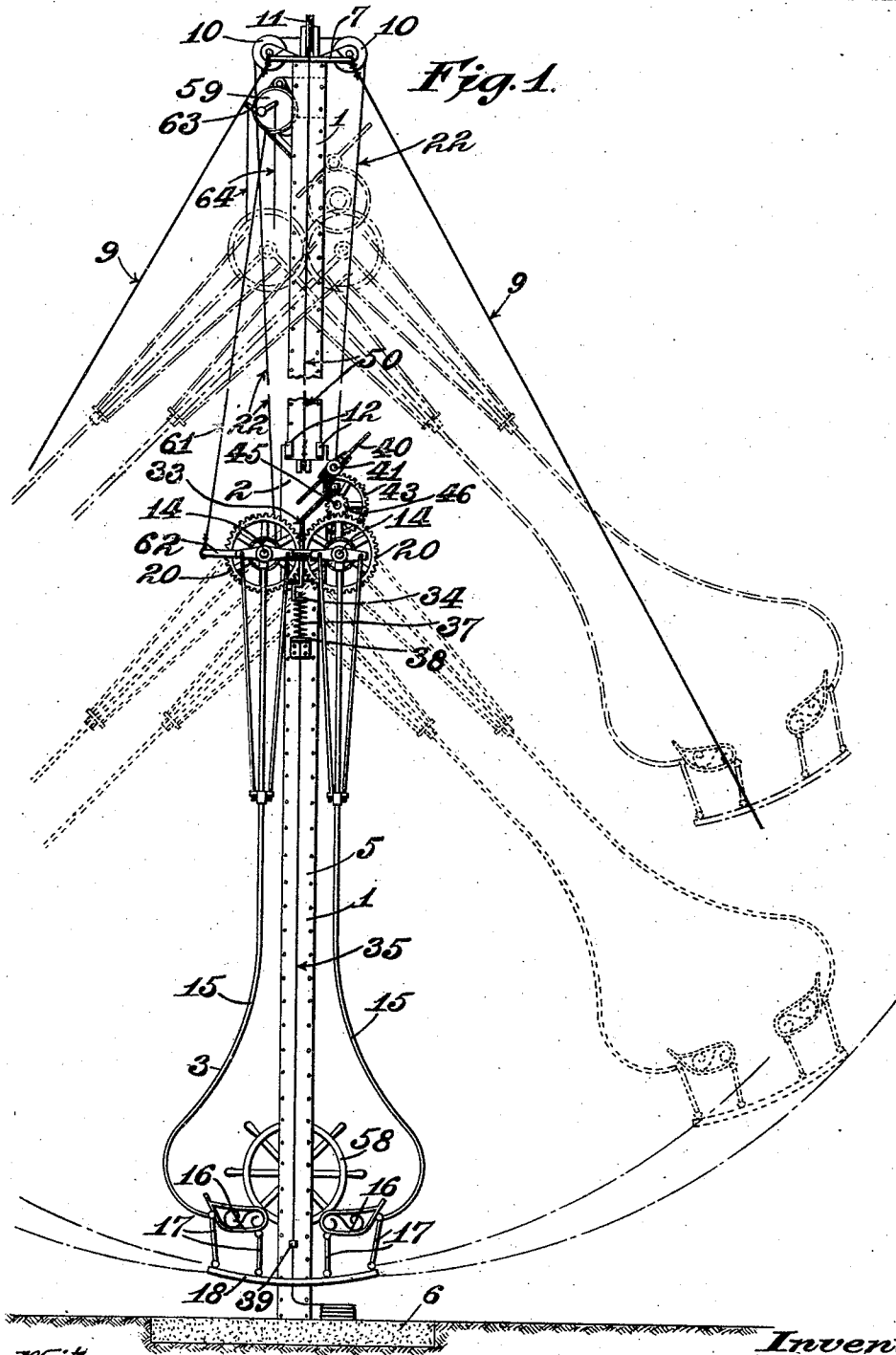


No. 842,635.

PATENTED JAN. 29. 1907.

R. DODSON.
AMUSEMENT APPARATUS.
APPLICATION FILED JUNE 8, 1906.

5 SHEETS—SHEET 1.



Witnesses:
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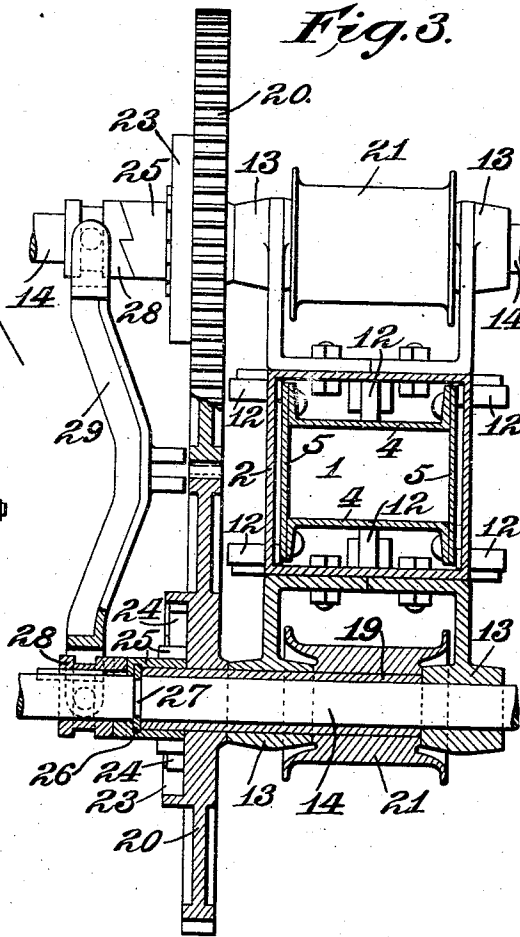
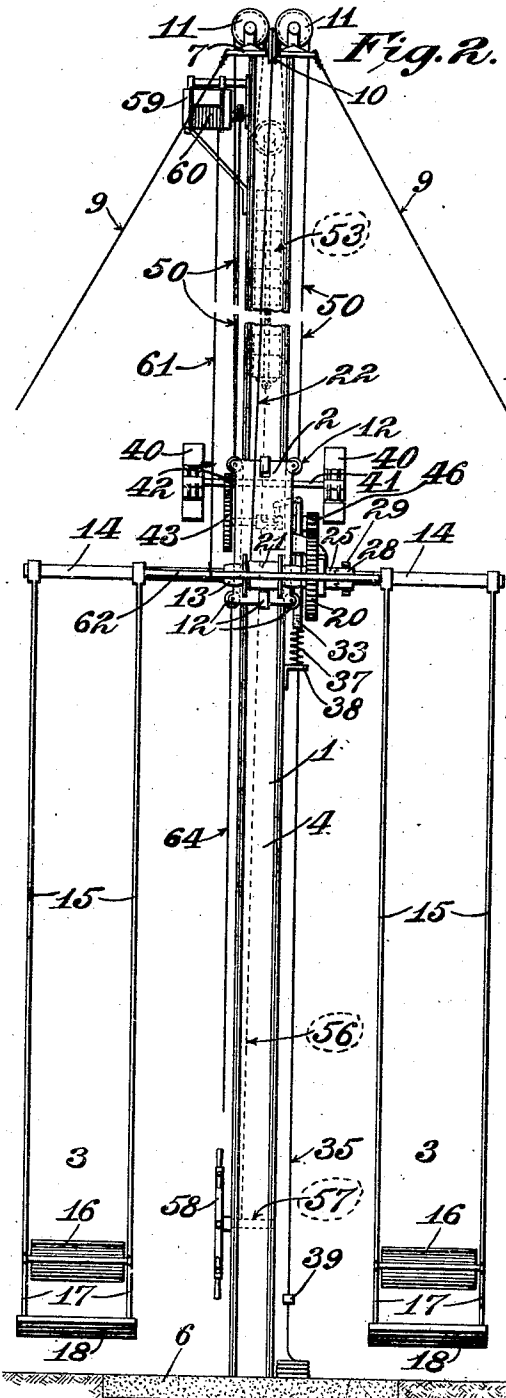
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5 SHEETS—SHEET 2.



Witnesses:

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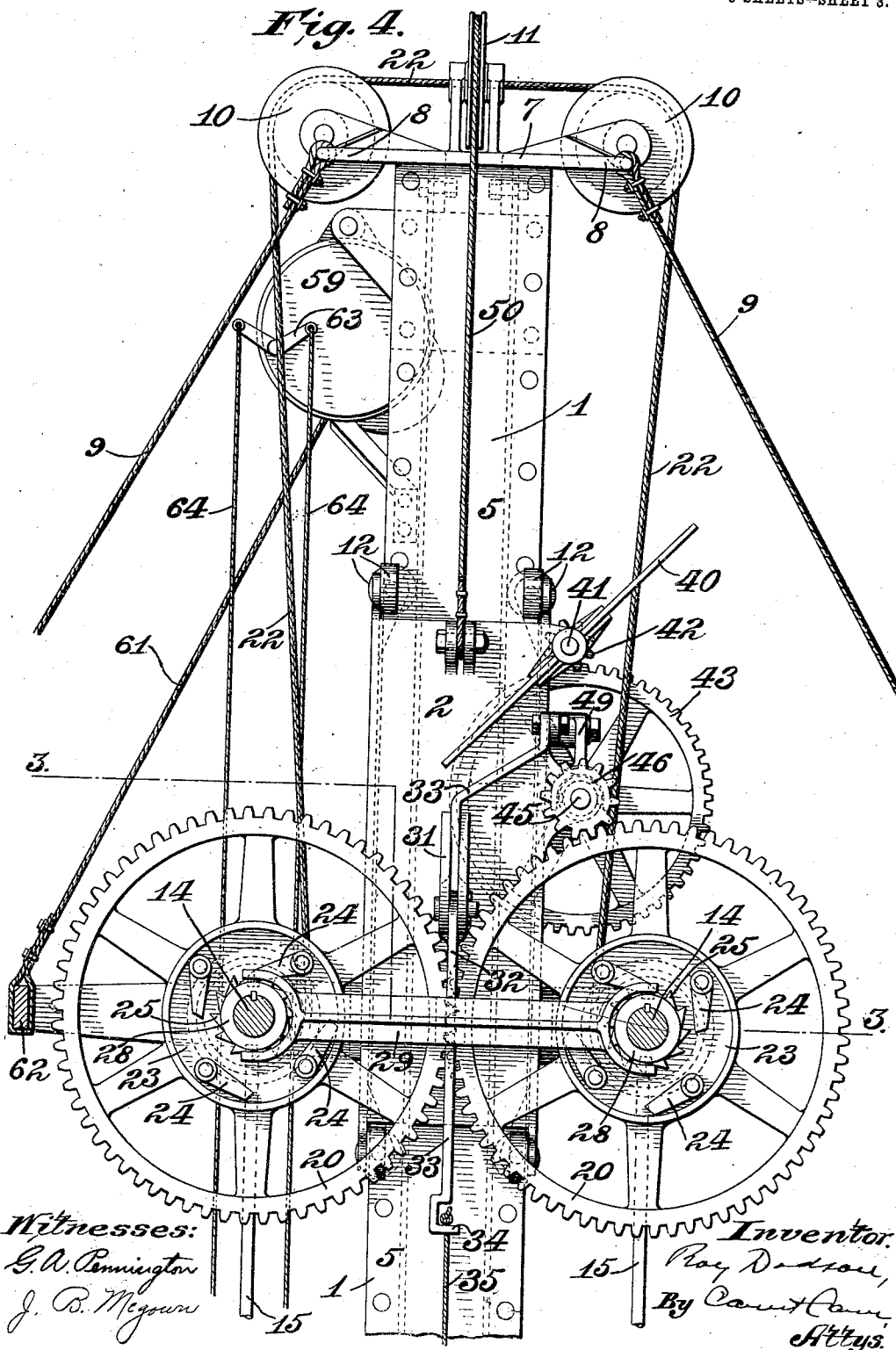
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5 SHEETS--SHEET 3.



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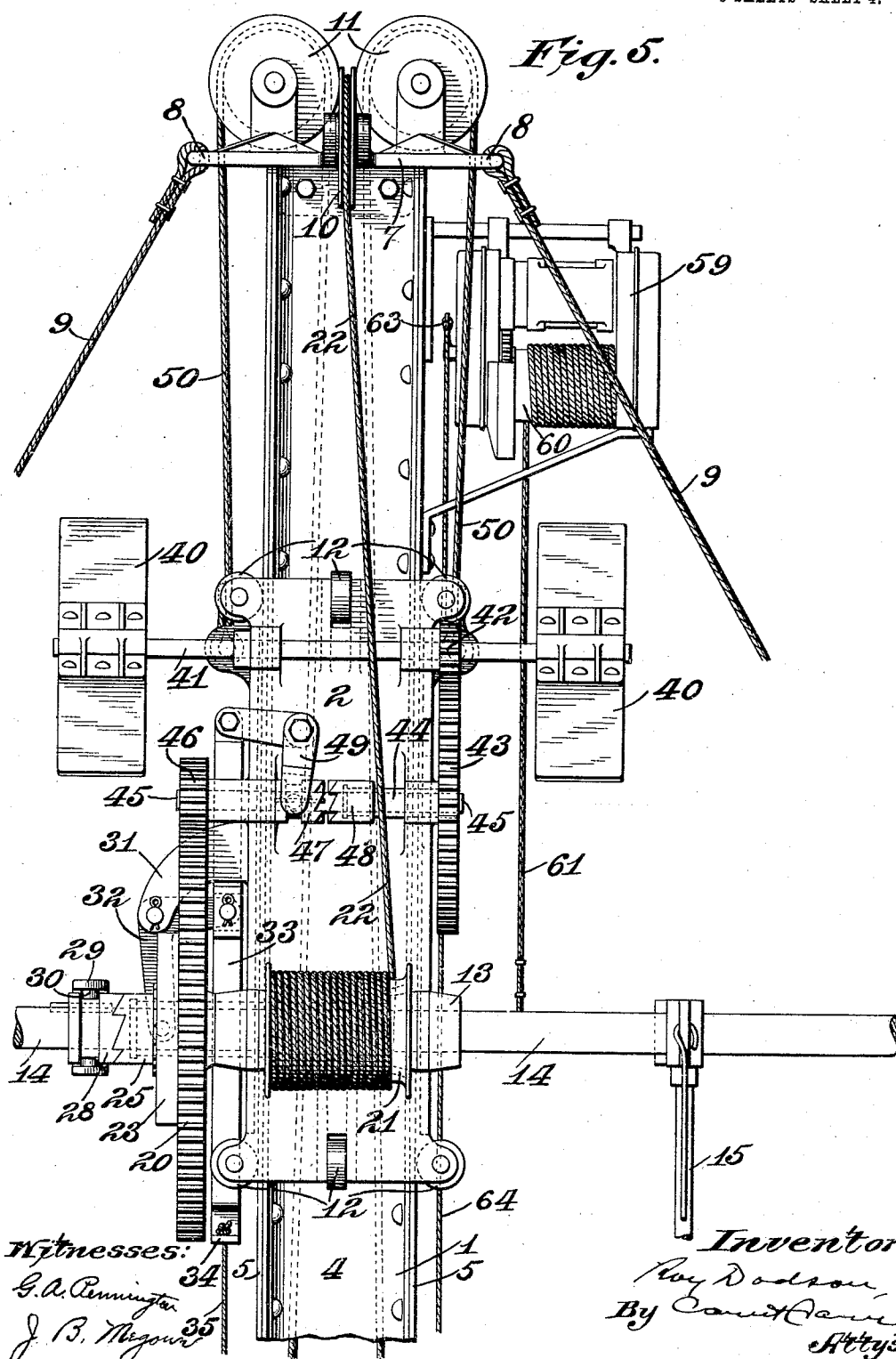
Atlys.

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5 SHEETS—SHEET 4.

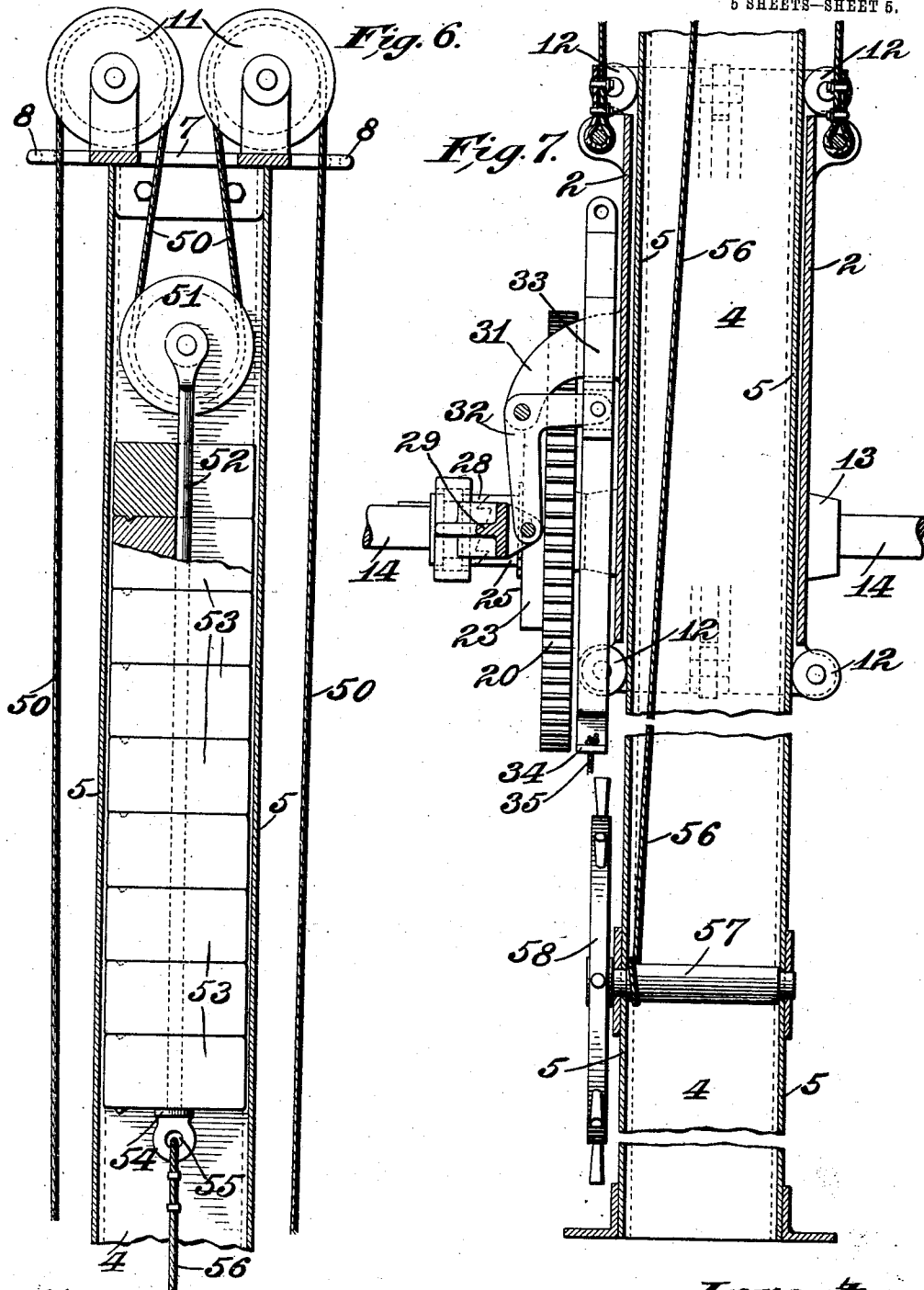


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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

ROY DODSON, OF ST. LOUIS, MISSOURI.

AMUSEMENT APPARATUS.

No. 842,635.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed June 8, 1906. Serial No. 320,697.

To all whom it may concern:

Be it known that I, ROY DODSON, a citizen of the United States, and a resident of the city of St. Louis, and State of Missouri, have invented a new and useful Improvement in Amusement Apparatus, of which the following is a specification.

My invention relates to amusement apparatus, and has for its principal objects to produce an apparatus constituting a climbing swing; to provide for elevating the swing-support during the oscillatory movement of the swing; to provide for automatically releasing the elevating mechanism at a predetermined elevation to permit the swing to descend; to provide for mechanically oscillating the swing, and to attain certain advantages hereinafter more fully appearing.

The invention consists in the parts and in the arrangement, and combinations of parts hereinafter described and claimed.

In the accompanying drawings, forming a part of this specification, and wherein like symbols refer to like parts wherever they occur, Figure 1 is a side view of my amusement apparatus. Fig. 2 is a front view. Fig. 3 is a cross-section on the line 3 3 of Fig. 4. Fig. 4 is a side view of the upper portion of the apparatus, showing the vertically-movable swing-support near its uppermost position. Fig. 5 is a rear view. Fig. 6 is a detail sectional view of the upper portion of the column, showing the arrangement of balance-weights; and Fig. 7 is a sectional view of the lower portion of the column, showing portions of the swing-supporting mechanism and the cable connection to the balance-weights.

The apparatus comprises a vertical column or post 1, a swing-support 2, movably mounted on said column, and a swing or plurality of swings 3, suspended from said support. The column 1 is preferably of box-girder construction, comprising channels 4 and plates 5. The lower end of the column is set upon a suitable foundation 6, while at the top of the column is mounted a casting 7. This casting is provided with perforated projections 8, to which are connected stay-ropes 9. The casting is also formed with bearings for two pairs of oppositely-disposed sheaves 10 and 11, respectively.

The swing-support 2 comprises a sleeve provided with antifriction guide-rollers 12, adapted to bear against the outer faces of the column 1. Bracket-bearings 13 are secured

to the sleeve 2, and in said bearings are mounted rock-shafts 14. These rock-shafts extend some distance beyond the bearings 13 on each side of the apparatus and have fixedly secured thereto the swing-hangers 15. At their lower ends the hangers 15 are hingedly connected to the swing-seats 16. The seats are mounted on links 17, pivotally secured to the swing-platform 18.

A sleeve 19 is freely mounted on each of the rock-shafts 14, and said sleeves have fixedly secured thereon intermeshing gears 20. Winding-drums 21 are also securely fastened on said sleeves. A cable 22 passes over one pair of sheaves 10 and has its end portions fastened to the respective winding-drums 21. The gears 20 are formed with circular housings 23. Pivotally mounted in these housings are pawls 24, adapted to engage ratchet-wheels 25. The ratchet-wheels are loosely mounted on the sleeves 19 and also loosely engage rock-shafts 14. They are locked against longitudinal displacement by annular keys 26, fitting in grooves 27 in said rock-shafts 14 and registering grooves in the hub portions of said ratchet-wheels.

The outer end portions of the hubs of ratchet-wheels 25 are formed with clutch-teeth adapted to engage like teeth on clutch members 28, feathered to prevent turning on the rock-shafts 14, but permitted to slide longitudinally thereof. Both clutch members 28 are moved simultaneously into and out of engagement with the ratchet-wheels 25 by a yoke 29. The end portions of the yoke 29 are bifurcated, and the forks thereof are provided with projections 30, which engage annular grooves in the sliding clutch members 28. Mounted in a bracket 31 on the sleeve 2 is a bell-crank lever 32. This bell-crank lever is connected at one end to the yoke 29 and its other end to an operating-bar 33. The lower portion of the bar 33 is slightly offset and the end bent at right angles, as at 34. The portion 34 is perforated for the attachment of a rope 35 and is also adapted to come in contact with a spring 37 when the swing-support is nearing its lowermost position. The spring 37 is mounted on a bracket 38, secured to the column in such a position that the spring will raise the bar 33 to throw the clutch members 28 into engagement with their respective ratchet-wheels 25 when the swing-support has reached its lowermost position. The rope 35 is of a

length to be at all times within convenient reach of an attendant, and it is threaded through a perforation in the bracket 38 and through the coiled spring 37. It is provided
 5 at a point in its length with a stop 39. The stop is adapted to come in contact with the bracket 38 when the swing-support is nearing its uppermost position, and thereby exert a downward pull upon the bar 33 to dis-
 10 engage the clutch members 28 from the ratchet-wheels 25. It is preferable to adjustably secure the stop upon the rope, so that said stop can be set to lower the swing-support at any predetermined point.

15 In order to limit its speed when the swing-support is falling, a governor is provided. This governor comprises fan-blades 40, mounted on a shaft 41, which is journaled in bearings on the casting 2. A pinion 42 is
 20 fixed on the shaft 41, in mesh with a gear 43, fixed on a sleeve 44. The sleeve 44 is journaled in a bearing on the casting 2 and has journaled therein a portion of a shaft 45. This shaft 45 has fixed thereon a pinion 46, in
 25 mesh with one of the gears 20. A clutch member 47 is feathered on the shaft 45 to prevent turning, but is permitted to slide longitudinally thereof to engage a clutch member 48, fixed on the sleeve 44. A bell-
 30 crank lever 49, pivotally mounted on the casting 2, is connected at one end to the bar 33, and its other end is bifurcated and provided with projections to engage an annular groove in the movable clutch member 47.
 35 The bell-crank levers 32 and 49 are oppositely disposed relative to the bar 33. Hence the clutch members 47 and 48 are disconnected when the members 28 and ratchet-wheel 25 are in engagement, and vice versa.

40 A cable 50 passes over the pair of sheaves 11 and has its ends fastened to the casting 2. The middle portion of the cable 50 carries a sheave 51, from which depends a rod 52, upon which is strung a plurality of
 45 weights 53 within the column 1. The rod is provided with a shoulder 54 at its lower end and is also formed with an eye 55, to which is connected a cable 56. The cable 56 extends down within the column 1 and is at-
 50 tached to a windlass 57, journaled in the lower portion of the column. A hand-wheel 58 is provided on the outside to operate the windlass.

Mounted near the top of the column is a
 55 motor 59. Preferably, this motor is of the electric-hoist type and provided with a winding-drum 60, upon which is adapted to be wound a cable 61. The cable 61 is connected to a yoke 62, secured to one of the rock-shafts
 60 14. The motor is provided with an operating-handle 63, from which depend cords 64 to within convenient reach of an attendant. By pulling upon one of the cords the lever is moved in a direction to render the motor op-
 65 erative. A pull upon the other cord will

render the motor inoperative and disconnect the winding-drum therefrom to permit the cable to be unwound.

The parts of the motor just described are embodied in a well-known commercial de-
 70 vice, and therefore are not here described in detail.

In the operation of the apparatus it is the primary object to elevate the swing support or carrier through oscillatory movement of
 75 the swing, due to the weight and energy of the occupants of the swing. Assuming that the swing-support is in its normal or lowermost position, with the bar 33 in contact with the spring 37 and the clutch members 80
 28 in engagement with the ratchet-wheels 25, as shown in full lines in Figs. 1 and 2. An oscillatory movement of the swing will impart a rocking motion to the rock-shafts 14. By the ratchet-and-pawl arrangement (shown
 85 more clearly in Figs. 3 and 4) an oscillation of the swing in either direction will impart a rotary motion to one of the gears 20 and the drum 21, connected thereto. An equal rotary motion is simultaneously transmitted to the adjacent intermeshing gear 20 and its
 90 companion drum 21. Thus at each oscillation of the swing an equal portion of the cable 22 is wound upon each of the drums. As the cable is wound upon the drums the swing-
 95 support gradually ascends until the stop 39 on the rope 35 is interrupted by the bracket 38. When the stop engages the bracket, a pull is exerted upon the bar 33, and the clutch members 28 are disengaged from the
 100 ratchet-wheels 25. At the same time the clutch member 47 is moved into engagement with the member 48, thereby connecting the gearing of the governor with the hoisting-gear. The swing-support is now free to de-
 105 scend by gravity, and as the cable 22 unwinds from the drums 21, the gears 20 are rotated, and motion is transmitted to the fan-blades 40, which rotate rapidly. The rapidly-rotating fan-blades offer sufficient re-
 110 sistance to retard the speed at which the cable is unwound from drums, and thus the descent of the swing-support is controlled. The rock-shafts 14 being free to move independently of the hoisting mechanism when the
 115 clutches are disconnected, the oscillatory movement of the swing may be continued as the swing-support descends.

The balance-weights 53 are employed to counterbalance the weight of the swing, so
 120 that the occupants have only their own weight to lift. In order to assist in starting or at any other desired time, the cable 56 and windlass 57 may be employed to lift the
 125 swing. When it is desired to oscillate the swing mechanically or to assist the efforts of the occupants in oscillating the same, the motor 59 is employed. In the operation of the motor one of the operating-cords is pulled to move the handle in the direction to render
 130

to be engaged thereby when the swing-support is in its lowermost position, whereby said bar is operated to render the clutches on said rock-shafts effective, and said stop being adapted to engage said bracket when the swing-support has reached a predetermined elevation and thereby operate said bar to render said clutches ineffective.

9. An amusement apparatus comprising a column, a swing-support movably mounted on said column, a swing suspended from said swing-support, a counterbalance for said swing-support and said swing, and mechanism operatively connected to said swing to be actuated thereby for elevating said swing-support.

10. An amusement apparatus comprising

a column, a swing-support movably mounted on said column, a swing suspended from said swing-support, a counterbalance for said swing-support and said swing, mechanism operatively connected to said swing to be actuated thereby for elevating said swing-support, and means for elevating said swing-support independently of said swing-operated mechanism.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 5th day of June, 1906, at St. Louis, Missouri,

ROY DODSON.

Witnesses:

G. A. PENNINGTON,
J. B. MEGOWN.