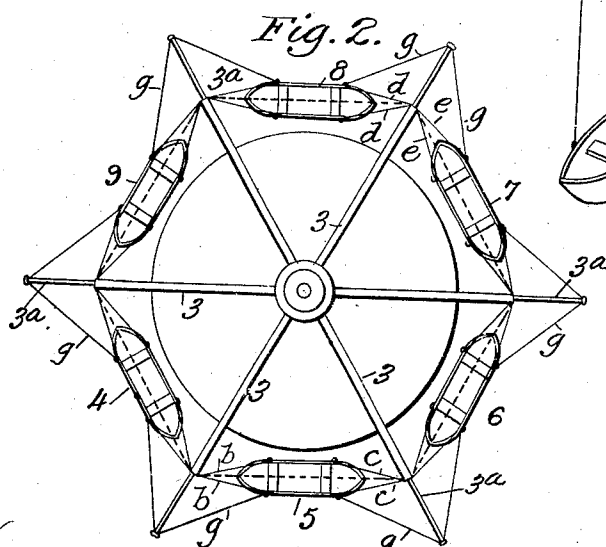
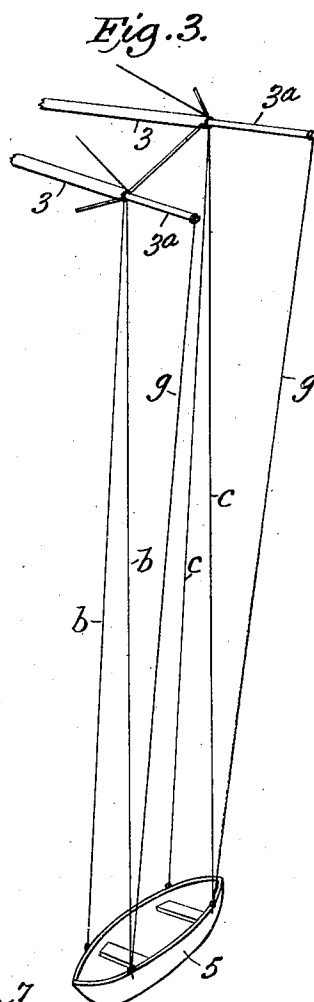
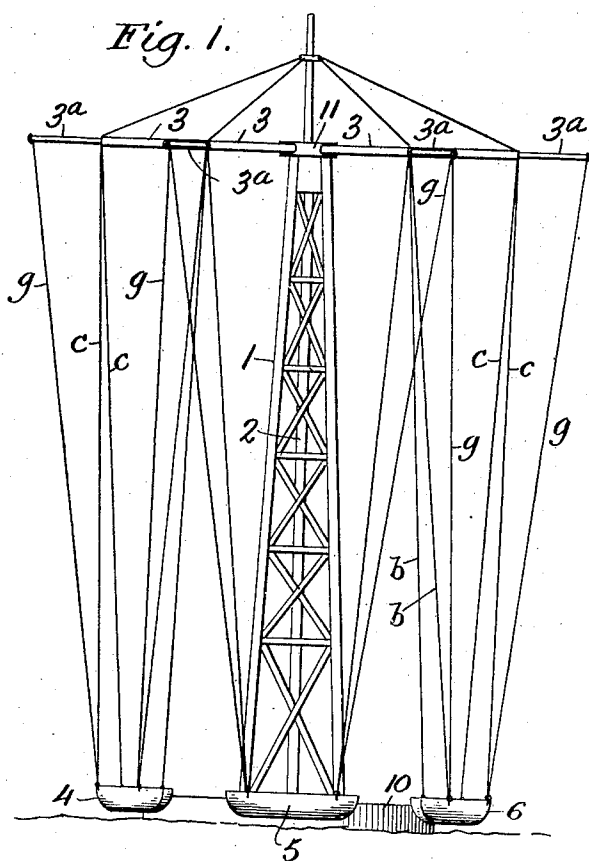


No. 830,688.

PATENTED SEPT. 11, 1906.

H. G. TRAVER.
ROUNDAABOUT.

APPLICATION FILED MAY 1, 1906.



Witnesses
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UNITED STATES PATENT OFFICE.

HARRY G. TRAVER, OF NEW YORK, N. Y., ASSIGNOR TO TRAVER CIRCLE SWING COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ROUNABOUT.

No. 830,688.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed May 1, 1905. Serial No. 258,376.

To all whom it may concern:

Be it known that I, HARRY G. TRAVER, a citizen of the United States of America, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Roundabouts, of which the following is a specification.

This invention relates to an amusement apparatus of the roundabout kind, and has for its leading object to prevent the cars from swinging too far inwardly toward the center of rotation when they are being brought to a stop.

The invention consists, essentially, in an auxiliary or supplemental cable hung outside of the center of gravity of the car and outside the main point of the car-support and also in various details and peculiarities in the arrangement of the parts, substantially as will be hereinafter described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a side elevation of my improved amusement apparatus. Fig. 2 is a top plan view of the same. Fig. 3 is an enlarged perspective view showing in detail the arrangement of the supporting-cables of a single car.

Similar characters of reference designate corresponding parts throughout the different figures of the drawings.

In carrying my invention into practical effect I employ a suitable tower 1, constructed in any desired manner and having any desired height and other dimensions. At the base of the tower or at some other point is a horizontal platform 10, upon which, if desired, a motor or other source of power for driving the machine may be situated. Journalled in suitable bearings in the tower 1 is a vertical shaft 2, which extends above the top of the tower and which is actuated by the aforesaid motor. The portion of this shaft projecting above the top of the tower has rigidly attached thereto, so as to rotate therewith, a hub 11, from which project radially a plurality of horizontal arms 3, of which there may be any number—as, for instance, six. These arms rotate with the vertical shaft 2, and they are designed to support the cars by means of cables and to carry the cars around as the shaft 2 revolves, the effect being, as is well understood, to cause said cars to move swiftly through the air at a high rate of speed

and to move outwardly away from the center of the shaft 2 by centrifugal action.

The cars, which may be of any desired type and pattern, are designated in the drawings by the numerals 4, 5, 6, 7, 8, and 9, there being in this example of the invention six of them shown. Each car is supported by two cables at each end, the cables at one end running to one of the arms 3 and those at the other end running to another of the arms 3. Thus from each of the arms 3 there drop four cables or two pairs, one pair running to the end of one car and another pair to the end of the next car. For instance, referring to car 5, as seen in Figs. 1 and 3, it will be observed that two cables *b b* suspend one end of said car from one of the arms 3, while two cables *c c* suspend the other end of said car from the next adjoining arm 3. This is shown fully in Fig. 3. In Fig. 1 it is also indicated how another pair of cables runs from each of these arms 3 to the next adjoining cars. I have described this way of supporting the cars simply by way of illustration. They may be supported in a different way. Single cables instead of pairs may be used, one cable running to each end of the car, and, furthermore, there may be a sufficient number of arms 3 so that each arm will be obliged only to carry a single cable.

Thus far I have been describing the car-supporting cables. I will now proceed to discuss the feature which constitutes the present invention. These car-supporting cables, already spoken of, in previous forms of a centrifugal roundabout apparatus drop from the outer terminals of the horizontal arms 3. In the present invention I extend said arms 3, making them longer than heretofore, adding thereto the extended portion 3^a, so that the point at which the car-supporting cables, as *b c*, are fastened is between the hub 11 and the outer end of the arm 3 at some suitable point to be decided upon, which point will usually be a short distance from the outer end of the arm. From the outer end of the extension 3^a an auxiliary or supplemental cable *g* leads down to the end of the car. Ordinarily from the outer end of each arm two of these auxiliary cables *g* will drop, one to the end of one car and the other to the end of the adjacent car, as indicated in Fig. 2. These cables may be termed "bracing-cables." Their purpose is to keep the car from swinging in-

wardly too far at the time when the machine is slowing down or being brought to a stop for the discharge of passengers and the loading with other passengers. It will be noted that
 5 these bracing-cables *g* are suspended from points on the arms outside of the center of gravity of the car and outside the main points of car-support and that the effect, therefore, when the machine is rotating is to
 10 prevent the car from moving inwardly too far, although allowing it perfect freedom to move outwardly as far as may be desired under the centrifugal action imparted to the car in consequence of its rapid movement about
 15 the center. When the brace *g* is absent, the car is free to swing centrifugally or centripetally, though, of course, there will be no centripetal swing, for the car will move forward; but at the time of slowing down there some-
 20 times may be such an oscillation inwardly as would tend to cause the car to strike against the platform 10 or the inner housing or structure situated within the circle of rotation, and it is to avoid this that I provide the ca-
 25 bles *g*, which effectually hold the car in place and prevent it from moving inwardly toward the center.

Having thus described my invention, what I claim as new, and desire to secure by Let-
 30 ters Patent, is—

1. In an amusement apparatus, the combination with a central shaft and arms hori-
 35 zontally projecting therefrom, of cars, means supporting said cars from the arms at points between the ends of the latter, and means connecting the ends of the cars with the arms at points farther distant from the center of motion than the car-supporting points, for

the purpose of preventing an undue inward swing.

2. In an amusement apparatus, the combination with a revoluble shaft and arms projecting radially therefrom, of means for supporting said shaft, a series of cars, means supporting said cars from the arms, and auxil-
 45 iary means for suspending said cars from the arms outside of the center of gravity of the cars.

3. In an amusement apparatus, the combination with a tower, a vertical revoluble
 50 shaft journaled therein, a series of radial arms projecting horizontally from the shaft, cars for carrying passengers, cables for suspending said cars from the arms, and auxil-
 55 iary cables fastened to the cars and suspended from the ends of the arms outside of the points of attachment of the car-supporting cables.

4. The combination in an amusement apparatus, with a tower, a revoluble shaft,
 60 and a series of arms projecting radially from said shaft, of cars, cables running from the cars to the arms, there being a pair at each end of the car, and each arm carrying two
 65 pairs, and means consisting of auxiliary cables suspended from the outer ends of the arms and fastened to the cars, so that when the cars swing down to standing position they will be prevented from moving unduly
 70 inwardly toward the center of motion.

Signed at New York this 3d day of April, 1905.

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Witnesses:

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