No. 775,234. PATENTED NOV. 15, 1904.

J. J. CARR.

ELEVATOR.

APPLICATION FILED JAN. 14, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

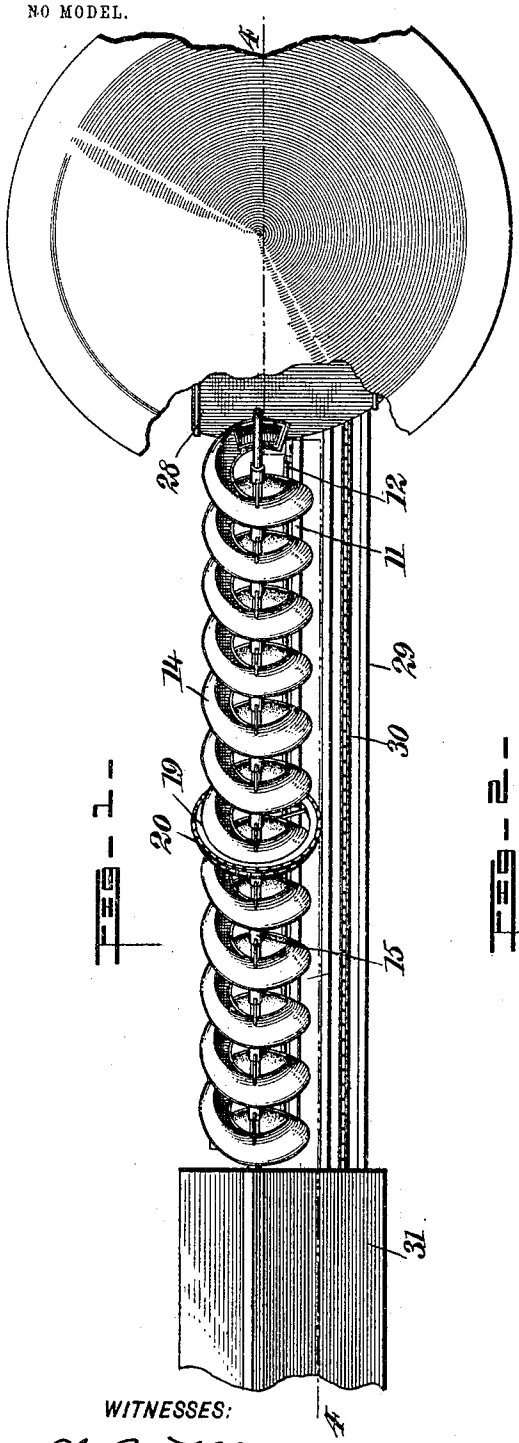

FIG. 1.

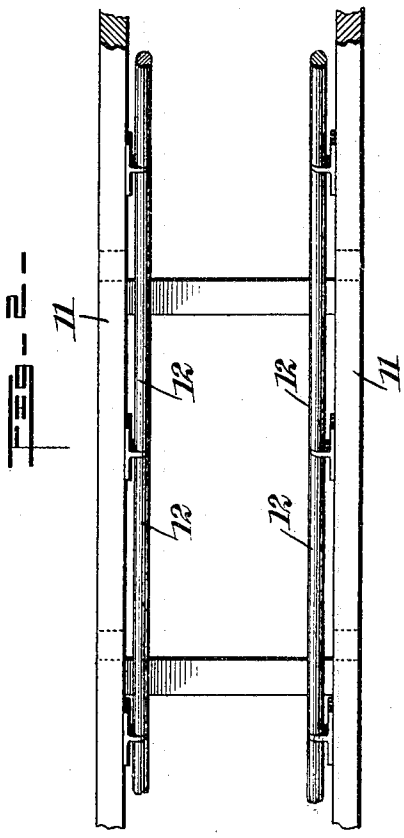

FIG. 2.

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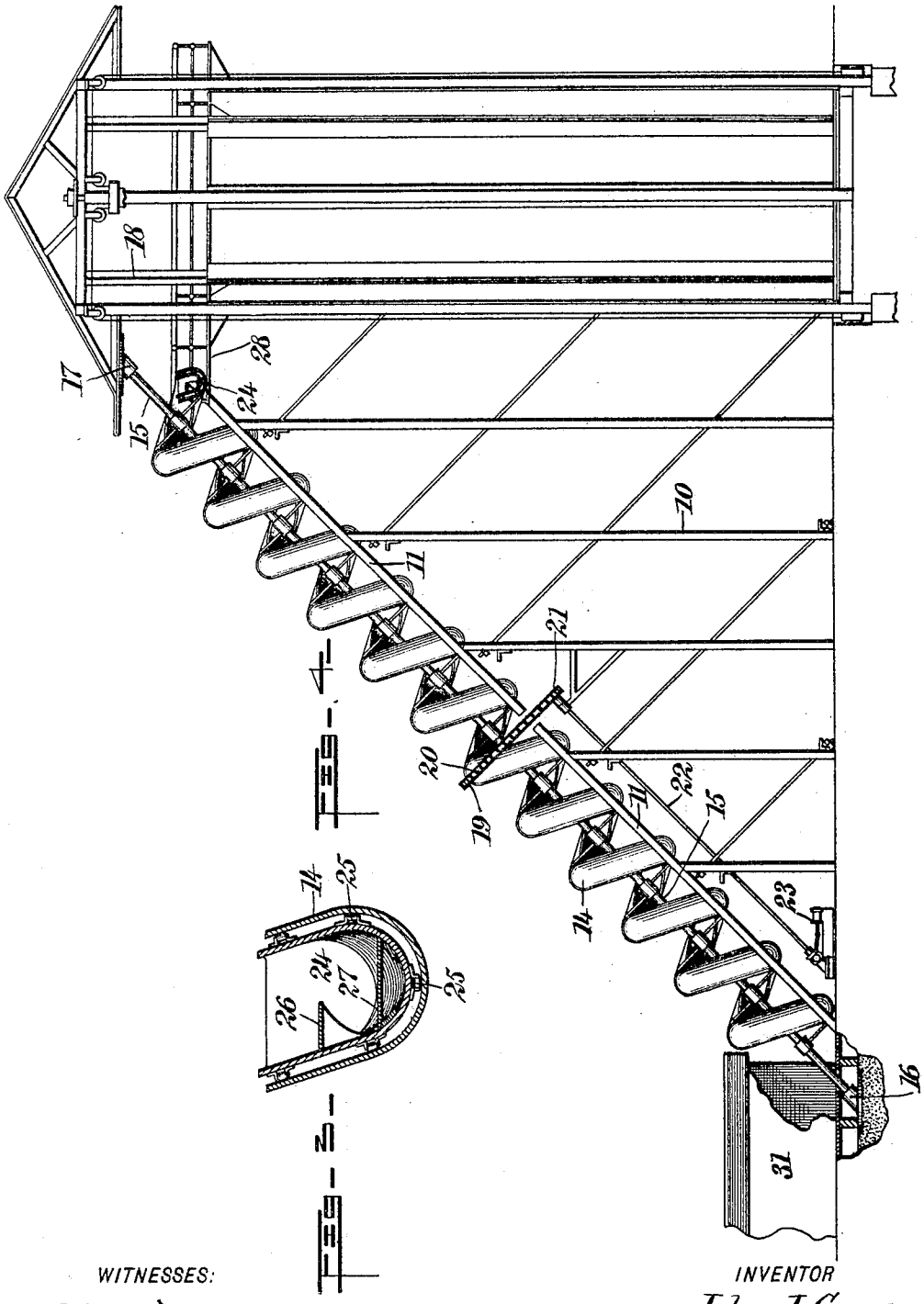

WITNESSES:

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No. 775,234. Patented November 15, 1904.

UNITED STATES PATENT OFFICE.

JOHN JOSEPH CARR, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO CYRUS EVERS, DANIEL J. LYNCH, AND DANIEL McRAE, OF BROOKLYN, NEW YORK.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 775,234, dated November 15, 1904.

Application filed January 14, 1904. Serial No. 188,991. (No model.)

To all whom it may concern:

Be it known that I, JOHN JOSEPH CARR, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Elevator, of which the following is a full, clear, and exact description.

This invention relates to a novel form of elevator which I have designed particularly for use as an amusement apparatus, but which is useful in other connections.

The apparatus as here illustrated embodies, briefly stated, an open spiral inclosure or Archimedean screw having an axial shaft revolubly mounted on the desired incline and bearing in addition on longitudinally-extending supports at each end of the lower portion of the inclosure or Archimedean screw, so as effectively to support the inclosure. In said inclosure a car is arranged to be raised and lowered, if desired, by the operation of the screw, and means are provided for revolubly driving the Archimedean screw or spiral inclosure.

The invention further resides in certain novel details of construction concerned with the car and screw and with the manner of mounting and driving the latter.

This specification is an exact description of one example of my invention in which it is embodied as an amusement apparatus and is illustrated in connection with my novel passenger-drop forming the subject of my copending application filed of even date herewith, Serial No. 188,992, and the claims are exact definitions of the scope of the invention.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the elevator. Fig. 2 is an enlarged detail view showing the rollers forming the bed in which the screw turns. Fig. 3 is a cross-section of the screw, taken at the bottom of one of its convolutions and showing the car in place therein; and Fig. 4 is a side elevation of the complete apparatus.

A suitable staging or support 10 is provided to sustain the parallel stringers 11, which are arranged at an inclination, as shown, and carry at their inner sides rollers 12, which are made up of sections forming two continuous rollers extending, essentially, throughout the length of the stringers 11. On said rollers 12 bear the convolutions of a spiral inclosure or Archimedean screw 14, which is open throughout, as indicated, and suitably mounted on an axial shaft 15. The details of the structure of the screw 14 are not material to my invention, and any approved practice may be resorted to to secure a strong, convenient, and graceful structure. The shaft 15 is mounted at its lower end in a step-bearing 16 and at its upper end in a bearing 17, sustained on a tower 18, which carries the before-referred-to passenger-drop. Consequently the screw 14 is suitably journaled or mounted by its axial shaft 15 and the rollers 12. The screw 14 may be driven in any desired manner. I have here shown a sprocket-wheel 19 encircling the screw and carrying a chain 20, running to a sprocket-wheel 21 on a shaft 22, suitably mounted in the staging 10 and connected with a source of power—for instance, an engine 23.

24 indicates the cars, which may be of any number desired and which are arranged to fit within the screw, the cars having rollers 25 running on track-surfaces within the screw, so as to reduce the friction between the parts. Interiorly the cars may be fitted as desired—for instance, with seats 26, a floor 27, and other conveniences for the passengers. It is clear that by placing a car within the lower convolution of the screw and rotating the screw the car will be moved up through the screw to its upper extremity, and in this manner the passengers are elevated. The tower 18 supports a suitable landing 28 for the passengers, and this landing may also serve to facilitate the transfer of the cars from the screw to a descending track 29, along which the cars are returned to the bottom of the screw.

30 indicates a chain or other means running along the descending track 29 to control the descent of the cars. This chain may be con-

nected with any suitable means for retarding its movement, so as to prevent the cars from descending too rapidly.

31 may be taken to represent a house or shelter through which the passengers may pass to the cars, and as the cars run down the track 29 to the level of the house 31 they may be transferred manually or mechanically back to the screw and the lifting operation repeated.

In the practical operation of the apparatus as an amusement device the cars will be successively placed in the screw and elevated thereby, as explained. The passengers upon landing on the platform 28 may be returned to the ground by any desired means. I prefer to employ the improved passenger-drop above referred to, and in such case the passengers pass from the platform 28 to the car of the drop and are thereby returned to the ground. The cars as soon as they reach the platform 28 are returned on the descending track 29 and again engage with the screw. The operation of the screw should be kept up continuously, and the cars accordingly will move continuously up the screw and down the descending track. This enables a large number of passengers to be handled continuously and produces, consequently, an amusement apparatus of large capacity.

Various changes in the form, proportions, and minor details of my invention may be resorted to at will without departing from the spirit and scope thereof. Hence I consider myself entitled to all such variations as may lie within the intent of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a revolubly-mounted spiral inclosure, means for rotating the same, and a car movably mounted in the inclosure and having parts bearing against the bottom and side walls thereof.

2. The combination of a spiral inclosure the convolutions of which are spaced from each other forming an open structure, an axial shaft passing centrally through said inclosure and fastened thereto, means for revolubly mounting the shaft, supporting means extending longitudinally along the under portion of the spiral inclosure at each side thereof, means for revolubly driving the spiral inclosure, and a car movable in the inclosure.

3. The combination of a spiral inclosure the convolutions of which are spaced from each other forming an open structure, an axial shaft passing centrally through said inclosure and fastened thereto, means for revolubly mounting the shaft, supporting means extending longitudinally along the under portion of the spiral inclosure at each side thereof, means for revolubly driving the spiral inclosure, and a car movable in the inclosure, said means for driving the spiral inclosure comprising an annular gear member encircling the spiral inclosure and fastened thereto, a drive-shaft, a gear member attached thereto, and belt connecting the gear members.

4. The combination of a framing having inclined members, rollers extending parallel to each other and mounted on the inclined members of the framing, a spiral inclosure the convolutions of which are spaced apart to produce an open structure, said inclosure being mounted on said rollers, a car movable in the inclosure, a shaft passing axially through said inclosure and fastened thereto, means for revolubly mounting the shaft, and means for revolubly driving the said inclosure.

5. The combination of a spiral inclosure, a car movable therein, a shaft extending through the longitudinal axis of the spiral inclosure and fastened to said inclosure, means for revolubly mounting the shaft, and means for revolubly driving the spiral inclosure, the convolutions of the spiral inclosure being spaced apart to produce an open structure.

6. The combination of a spiral inclosure, the convolutions of which are spaced from each other forming an open structure, means for revolubly mounting the spiral inclosure, means for revolubly driving the spiral inclosure, and a car located within the spiral inclosure and adapted to move through the same.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN JOSEPH CARR.

Witnesses:
CYRUS EVERS,
DANIEL MCRAE.