

June 15, 1926.

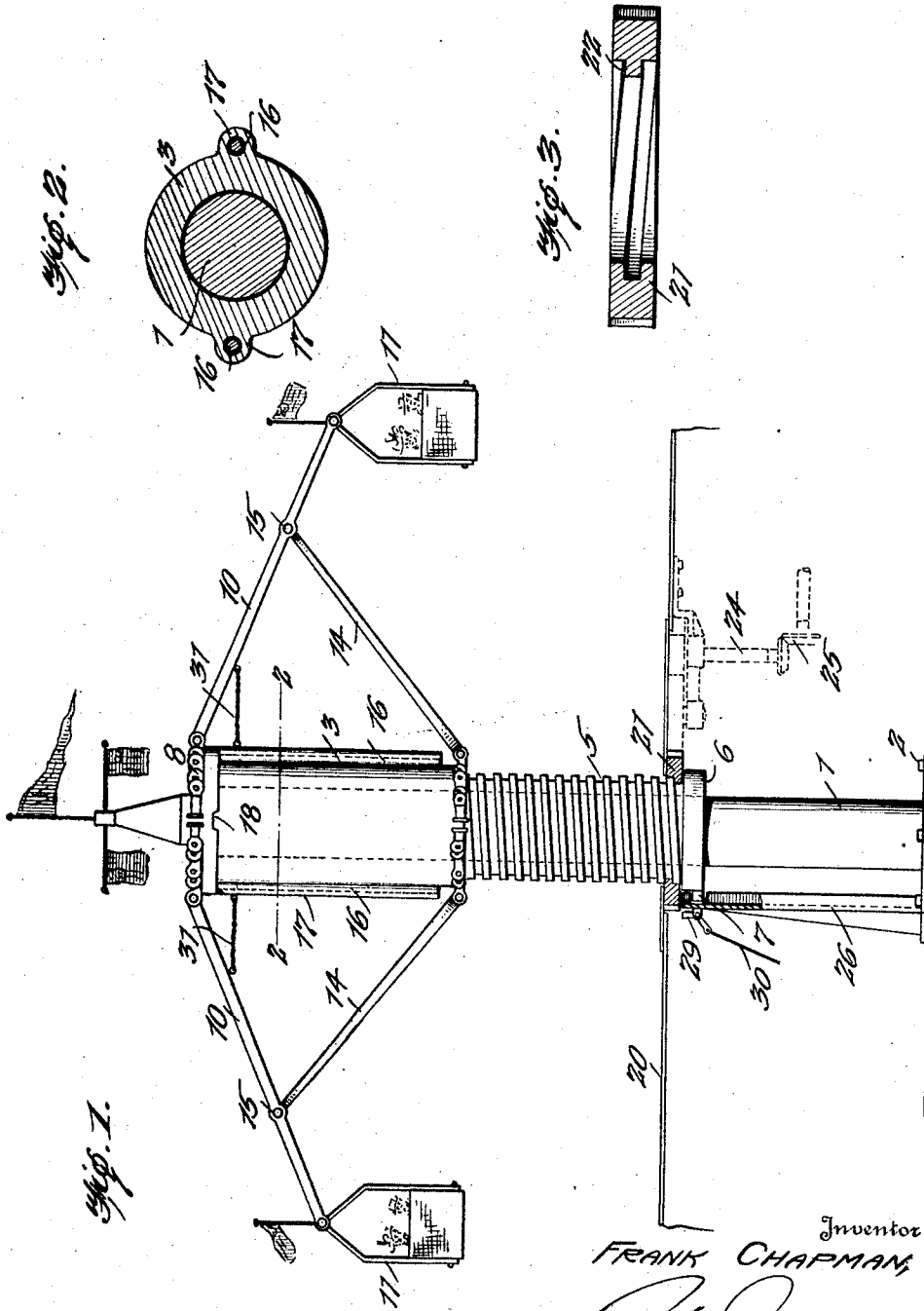
F. CHAPMAN

1,588,941

AMUSEMENT DEVICE

Filed Dec. 23, 1925

2 Sheets-Sheet 1



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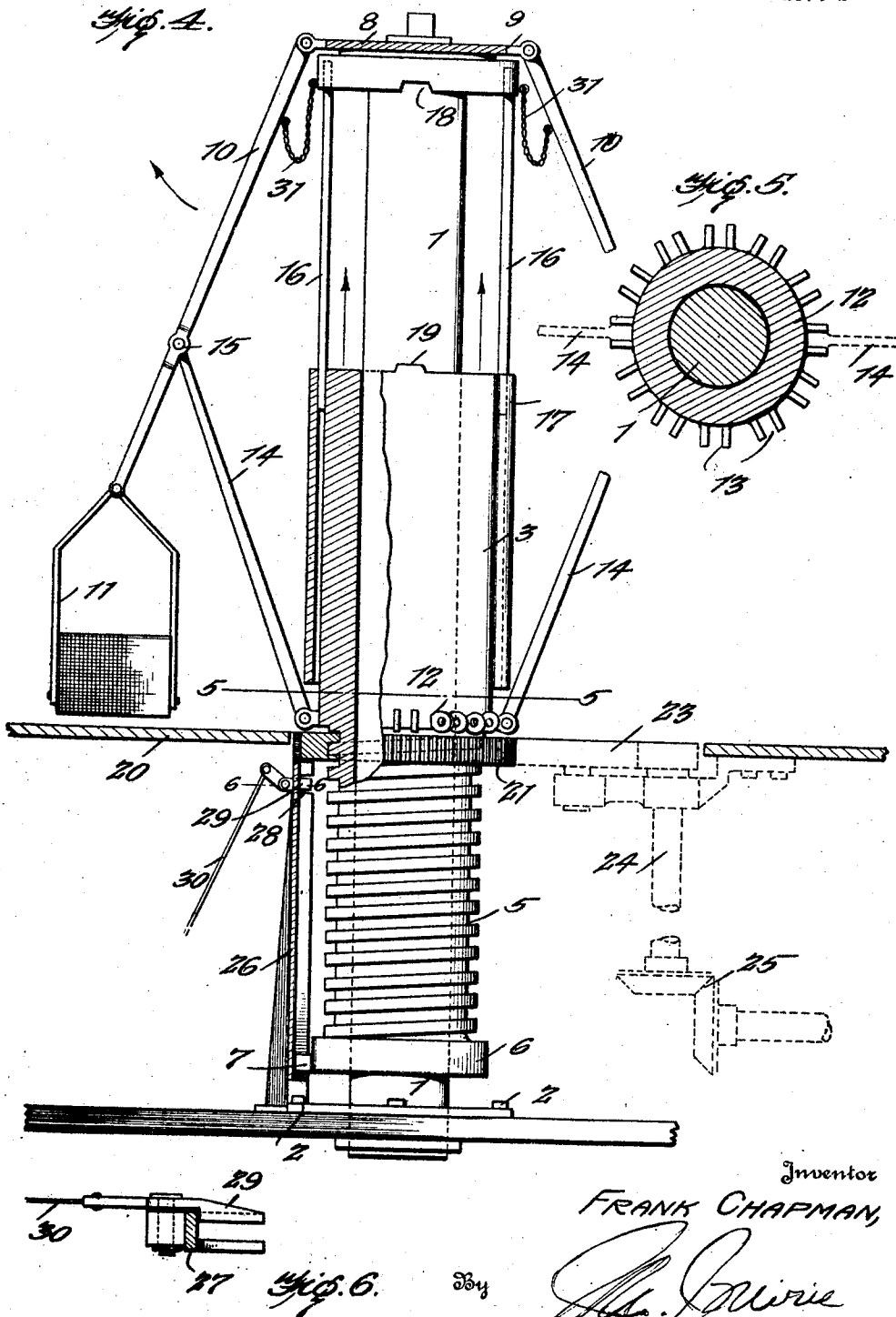
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UNITED STATES PATENT OFFICE.

FRANK CHAPMAN, OF BROOKLYN, NEW YORK.

AMUSEMENT DEVICE.

Application filed December 23, 1925. Serial No. 77,339.

This invention is directed to an amusement device, in which a series of passenger carrying cars are movable from an inoperative or loading position, at which the passengers may readily enter or leave the cars, to an elevated position, with the cars in the latter position adapted to revolve as a unit about an axis, to provide the thrilling ride for which the device is designed.

10 The construction as a whole simulates in its general structure a gigantic umbrella, with the rod forming the axis and the passenger carrying cars supported at the ends of elements simulating the ribs of the umbrella, cooperating elements simulating the umbrella stretchers being connected to the ribs and to a member simulating the runner of the umbrella, by which the ribs and thereby the cars may be moved from a lowered, or
15 umbrella closed position, to dispose the cars convenient to a platform to permit the passengers to enter or leave the cars, the actuating apparatus initially raising the runner element and thereby the ribs to elevate the cars above the ground and at the same time moving them outwardly, following which the structure as an entirety is revolved about the axis or umbrella rod.

The invention comprehends a simple efficient means for operating the parts so that the cars may be readily raised or lowered and revolved about the axis of the device after being elevated.

The invention is illustrated in the accompanying drawings, in which:

Fig. 1 is a view in elevation of the improved amusement device.

Fig. 2 is a section on line 2—2 of Fig. 1.

Fig. 3 is a vertical section of the operating gear.

Fig. 4 is a vertical section, partly in elevation, of the apparatus, the cars being shown in lowered or normal positions.

Fig. 5 is a sectional view on line 5—5 of Fig. 4.

Fig. 6 is a sectional view on line 6—6 of Fig. 4.

The amusement device of the present invention comprises a center shaft 1, the lower end of which is fixed in an appropriate base 2, the shaft being of the desired length or height and of sufficient diameter to support the operating structure. Slidably encircling the shaft is an elevating member 3, corresponding to the runner of the umbrella structure and hereinafter termed the eleva-

tor. The upper portion of the elevator is of cylindrical form with the wall of sufficient thickness to sustain the weight of the parts, while the lower portion of such elevator is exteriorly formed to provide a worm thread 5. The lower end of the elevator is provided with or has secured thereto a control member 6, in the form of a ring-like extension below the worm thread, with such ring-like extension provided with a radiating lug 7, the purpose of which will later appear. A crown head 8 is rotatably supported upon the upper end of shaft 1, this crown head being formed to provide cooperating pairs of radiating arms 9 between which is pivotally supported bars 10, simulating the ribs of the umbrella-like structure, and hereinafter termed the rib bars. These rib bars carry at their outer or free ends any convenient form or type of carriage or car 11 for the reception of passengers, the particular construction of this car being without importance in the present invention.

The runner sleeve 3 is formed at its juncture with the worm thread portion, with an annular ring-like extension 12 having radiating arms in pairs at 13 to pivotally receive and support the lower ends of bars 14, the outer or free ends of which are pivotally connected at 15 to the rib bars 10, these bars 14 serving a function similar to that of and being hereinafter termed stretcher bars.

The runner sleeve 3 and the crown head 8 are held against relative rotative movement but permitted independent relative sliding movement through the medium of rods 16, secured in the crown head and passing through sleeve-like guides 17 formed on the runner sleeve 3. Thus the sleeve may move up and down relative to the crown head, but cannot rotate independently of such head. The crown head is formed with diametrically opposed recesses 18 and the runner sleeve 3 is formed with corresponding projections 19, adapted when the runner sleeve has reached its upper limit of movement to interlock the sleeve and crown head to insure a positive rotation of the crown head in the similar operation of the runner sleeve.

A loading platform 20 is arranged in line with the juncture between the plain and threaded portion of the runner sleeve when this element is in lowered position. This platform constitutes the limit of lowered movement of the cars, and provides a means by which the passengers may enter or leave

the cars. Of course the platform may be elevated above the ground surface to receive the other parts below the platform, or such platform may constitute the ground surface and the relatively lower parts be arranged in a pit.

Arranged in line with the platform 20 is a main gear 21 formed for cooperation through a threaded interior 22 with the threaded portion 5 of the runner sleeve. This gear 21 is operated through an intermediate gear 23 by a shaft 24 actuated from a suitable source of power through appropriate shafts in gearing indicated at 25.

A guide member 26 is arranged lengthwise the threaded portion of the runner sleeve, this guide member extending from the base 2 to the platform 20. The guide member is in the form of a vertically channeled bar 27, with the channel of a size to slidably receive the lug 7 of the control member 6. At an appropriate point near the upper end, walls of the guide member are cut out at 28 to permit the lug 7 to move laterally free of the guide member. Pivottally supported upon the guide member is a latch 29, the operative portion of which is adapted, when the latch is in actuated position, to close the opening 28 in one wall of the guide member, the position of the latch being controlled through an operating cable or rod 30. Chains 31 may be used to connect the rib bars 10 to the crown head 8, serving to prevent any undue spreading of the rib bars in the movement of the parts after the carriages have been elevated.

Assuming the parts in normal or inoperated positions, as indicated in Fig. 4, it will be noted that the runner sleeve 3 is at its lowest limit of movement, the passenger cars 11 are resting on or immediately adjacent the platform 20, the lug 7 is in the lower end of the guide 26, and in that simulation heretofore referred to, the umbrella structure may be said to be closed. When applying power, the gear 21 is driven, but as the runner sleeve cannot rotate, incident to the fixed path of travel of the lug 7 in the guide 26, the operation of the gear 21 will, through the worm thread formation 5 of the runner sleeve, move said sleeve upwardly. This operation tends to raise the rib bars 10, and thereby the passenger cars 11, through pressure on said rib bars by the stretcher bars 14, this movement continuing until the carriages or cars have reached the fully elevated position and the projections 19 on the runner sleeve 3 are interlocked in the recesses 18 in the crown head 8. As this interlocking cooperation takes place, the lug 7 has reached the cut out 28 of the guide 26, and therefore further operation of the gear 21 will cause the runner sleeve, crown head, and passenger cars carried thereby to revolve about the shaft 1 as a

center. In returning the cars to the platform to discharge the passengers, the driving force of the gear 21 is gradually reduced and as the cars come to rest, the latch 29 is moved to close the opening 28 in the wall of the guide 26. The power is reversed, and as the guide reaches the stop position in rotation, the rotative movement of the runner sleeve is interrupted, and the further operation of the gear will cause the sleeve to move downward by feeding the same through the worm thread cooperation. This lowers the runner sleeve, stretcher bars, rib bars, and carriages, the movement being continued until all parts are returned to normal position.

It is intended that the simulation of the umbrella be further carried out by providing the rib bars with suitable covering as a whole in the form of any canopy construction, to simulate the umbrella covering. This canopy is not illustrated as it may or may not be used, and if illustrated, would tend to confuse the detail.

The structure as a whole provides a simple form of amusement device in which passengers may be safely raised to considerable heights and caused to follow a circular path of travel at that height, thereby imparting a decided thrill and amusement to the passenger.

Claims:

1. An amusement device simulating an umbrella structure and comprising a fixed shaft, a sleeve slidable on the shaft, passenger car carrying arms pivotally and rotatably connected to the upper end of the shaft, a driving gear, means for holding the sleeve against rotative movement throughout a predetermined longitudinal movement of such sleeve, said holding means being released following such predetermined movement of the sleeve, and cooperative means on the gear and sleeve to cause a rotative movement of the gear to compel a longitudinal movement of the sleeve during effective action of said holding means, said cooperative means locking the sleeve and gear for rotative movement of the sleeve in the operation of the gear following the release of the holding means.

2. An amusement device comprising a fixed sleeve shaft, a crown head rotatable on the upper end of the shaft, a series of passenger car carrying bars pivotally connected to the crown head, a sleeve slidable on the shaft and having bars connected to the first mentioned bars, a gear, a power driven member cooperating with the sleeve, means for holding the sleeve against rotative movement during a predetermined longitudinal movement of the sleeve, said holding means being thereafter released, and means for connecting the sleeve and member to cause the member when operated to move

the sleeve longitudinally while the holding means is effective and to rotate the sleeve on the release of the holding means.

3. An amusement device comprising a fixed shaft, a crown head rotatably mounted on the upper end of the shaft, passenger carrying bars connected to the crown head, a sleeve slidable on the shaft and formed at its lower end to provide a worm thread, a gear having threaded cooperation with the worm thread, and means to prevent the sleeves from turning in the driving cooperation of the gear and worm thread while compelling a vertical movement of the sleeve through such threaded cooperation, said means being releasable at a predetermined point in the vertical movement of the sleeve to thereafter permit a simultaneous rotative movement of the gear and sleeve.

4. An amusement device comprising a fixed shaft, a crown head rotatable on the upper end of the shaft, passenger car supporting bars pivotally connected to the crown head, a sleeve slidable and rotatable on the shaft, the lower end of the sleeve being formed as a worm thread, bars leading from the sleeve to the first mentioned bars to raise the latter in the vertical movement of the sleeve, a driving gear having threaded cooperation with the worm thread of the sleeve, a lug radiating from the sleeve, and a guide to prevent rotative movement of the sleeve through cooperation with the lug.

5. An amusement device comprising a fixed shaft, a crown head rotatable on the upper end of the shaft, passenger car supporting bars pivotally connected to the crown head, a sleeve slidable and rotatable on the shaft, the lower end of the sleeve being formed as a worm thread, bars leading from the sleeve to the first mentioned bars to raise the latter in the vertical movement of the sleeve, a driving gear having threaded cooperation with the worm thread of the sleeve, a lug radiating from the sleeve, a guide to slidably receive the lug and prevent rotative movement of the sleeve, said guide being formed with an opening to permit the passage of the lug therethrough following a predetermined vertical movement of the sleeve, and a manually operable latch to close said opening.

6. An elevating and rotating mechanism for amusement devices, including a sleeve

mounted for longitudinal and rotative movement, a power driven element encircling the sleeve and having threaded connection therewith, and a projection carried by the sleeve and cooperating with a fixed guide to prevent rotative movement of the sleeve during such cooperation, the member acting through its threaded cooperation with the sleeve to move the sleeve longitudinally during the cooperation of the stop and guide, the member further acting to rotate the sleeve when the stop is free of the guide.

7. An elevating and rotating means for amusement devices including a power driven member, a sleeve arranged within said member and having threaded cooperation with the member, a projection from the sleeve, a fixed guide with which the projection cooperates to hold the sleeve against rotation during a predetermined operation of the member and thereby cause the threaded cooperation between the member and sleeve to move the sleeve longitudinally, the threaded cooperation between the member and sleeve serving to interlock the parts to compel a rotative movement of the sleeve in the operation of the member when the stop is free of the guide.

8. An elevating and rotating means for amusement devices including a power driven member, a sleeve arranged within said member and having threaded cooperation with the member, a projection from the sleeve, a fixed guide with which the projection cooperates to hold the sleeve against rotation during a predetermined operation of the member and thereby cause the threaded cooperation between the member and sleeve to move the sleeve longitudinally, the threaded cooperation between the member and sleeve serving to interlock the parts to compel a rotative movement of the sleeve in the operation of the member when the stop is free of the guide, and manually operable means to compel an interlocking cooperation of the projection and guide during reverse rotative movement of the sleeve and member to interrupt the rotative movement of the sleeve and compel a reverse longitudinal movement.

In testimony whereof I affix my signature.

FRANK CHAPMAN. [L. s.]