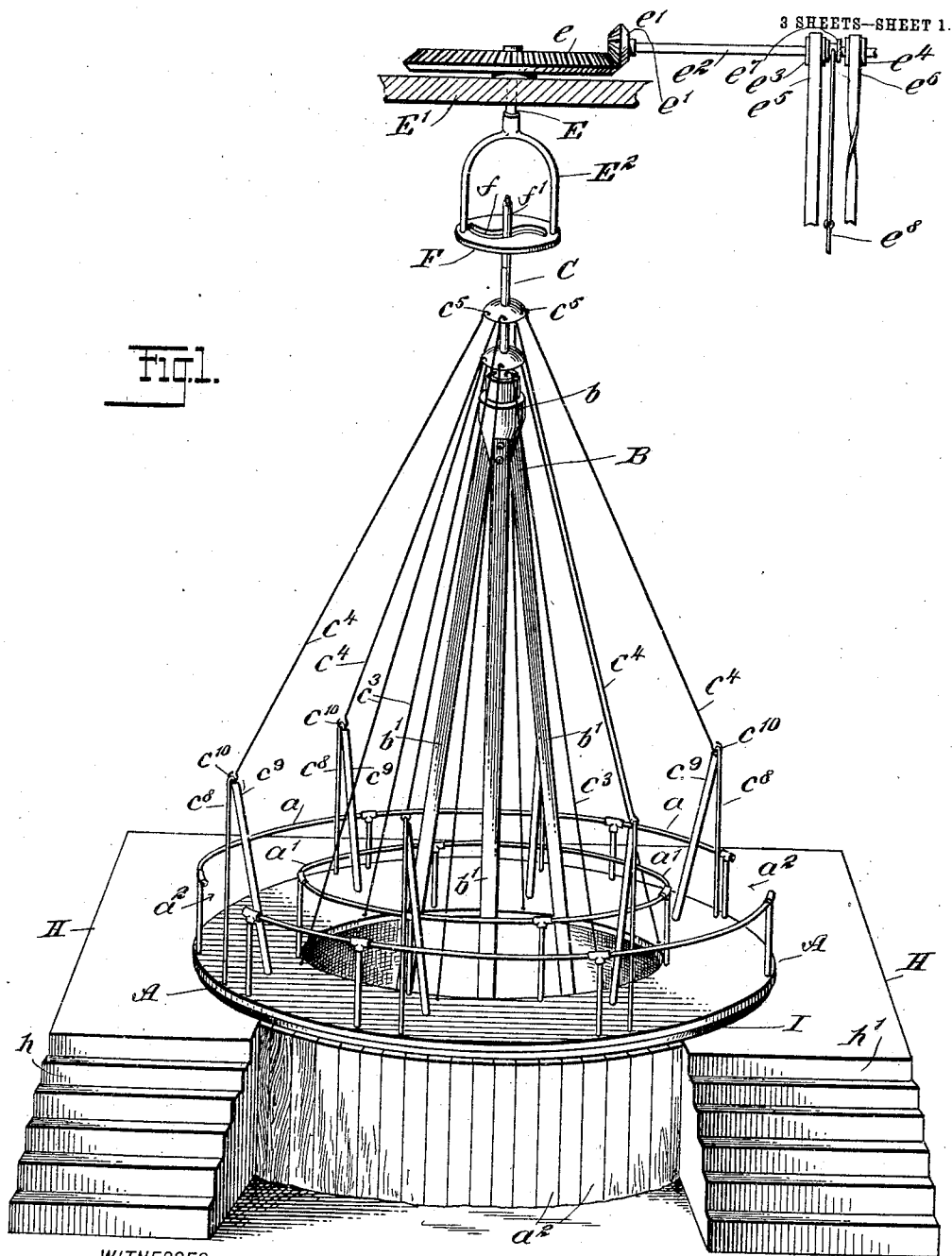


No. 836,799.

PATENTED NOV. 27, 1906.

C. L. BARNHART.
AMUSEMENT APPARATUS.
APPLICATION FILED NOV. 3, 1905.



WITNESSES:

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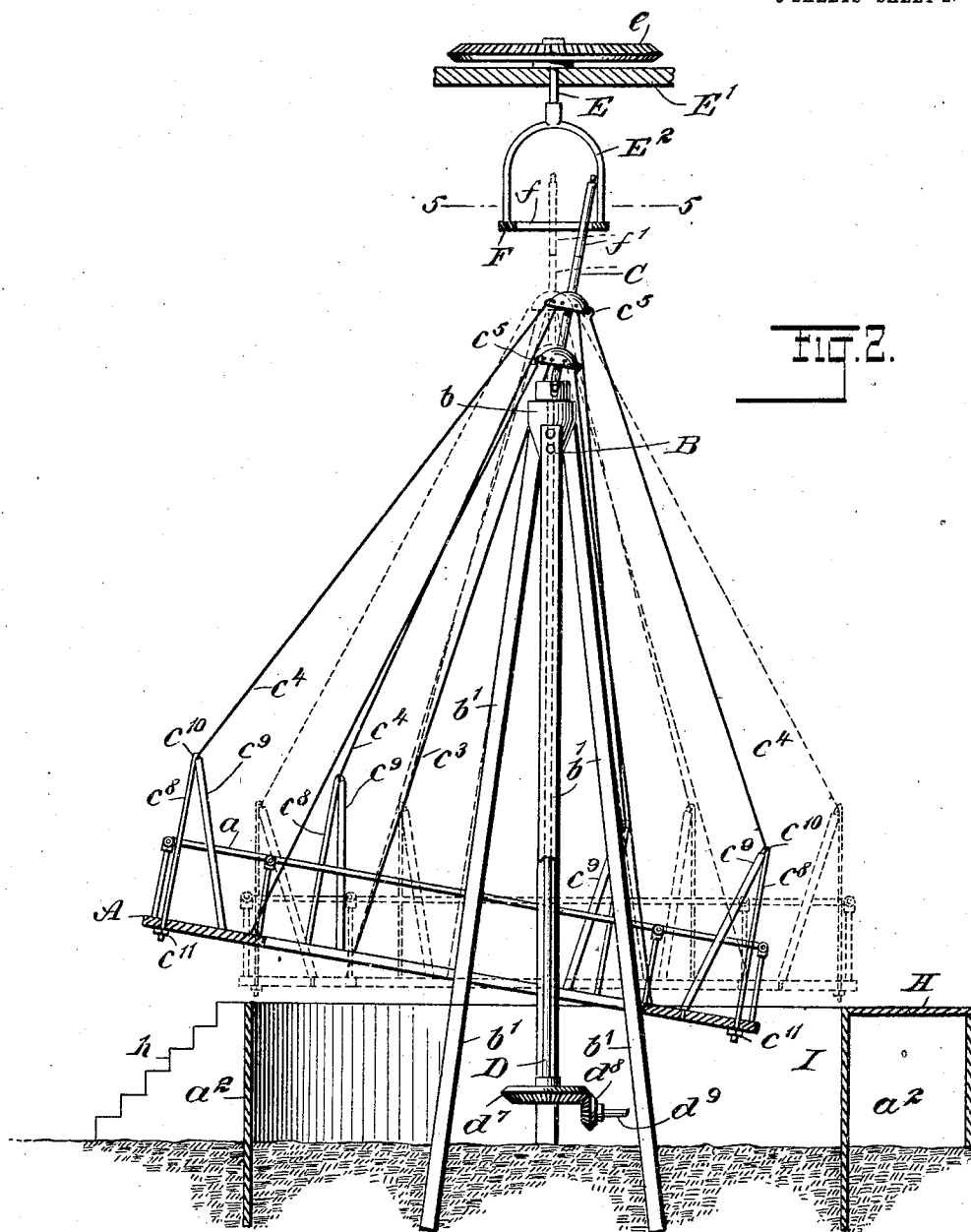
Wm. H. Hutton.
ATTORNEY

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3 SHEETS—SHEET 2.



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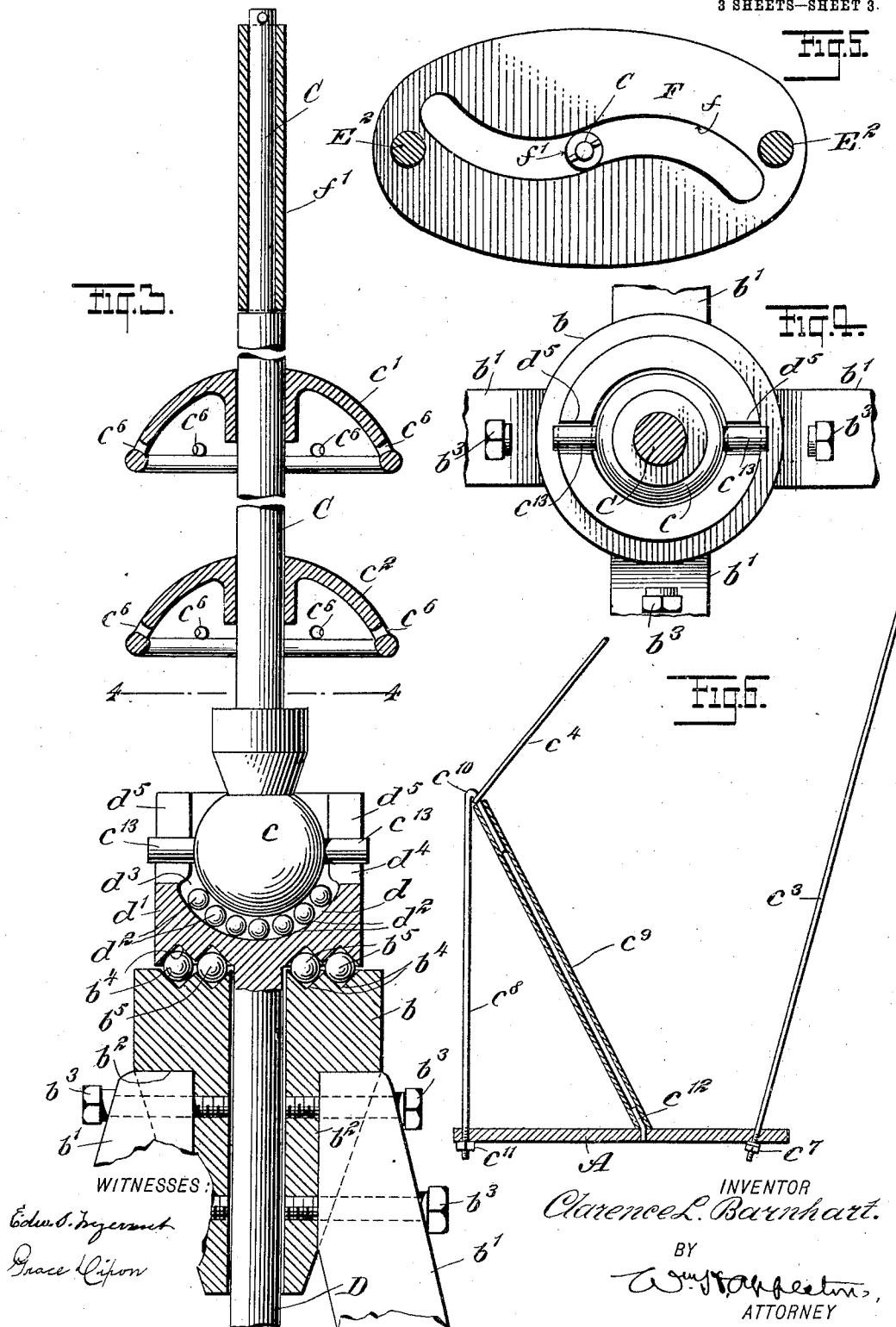
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3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

CLARENCE L. BARNHART, OF NEW YORK, N. Y.

AMUSEMENT APPARATUS.

No. 836,799.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed November 3, 1905. Serial No. 285,669.

To all whom it may concern:

Be it known that I, CLARENCE L. BARNHART, a citizen of the United States, and a resident of the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Amusement Apparatus, of which the following is a specification.

My invention while relating to amusement apparatus has reference more particularly to that form thereof which is known to the art as "merry-go-rounds" and "razzle-dazzles," its object being to produce an apparatus of this character which while simple in construction and efficient in operation shall at the same time be automatically operated by power applied thereto through the intervention of appropriate mechanism.

To these ends the invention consists in various constructions and combinations of parts, of which the best form contemplated by me for carrying it into practice is shown in the accompanying drawings, wherein—

Figure 1 is a perspective view of an apparatus embodying my invention with certain of the parts shown in section and others broken away for convenience of illustration; Fig. 2, a side elevation thereof with certain of the parts shown in section and in a different position and others broken away; Fig. 3, a side view showing the upper portion of the supporting-standard, the upper portion of the main driving-shaft, and the shaft to which the moving platform is secured with the upper end of the supporting-standard, the upper end of the main driving-shaft, and the collars to which the platform is secured illustrated in central section and the remaining parts shown in elevation; Fig. 4, a horizontal section taken in the plane 4 4 of Fig. 3 looking downward; Fig. 5, a horizontal section taken in the plane 5 5 of Fig. 2 also looking downward; and Fig. 6, detail vertical section of the platform, taken radially thereof and showing the means through which the suspension of the platform from its supporting-shaft is effected, with one of the tubular struts or compression members shown in axial section.

In all the drawings like letters of reference are employed to designate corresponding parts.

A indicates the platform which receives the persons to be carried, and B indicates the standard by which the platform and its accessories are supported. The platform A is

preferably constructed in annular form and may be built up from sections joined together or otherwise, as may be preferred; but however constructed it is provided with railings 60 a and a' , respectively, arranged around its outer and inner edges and the railings a equipped at appropriate points with passage-ways a^2 , through which ingress to and egress from the platform may be had when 65 desired. The standard B in like manner may be constructed in various ways, it only being essential that whatever its construction it be possessed of sufficient stiffness and strength to firmly resist and withstand the 70 lateral and vertical strains that may be imparted to it by the operation and weight of the apparatus and the load carried by the latter. In the drawings, however, I have shown this standard as constructed in the 75 form of a braced support with a tubular sleeve b at its upper end and four several upright posts or struts b' disposed around the same at equal distances apart and firmly secured at their lower ends in the ground or to 80 a suitable pier and their upper ends entering recesses b^2 , formed in the sleeve b , in which they are secured by screws b^3 ; but this is merely illustrative, and when this form of construction is adopted a greater or less number 85 of posts or struts may be employed as the exigencies of the use or the judgment of the constructor may dictate. For supporting the platform A upon the standard B, however the latter may be constructed, I make 90 use of a shaft C, which is provided at its lower end with a ball c , that enters a correspondingly-shaped socket d , formed in a collar d' , secured to or constructed upon the upper end of a vertical shaft D, which extends downward vertically through and finds a bearing 95 in the sleeve b at the upper end of the standard B, as shown. As thus supported and carried this shaft C is provided with two collars c' and c^2 , which are located one above the 100 other thereon, with the inner edge of the platform A connected with the collar c^2 through the intervention of guys or rods c^3 and the outer edge thereof connected with the collar c' through the intermediation of the guys or 105 rods c^4 . In thus effecting the support of the platform A from the shaft C the upper end of each of these guys or rods is provided with a hook c^5 , which engages with a suitable orifice c^6 , formed in its respective collar c' or c^2 , 110 while the lower end of the guys or rods c^3 are severally passed downward through suitable

orifices formed in the platform A and receive on their ends appropriate nuts c^7 .

The lower end of the guys or rods c^4 , on the other hand, instead of being connected directly with the outer edge of the platform are connected therewith through the intervention of suspending-brackets whereby they are carried outward sufficiently far to permit of a free passage beneath them on the platform. The suspending-brackets by which this connection is effected consist of vertically-disposed rods or tension members c^8 and tubular struts or compression members c^9 . Of these the rods or tension members c^8 are provided at their upper ends with hooks or overturned portions c^{10} , with which the lower ends of their respective guys or rods c^4 are engaged, and extending downward through the outer edge of the platform these rods or tension members are provided on their lower ends beneath the latter with appropriate nuts c^{11} , while the tubular struts or compression members c^9 incline outward from their lower ends and receive the overturned portion c^{10} of the rods or tension members c^8 in their upper end, with their lower ends held in place by rods c^{12} , which secured in the platform A extend upward therefrom at an outward inclination and enter the lower ends of their respective struts or compression members, as shown in Fig. 6. With the platform A thus supported upon the standard B not only is the platform capable of rotary motion around its axis, but of a gyratory or wave-like motion as well, and in order to reduce the friction between the ball c and its socket d to the minimum when this gyratory motion takes place I find it desirable to interpose between the under side of the ball and the interior of the socket a number of balls d^2 , to permit of which interposition I preferably enlarge the lower portion of the socket d to form a chamber d^3 therein for their reception and provide this chamber around its upper edge with an inwardly-extending annular shoulder d^4 , whereby to prevent the escape of the balls therefrom by accident or otherwise.

For imparting a rotary motion to the platform A around its axis I preferably provide the walls of the socket d with vertical slots d^5 , which are disposed in diametrical relationship therein and receive the projecting pins or trunnions c^{13} , that extend outward from the ball c , as shown, and also apply to the shaft D at any appropriate point means by which a rotary motion may be imparted to it. The means through which this rotary motion may be imparted to the shaft D may be of various forms. In the drawings, however, I have shown it as consisting of a bevel-gear d^7 , which engages with a corresponding bevel-gear d^8 , secured upon the end of the shaft d^9 , to which latter a rotary motion may be imparted from any appropriate source of

power—as, for instance, from an electric motor or steam-engine. (Not shown.) With the rotation of the platform A around its axis thus effected the apparatus may be employed as a merry-go-round, and in order to reduce the friction between the rotating shaft D and the upper end of the standard B to the minimum I preferably form in the under surface of the collar d^7 of the shaft D and in the cooperating upper end of the tubular sleeve b correspondingly-arranged annular V-shaped grooves b^4 and dispose within them balls b^5 , as shown in Fig. 3. The number of these cooperating annular V-shaped grooves may be varied and in some instances but a single pair of these grooves may be employed. In the drawings, however, I have shown two pairs of these cooperating annular grooves as made use of, but a greater number may be employed, if so desired. When, however, the apparatus is to be employed as a razzle-dazzle, then in addition to the rotary motion of the platform around its axis a gyratory or wave-like motion is imparted to it. For imparting this gyratory movement to the platform various means may be employed. I prefer, however, to impart it thereto from a shaft E, which is or may be journaled in a suitable beam or support E' above the apparatus and to communicate the required gyratory movement to the platform through the intervention of a disk or plate F, which is supported upon and rotated by the shaft E through a forked-shaped carrier E^2 and is provided with a slot f , which receives the upper end of the shaft C, that projects upwardly through the same. As thus provided, whenever rotation is imparted to the shaft E and the upper end of the shaft C is thrown slightly out of the vertical by the tilting of the platform A the motion of the disk will cause the shaft C to gyrate around its lower end and through it impart a similar movement to the platform A, as shown, for instance, in Fig. 2. The form of this slot f in the disk or plate F may be of a variety of contours and the gyratory motion imparted to the platform modified thereby. In the form of the invention selected for the purposes of illustration, however, it is made of an S shape, whereby when the apparatus is in operation and the disk or plate F is rotating in one direction, with the upper end of the shaft C moving outward from the center of the slot f to one of its ends, the gyratory movement imparted to the platform will in consequence of the backward curve of the slot be characterized by a gradually-decreasing speed until the end of the slot is reached, when an accelerated movement will be imparted thereto. On the other hand, when the disk or plate F is rotated in the opposite direction the gyratory movement will in consequence of the forward curve of the slot be characterized by a

gradually-accelerated speed, as the shaft C travels from its vertical position toward one of the ends of the slot until the end of the slot is reached, when a slight retardation of the speed of the movement will be effected, and in order to relieve the friction between the slot and the upper end of the shaft and reduce it to the minimum I find it desirable to equip the upper end of that shaft with a rotatable sleeve f' .

For imparting a rotation to the shaft E in one of the other directions and through it to the plate or disk F various means may be employed. In the drawings, however, I have shown this result accomplished through the medium of a bevel-gear e , which is fixedly secured to the upper end of the shaft E and intermeshes with a bevel-pinion e' , fast upon a shaft e^2 , that may be rotated in one or the other direction through the intervention of pulleys e^3 and e^4 , supplemented with open and crossed belts e^5 and e^6 , leading from any appropriate source of power, (not shown,) a suitable clutch e^7 being employed to operatively connect one or the other of these pulleys e^3 or e^4 to the shaft e^2 , and this may be operated to effect that result by any appropriate means—as, for instance, by a shipper-lever e^8 .

With the parts constructed and operated as above described I preferably employ a stage or scaffold H, by which to gain access to the platform A and departure therefrom, the same being provided with stairs h h' , which allow of ready and convenient ascent thereto and descent therefrom, and also with a circular well or chamber I in its center beneath the platform A, which well or chamber may be inclosed around its sides with a suitable curbing or casing a^2 , if so desired.

In addition to the stage or scaffold H the apparatus may be provided with appropriate brakes or supports, whereby the platform A may be held stationarily in a horizontal position when required—as, for instance, when it is desired to pass from the scaffold to the platform, or vice versa—and which may be removed from operation when the rotation or gyration of the platform is to be effected. These brakes or supports, however, constitute no part of my present invention and so have not been illustrated, but are or may be the same as the corresponding parts illustrated in Letters Patent No. 539,717, which were granted to me May 31, 1895.

With parts constructed and organized as above explained it will be seen that I produce an amusement apparatus which, in addition to being simple in construction and capable of operation by power, may at the same time be used either as a merry-go-round, a razzle-dazzle, or both, as may be desired.

Although in the drawings I have shown and in the foregoing described the best means

contemplated by me for carrying my invention into practice, I wish it distinctly understood that I do not limit myself strictly thereto, as it is obvious that I may modify the same in various of its details and still be within the scope of the invention.

Having now described my invention and specified one of the various forms in which it may be embodied, I claim and desire to secure by Letters Patent of the United States—

1. The combination, with a platform, and a gyratory shaft from which it is suspended, of a vertical shaft to which the gyratory shaft is connected by a ball-and-socket joint, a support in which the vertical shaft is rotatively mounted, means by which the gyratory shaft is locked to the vertical shaft and caused to rotate with it, and means by which the vertical shaft may be rotated, substantially as described.

2. The combination, with the vertical shaft provided with a socket and diametrically-arranged slots at its upper end, a support in which this vertical shaft is mounted, and means by which such shaft is rotated, of a gyratory shaft provided with a ball and outward-extending pins or trunnions at its lower end for respectively resting in the socket and engaging with the slots in the upper end of the vertical shaft, substantially as described.

3. The combination, with a vertical shaft provided with a socket and diametrically-arranged slots at its upper end, a support in which this vertical shaft is mounted, and means by which such shaft may be rotated, of a gyratory shaft provided with a ball and outwardly-extending pins or trunnions at its lower end for respectively resting in the socket and engaging with the slots in the upper end of the vertical shaft, a chamber formed in the lower portion of the socket, and balls arranged in such chamber between the ball on the lower end of the gyratory shaft and the bottom of the socket, substantially as described.

4. The combination, with a vertical shaft provided at its upper end with a collar in the upper end of which is constructed a socket and in its lower end is formed an annular groove or annular grooves, a support provided at its upper end with a sleeve in which the vertical shaft is mounted constructed with an annular groove or annular grooves corresponding to those in the lower end of the collar, balls arranged in such grooves, and means for rotating the shaft, of a gyratory shaft provided with a ball at its lower end for engaging with a socket, and a platform suspended from the gyratory shaft, substantially as described.

5. The combination, with a gyratory shaft, a support therefor, and an annular platform, of a series of guys or rods extending from the gyratory shaft to the inner edge of the platform, a second series of guys or rods for sup-

porting the outer edge of such platform also
extending from said gyratory shaft, and sus-
pending-brackets, consisting of tension-rods
and struts or compression members, for con-
5 necting the lower ends of these last-men-
tioned guys or rods to the platform, substan-
tially as described.

6. The combination, with a gyratory shaft,
a support therefor, and a platform suspended
10 from said shaft, of a slotted disk or plate with
which the upper end of the gyratory shaft en-
gages, means by which this disk or plate is
supported and rotated, substantially as de-
scribed.

7. The combination, with a gyratory shaft, 15
a support therefor, and a platform suspended
from such shaft, of a slotted disk or plate
with which the upper end of this gyratory
shaft engages, a shaft upon which this slotted
disk or plate is supported, and means for sup- 20
porting and rotating this shaft, substantially
as described.

In testimony whereof I have hereunto set
my hand this 1st day of November, 1905.

CLARENCE L. BARNHART.

Witnesses:

WM. H. APPLETON,
GRACE DIXON.