No. 774,757. PATENTED NOV. 15, 1904.

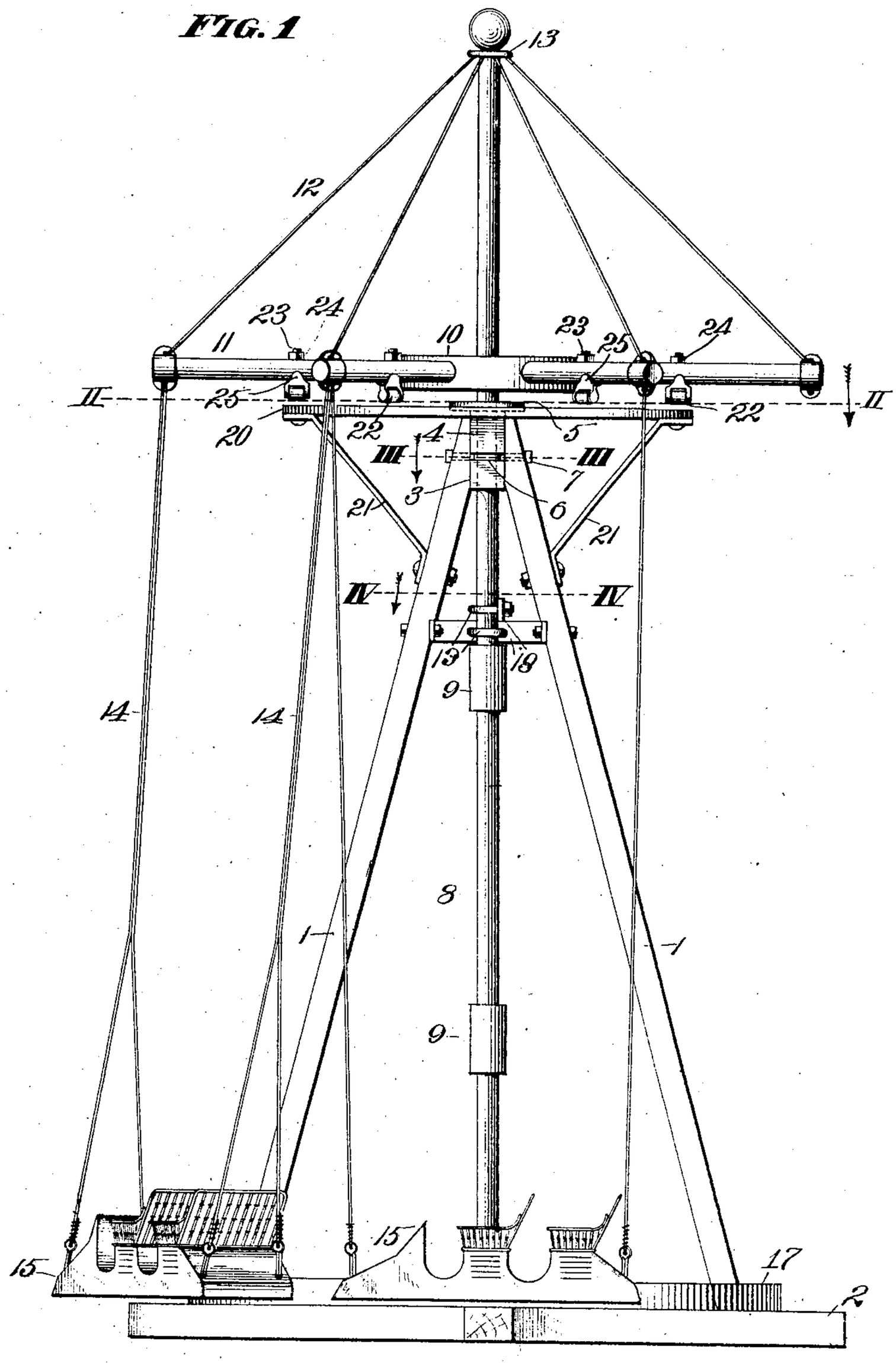
C. C. KEEN.

CIRCLE SWING.

APPLICATION FILED JAN. 20, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 1



Witnesses
F. R. Gilmore.
H. C. Rodgers.

Inventor
Chas. C. Keen.
By George H. Thorpe
Atty.

No. 774,757. PATENTED NOV. 15, 1904.

C. C. KEEN.

CIRCLE SWING.

APPLICATION FILED JAN. 20, 1904.

NO MODEL. 2 SHEETS—SHEET 2.

FIG. 2

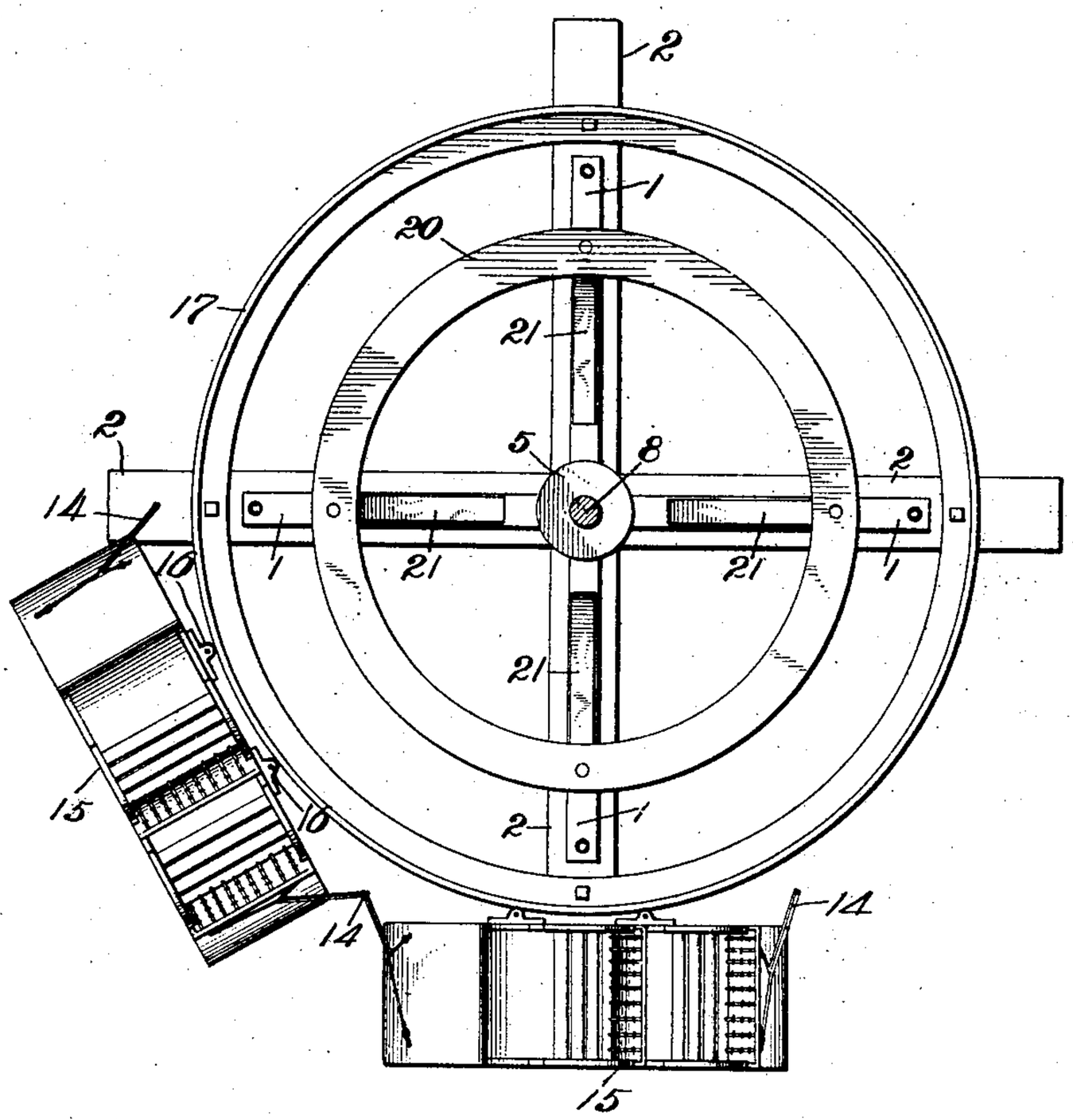


FIG. 3

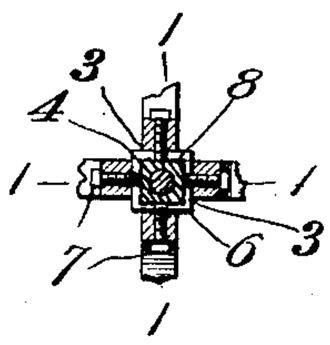
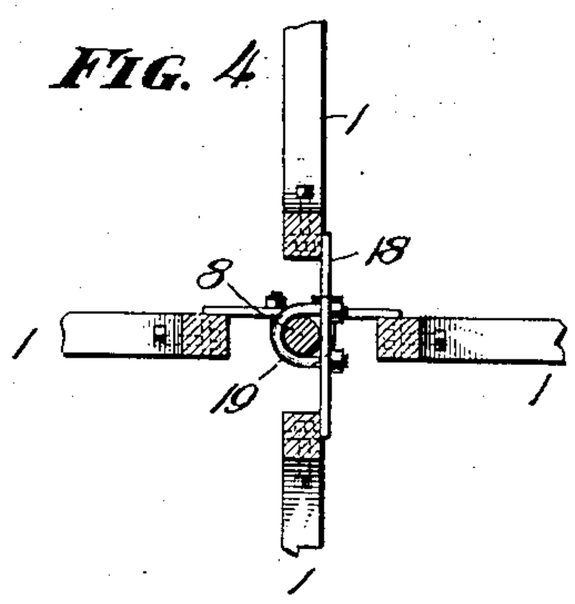


FIG. 4



Witnesses
F. P. Glore.
H. C. Rodgers

Inventor
Chas. C. Keen.
By Chapell & Thorpe
Attys

No. 774,757. Patented November 15, 1904.

UNITED STATES PATENT OFFICE.

CHARLES C. KEEN, OF KANSAS CITY, MISSOURI.

CIRCLE-SWING.

SPECIFICATION forming part of Letters Patent No. 774,757, dated November 15, 1904.

Application filed January 20, 1904. Serial No. 189,936. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. KEEN, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Circle-Swings, of which the following is a specification.

My invention relates to circle-swings of that type embodying a tower, a revoluble frame thereon, a vertical shaft to operate said frame, and a series of cars suspended from the frame; and my object is to produce a swing of this character which operates efficiently and reliably and which is of simple, strong, durable, and comparatively inexpensive construction.

To this end the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed, and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a side elevation of a circle-swing embodying my improvements, the near standard of the tower being omitted to more clearly disclose said improvements. Fig. 2 is a horizontal section on the line II II of Fig. 1. Fig. 3 is a horizontal section on the line III III of Fig. 1. Fig. 4 is a horizontal section on the line IV IV of Fig. 1.

In the said drawings the tower comprises upwardly-converging standards 1, preferably four in number, and adapted to be braced in a manner common in structures of this character. The lower ends of the standards of the tower are erected upon a suitable foundation or base. With towers not exceeding forty feet I prefer to employ a base consisting of a pair of cross-timbers 2, suitably secured together and adapted to be anchored to the ground in any suitable manner—for instance, by means of suitable stakes. (Not shown.) For towers exceeding the height mentioned and which are designed as permanent structures it is preferable to provide a brick and cement foundation.

The upper ends of the tower-standards are provided at their inner sides with vertical faces 3 and disposed rectangularly, so as to provide a square chamber to receive snugly the square bearing 4; said bearing having a flange 5 at its upper end, which rests upon the upper ends of standards 1, the bearing being provided, furthermore, with a groove 6 to receive the inner ends of bolts 7, extending through the tower-standards for the purpose of securing the upper end of the tower rigidly to said bearing.

8 designates the shaft of the swing, the same being arranged vertically and journaled, as usual, at its lower end in the base and also journaled in the bearing 4, above which it projects for a considerable distance, said shaft being preferably made in sections secured together by couplings 9. Mounted rigidly upon the shaft and disposed horizontally is a revoluble frame, consisting of a hub portion 10 and a series of radial arms 11, the outer ends of said arms being connected by guy-ropes or cables 12 with the upper end or cap portion 13 of the shaft, these guy-ropes or cables being adapted to brace and support the frame-arms 11. Attached to the outer ends of said arms in any suitable manner are cables 14, the lower ends of said cables being connected as shown or otherwise to cars 15, the cables being of such length that they shall support the cars slightly above the base when the swing is not in operation.

Each car is preferably equipped at its inner side and at opposite sides of its center with antifriction-rollers 16 for engagement with a circular guard-rail 17, secured rigidly upon the base concentrically of the shaft and of suitable diameter to hold the cars outward of the center of gravity from their suspension-point—namely, the outer ends of the revoluble frame. By thus holding the cars outward of the center of gravity mentioned and against accidental movement passengers will be enabled to step in or out of the cars without requiring an attendant to steady them and keep them from swinging inward, outward, backward, or forward, it being obvious that the last-named movements are prevented because one roller or the other would have a tendency to travel uphill. An additional function of the guard-rail is to provide a stop for the cars in case the motor (not shown) which is utilized to drive the shaft should break or in case the shaft should break. In either case it is ob-

vious the speed of movement of the revoluble frame would diminish with greater proportionate rapidity than that of the cars, and as a result one or more of the latter might and probably would swing downward before their rotary movement was completely spent and strike against the base of the tower and possibly injure the occupants as well as the swing. In my construction the cars would strike the guard-rail and at most could do no more injury than to jar the occupants of the car. To still further guard against such contingency happening as that above mentioned, I provide an auxiliary bearing for the shaft above the topmost coupling, said bearing comprising cross-bars 18, connecting opposite standards and equipped with U-bolts 19, which embrace the shaft, as shown in Figs. 1 and 4.

With the swings as at present constructed it is advisable to exercise considerable care in loading the cars, so as to substantially balance the revoluble frame. I have therefore provided a circular trackway 20, supported in a horizontal position just below the frame by braces 21, said braces being secured to the tower as shown or in any other suitable manner. This trackway in practice will preferably be disposed slightly below a series of rollers 22, carried at the lower ends of bolts 23, extending up through the arms 11 and engaged by nuts 24 at their upper ends, said bolts being provided with ears 25, embracing opposite sides of arms 11, so as to compel the rollers to track properly on the trackway 20 in case any of the arms of the frame spring downwardly. The track therefore acts as an auxiliary brace for the comparatively long and slender arms of the revoluble frame and relieves the shaft of lateral strain which would otherwise be imposed upon it.

From the above description and the drawings it will be apparent that I have produced a swing which embodies the features of advantage enumerated as desirable and which, furthermore, when provided with a base of substantially the type shown can be moved from one town to another with comparatively little trouble.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

A swing, comprising a base composed of crossed timbers, a circular guard-rail secured to said timbers centrally of the base, a tower erected upon the base, a sleeve secured rigidly in the upper end of the tower and provided with external grooves, screw-bolts mounted in the tower and having their ends engaging said grooves, a circular track 20, concentric of the tower, braces 21 secured to said trackway and to the tower, a vertical shaft journaled in said sleeve, a revoluble frame secured rigidly to said shaft and provided with a series of rollers slightly above and normally out of contact with said track 20, and a series of cars suspended from said revoluble frame, and adapted to be limited in their movement toward the tower by said guard-rail.

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

CHARLES C. KEEN.

Witnesses:
H. C. RODGERS,
G. Y. THORPE.