No. 713,070. Patented Nov. 11, 1902.

W. D. CRONIN.

CYCLOIDAL CAROUSEL.

(Application filed June 6, 1901. Renewed May 12, 1902.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.

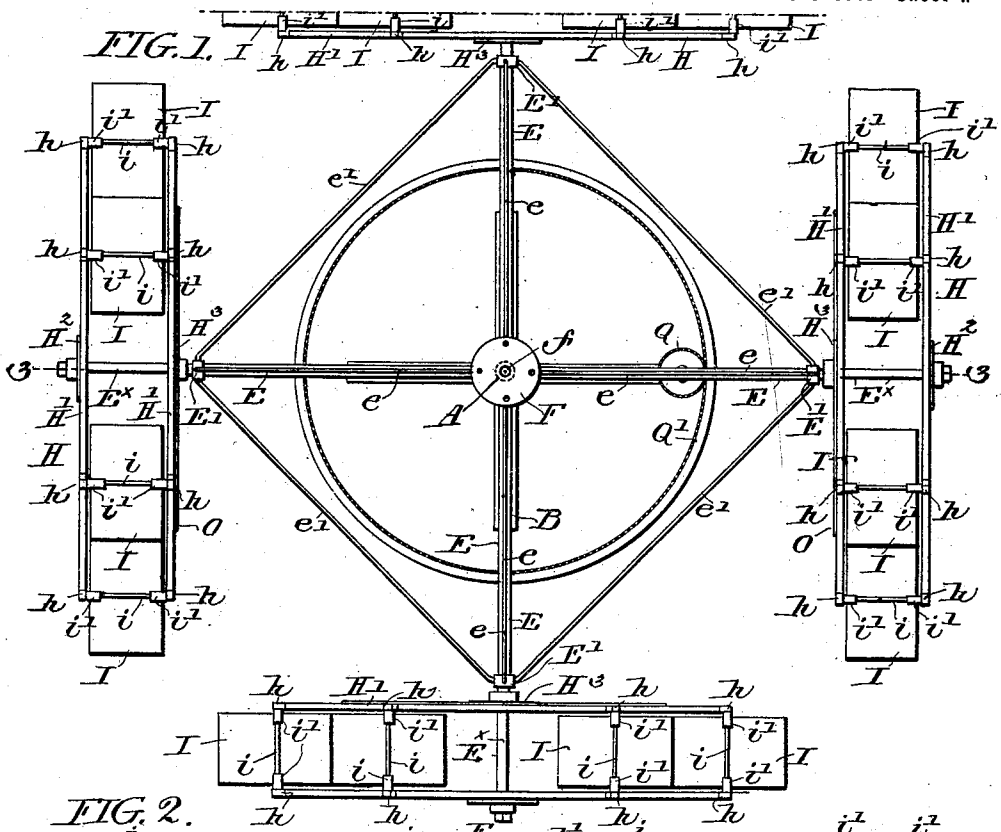
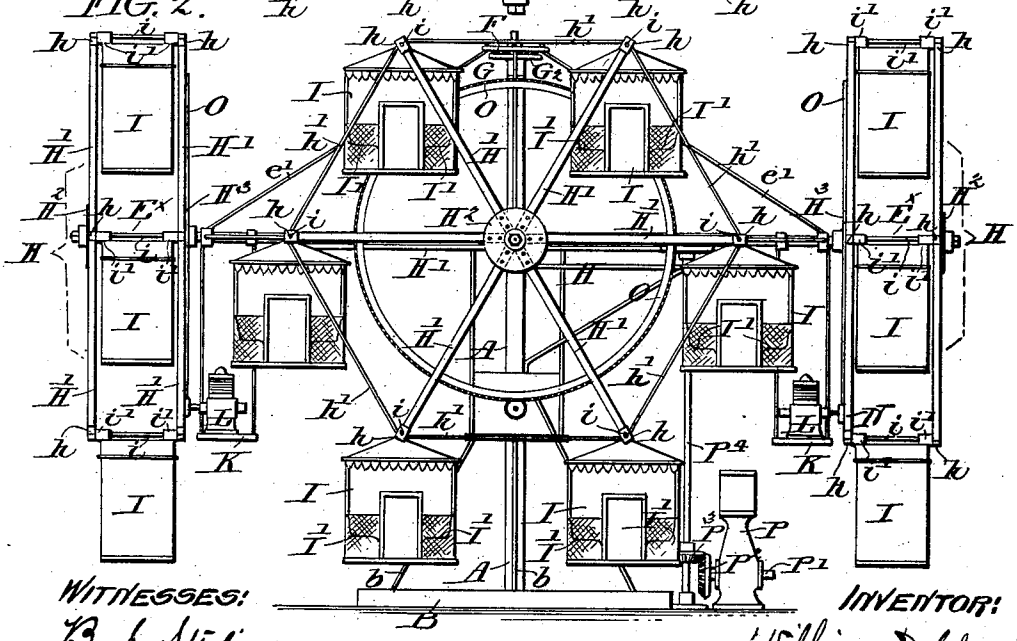


FIG. 2.



WITNESSES:

B. S. Stirling

Richard H. Sharp

INVENTOR:

William D. Cronin

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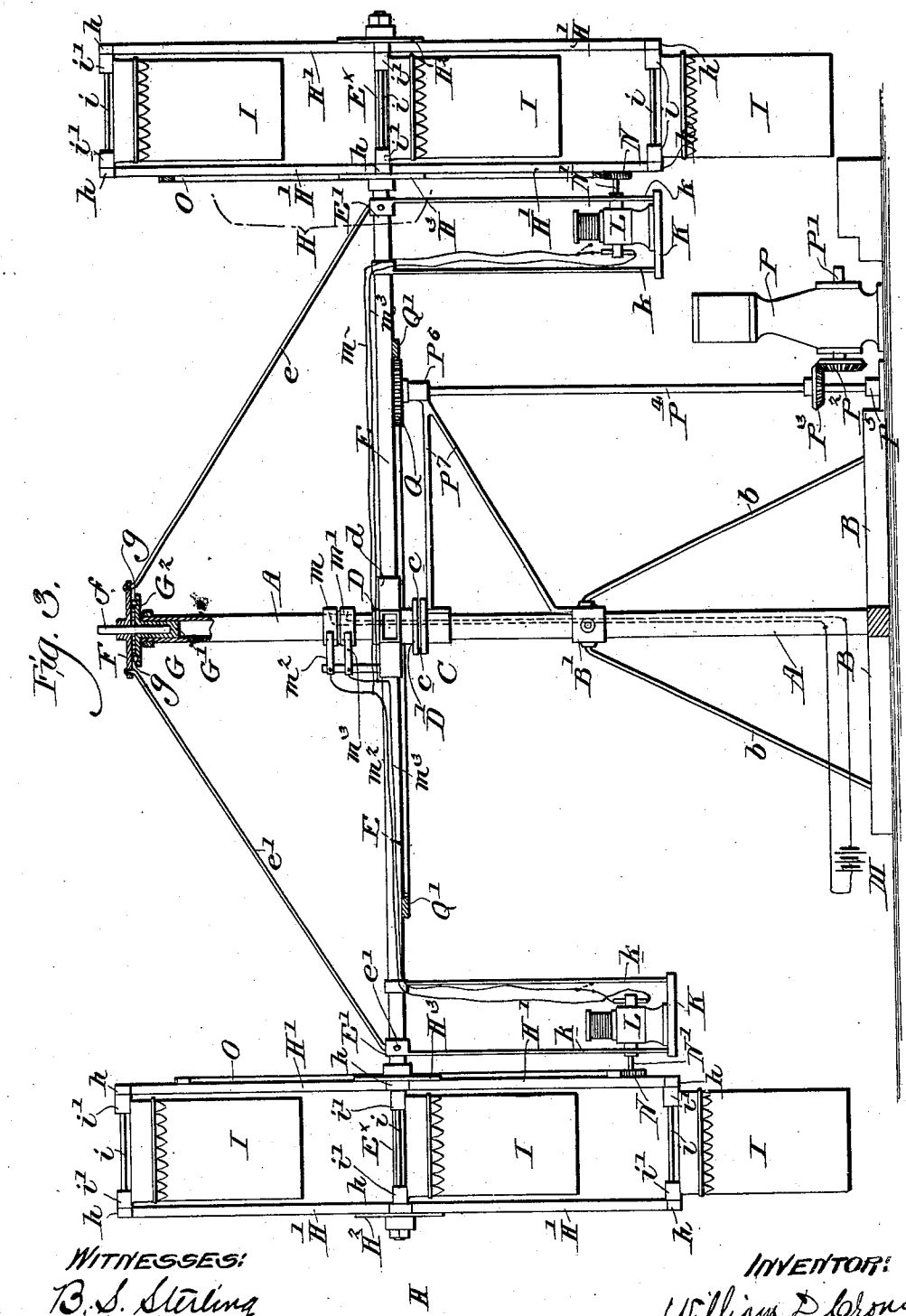

Fig. 3.

WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM D. CRONIN, OF ATLANTIC CITY, NEW JERSEY, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO ATLANTIC COAST AMUSEMENT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CYCLOIDAL CAROUSEL.

SPECIFICATION forming part of Letters Patent No. 713,070, dated November 11, 1902.

Application filed June 6, 1901. Renewed May 12, 1902. Serial No. 106,973. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. CRONIN, a citizen of the United States of America, residing at Atlantic City, in the county of Atlantic and State of New Jersey, have invented certain new and useful Improvements in Cycloidal Carousels, of which the following is a specification.

My invention relates to an improved carousel; and it consists of a series of rotating wheels each of which is provided with a number of carriages pivoted to the spokes or arms of the wheel so as to assume a vertical position when the wheel is turned. These wheels are journaled upon radial arms which turn upon a vertical shaft operated from any convenient source of power.

My invention consists of numerous details of construction and in means for operating the movable parts thereof, as will be fully described hereinafter.

Referring to the accompanying drawings, Figure 1 represents a plan view of my improved carousel with a portion of the upper wheel broken away. Fig. 2 shows a side elevation of the same, and Fig. 3 illustrates an enlarged vertical section on the line 3 3 of Fig. 1.

Referring to the letters of reference, in which similar letters denote similar parts, A represents a vertical shaft which is supported upon a base B and braced by rods *b*, extending from the base to a collar B'. The shaft A is provided some distance above the collar B' with a bearing C in the form of a grooved plate adapted to receive a number of balls or rollers *c*, which support a corresponding plate D', which forms the lower extension of a hub D. The hub D is provided with sockets *d d*, &c., in which are fastened a number of arms E E, &c., which constitute a revolving platform. The arms E are braced from above by stay-rods *e*, which are connected at one end to collars E' upon said arms and at the other to a plate F. Interposed between the arms E and collars E' are stay-rods *e'*.

At the top of the shaft A is a bearing G, having a lower projecting portion G' inserted into the hollow end of the shaft A and an upper grooved plate G^2, adapted to receive a number of balls or rollers *g'*, which form a bearing for the plate F, resting upon them.

The plate F is provided centrally with a king-bolt *f*, which enters a socket in the bearing G.

Each of the arms E is provided with a wheel H, and each wheel has in turn a series of pivoted carriages I. The wheels H are formed of a series of arms or spokes H', mounted in hubs H^2 and H^3, arranged some distance apart and journaled so as to turn freely upon the projecting ends E of the arms E.

The intervening space between the hubs H^2 and H^3 and the arms H', projecting therefrom, is occupied by the cars or carriages I. These carriages, which may be constructed of any light framework, open or closed, are provided with seats I' and a gate or door I^2. The carriages are supported and journaled at the top by rod *i*, which passes through bearings *i'* in the top of each of the carriages and interbearings *h*, mounted upon the ends of the arms H'.

The manner of bracing the outer ends of the arms H' is effected by means of stay-rods *h'*, which are connected to the bearing-blocks *h*. It will be understood, however, that various methods of staying and bracing these wheels and other like parts of my device other than those shown may be adopted, the arrangement being entirely governed by the capacity and weight of the machine.

The method which I prefer to adopt in operating the movable parts of my device is as follows: Upon platforms K, which are suspended from arms E by rods K, are motors L. (See Fig. 3.) These motors are driven from any source of electric supply—say M—the conductors therefrom passing through or around the shaft A, which is stationary, and being connected to insulated rings *m* and *m'*. From these rings the electric energy is conveyed to brushes m^2 and m^3, which are connected to and turn with one of the arms E, and from thence the current is conveyed through wires m^2 and m^3 by as many paths as desired to the motors L. In order to drive the wheels H from the motors L, the latter

are provided with small pinions N, mounted on the ends of the shafts N′, which pinions engage large circular racks O, secured to the inner set of arms of the wheels H. The means I desire to employ in turning the arms E and their connections, which constitute a frame for supporting and carrying the wheels H, is by a motor P. This motor has a shaft P′, upon which is fastened a bevel-gear P^2, meshing with a bevel-gear P^3, mounted upon a vertical shaft P^4. The shaft P^4 is journaled at the bottom in a bearing P^5 and at the top in a bearing P^6, carried by a bracket P^7. The top of the shaft P^4 is provided with a pinion Q, which engages a circular rack Q′, secured to the arms E.

In place of the motor P, which is in the form of a steam or gas engine, I may employ an electric motor, such as one of the motors L, and other methods of operating my device may be employed without departing from the spirit of my invention.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A carousel comprising a series of radial arms connected together constituting a frame adapted to revolve, a vertical shaft for supporting and guiding said arms together with a motor for driving said frame, a series of wheels adapted to revolve upon said frame each of which is provided with a series of pivoted carriages, in combination with the platforms suspended from the radial arms of the frame and arranged adjacent to the revolving wheels, each of said platforms being provided with motors for driving said wheels.

2. A carousel comprising a rotatable frame formed of a series of radial arms connected together, a motor for driving frame, a series of wheels journaled on the arms of said frame each of which is provided with a series of pivoted carriages, in combination with platforms K, suspended from the frame and having motors L, for independently turning the wheels and carriages.

3. A carousel comprising in combination a vertical shaft A, a series of revolving arms E carried thereby and a motor P, for revolving said arms, a series of wheels H, pivoted to said arms, a series of carriages I, pivoted to said wheels, platforms K, depending from the arms E, and motors L arranged upon said platforms and adapted to independently operate said wheels substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM D. CRONIN.

Witnesses:
WILLIAM T. LEEK,
JAMES H. MASON.