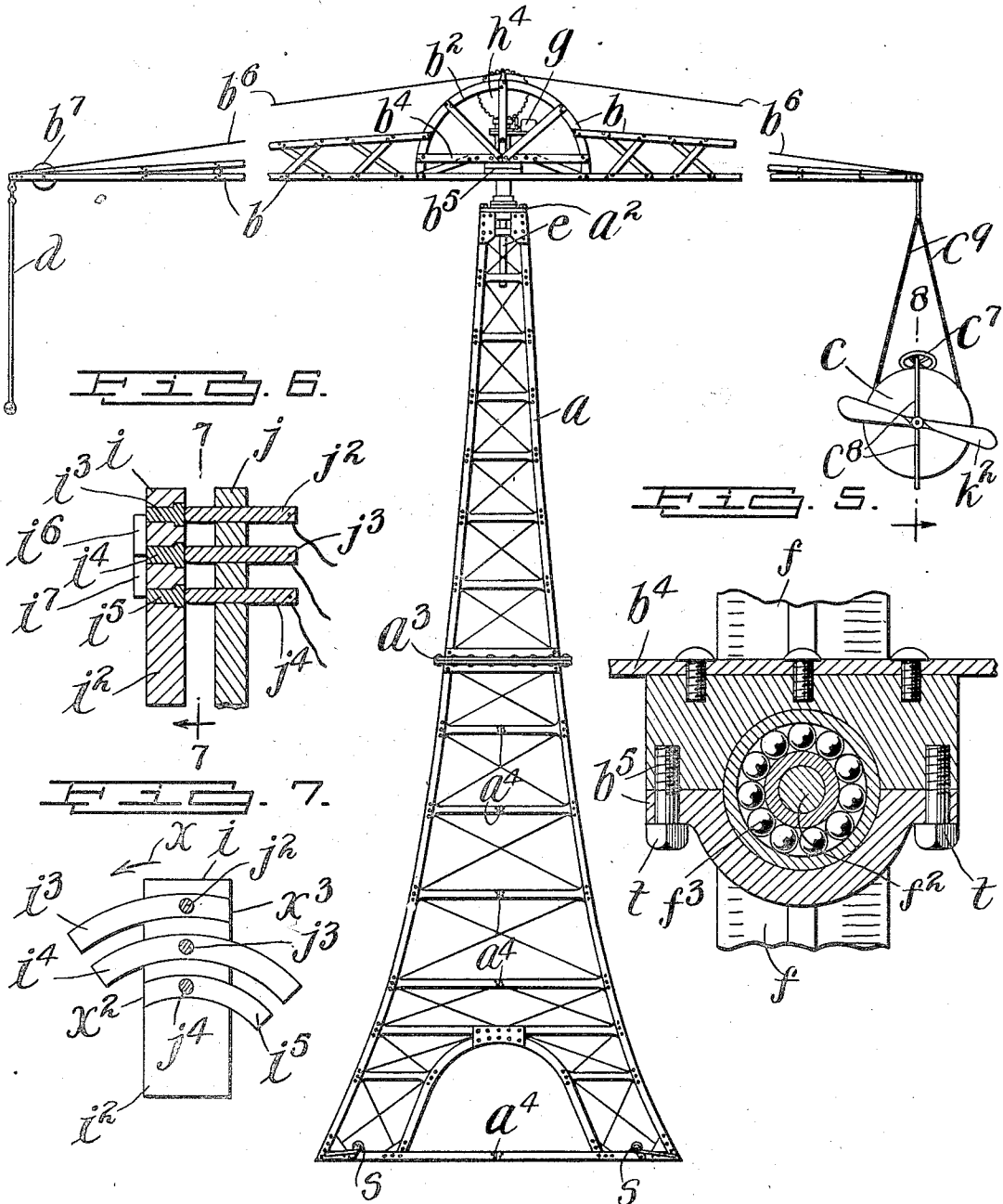


A. MIRANO & F. W. WALCH.
 AMUSEMENT APPARATUS.
 APPLICATION FILED MAR. 18, 1914.

1,120,733.

Patented Dec. 15, 1914.
 3 SHEETS—SHEET 1.

FIG. 1.



Witnesses:
 H. E. Thompson
 S. Andrews.

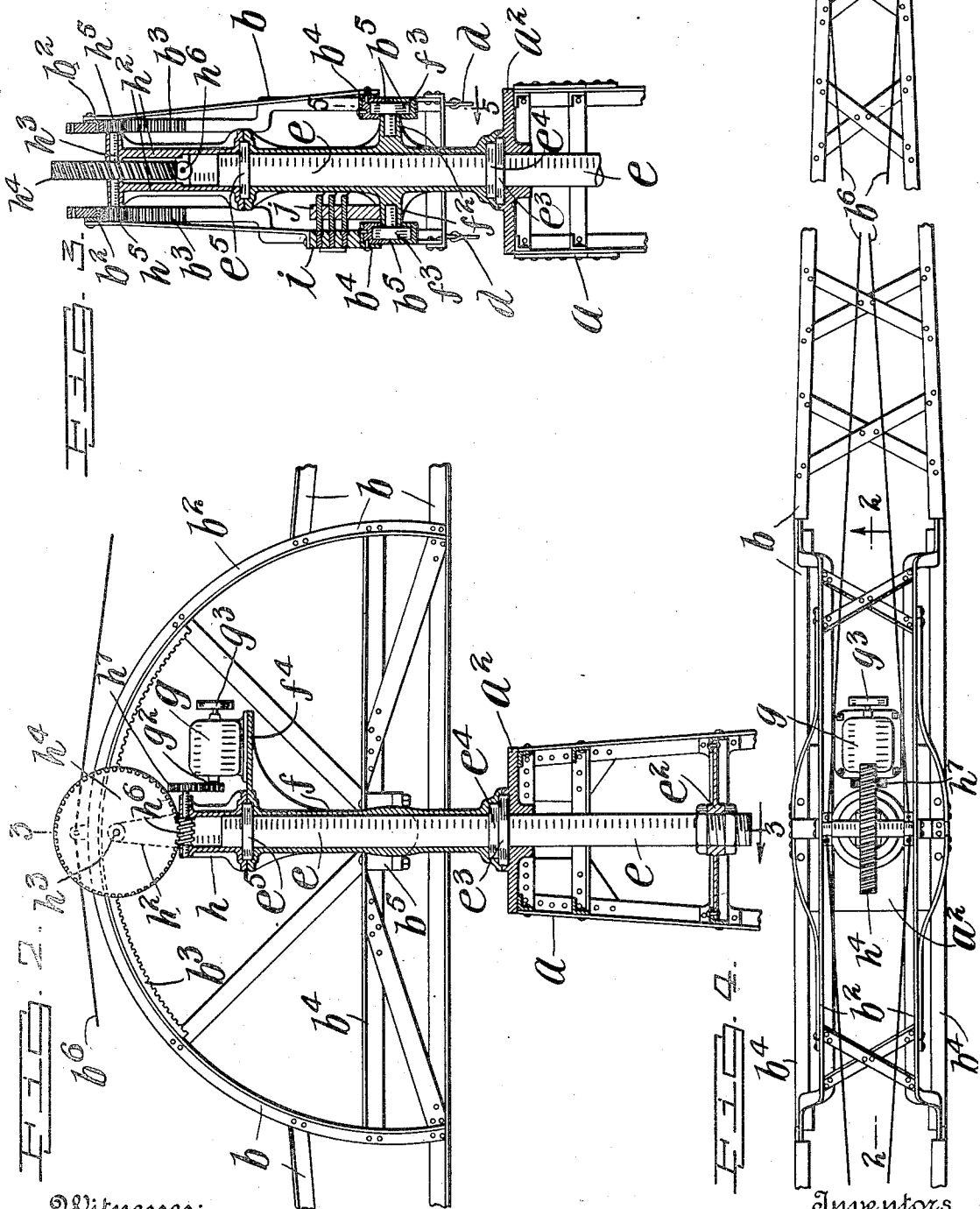
Inventors
 Axel Mirano & Frederick W. Walch,
 By his Attorney's
 Edgar Tate & Co.

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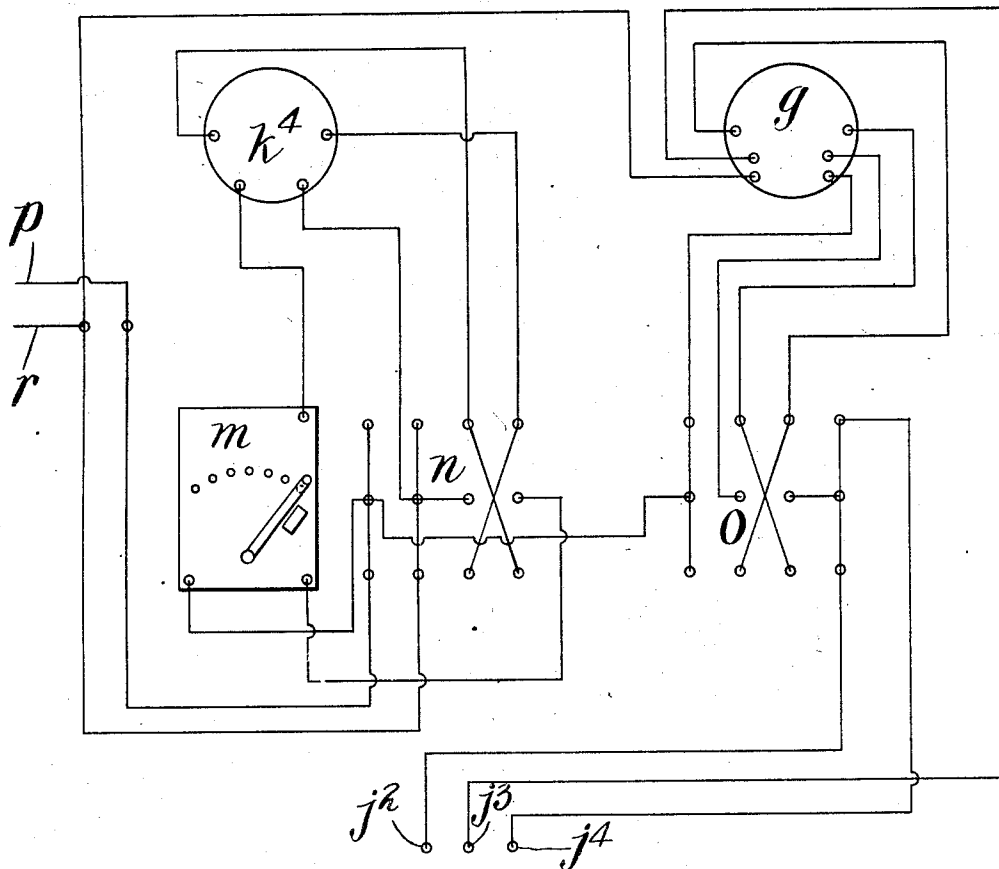
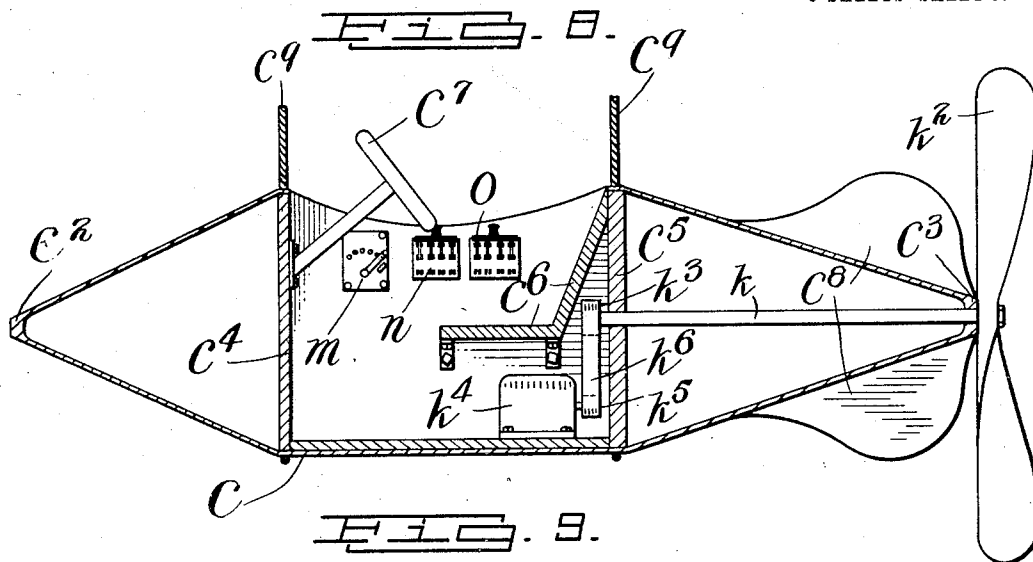
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3 SHEETS—SHEET 3.



Witnesses:
H. C. Thompson.
S. Andrews.

i^3 i^4 i^5
i^6 i^7

Inventors
Axel Mirano and Frederick W. Walch
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UNITED STATES PATENT OFFICE.

AXEL MIRANO, OF NEW YORK, AND FREDERICK W. WALCH, OF BALDWIN, NEW YORK.

AMUSEMENT APPARATUS.

1,120,733.

Specification of Letters Patent. Patented Dec. 15, 1914.

Application filed March 18, 1914. Serial No. 825,474.

To all whom it may concern:

Be it known that we, AXEL MIRANO and FREDERICK W. WALCH, citizens, respectively, of Sweden and the United States, and residing, respectively, at New York and Baldwin, in the counties of New York and Nassau and State of New York, have invented certain new and useful Improvements in Amusement Apparatus, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to amusement apparatus, and the object thereof is to provide an improved apparatus of this class designed for use in amusement places such as public parks, hippodromes, theaters and other places of this class, and which is also designed to amuse and entertain both old and young.

The invention involves a tower of any suitable construction and of any desired height and which may be erected at any preferred place and on the top of which is mounted a beam adapted to rotate, or to be rotated in a horizontal plane, and which is also adapted to be turned into an inclined plane or into a plane at an angle to the horizontal, and to be rotated in said inclined plane, and which when rotated in a horizontal plane, may also be given an undulatory or up and down movement, and from one end of which is preferably suspended a carriage by and from which said beam may be operated, and from the other end of which is preferably suspended a trapeze or other apparatus or means for exhibiting calisthenic skill.

The invention is fully disclosed in the following specification of which the accompanying drawings form a part, in which the separate parts of our improvement are designated by suitable reference characters in each of the views, and in which:—

Figure 1 is a side view of our improved amusement apparatus;—Fig. 2 a partial section on the line 2—2 of Fig. 4;—Fig. 3 a partial section on the line 3—3 of Fig. 2;—Fig. 4 a plan view of our apparatus showing only a part thereof;—Fig. 5 an enlarged sectional view taken on the line 5—5 of Fig. 3;—Fig. 6 a view similar to Fig. 3 showing only part thereof, and on an enlarged scale;—Fig. 7 a section on the line 7—7 of Fig. 6;—Fig. 8 an enlarged sectional view of a carriage which we employ, and

taken on the line 8—8 of Fig. 1;—Fig. 9 a diagrammatic view of the wiring system.

In carrying our invention into effect, we provide a tower *a* which may be constructed similar to other devices of this class and which may be of any preferred height, as, for instance, from 20 to 40 feet, and which, in practice, is constructed of separate detachably connected parts whereby it may be conveniently put up and taken down whenever and wherever desired.

On the top of the tower *a* is mounted a beam *b* which is adapted to rotate in a horizontal plane, and which may, during such rotation, be also given an undulatory or up and down movement; and which may also be turned into an inclined plane, or into a plane at an angle to the horizontal and rotated in said last named plane, and said beam may also be of any preferred length, as, for instance, from 20 to 40 feet, and from one end of the beam *b* is supported a carriage *c* from and by which the beam *b* is operated as hereinafter described, and from the other end of the beam *b* is preferably suspended a trapeze *d*, or any other suitable device or apparatus for use by a calisthenic performer or others. The beam *b* is constructed in any suitable manner and is tapered from the middle thereof toward both ends, and the invention depends, for its utility, on the method of mounting the beam *b* on the tower *a*, and on the method of operating said beam; and in mounting said beam on said tower, the procedure is as follow: The tower *a* is provided on the top thereof with a substantial plate *a*² through which is passed a vertical shaft *e* secured at its lower end to the tower, as clearly shown at *e*² in Fig. 2. Placed on the shaft *e* above the plate *a*² are thrust and roller bearings *e*³ and *e*⁴, and adjacent to the top thereof is another roller bearing *e*⁵. Mounted on the shaft *e* is a beam supporting member *f* having transverse arms *f*² provided at their ends with roller bearings *f*³, and at the top thereof with a motor supporting plate *f*⁴ to which is secured a motor *g*. Secured to the top portion of the supporting member *f* is a supplemental Y-shaped member *h* having longitudinal vertical arms *h*². Centrally of the beam *b* and forming part thereof are two arch-shaped members *b*² on the under sides of which are secured racks *b*³ of predetermined length, and secured to the parts *b*⁴ of the beam *b* are split bearing cups or seats *b*⁵

in which the bearings f^3 are mounted. Mounted in the upper end of the arms h^2 of the Y-shaped member h is a shaft h^3 , and said shaft is provided between the arms h^2 with a worm gear h^4 , and said shaft is also provided at its ends with pinions h^5 which mesh with the racks b^3 . The gear h^4 meshes with a worm gear h^6 one shank of which is extended and provided with a small gear h^7 which meshes with the pinion g^2 on the shaft of the motor g , and said motor is provided at the other end with a fly wheel g^3 , and it will be seen that by means of all these parts, the beam b may be given its undulatory or up and down movement as will be hereinafter described. The beam b is also preferably provided with cables b^6 which assist in supporting the ends of the beam b , and placed adjacent to the end from which the trapeze d is suspended is a receptacle b^7 in which may be placed shot or weight of any kind.

Placed on one side of the beam b centrally thereof and secured to the part b^4 is an electrical making and breaking mechanism i consisting of an insulation block i^2 in which are placed radial contact plates i^3 , i^4 and i^5 , and the contact plates i^3 and i^4 are in communication by means of a plate i^6 , while the contact plates i^4 and i^5 are in communication by means of a plate i^7 . Secured to the arm f^2 adjacent to the making and breaking mechanism i is an insulation block j in which are secured contact pieces j^2 , j^3 and j^4 , and said contact pieces are in communication with the plates i^3 , i^4 and i^5 respectively.

The tower a is preferably made of three parts for the convenience in shipping, and in such cases the same is disconnected centrally, as shown at a^3 , after which the lower half of the tower may be disconnected at a^4 , and it will be understood that the beam b may also be detachably connected in any desired manner.

The carriage c is preferably torpedo in shape having a tapered nose c^2 and a tapered tail c^3 , and being divided into three sections by cross pieces c^4 and c^5 , and the central section or the section between the cross pieces c^4 and c^5 is provided at the top with an opening to permit the admittance of a person. Mounted in the tail portion of the carriage c and centrally thereof is a shaft k , and on the rear end of which is fixed a propeller k^2 and on the forward end of which is secured a pulley k^3 . Placed in the bottom of the carriage c is a motor k^4 on the shaft of which is mounted a pulley k^5 , and passed around the pulleys k^3 and k^5 is a belt k^6 , and it will be understood that gears may be substituted for this construction as may also sprockets and chain constructions. The carriage is provided, preferably over the motor, with a seat c^6 , and in the cross piece c^4 is fixed a hand wheel c^7 , and the tail

portion of said carriage is provided with rudder members c^8 , and it will be seen that the carriage c is suspended from the end of the beam b by means of cables c^9 . Secured in the central section of the carriage c in the most convenient place is a starting box m and two, four pole, two throw switches n and o .

In Fig. 9 of the drawings, we have shown a diagrammatic view of our preferred wiring system, and it will be seen that we indicate the carriage motor k^4 , the motor g , which is mounted on the beam support, the starting box m , the four pole two throw switches n and o , and the contact plates i^3 , i^4 and i^5 , the plates i^6 and i^7 and the contact pieces j^2 , j^3 and j^4 , and it will be understood that all the parts above referred to may be placed, as shown in Figs. 1, 2, 3, 4 and 8, and the wiring between said parts may be made in any practical way. We have also shown the feed wires at p and r , and the connection of these wires will be preferably made at the foot of the tower a .

The apparatus or the beam thereof with the trapeze and the carriage in position is perfectly balanced, or as is shown in Fig. 1, and in the use of this apparatus, ropes are connected with the ends of the beam b by means of which an acrobat or calisthenic performer and his partner, who may be clown, acrobat, or otherwise, may ascend to the trapeze and carriage respectively, and should one be heavier than the other, this difference may be done away with by the adding of weight in either the receptacle b^7 , or the carriage c , it being always essential to have the beam b as perfectly balanced as possible. The acrobat and his partner being in position, the motor k^4 in the carriage is started by means of the switch n and starting box m , which rotates the beam b , after which the motor g may be started by means of the switch o which will raise one end of the beam and lower the other, and should it be desired to raise the lowered end of the beam, the switch o will be reversed or thrown into contact with the second series of poles, and again, should it be desired to stop or reverse the rotation of the beam, the switch n will be thrown into its reversed position, as will be understood, and while the above operations are taking place, the acrobat is performing on the trapeze or other device.

In the above operation of raising or lowering the ends of the beam b , it will be seen that by means of our making and breaking mechanism i and j , or the construction of the contact plates i^3 , i^4 and i^5 that when the motor g has been started to raise one end of the beam b , or to move the contact pieces j^2 , j^3 and j^4 , over the contact plates in the direction of the arrow X in Fig. 7, the circuit through the wires connected with the con-

tact pieces j^2 and j^3 will be broken when the same reaches the point x^2 in Fig. 7, the breaking of the circuit will stop the motor, and to do away with a sudden stop, or the tendency of snapping some part of the frame-work, we provide the motor g with the fly wheel g^3 which will permit the beam to travel a slight distance beyond the point x^2 , and in order to raise the lowered end, the circuit in the wires connected with the contact pieces j^2 and j^3 is completed by reversing the switch o , and this circuit will not be broken until said contact pieces reach the point x^3 , and in order to raise the end now lowered, the switch is again reversed or thrown into its first position, and it will be understood that the above operation may be repeated as often as desired, and it will also be understood that while three contact pieces are in communication with three contact plates, the beam b may be raised in either direction, but when the said pieces are in communication with only two of said plates, the beam can only be raised in one direction.

In the use of this device on a stage or otherwise, the beam b will be raised above the stage in the same manner as scenery is now usually raised, when not in use, and the tower a moved behind the scene, and to permit the latter, we provide rollers s which may be placed in or out of engagement with the floor, as may be desired, and on careful examination of the drawings, it will be seen that in order to disconnect the beam from the tower, the bolts t of the split bearing cups or seats b^5 will be withdrawn.

It will be clearly seen in Figs. 3 and 4 of the drawings that the arc-shaped members b^2 of the beam b are narrower at the top, and the full width of the beam at the bottom, and although we have shown our beam as being so constructed, it will be understood that the same may be constructed in any desired manner as may also the tower a , and it will be also understood that any calisthenic apparatus may be connected with one end of the beam and to the other a carriage or similar device, and while we have shown and described the preferred method of constructing our improved amusement apparatus, it will be understood that our invention is not limited to the details of construction herein shown and described, and various changes therein and modifications thereof may be made, within the scope of the appended claims, without departing from the spirit of our invention or sacrificing its advantages.

Having fully described our invention what we claim as new and desire to secure by Letters Patent is:—

1. In an amusement apparatus of the class described, a tower, a beam rotatably mounted on the top thereof, a carriage suspended

from one end of said beam and provided with means for rotating said beam and a calisthenic exhibiting device suspended from the opposite end of said beam.

2. In an apparatus of the class described, a tower, a beam, means for rotating said beam in a horizontal plane, and means for raising said beam into an inclined plane and rotating it therein, and means secured centrally of said tower and beam for limiting the movement of said beam in an inclined plane.

3. In an amusement apparatus, a tower, a beam, a motor secured centrally thereof, a carriage suspended from one end of said beam, a motor placed in said carriage, a making and breaking mechanism placed centrally of said tower and beam, a starting box and two switches placed in said carriage and means for putting said parts in electrical connection, as shown.

4. In an apparatus of the class described, a tower, a beam pivotally and rotatably mounted on the top thereof and adapted to rotate horizontally and at the same time swing vertically, a carriage suspended from one end of said beam, and by which said beam is rotated, an electric motor mounted in connection with the support of said beam, means in operative connection with said motor for swinging said beam vertically, and means in said carriage for controlling said motor.

5. In an amusement apparatus of the class described, a tower, a beam rotatably mounted on the top thereof, a carriage suspended from one end of said beam and by which it is rotated, devices connected with said beam centrally thereof for swinging said beam vertically while it is rotating, and means within said carriage for controlling said devices.

6. In an amusement apparatus of the class described, a tower, a support rotatably mounted thereon, a beam connected with said support and adapted to rotate therewith, a carriage suspended from one end of said beam and adapted to rotate it, means connected with the rotary support of said beam for swinging it vertically while rotating, and means within the carriage for controlling its movement and also controlling said devices.

7. In an amusement apparatus of the class described, a tower, a rotary support mounted thereon and provided with a horizontal beam, an electric motor connected with said support and adapted to swing said beam vertically, a carriage suspended from one end of said beam, and means within said carriage for controlling said motor.

8. In an apparatus of the class described, a tower, a rotatable support mounted thereon, a horizontal beam pivoted on said support and adapted to rotate therewith and

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swing vertically, an electric motor connected with said support, means operated by said motor for swinging said beam vertically, a carriage suspended from one end of said beam, means for propelling said carriage and rotating said beam, and devices in said carriage for controlling said motor.

9. In an amusement apparatus of the class described, a tower, a rotatable support mounted thereon, a beam pivotally connected therewith and adapted to rotate therewith and to swing vertically, said beam being provided centrally thereof with segmental rack gears, a shaft mounted in connection with said support, and provided with a worm gear and pinions which operate in connection with said rack gears, an electric motor mounted in connection with said support, and a worm gear shaft mounted in connection with said support and geared in

connection with said motor, and meshing with the worm gear on the first named shaft.

10. In an amusement apparatus of the class described, a tower, a beam rotatably mounted on the top thereof and adapted to swing vertically, a carriage suspended from one end of said beam and provided with means for rotating it, and means located centrally of said beam for operating it vertically, said operation being governed by means in said carriage.

In testimony that we claim the foregoing as our invention we have signed our names in presence of the subscribing witnesses this 17th day of March 1914.

AXEL MIRANO.
FREDERICK W. WALCH.

Witnesses:
S. ANDREWS,
C. MULREANY.