

No. 775,235.

PATENTED NOV. 15, 1904.

J. J. CARR.
PASSENGER DROP.

APPLICATION FILED JAN. 14, 1904.

NO MODEL.

2 SHEETS—SHEET 1.

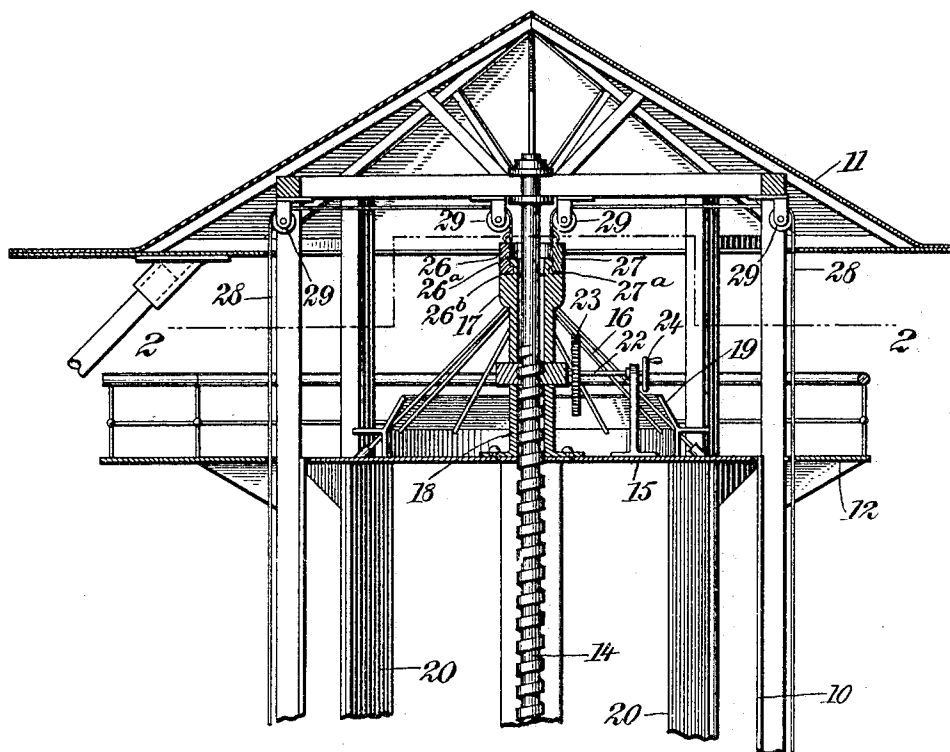
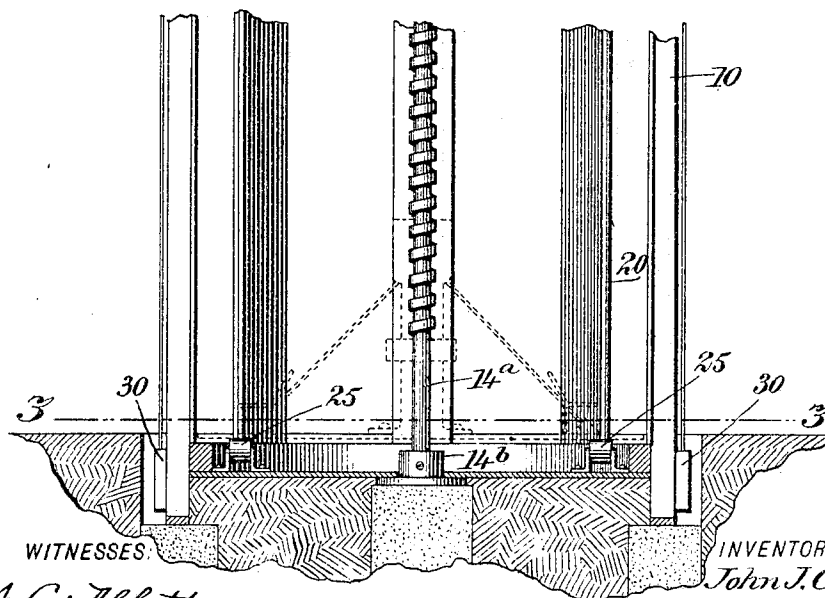


FIG. 1



WITNESSES:

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John J. Carr

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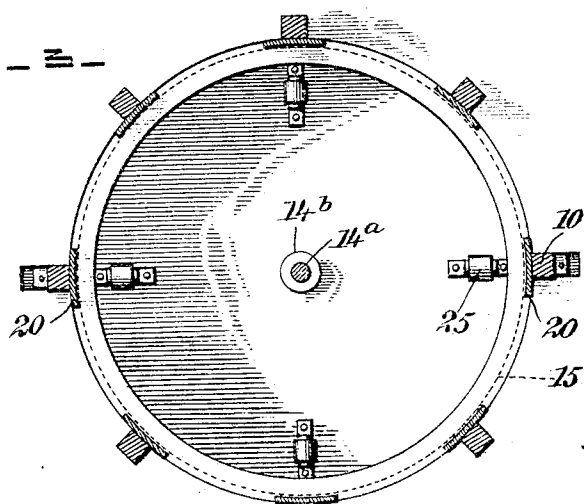
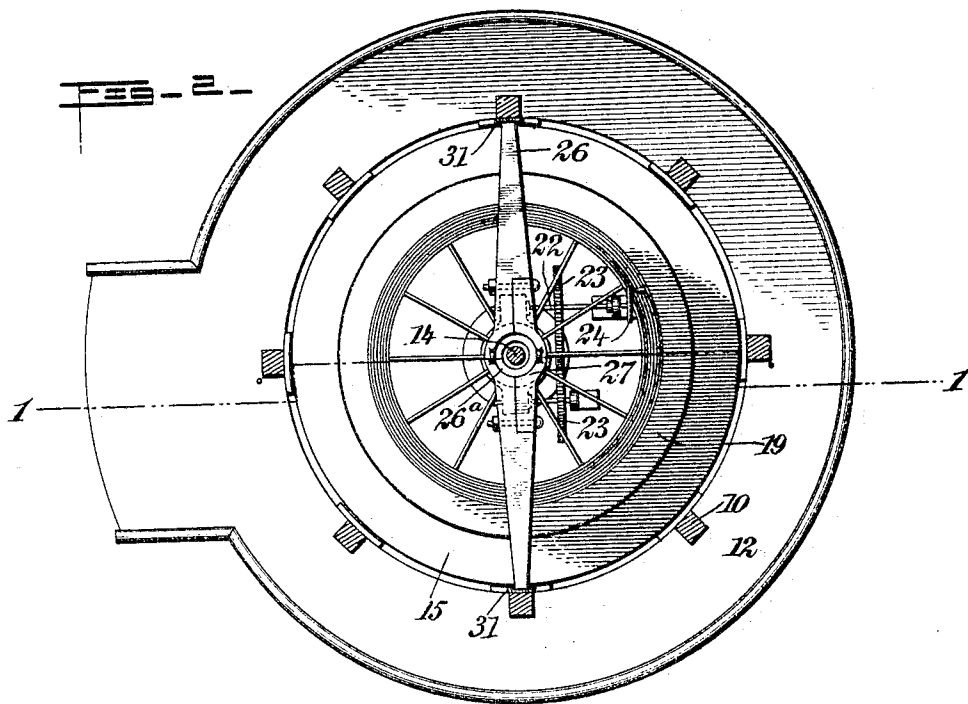
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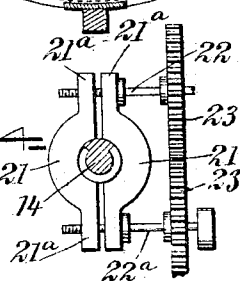
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2 SHEETS—SHEET 2.



WITNESSES:
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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.

PASSENGER-DROP.

SPECIFICATION forming part of Letters Patent No. 775,235, dated November 15, 1904.

Application filed January 14, 1904. Serial No. 188,992. (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 Passenger-Drop, of which the following is a full, clear, and exact description.

This invention relates to a means for enabling passengers or any other load to quickly and safely descend from an elevated point. It is particularly adapted for use in connection with an elevator—for example, the elevator disclosed in my copending application filed of even date herewith, Serial No. 188,991.

The invention comprises a gravity-car and a vertically-disposed screw, with which coacts a nut, movably mounted on the car, this nut serving at will the double function of a brake, and of a means for causing the car to wind downward around the screw, whereby the passengers may not only be safely dropped to the ground, but may also be given the amusing sensation of winding downward around the screw. This feature of the invention particularly adapts it to use as an amusement apparatus, for which purpose my above-referred-to elevator is particularly intended.

The invention resides in various other features of major or minor importance, and all will be fully set forth hereinafter.

This specification is an exact description of an example of my invention in which the drop is employed as an amusement apparatus in connection with my before-referred-to elevator, and the claims are definitions of the actual 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 vertical section of the apparatus on the line 1 1 in Fig. 2. Fig. 2 is a sectional plan view thereof on the line 2 2 of Fig. 1. Fig. 3 is a sectional plan on the line 3 3 of Fig. 1, and Fig. 4 is a detail view of the preferred form of the nut.

A suitable framing 10 is erected, which con-

stitutes the shaft, and this is preferably provided with a roof 11 and with an encircling platform 12 immediately below the roof, such platform constituting the stage on which the passengers are landed by the elevator. Extending vertically through the center of the shaft and suitably mounted in the tower or frame 10 and in the base or foundation of the structure is a rigid screw 14, the specific structure of which may be according to any approved practice. The car comprises a floor 15, from which rises a suitable frame 16, and between these two parts are sustained the sleeve-sections 17 and 18. The sleeve-sections have uniform inner diameters which are loosely engaged with the periphery of the screw, so that the sleeves may slide freely on the screw, but at the same time act to steady and guide the car. The floor 15 of the car also carries seats 19, which preferably assume a circular form, extending around all of the sides of the car. If desired, the tower may be provided with guides 20, extending along the inner sides of the shaft, to be engaged by the periphery of the floor of the car, so as to further steady the same, as is illustrated by the full lines in Figs. 1 and 2 and the full and dotted lines in Fig. 3.

The movable nut suitably mounted between the sleeve-sections 17 and 18 is preferably formed of two matching sections 21, adapted to engage opposite sides of the screw 14 and threaded to correspond thereto. Said sections 21 have projecting ears 21^a, with which coact the screws 22 and 22^a. Said screws are suitably mounted on the car and connected by gears 23, as shown. The screw 22 is provided with a hand-wheel 24 or other means for manually controlling it, and it will be seen that by operating the screw-shaft 22 the screw-shaft 22^a will be operated in unison, and in this manner the nut-sections 21 may be moved toward or from each other, as desired. It will be observed that the nut-sections may be tightened so firmly on the screw as completely to prevent any rotation of the car thereon, and since this rotation of the car is essential to the descent of the same such descent can be in this

manner checked, and it will also be observed that by engaging the nut with the screw with less force the car will be allowed by force of gravity to turn downward around the screw.

Therefore in the operation of the device after the passengers have entered the car the operator by manipulation of the hand-wheel 24 may completely control the descent thereof. In this connection I would point out that should by any possibility the threads of the screw be stripped therefrom the nut-sections may still be employed as a brake and caused to grip the shaft so firmly as to prevent or properly retard the downward movement of the car. The screw 14 is provided at its lower extremity with a smooth portion 14^a, on which the nut runs when the car reaches its lowermost position and which thereby prevents the nut being jammed at the other end of the screw. The downward movement of the car is arrested by the step 14^b, carrying the lower end of the screw, and also by rollers 25, mounted in the bottom of the shaft. These rollers, in connection with the smooth portion 14^a of the screw, allow the car to be turned around freely in the base of the shaft for the convenience of the passengers in alighting from the car or for any other purpose desired. The gravitating car may be returned to the top of the shaft by any mechanism desired. For the sake of economy I prefer to employ counterweights. At the upper end of the car is arranged a horizontal beam or cross-head 26, having its ends slidably engaged in vertical guides 31, mounted within the shaft. This beam has an inwardly-projecting bead 26^b opposite a notch 26^a, and suitably secured in said notch is a block 27, having a bead 27^a matching the bead 26^b. These beads are engaged with an annular rib formed on the upper extremity of the sleeve 17, and in this manner the cross head or beam 26 is connected with the car so as to allow the car to turn freely with respect to the cross beam or head, while the cross head moves vertically in the shaft. To said cross-head 26 a suitable number of cables 28 are connected, these cables running over guide-sheaves 29 at the top of the tower or frame 10 and the cables having at their lower ends suitable counterweights 30. It is therefore clear that when the operator relaxes the strain of the nut on the screw and when the car is relieved of its passengers the counterweights will lift the empty car to the top of the tower. It is also clear that by increasing the heft of the weights 30 the car may be returned to the top of the shaft or tower, irrespective of the weight of the car.

In the practical operation of the apparatus as the passengers enter the car from the platform 12 and are ready for the descent the operator should relax the strain on the nut sufficiently to enable the car to turn with the nut around the screw, and in this manner the car

will descend, turning continuously on its way. The speed of the descent may be regulated by the operator through the medium of the nut, as before explained, and the safety of the passengers is assured by this arrangement. It will be observed that as the car turns around the passengers are given a continuous or panoramic view of the surrounding scenery, and this, together with the novel experience of the rotating descending car, renders the apparatus extremely effective as an amusement device.

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 stationary screw, a car movable with respect thereto, a nut movably mounted on the car and coacting with the screw and means mounted on the car for manually operating the nut.
2. The combination of a stationary screw, a car movable along the same, a two-section nut mounted on the car, and means for moving said sections toward and from each other.
3. The combination of a car, a stationary screw, a two-sectioned nut coacting with said screw, a screw engaged with the nut-sections to move them toward and from each other, and means for operating the second-named screw.
4. The combination of a vertically-extending stationary screw, a gravity-car movable along the same, a nut movably mounted on the car and coacting with the screw, and means for elevating the car.
5. The combination of a vertically-extending stationary screw, a gravity-car movable along the same, a nut movably mounted on the car and coacting with the screw, and means for elevating the car, said means comprising a counterweight and connections between the counterweight and the car.
6. The combination of a stationary vertically-extending screw, a gravity-car movable along the same, a nut movably mounted on the car and coacting with the screw, a vertically-movable cross-head having a rotary connection with the car, and means in connection with said cross-head for raising the car.
7. The combination of a stationary, vertically-extending screw, a gravity-car, a nut movably mounted on the car and coacting with the same, a vertically-movable cross-head having revoluble connection with the car, a counterweight, and a connection between the counterweight and the car.
8. The combination of a vertically-extending stationary screw, a car movable along the same, a nut on the car coacting with the screw, the screw having a plain portion at its lower

end, for the purpose specified, and means for rotatably supporting the car at the lower end of the screw.

5 9. The combination of a stationary screw, a car movable with respect thereto, a nut mounted on the car and movable transversely of the screw toward and from the same, and means for manually operating the nut.

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

JOHN JOSEPH CARR.

Witnesses:

CYRUS EVANS,
DANIEL McRAE.