(No Model.)

G. A. MOORE.

ELEVATOR.

No. 382,487. Patented May 8, 1888.

Fig. 2.

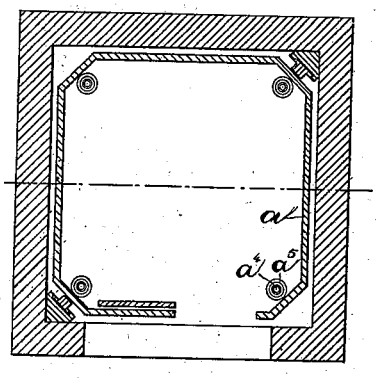


Fig. 3.

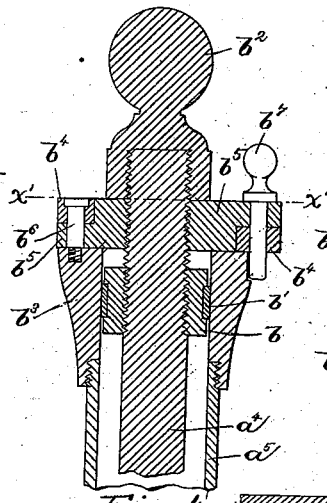


Fig. 5.

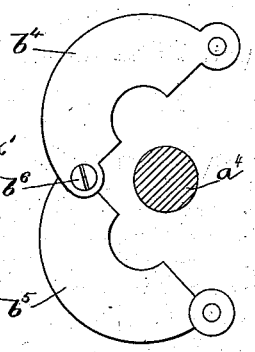


Fig. 1.

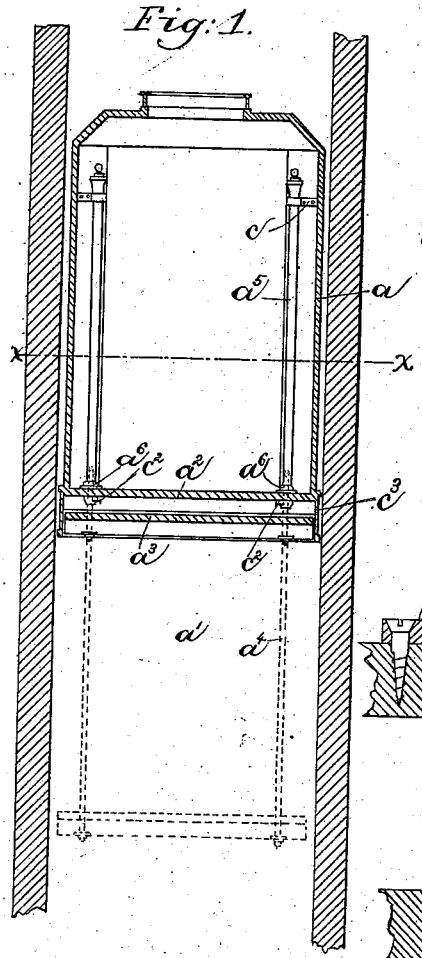


Fig. 4.

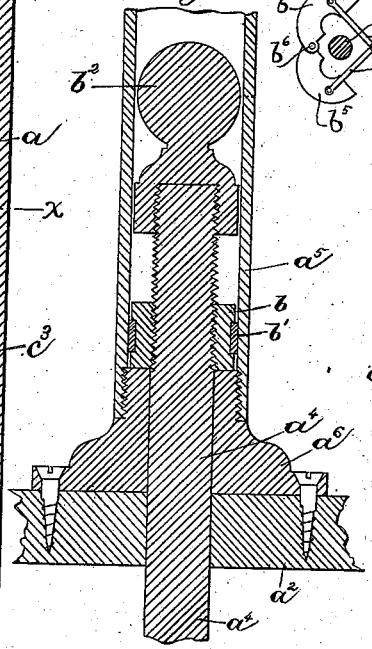


Fig. 6.

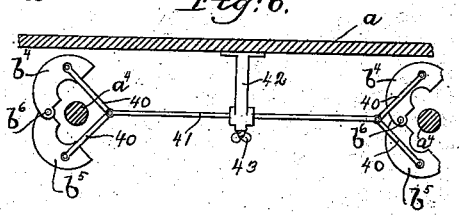


Fig. 7.

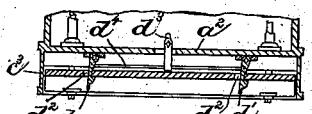


Fig. 9.

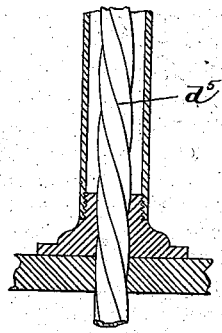
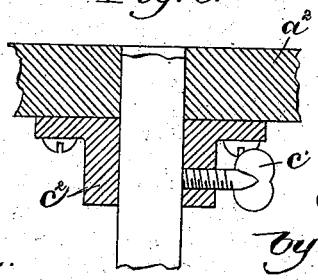


Fig. 8.



Witnesses.
Howard F. Eaton.
Fredrick L. Emery.

Inventor.
George A. Moore.
By Crosby & Gregory. Attys.

UNITED STATES PATENT OFFICE.

GEORGE A. MOORE, OF CAMBRIDGE, MASSACHUSETTS.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 382,487, dated May 8, 1888.

Application filed January 27, 1888. Serial No. 262,124. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. MOORE, of Cambridge, county of Middlesex, and State of Massachusetts, have invented an Improvement in Elevators, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

Many elevators in use in hotels and other public places are and have to be adapted for both passengers and freight.

In this class of elevators as now made the freight-platform is fixed to the passenger-car at a distance from its bottom or floor, and the elevator-well is excavated below the lowest passenger-landing for a depth equal to the distance of the freight-platform below the passenger car or floor; or, in other words, the freight-platform, connected rigidly to the car-body and occupying a fixed position with relation to the car-body and at a distance below the car-floor equal to nearly the height of the passenger-car, enters a pit at the bottom of the elevator-well. The formation of a pit at the bottom of the elevator-well for the reception of the attached freight-platform is sometimes very difficult, owing to the nature of the soil, and is at the same time more or less expensive. In some instances the basement-story of the hotel or other building is utilized as part of the elevator-well, and in this case, with elevators as now constructed, the said basement-story is not accessible from the passenger-car.

In my experiment, to avoid making the pit and at the same time to enable the basement-story to be accessible to passengers in the passenger-car, and so, also, to avoid the usual unsightly freight-platform dependent from the passenger-car, I have combined with the passenger-car an extensible freight car or platform which, when it is desired to carry freight, may be quickly brought into position to be used as a freight car or platform, the said freight car or platform when not to be used being brought close up to the floor of the passenger-car, as will be described.

My invention consists, essentially, in the combination, with a passenger-car, of an extensible auxiliary freight car or platform which at will may be brought in position to be used as a freight-car.

Other features of my invention will be pointed out in the claims at the end of this specification.

Figure 1 is a vertical section through the elevator-shaft and passenger-car, the said drawing by full lines showing the auxiliary or freight car in the position occupied by it when not in use, and by dotted lines the position when in use, the lines of section being shown in Fig. 2; Fig. 2, a section of Fig. 1 on line x x; Fig. 3, a sectional detail showing the manner of securing the auxiliary or freight car platform in its fuller-line or inactive position, as when the said freight-car is not in use; Fig. 4, a sectional detail showing the position of the parts when the auxiliary car is in use; Fig. 5, a section of Fig. 3 on line x' x', showing the clamping-arms open; Figs. 6, 7, and 8, details to be referred to, and Fig. 9 a modification to be referred to.

The passenger car or cage a, located in the shaft or well a' of a building, may be of ordinary or well-known construction, it being adapted to be raised and lowered in the said shaft or well in any well-known or usual manner. The passenger car or cage a has extensibly attached to it below its bottom or floor a^2 an auxiliary car or platform, a^3, which in the ordinary use of the elevator will be employed as a freight car or platform.

The auxiliary car or platform a^3 may be extensibly attached to the passenger-car, as herein shown, by means of rods a^4, one end of each rod being secured to the auxiliary car or platform, preferably near the corners of the same, and the other end of the said rod extended up through the floor a^2 of the passenger-car and into a tube or pipe, a^5, secured, as shown, to a base, a^6, attached to the car-floor.

Each rod a^4 at its extremity within the tube is herein shown as screw-threaded to be engaged by a threaded collar, b, provided with a packing, b', between the said collar and the interior of the tube, the said rod at its end also having a cap, b^2, fitted thereon.

The tube or pipe, as herein shown, has screwed upon its upper end a sleeve or extension, b^3, to which is fastened a clamp consisting of two arms, b^4 b^5, pivoted, as at b^6, to the said extension. Each arm of the clamp is provided, as shown, with a semicircular recess, which enables the arms to encircle the rod a^4 when the said arms are fastened together by

a pin, b^7, or otherwise, the said arms encircling the rod below the cap b^2, as shown in Fig. 3, thereby preventing the downward movement of the rod within the tube or pipe a^5, and thus holding the auxiliary car or platform in its elevated or full-line position immediately below the floor of the passenger-car.

Each tube or pipe a^5, as shown, is sustained at its upper end by a bracket, c, secured to the sides of the car. Each rod a^4, below the car-floor, is preferably provided with an auxiliary clamping device, shown as a set-screw, c', extended through a boss or collar, c^2, secured to the car-floor.

In operation let it be supposed that the auxiliary car occupies the position shown by full lines, it being preferably concealed from view by a panel, c^3, secured to the passenger-car. With the auxiliary car or platform in the position shown, the passenger-car may be used in usual manner to carry passengers. If it is desired to use the auxiliary car or platform for transportation of freight—such as trunks, &c.—from one floor to another of a building, the operator, through the shipper-rope or other usual operating mechanism, (not shown,) raises the car a sufficient distance to enable him to loosen the set-screws c' or other clamping device on the rods a^4, and he then releases the clamping-arms b^4 b^5 at the top of the tubes or pipes a^5, and if the car is at the bottom or ground floor the operator starts the operating mechanism to raise the passenger-car, while the auxiliary car or platform remains stationary. As the passenger-car rises, each tube or pipe travels up over its rod a^4 until the base a^6 strikes against the collar b, and when this occurs the operator stops the movement of the passenger-car. If it is desired to use the auxiliary car or platform when the passenger-car is at or near the upper floors of the building, the operator unclamps the rods, as described, thus permitting the auxiliary car to descend by gravity until the collar b strikes the base a^6.

The clamping-arms b^4 b^5 at the top of the tubes may be operated singly or in pairs, they being connected substantially as shown in Fig. 6, wherein the arms b^4 b^5 on opposite sides of the car a are joined by links 40 to a rod, 41, herein shown as extended through a suitable bracket, 42, the said rod being clamped in any desired position by screw 43; or all four clamps may be operated at once. If desired, the auxiliary car may be locked to the passenger-car by latches d d', as shown in Fig. 7, the said latches being adapted to pass through slots d^2 in the auxiliary car and to be operated to unlock the said auxiliary car by a lever, as d^3, extended into the passenger-car, the said lever being connected to a rod, d^4, joining the said latches.

As shown in Figs. 3 and 4, the rod a^4 is made smooth or plain, so as to slide within the tube; but instead thereof the said rod may be made with spiral grooves d^5, as shown in Fig. 9, to co-operate with a spiral groove in the base a^6, or it may be in the tube itself, the rod a^4 in such event being free to rotate.

The tubes a^5 are herein shown as located inside the passenger-car; but, if desired, it is evident that the same may be located outside thereof.

I prefer to employ the means shown for guiding and securing the auxiliary car or platform to the passenger-car; but I do not desire to limit my invention to the particular mechanism shown, as the said auxiliary car may be raised toward and lowered from the passenger-car in many obvious ways—such, for instance, as by racks and pinions.

In practice the auxiliary car or platform will be guided in the shaft or well by the same guides as the passenger-car.

The tubes or pipes a^5 are shown as extended up into the passenger-car a considerable distance, and the rods a^4, extended into said tubes, are made in one piece; but it is evident that the tubes a^5 may be made considerably shorter and the rods a^4 made in sections, so as to telescope within the said short tube, and when this construction is used the said tubes may be located beneath the seats.

I claim—

1. In an elevator, a passenger-car combined with an auxiliary car or platform extensibly connected thereto, substantially as described.

2. In an elevator, a passenger-car, tubes or pipes, as a^5, secured thereto, combined with an auxiliary car or platform located below the said passenger-car and provided with rods to enter the said tubes or pipes, and with a clamping device to secure the said rods and lock the auxiliary car in its elevated position in proximity to the passenger-car, substantially as described.

3. In an elevator, a passenger-car provided with a panel, as c^3, combined with an auxiliary car or platform extensibly connected to the passenger-car and adapted to be concealed in its elevated position by the said panel, substantially as described.

4. In an elevator, a passenger-car, tubes or pipes secured thereto, and an auxiliary car or platform located below the said passenger-car and provided with rods a^4 to enter the said tubes or pipes, combined with a clamping device at or near the top of the said tubes to secure the said rods, and with a second or auxiliary clamping device located below the passenger-car floor, substantially as described.

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

GEORGE A. MOORE.

Witnesses:

JAS. H. CHURCHILL,

J. C. SEARS.