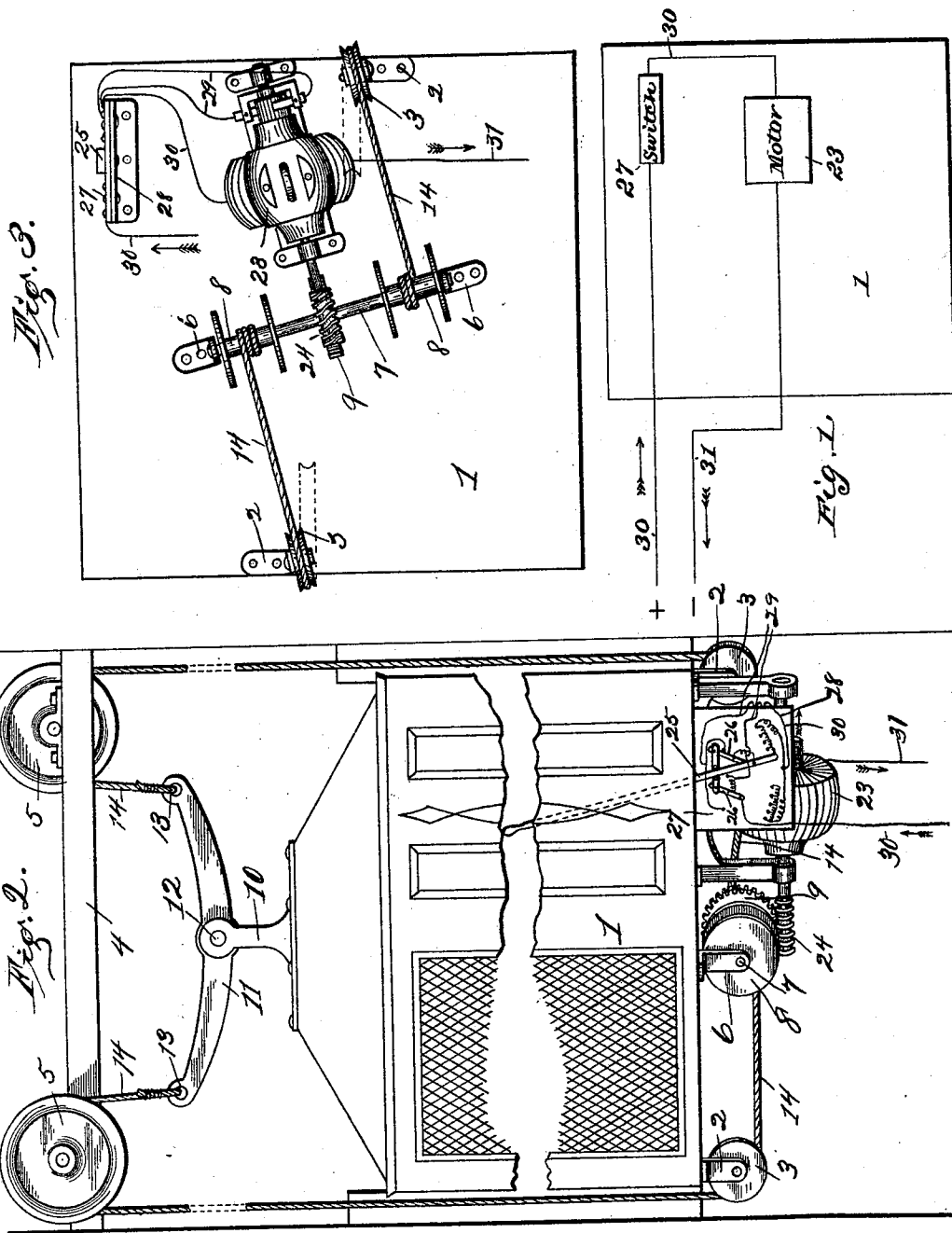


(No Model.)

J. W. BLAKE & F. H. LACEY.
G. H. BLAKE, Administrator of J. W. BLAKE, Deceased.
ELEVATOR.

No. 516,343.

Patented Mar. 13, 1894.



Witnesses:
W. P. Smith.
G. P. Thorpe.

Inventors:
John W. Blake.
F. H. Lacey.
By Higdon & Higdon Attys.

UNITED STATES PATENT OFFICE.

JOHN W. BLAKE AND FRANCIS H. LACEY, OF KANSAS CITY, MISSOURI;
GEORGE H. BLAKE ADMINISTRATOR OF SAID JOHN W. BLAKE, DE-
CEASED.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 516,343, dated March 13, 1894.

Application filed November 8, 1892. Serial No. 451,286. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. BLAKE and FRANCIS H. LACEY, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Elevators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates to an improvement in elevators for passenger or freight use in buildings of all kinds where it is necessary and desirable to place an elevator, and our objects are to produce an elevator which can be operated economically, and which is simple, strong and durable of construction.

To the above purposes our invention consists in certain peculiar and novel features of construction and arrangement, as will be hereinafter specified and claimed.

In order that our invention may be fully understood, we will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1. represents a diagrammatic plan view of the bottom of an elevator, and the motor, switch and current wires therefor. Fig. 2. is a front elevation constructed in accordance with our invention. Fig. 3. is a bottom plan view of the same.

In the drawings, 1 designates an elevator cage, of the usual or any preferred construction, which has journaled vertically in suitable pendent brackets 2, secured to the bottom of the cage at opposite sides thereof, the guide pulleys 3 which are arranged parallel to each other, but preferably at an angle to the lateral axis of the cage, and have their outer margins projecting slightly beyond the side edges of the cage. Supported in suitable frame work extending transversely of the upper end of the shaft, and at opposite sides thereof, are the guide pulleys 5, the longitudinal axis of each of which extends parallel with the other, and at an angle to the axis of the guide pulleys 3. The outer edge or margin of the upper guide pulleys 5 is in vertical alignment with its corresponding side pulley 3. Journaled horizontally below the bottom of the elevator cage in the lower ends of pend-

ent brackets 6, is the shaft 7, arranged at right angles to the longitudinal axis of the pulleys 3. This shaft 7 is provided near its opposite ends and in longitudinal alignment with the pulleys 3, with drums or spools 8, and also between said drums or spools with the worm-gear wheel 9. Erected vertically and centrally of the top of the elevator cage, is a bracket 10, to the upper end of which an equalizing bar 11 is pivoted centrally of its length at 12, and is provided with openings 13 at its opposite ends. Cables 14 are secured at one end through the openings 13 of the equalizing bar and are guided thence over the pulleys 5 and down and under the pulleys 3, and the free ends of the cables are carried, one to the upper side of its adjacent drum and the other to the lower side of its adjacent drum and are there secured. When the cage moves to the upper end of the shaft, as shown in the drawings, the cables will each be wound around its respective drum.

Secured to the bottom of the elevator car as shown, or in any other suitable manner is an electric motor 23, the armature shaft of which is arranged transversely of the shaft carrying the worm-wheel, and is provided at its inner end with the worm-thread 24 meshing with the teeth of the worm-gear wheel at its under side preferably, as shown.

Pivotally secured in the car in the usual manner is the hand lever 25 the lower end of which projects downward through a slot or aperture in the floor of the car and engages operatively the pivoted switch bars 26 of a current reversing switch 27 of the usual construction, the board 28 of which is arranged vertically pendent from the bottom of the cage, and parallel with and along the margin of the slot through which the lever operates, by bolts or other suitable means. The switch is connected up to the motor in the usual manner by wires 29 leading to the brushes of said motor, and the up current or positive wire 30, which leads to the switch thence to the motor and the down current or negative wire 31 which leads from the motor. The wires 30 and 31 are connected up to the usual positive and negative current wires of

an electric light system or to wires arranged for the purpose and connected to a dynamo or other current generator.

The operation of the device is as follows:

5 The lever being in the position shown, the current passing through the motor actuates the armature to revolve the shaft and worm thereof, to revolve the shafts carrying the drums so as to wind the cables around the
10 drums, thus shortening the rope and lifting the cage until the lever is thrown to a vertical position, which breaks the circuit and the cage stops. It is not necessary to use brakes of any description, because unless actuated revolvably the worm shaft can not re-
15 volve. When desiring to descend the lever is thrown in the opposite direction or toward the right as viewed in Fig. 1, causing the motor shaft through the medium of the reversing switch to revolve in the opposite direction and cause the drum shaft to pay out or un-
20 wind the cables.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

25 In an elevator, the combination, with a mo-

tor carried thereby, and having its shaft worm-threaded, and a switch, and current wires electrically connecting the motor and the switch together and to the source of supply, and a lever within the car electrically connected to the switch, of a shaft carried by the cage, and arranged at right-angles to the motor-shaft, and having a worm-gear meshing with the worm-thread, and drums carried
35 by said shaft and guide pulleys carried by the cage and having their peripheries projecting beyond the side margins of the cage, and an equalizing bar upon the elevator, and guide-pulleys mounted in the upper end of
40 the elevator shaft, and cables secured to the drums guided upon the guide-pulleys of the cage and the pulleys in the upper end of the "elevator-shaft" and secured to the equalizing bar, substantially as set forth.

45 In testimony whereof we affix our signatures in the presence of two witnesses.

JOHN W. BLAKE.
FRANCIS H. LACEY.

Witnesses:

MAUD FITZPATRICK,
MARTIN P. SMITH.