P. D. HAUNSON.

AMUSEMENT APPARATUS.

APPLICATION FILED NOV. 8, 1919.

1,362,864.

Patented Dec. 21, 1920.

4 SHEETS—SHEET 1.

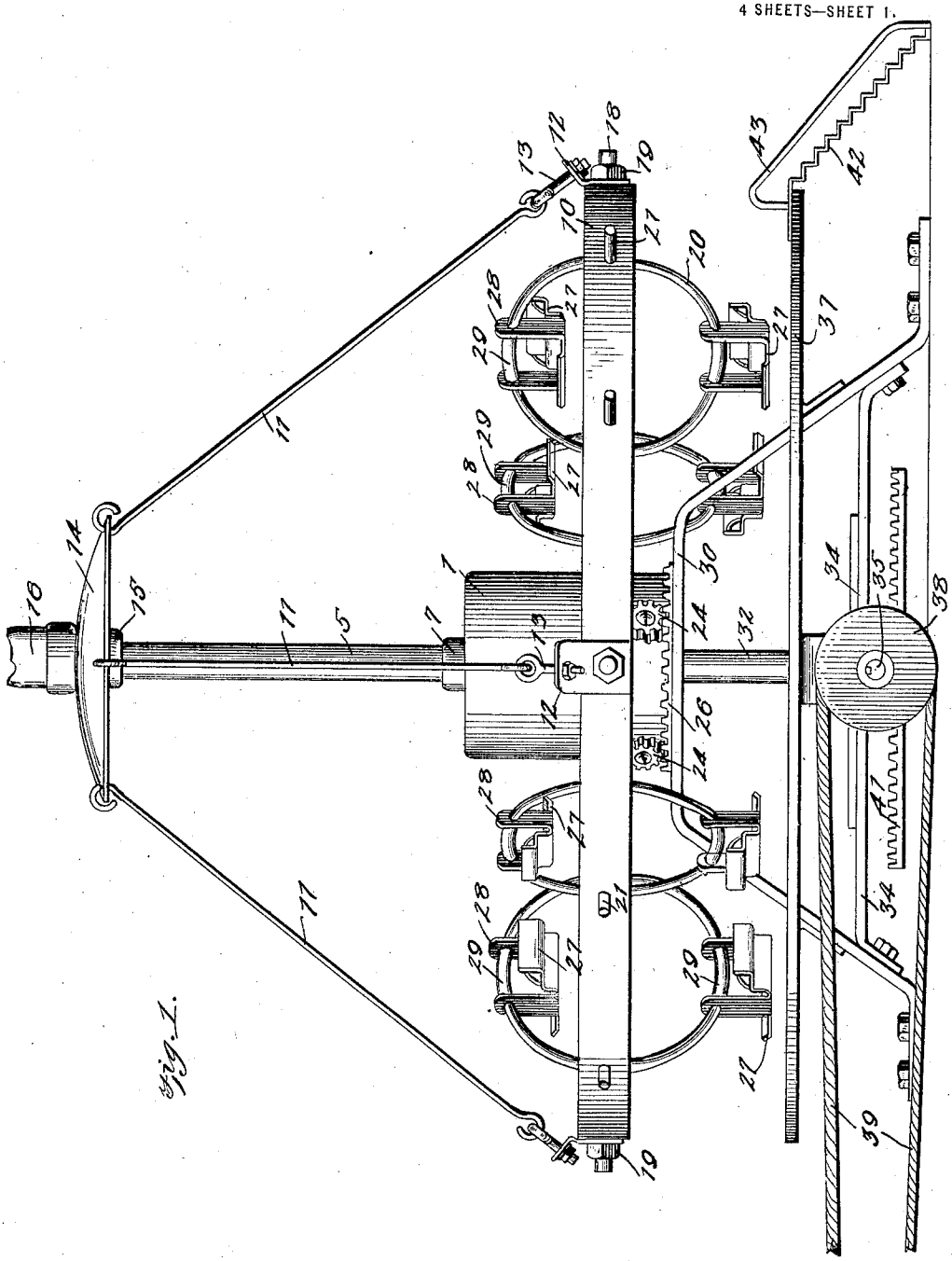

Fig. 1.

WITNESSES

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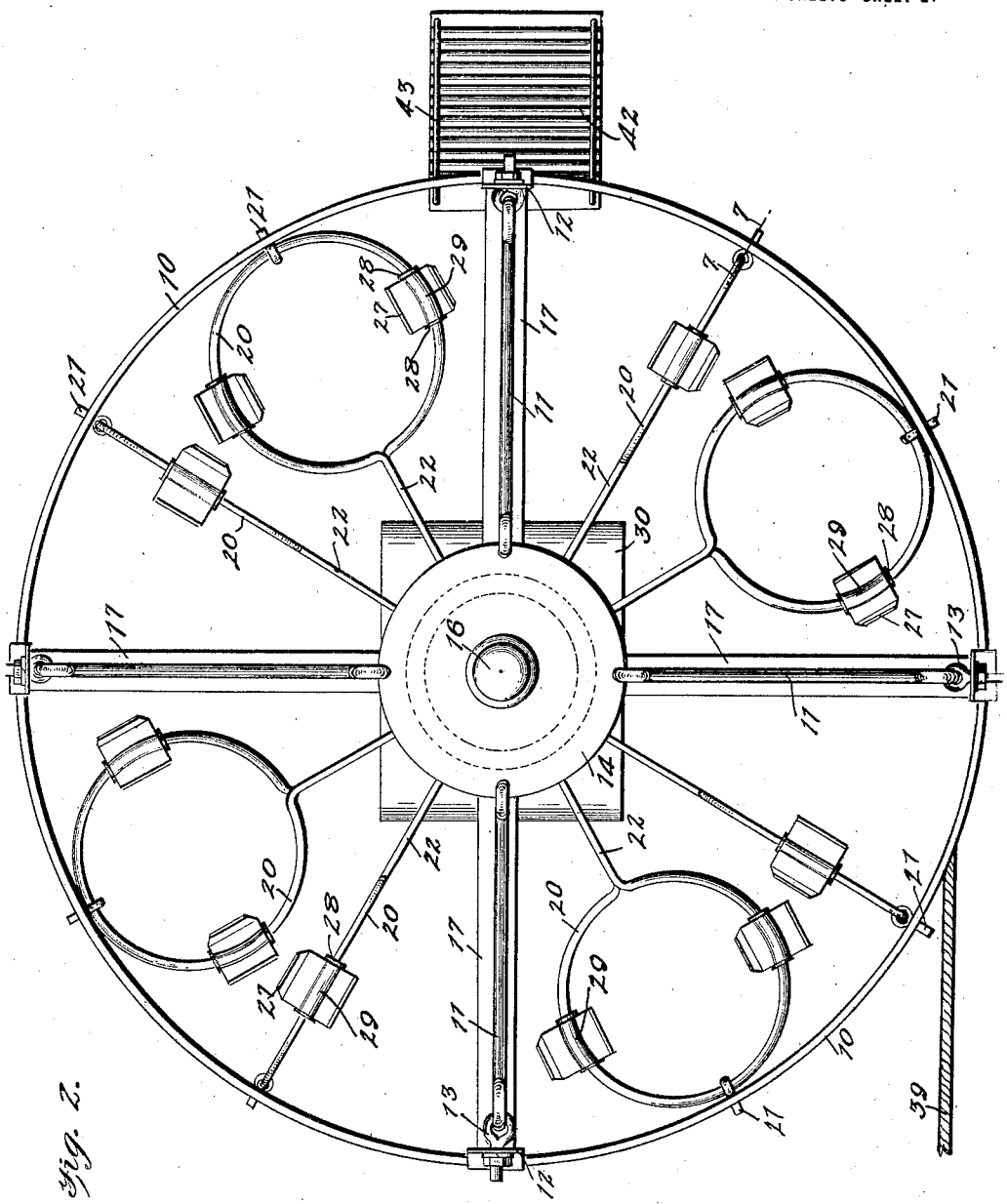

Fig. 2.

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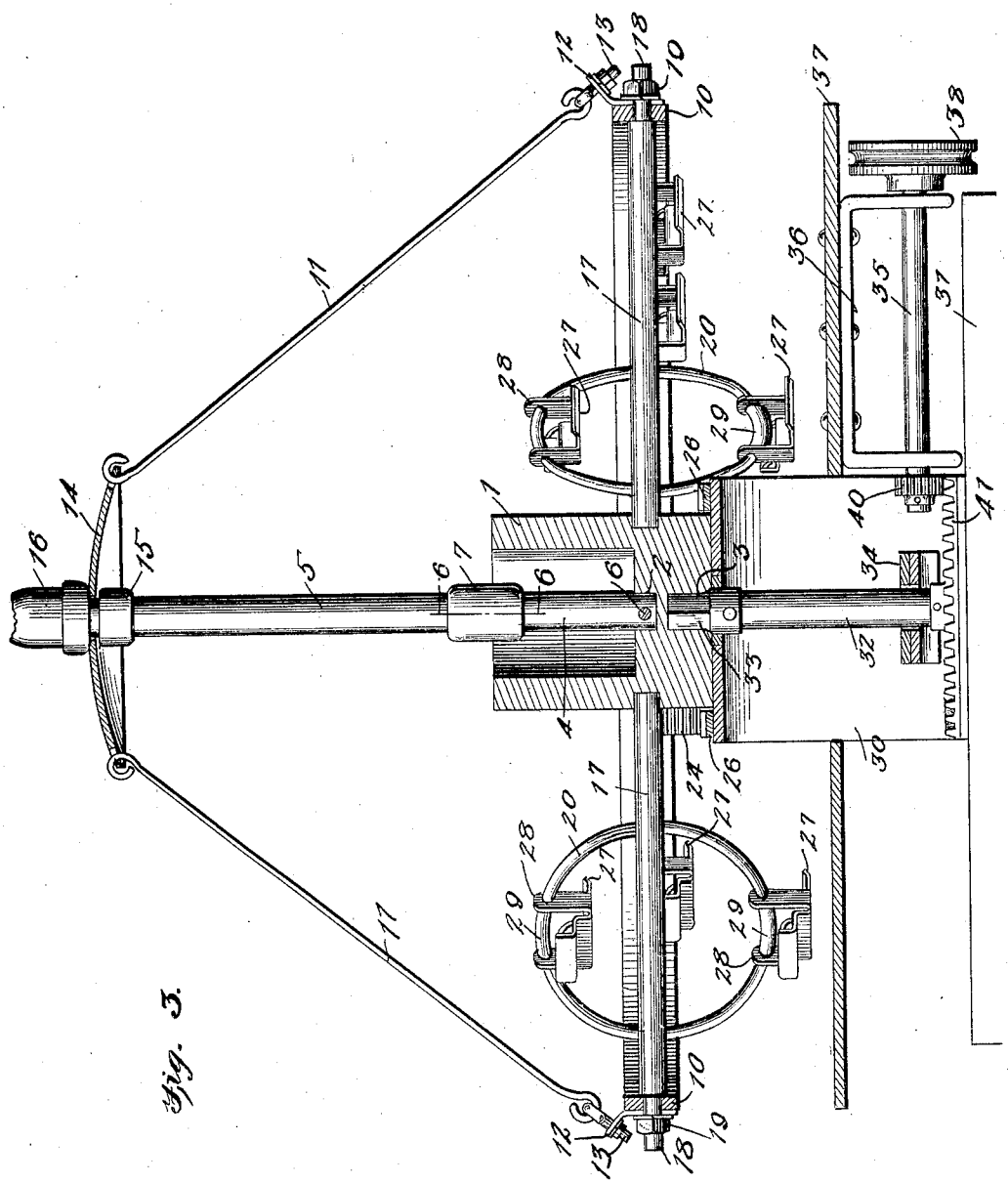

Fig. 3.

WITNESSES

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4 SHEETS—SHEET 4.

Fig. 5.

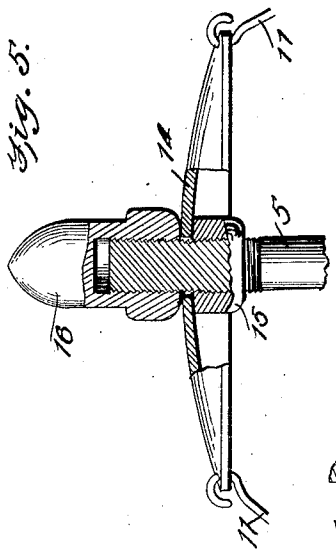


Fig. 8.

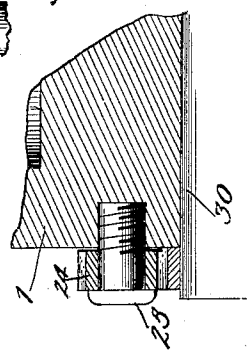


Fig. 7.

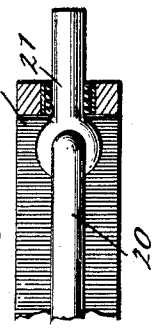


Fig. 4.

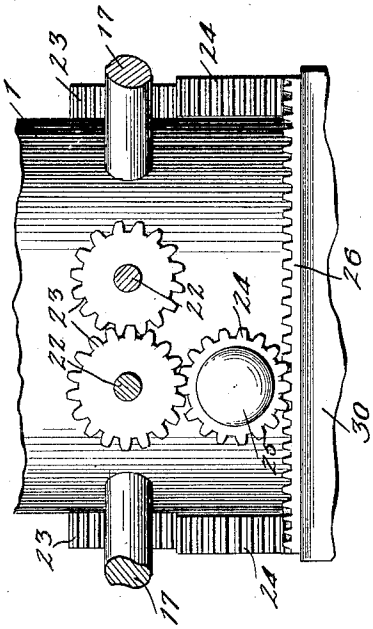
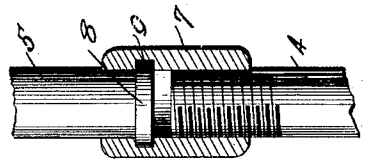


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

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AMUSEMENT APPARATUS.

1,362,864. Specification of Letters Patent. Patented Dec. 21, 1920.

Application filed November 8, 1919. Serial No. 336,721.

To all whom it may concern:

Be it known that I, PERCY DAVID HAUNSON, a citizen of the United States, and a resident of Breckenridge, in the county of Wilkin and State of Minnesota, have invented certain new and useful Improvements in Amusement Apparatus, of which the following is a specification.

My invention is an improvement in amusement apparatus, and has for its object to provide apparatus of the character specified of comparatively simple construction, and consisting of a series of pairs of rings mounted to revolve about a common vertical axis and to rotate each upon a horizontal axis, with the members of the pairs so arranged that the spheres described by the rotation of the rings will intersect.

In the drawings:

Figure 1 is a side view of the improved apparatus;

Fig. 2 is a top plan view;

Fig. 3 is a vertical section;

Fig. 4 is a side view of the supporting base;

Fig. 5 is a vertical section through the top of the apparatus;

Fig. 6 is a section on the line 6—6 of Fig. 3;

Fig. 7 is a section on the line 7—7 of Fig. 2;

Fig. 8 is a section through the mounting of one of the connecting pinions.

In the present embodiment of the invention a base 1 is provided, the said base being in the present instance a cup shaped member, and the bottom of this base is recessed on its upper and lower faces, as indicated at 2 and 3, at the axis thereof.

A shaft, consisting of sections 4 and 5, is mounted in the recess 2, the section 4 being pinned to the base as indicated at 6, and the upper end of this section is threaded to engage within a sleeve 7 which is rotatably connected with the upper section 5.

This upper section 5, as shown more particularly in Fig. 6, has a head or annular rib at its lower end, and this rib engages within an annular groove 9 in the sleeve. Thus the shaft section 5 may rotate freely with respect to the sleeve and to the section 4 and the sections 4 and 5 may be adjusted toward and from each other.

An annular frame or ring 10 is supported by the base and by the shaft 4—5, the said ring being connected to the base by rods 17, the said ring or frame being supported from the top of the shaft 4—5 by means of guys 11, each of which is connected at one end to the ring and at the other to the top of the shaft section 5.

The connection with the ring is by means of angle plates 12, each of which has a portion connected to the ring in a manner to be presently described, and a portion provided with an eye bolt 13, with which the guy is engaged. The other end of the guy engages an opening in a concavo-convex plate 14 which is held on the top of the shaft section 5 in the manner shown in Fig. 5.

The upper end of the shaft section 5 is threaded, and a collar 15 engages the threaded portion below the plate 14. A cap 16 is threaded on to the threaded portion of the shaft above the plate 14, and it will be obvious that by means of the collar and the cap the plate may be adjusted vertically on the shaft section.

A series of rods 17 connects the ring with the base, each rod having its inner end received within a radial recess in the base, while its outer end is reduced, as indicated at 18, and passes through an opening in the ring, and also through an opening in the adjacent angle plate 12. Each reduced portion is engaged by a nut 19 outside of the ring, and the nut, in addition to securing the ring to the shaft or rod 17, also secures the angle plate 12 to the ring.

A series of pairs of rings 20 is mounted between the ring and the base, each of these rings having journal pins 21 and 22 arranged at diametrically opposite points. The journal pin 21 of each ring engages an opening in the ring or frame 10, and the journal pin 22 of each ring is journaled in a radial recess in the base 1.

As shown more particularly in Fig. 2 there are four shafts or rods 17, arranged at angles of ninety degrees with respect to each other, and a pair of rings 20 is arranged between each pair of shafts or rods 17. The planes of the rings of each pair are arranged at right angles to each other and each pair of rings is geared together, so that they will rotate at the same speed and in opposite directions.

A pinion 23 is secured to each shaft 22,

the said pinions meshing, and one of these pinions is engaged by a pinion 24 journaled on a headed screw 25 threaded into a recess in the base 1. These pinions 24, which are at the same level, mesh with the teeth of a fixed gear ring 26 mounted in a manner to be presently described, and it will be evident that when the base 1 is rotated with respect to the gear ring the pinions 24 will be rotated and the pinions 23 will also be rotated. Since these pinions are of the same size, the rings 20 will be driven at the same speed, and since the base carrying the ring 10 is rotating about a vertical axis the rings will be simultaneously revolved about the base and will be rotated upon a horizontal axis, the plane of each ring cutting the plane of its companion ring of the pair once during each rotation.

Each ring carries a pair of seats 27, the seats being pivoted to the ring in such manner that they may always hang freely downwardly, regardless of the position of the ring. As shown, each seat has upstanding arms 28 which are journaled on the ring, a spacing sleeve 29 being arranged between the arms to properly space them. These sleeves 29 are prevented from movement circumferentially of the ring in any desired manner and thus they hold the seats in the proper position on the ring.

When the device is operated in a manner to be described, the rings will be moved about a vertical axis and at the same time will rotate on horiontal axes radial to the vertical axis about which they revolve.

In practice, the base is supported by an inverted substantially U-shaped support 30 uprising from a suitable foundation 31, and the ring 26 is secured to the body portion of this support, coaxial with the base. A shaft 32 has its upper end passing through an opening in the body of the support and engaging within the recess 3 of the support, and it will be noticed that this recess is polygonal in cross section.

The engaging portion 33 of the shaft is also polygonal, and is in the form of a cap fitting over the upper end of the shaft 32 and pinned thereto. The lower end of this shaft 32 is journaled in a bearing in a cross bracket 34 connecting the arms of the support 30. This shaft 32 is rotated from a driving shaft 35 journaled in the arms of a substantially U-shaped bracket 36 on the under side of a platform 37 which is mounted at a suitable level below the ring. The shaft 35 has a pulley 38 at its upper end for engagement by a belt 39 for connecting it with a suitable source of power, and the inner end of the shaft has a pinion 40 which meshes with the teeth of a gear ring 41 secured to the lower end of the shaft 32.

A flight of stairs 42 is provided for giving access to the platform 37 as shown. These stairs are formed from a plate bent to form treads and risers and having hand rails 43 which, in addition to serving as hand rails, also brace the treads and risers.

It will be understood that the seats 27 may be of any usual or desired construction, and may be suitably upholstered or otherwise decorated, if desired. The diameter of the rings 20 will of course depend upon the diameter of the ring 10, that is, upon the size of the apparatus as a whole, and it will be understood that the apparatus may be constructed in any desired size, with any number of pairs of rings. At the least, the rings should be eighteen feet in diameter to give the seats plenty of clearance. While but eight rings and sixteen seats are shown, it will be obvious that the number of rings and seats is not limited.

In loading the apparatus, the seats are brought in succession to the position shown in Fig. 3, at the lower portions of the rings 20. Four movements are necessary to load. The first movement brings the parts into the position of Fig. 3 and the lower seats may be loaded. A quarter turn of the rings 20 will bring another set of seats in lowermost position, and when these are loaded two more turns or a half turn will complete the loading. The unloading will take place in the same manner. It is obvious that the seats might be replaced by cars, if desired, each car holding a number of persons.

I claim:

1. An amusement apparatus comprising a supporting shaft, a ring supported by the shaft in coaxial spaced relation, a series of pairs of rings journaled between the shaft and the ring and mounted to move with the ring and to rotate on axes radial to the shaft, the members of the pairs having their planes at right angles to each other and each ring carrying seats arranged at opposite sides of the axis of rotation, means for constraining the rings of each pair to rotate together, means for rotating the shaft, and means controlled by the rotation of the shaft for rotating the rings on axes radial to the shaft.

2. An amusement apparatus comprising a supporting shaft, a ring supported by the shaft in coaxial spaced relation, means for rotating the shaft and ring, a series of pairs of rings journaled between the shaft and the ring and mounted to move therewith, the members of each pair having their planes at right angles to each other and each ring carrying seats, and means controlled by the rotation of the shaft and ring for rotating the rings at the same rate of speed.

3. In amusement apparatus, a rotatable support comprising a shaft and a ring held coaxially therewith, guys connecting the ring to the top of the shaft, a plate having

an opening for the shaft and to which the guys are connected and means for adjusting said plate vertically on the shaft, said means comprising a collar threaded on to the shaft below the plate and a cap threaded on to the shaft above the plate.

4. In amusement apparatus, a rotatable support comprising a shaft and a ring held coaxially therewith, guys connecting the ring to the top of the shaft, a plate having an opening for the shaft and to which the guys are connected, and means for adjusting said plate vertically on the shaft.

PERCY DAVID HAUNSON.