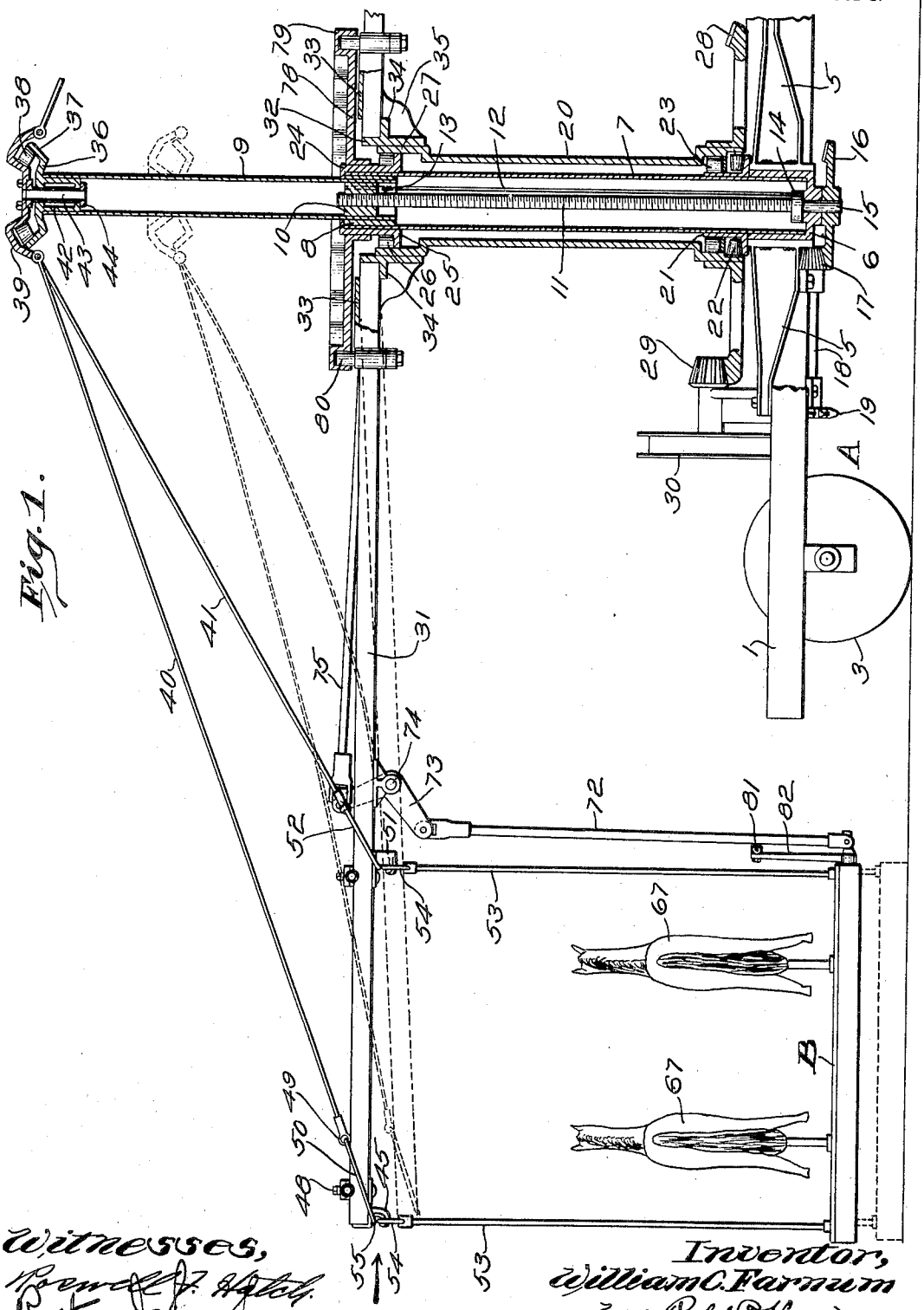

Fig. 1.

Witnesses,

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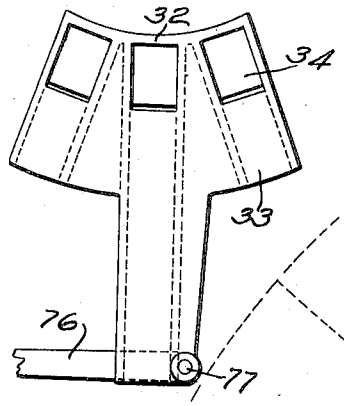

Fig. 3.

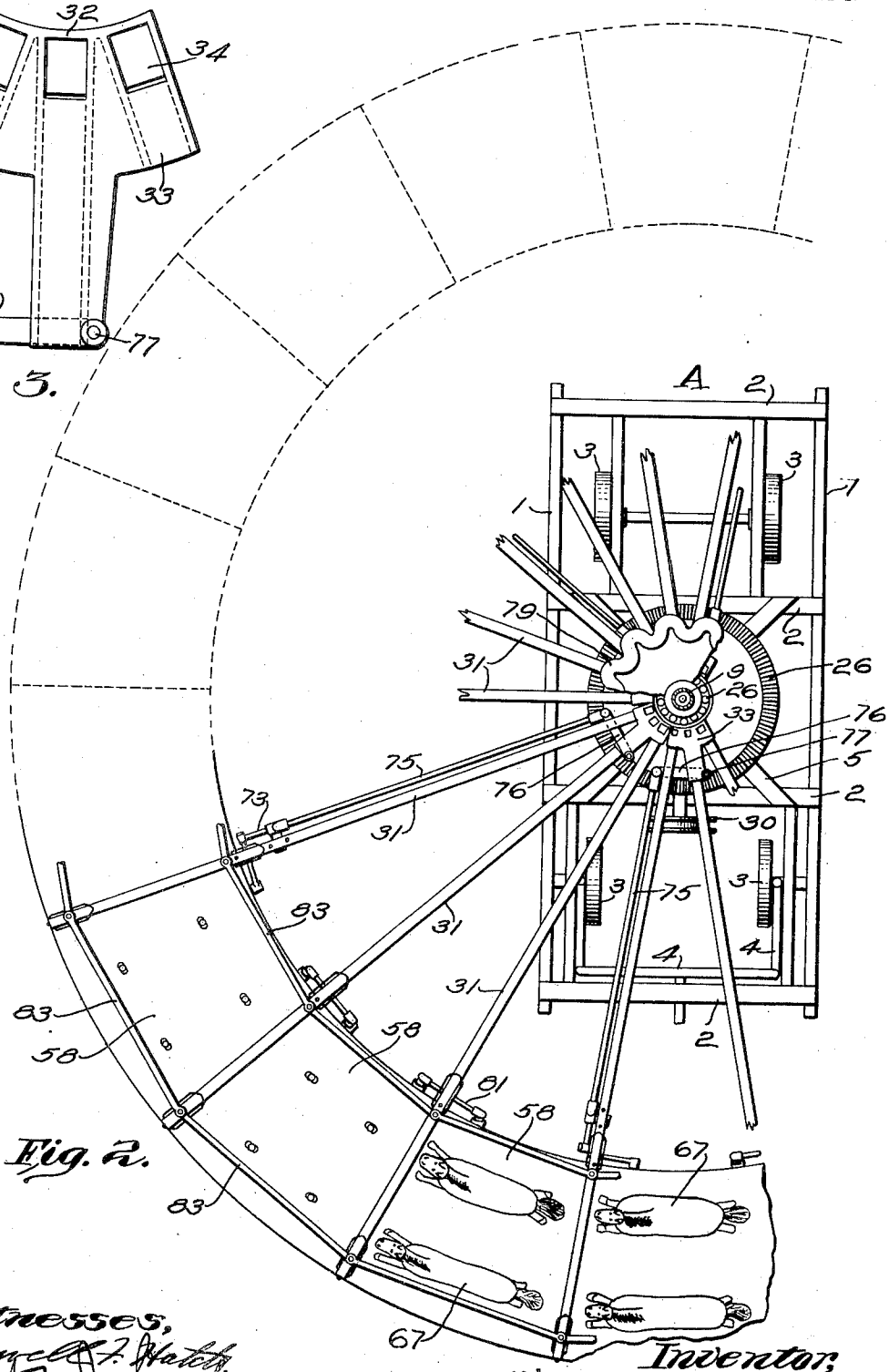

Fig. 2.

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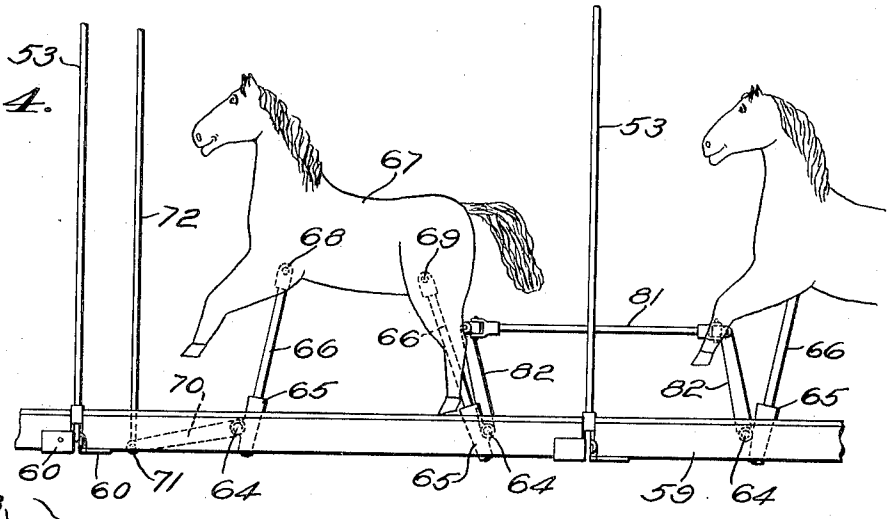
3 SHEETS—SHEET 3.

Fig. 4.



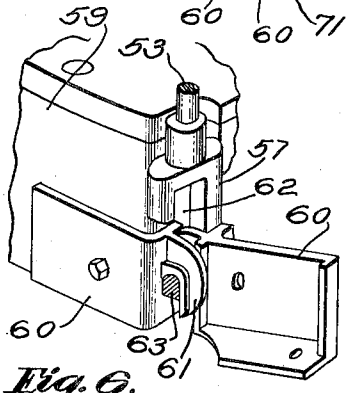


Fig. 6.

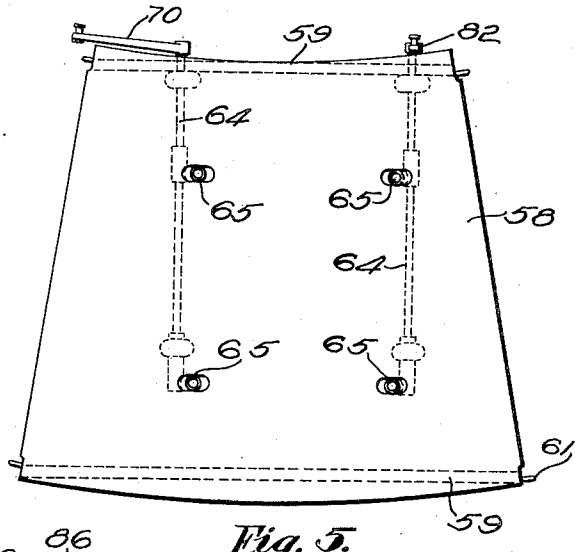


Fig. 5.

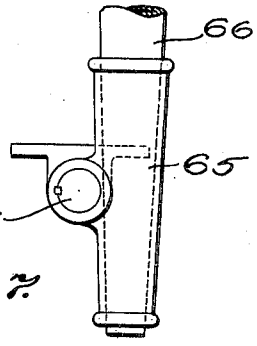


Fig. 7.

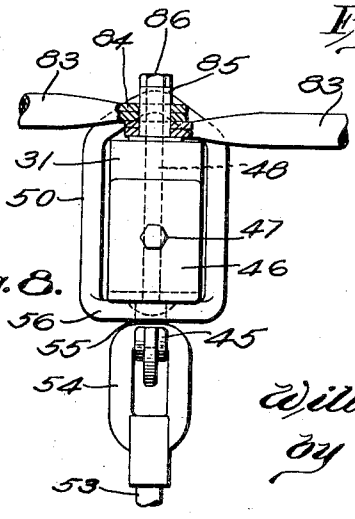


Fig. 8.

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UNITED STATES PATENT OFFICE.

WILLIAM C. FARNUM, OF WINCHENDON, MASSACHUSETTS, ASSIGNOR TO HIMSELF, AND WILLIAM F. PARMELEE AND WETMORE W. STEEVES, BOTH OF FITCHBURG, MASSACHUSETTS.

CAROUSEL OR MERRY-GO-ROUND.

1,088,558. Specification of Letters Patent. Patented Feb. 24, 1914.

Application filed April 3, 1913. Serial No. 758,589.

To all whom it may concern:

Be it known that I, WILLIAM C. FARNUM, a citizen of the United States, residing in Winchendon, county of Worcester, and State of Massachusetts, have invented an Improvement in Carousels or Merry-Go-Rounds, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

The invention to be hereinafter described relates to amusement devices or apparatus and more especially to the type known as carousels or merry-go-rounds. Devices of this character are intended to be set up and used for a time in one location and then removed to another, according to the dictates of circumstances. It is important, therefore, that the parts thereof be so associated and connected that they may be readily disassociated and reassembled, and that this change of relationship of the parts may be effected quickly and with minimum expense incident to the employment of operatives. It is further desirable that while a device of this character shall possess these characteristics which dictate simplicity of construction, it shall also possess the attractions incident to the use of rocking animal figures on which persons may ride, and further that it be driven by means of power through suitable transmitting mechanism. These various features, either alone or in combination, make the problem of ready and economical transportation one of difficult solution, as will be readily understood, and dictate that when the parts are assembled for use they shall be so united that perfect safety may be insured and yet that by simple and easily handled means they may be readily taken apart and put together.

With the above generally stated facts in mind, the aims and purposes of the invention will best be made clear by the following description and accompanying drawings of one form of means for carrying the invention into practical effect, it being understood, of course, that the invention is not necessarily limited to the particulars of the means shown and described, but embraces various changes that are within the true scope of the actual invention as definitely set forth by the claims.

In the drawings:—Figure 1 is a side elevation and part sectional view of substantially one half portion of a carousel or merry-go-round embracing features of the present invention; Fig. 2 is a general plan view showing only sufficient of the device to make clear the features of the present invention; Fig. 3 is a detail plan view on an enlarged scale of a head section; Fig. 4 is a development in side view showing the platform, its suspension means, the animal figures to be ridden and their operating devices; Fig. 5 is a plan view of one of the platform sections; Fig. 6 shows the manner of detachably connecting the platform sections to their supporting means to form the complete platform; Fig. 7 is a detail in side elevation showing the animal figure supports and rock shaft; and Fig. 8 is an enlarged detail looking in the direction of the arrow, Fig. 1, and showing the end of one of the supporting bars, the detachable and locking hook connection between said bars, the brace or tie rods, and platform suspending links, and also the spacing bars between the suspension bars.

The device as a whole is preferably carried upon a suitable truck, such as A, Figs. 1 and 2, which may be of a size and character to give steady and stable support to the operating parts when in use, and afford a means for transporting the tower and main portions of the device and associated mechanism. In the present form of the invention the truck A is shown as having a suitable body or frame formed of the longitudinal pieces 1 and cross-pieces 2 carried upon wheels 3 and having a steering device 4, whereby under the action of suitable motive power, not necessary to illustrate, the truck and parts carried may be moved from place to place.

It will be noted, Fig. 2, that the center cross-pieces 2, 2 sustain the metal pieces 5, 5, Fig. 1, preferably of beam form which serve as a support for the tower and its adjacent parts, presently to be described.

Secured to the beams 5, 5, is the tower base 6 from which rises the tower lower tube 7 fixedly secured to the base cap. At the upper portion of the tube 7 and within the same is a fixed guide collar or sleeve 8 through which extends the tower upper tube 9 having a block 10 fixed thereon. The tower tubes 7 and 9 are non-rotative and the upper one is arranged to telescope with relation to the lower one for a purpose that

will presently appear. To effect this telescopic relation of the tower tube in the form of the invention illustrated, the block 10 is preferably provided with a threaded perforation to receive the exteriorly threaded tower adjusting rod 11, and the two tubes 7 and 9 are held from relative rotatable movement by means of a key-way 12 in the lower tube 7 which may be engaged by a suitable key or pin 13 projecting from the upper tube 9.

The tower adjusting rod 11 is provided with means whereby it may be rotated to thereby cause relative telescopic movement of the upper and lower tower tubes. As one means to this end the lower portion of the rod 11 is provided with a fixed collar or head 14 which rests upon the upper surface of the base cap 6, and has an extension 15, which passes through the base cap, and has secured thereto a bevel gear 16, Fig. 1, adapted to engage a bevel gear 17 carried by a shaft 18 mounted on the truck frame. The shaft 18 may be provided with a sprocket wheel 19, Fig. 1, whereby power may be transmitted through the means described to rotate the tower adjusting screw 11. The means described for rotating the tower adjusting screw may be conveniently formed as stated, or it may be modified, the essentials in this respect being that there be provided suitable operating devices for turning the tower adjusting screw 11 to thereby relatively move the tower tubes 7 and 9 longitudinally.

Surrounding the tower lower tube 7 is the column or rotatable case 20, Fig. 1, which carries and gives rotary movement to the supporting bars which sustain the animal or other figures. This case 20 is preferably supported by anti-friction bearings, and as one form thereof the base cap 6 sustains and has secured to it a flanged collar 21, Fig. 1, which affords a suitable race-way for a series of conical rolls 22 which travel on the upper surface of the collar flange and support the case and a further race-way for a series of cylindrical rolls 23 which maintain the lower portion of the case in proper position horizontally. Obviously the roller or anti-friction devices for sustaining the case 20 may be variously formed within the true scope of the present invention or if desired other forms of bearings for the lower end of the case 20 may be employed, the essentials in this respect being that the case 20 may be properly held by suitable bearings at its lower end to rotate with substantial accuracy about the axis of the tower tubes.

At its upper part also, the case 20 is preferably provided with anti-friction bearings, indicated in Fig. 1. In the form of these bearings shown, the tower lower tube 7 which is stationary as already stated, is provided with a cap sleeve 24 having a flange 25 for sustaining a series of anti-friction rolls or balls 26 against which the inner surface of the enlarged part 27 of the case 20 bears. Thus the case 20 is rotatably supported at both its lower and upper portions by anti-friction devices in order that it may be rotated with ease, but it is to be understood that the manner of supporting the case may be varied, the essentials in this respect being that it be sustained rotatably about the tower lower tube.

The rotatable case 20 is provided with means for rotating it, and as illustrated this means may conveniently comprise a gear 28 secured to the lower part of the rotatable case 20 and adapted to engage a gear 29, Figs. 1 and 2, which may be driven from any suitable source of power through the pulley 30. It will be obvious that other forms of means may be employed to rotate the case 20, although that described is a good and convenient mechanism and is carried by the truck.

Mounted upon the upper portion of the rotatable case or column 20 is the capstan or case head for carrying the inner ends of the supporting bars 31, Figs. 1 and 2. This head is preferably formed of several sections for simplicity of manufacture and assembling, each section comprising a base flange 32 to fit upon and be secured to the enlarged upper part 27 of the rotatable case, an upper plate 33, Figs. 1 and 3, end rests 34 for the inner ends of supporting arms 31, and a web 35 in the form of a bracket. Each section of the capstan head is preferably adapted to support the inner ends of three supporting bars 31, but, of course, this number may be varied, and regardless of the number thus supported, when these sections are assembled and secured to the case 20, they form a complete circle of supports for as many supporting arms 31 as desired.

It will be noted upon reference to Fig. 1 that the inner ends of the supporting arms 31 simply rest upon the end rests 34 of the head sections and that the outer ends of said arms would fall if means were not provided in addition to the end rests 34. Such additional means in the present invention comprises tie or brace rods extending from the tower upper tube, and detachable connections between these tie or brace rods and supporting bars, and between the platform suspending means and supporting bars, said detachable connections being such that when the parts are in operative position, as indicated by full lines in Fig. 1, these detachable connections are locked, as will hereinafter appear, and the platform suspending means cannot become detached, but when the tower upper tube is lowered, as indicated by dotted lines, Fig. 1, the platform suspending means

as well as the tie or brace rods may be readily and conveniently detached, as will presently appear.

Secured to the upper portion of the tower upper tube 9 is a cap 36 having a race-way 37 for a series of anti-friction rolls 38 on which rest the rotating support 39 to which the upper ends of the tie or brace rods 40, 41 are secured, it being understood, of course, that each supporting bar 31 has its outer portion sustained by a pair of said tie rods as indicated in Fig. 1.

The rotating support 39 for the ends of the tie rods may be rotatably supported by the cap 36 or tower upper tube in any suitable manner, but a preferred form of construction is indicated by Fig. 1, wherein the cap 36 has a sleeve portion 42 extending into the tower upper tube 9, Fig. 1, and the rotating support 39 has a part 43 extending through the sleeve portion 42 and provided with an enlarged head 44, whereby, the support 39 may freely rotate and yet be held in operative position with respect to the cap 36.

Secured to the outer end of each supporting arm 31 is a hook 45, Figs. 1 and 8, formed as part of or secured to a plate 46 which is attached to the supporting arm by suitable bolts 47 and 48. Jointed to the tie rod 40 at 49 is a loop 50 adapted to readily pass over the end of the supporting arm 31 and engage the hook 45. Similarly at a point between the ends of each supporting bar is the hook 51, which may be as to all material construction substantially the same as the hook 45. The tie rod 41 for each arm is provided with a loop 52 similar to the loop 50 jointed to the tie rod and adapted to pass over the end of the supporting arms.

The hooks 45 and 51 on each supporting arm are separated a distance to accommodate them for engagement with the platform suspending means, which comprise a series of platform suspending rods 53 each having an upper link 54 adapted to engage one of the hooks 45 or 51, Figs. 1 and 8. It is desirable to prevent accidental disengagement of the links 54 from the suspension hooks while the apparatus is in use and to do this effectively without special and complicated locking means and at the same time to permit ready and quick disengagement, the present invention contemplates making the entrance opening 55 of the hooks of a size that will permit the passage singly of the loops or links and when the loops and links are engaged with said hooks that the engaged part 56, Fig. 8, of a loop will be substantially in vertical position over the engaged part of the link, the construction being such that when the parts are engaged as stated, the links are locked by the loops from becoming disengaged from the hooks. To effect the disengagement, the upper tube 9 is lowered by the means already described, thus permitting the supporting bars 31 to be lowered into dotted line position, Fig. 1, and the platform B to rest upon the ground, whereupon the tie rod loops may be disengaged from the hooks and thereafter the links of the platform suspending rods may be readily disengaged.

From the construction hereinbefore described, it will be apparent that the inner ends of the supporting bars 31 rest upon the end rests 34 and when the tie rods 40 and 41 are taut by raising the telescoping tower, these supporting arms have their outer ends raised to the full line position and their inner ends held upon the end rests.

In a device of this character, ready transportation and economy of assembling and disassembling require that the platform on which the figures are mounted shall be readily detachable from its supports, such as 53. To this end the present invention contemplates providing the lower end of the supporting rods 53 each with an elongated eye 57 which may either be formed integral with the supporting rods or properly secured thereto, as indicated in Fig. 6.

The platform for supporting the figures comprises a series of sections 58, Fig. 5, each of which has a floor supporting beam 59 at its inner and outer portion to which beams are secured, as indicated by Fig. 6, the platform hooks 60. These platform hooks 60 are so arranged that their hooked ends 61 may pass into the opening 62 of the elongated eye 57 and engage the lower cross bar 63 of said elongated eye, substantially as indicated in Fig. 6. From this construction it will be seen that the platform sections 58 may be readily and easily detached from the supporting rods 53, and while the present invention contemplates the elongated eyes 57 for sustaining the platform sections from the supporting bars, it is obvious that the construction may be modified.

Mounted upon suitable supports, preferably below the top surface of the platform sections 58 are the rock shafts 64, see Figs. 5 and 7. Each of these rock shafts carries appropriate socket pieces 65 from which rise the figure supporting arms 66. These socket pieces 65, are preferably formed of a shape to permit the supporting arms 66 to be readily disengaged therefrom, and as one form of means to this end they are made conical, as indicated in Fig. 7, the conical socket of each part 65 being adapted to receive the conical end portion of the figure supporting arm 66.

The figures which may be that of an animal or some other appropriate character such as represented in Fig. 4, and indicated as 67, are preferably pivoted at 68 and 69 to the upper end portions of the figure supporting arms 66.

Secured to one of the rock shafts 64 as

indicated by Figs. 4 and 5, is a crank arm 70 to which is connected at 71 a figure operating arm 72 jointed at its upper end to a bell crank 73 pivoted at 74 to one of the supporting bars 31, as indicated in Fig. 1. To the upper end of the bell crank 73 is connected a link 75, the inner end of which is joined to a pivoted arm 76, Figs. 2 and 3, which is itself pivoted at 77 to one of the sections of the capstan head or other suitable support adjacent the top part of the rotating case 20.

In order to properly move the figures or impart to them a rocking movement as the platform is carried around by the supporting bars, there is secured to the top portion of the stationary tube 7, Fig. 1, a cam member 78 having a cam-like groove 79 around its outer periphery, substantially as indicated in Figs. 1 and 2, which cam is engaged by a suitable roller 80 projecting upward from the pivoted arm 76 as indicated in Fig. 1, the construction being such that as the case 20 and the supporting bars with the suspended platform rotate, the arms 76 by engagement of the rollers 80 with the stationary cam 79 will impart to the links 75 and perforce to the rock shaft 64, a rocking movement, thereby giving to the figures on the platform the desired motion.

In order that the figures may be properly moved on the adjacent platform sections without the necessity of multiplication of the figure-operating means, the rock shafts 64 of the adjoining sections may be joined by the rods 81 connected to arms 82 secured to the adjacent rock shafts, the construction being such that upon operation of one figure by its operating means such as described, the figure on the adjoining section or sections may be properly moved.

In the present form of the invention, where it is desirable to disassemble the parts quickly, the capstan head for supporting the supporting bars 31 is preferably formed in sections, as indicated in Figs. 2 and 3, each section providing a series of three-end rests 34 for the supporting bars. Of course the number of end rests thus provided by each portion of the divisible capstan head may vary, but they are preferably less than the total number of supporting bars so that the device may be readily disassembled and put together.

It is desirable that the outer ends of the supporting bars 31 be properly spaced apart and to this end the present invention contemplates the end spacing rods 83, see Figs. 2 and 8, each of which has a flattened end portion 84 to engage about a washer or collar 85 held upon the through-bolt 48 which may preferably also be the bolt for holding the hooks 45 and 51 to the supporting bars, all as indicated by Fig. 8. It is preferable also that the washer 85 be of a size substantially the same as the head 86 of the bolt 48, whereby the ends of the spacing rods 83 may be readily and quickly engaged with and disengaged from said bolt. Obviously the spacing rods 83 may be duplicated one at the outer ends of the supporting bars and the other at points intermediate the outer and inner ends, as indicated by Fig. 2.

Obviously many of the details may be varied within the scope of the actual invention which is defined by the claims.

What is claimed is:

1. In a carousel or merry-go-round, the combination of a tower formed of telescoping sections, a rotatable case, supporting arms having their inner ends supported by said case, tie rods connecting the telescoping tower with said supporting arms and holding the inner ends of the supporting arms in supporting relation to said case, and means for telescoping the tower sections.

2. In a carousel or merry-go-round, the combination of a tower formed of telescoping non-rotatable sections, a rotatable case or column surrounding a part of the tower and having end rests, supporting arms having their inner ends resting on said end rests, tie rods connecting the upper portion of the telescopic tower with said supporting arms and holding the inner ends of said arms on said rests, and means for telescoping the tower sections to lower the outer ends of the supporting arms and permit the inner ends thereof to be drawn from the end rests of the case or column.

3. In a carousel or merry-go-round, the combination of a tower comprising telescoping non-rotatable tubular sections, means for telescoping the sections, a rotatable casing surrounding the telescoping tower, supporting arms carried by the casing, tie rods having connection with the supporting arms and permitting ready detachment therefrom when the tower is in contracted condition.

4. In a carousel or merry-go-round, the combination of a truck, a telescoping tower and rotatable case carried by said truck, means for telescoping the tower and rotating said case, supporting arms extending outward from the rotatable case, tie rods connecting the said arms with the upper part of the telescoping tower, and means joining said tie rods to said arms to permit ready detachment when the tower is lowered.

5. In a carousel or merry-go-round, a truck, a tower formed of telescoping sections supported by said truck, a rotatable case surrounding the lower portion of the tower and carrying supporting arms, a screw device for telescoping the tower sections, and means for turning the screw.

6. In a carousel or merry-go-round, the combination of a truck, a tower formed of

telescoping tubular sections supported by said truck, a rotatable case surrounding the lower part of the tower, a threaded rod extending inside the tubular tower sections for telescoping said sections, and means for operating the screw.

7. In a device of the character described, the combination of a telescoping tower and rotatable case, supporting arms extending outward from said case, tie rods connected to the upper portion of the telescoping tower and having loop end portions to engage over the ends of the supporting bars, and means for telescoping the tower to slacken the tie rods and permit the loop end portions to be disengaged from the ends of the supporting arms.

8. In a carousel or merry-go-round, the combination of a telescoping tower and rotatable case, supporting arms extending outward from said case and having hooks, platform supports having links engaging said hooks, tie rods connected to the tower and having loops to also engage said hooks, and means for lowering the tower telescopingly to permit the tie rod loops to be disengaged from said hooks.

9. In a carousel or merry-go-round, the combination of a telescoping tower and rotatable case, supporting arms extending outward from said case and having hooks, said hooks being disposed at the under side of said supporting arms with their opening facing outward, platform supports having links engaging said hooks, tie rods connected to the tower and having loops to also engage said hooks, and means for lowering the tower telescopingly to permit the tie rod loops to be disengaged from said hooks.

10. In a carousel or merry-go-round, the combination of a tower formed of telescoping sections and a rotatable case, supporting arms extending from said case, and having hooks, platform supports having links for engaging said hooks, tie rods connected to the tower and having loops for also engaging said hooks above the said links and locking the said links from disengagement from the hooks, and means for telescoping the tower to permit the tie loops and platform supporting links to be disengaged from said hooks.

11. In a carousel or merry-go-round, the combination of a truck, a tower formed of telescoping non-rotatable sections and mounted on said truck, a rotatable case surrounding the lower section of the tower, and having a capstan head provided with end rests, supporting arms having their inner ends resting on said end rests, a rotatable cap carried by the upper section of the tower, tie rods having one end secured to the rotatable cap and provided at the other with a loop to pass about the end of a supporting bar, and means for telescoping the sections to lower the outer ends of the supporting bars and permit the tie rod loops to be disengaged therefrom.

12. In a carousel or merry-go-round, the combination of a truck, a tower formed of telescopic tubular sections mounted on said truck, a case having a capstan head surrounding the lower section of the tower, anti-friction bearings for said case, a series of supporting arms extending from said head, a rotatable cap mounted on the upper telescopic section of the tower, tie rods connecting said rotatable cap and supporting arms, and means within the tubular sections of the tower for telescoping said tower sections.

13. In a carousel or merry-go-round, the combination of a truck, a tower formed of non-rotatable telescopic sections mounted on said truck, a rotating cap mounted upon the top portion of the upper telescopic section, supporting bars and a rotatable case surrounding the lower telescopic section having end rests for said bars, tie rods connecting the supporting bars with the rotatable cap, and means for raising and lowering the upper telescopic section.

14. In a carousel or merry-go-round, the combination of a truck, a tower formed of non-rotatable telescopic sections, a rotating case surrounding the lower of said sections and having a capstan head, supporting bars extending from said head, figures supported by said bars, a cam secured to the non-rotatable telescopic sections, and means connecting said cam with said figures to impart motion thereto.

15. In a carousel or merry-go-round, the combination of a truck, a tower formed of non-rotatable telescopic sections and permanently mounted on said truck, a rotating case surrounding the lower member of the telescopic sections and having a series of supporting bars extending therefrom, a screw extending axially of the telescopic sections and having a gear connected thereto, and means for operating the said gear to turn the screw to cause the sections to be relatively moved telescopically.

16. In a carousel or merry-go-round, the combination of a truck, a base cap secured to said truck, a non-rotatable tubular section secured to and rising from said base cap, an upper tubular section telescopically connected to said first-named section, a rotating case, arms projecting therefrom, and tie rods connecting said upper section with the said supporting bars.

17. In a carousel or merry-go-round, the combination of a tower formed of telescopic sections, a truck on which said tower is permanently secured, a rotating case having supporting bars projecting therefrom, tie rods connecting the telescopic tower with the supporting bars, a platform and means

for suspending it from the supporting bars, and detachable means for connecting the sections of the platform end to end and with the platform suspending means.

18. In a carousel or merry-go-round, the combination of a tower formed of telescopic sections, supporting bars extending radially therefrom, platform supporting rods connected to said bars and having elongated eyes at their lower ends, a platform formed of sections having open hooks for engaging with said elongated eyes.

19. In a carousel or merry-go-round, the combination of a tower formed of telescopic sections, a truck to which said telescopic tower is permanently connected, supporting arms extending radially from the tower and a platform supported from said arms, rock shafts carried by the platform and having socket pieces secured thereto, figure supporting rods having ends for detachably engaging said socket pieces, and means for rocking the rock shaft.

20. In a carousel or merry-go-round, the combination of a tower formed of telescopic sections, supporting bars extending radially from said tower, tie rods connecting the supporting bars with the upper member of the telescopic tower, a platform suspended from said supporting bars and formed of sections, figures mounted on the platform, means carried by the supporting bars for rocking one of said figures, and connections between the adjacent figures whereby movement of one is imparted to the other.

21. In a carousel or merry-go-round, the combination of a tower formed of telescopic sections, supporting bars extending radially therefrom, tie rods connecting the bars with the upper member of the telescopic tower, a platform formed of sections, suspending means for the platform, hooks for connecting the sections of the platform with the suspending means, and means for lowering the upper member of the tower to permit the ends of the supporting bars to be lowered and the platform sections to be detached from the supporting means.

22. In a carousel or merry-go-round, the combination of a tower formed of telescopic tubular sections, a rotating case surrounding the lower section and having a capstan head provided with end rests 34, supporting bars 31 projecting from the end rests, tie rods connecting the supporting bars with the upper member of the telescopic tower, means connecting the upper and lower sections of the telescopic tower permitting them to move relatively in a longitudinal direction and maintaining them from relative rotation, and means for telescoping the tower sections.

23. In a carousel or merry-go-round, the combination of a truck, a telescopic tower permanently secured to the truck and rising therefrom, a rotatable cap surrounding the upper section of the telescopic tower, a case having a capstan head provided with end rests 34, supporting bars having their inner ends engaged by said rests, and tie rods connecting the rotatable cap with said supporting bars, and means for telescoping the sections with respect to each other.

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

WILLIAM C. FARNUM.

Witnesses:
FRANK B. SPALTER,
ELLIOT S. TUCKER.