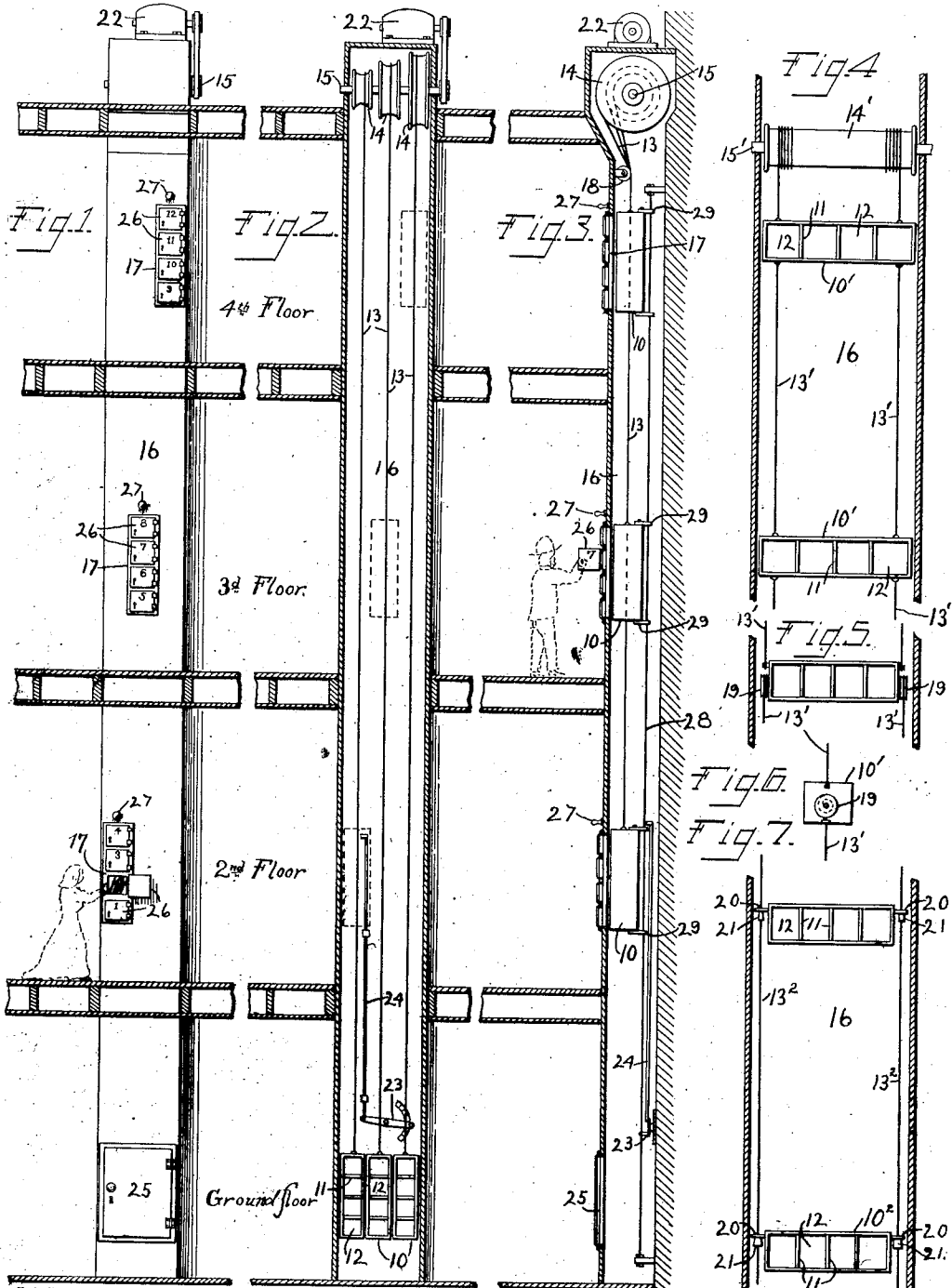


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MAIL ELEVATOR.
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Patented Apr. 4, 1911.



WITNESSES.
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MAIL-ELEVATOR.

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To all whom it may concern:

Be it known that I, ALBA D. ARCHIBALD, a citizen of the United States, and residing in Covington, Kenton county, State of Kentucky, have invented a certain new and useful Mail-Elevator; and I do declare the following to be a clear, full, and exact description thereof, attention being called to the accompanying drawing, with the reference characters marked thereon, which forms also a part of this specification.

This invention relates to means for elevating mail-matter, to be delivered to the various stories of a building, particularly of an apartment building.

The object is to limit delivery by the postman to one place, which is the ground floor, and from whence the mail is elevated and delivered to the various floors above where it may be obtained.

The invention consists of the means whereby such elevation is brought about, the arrangement being such that the mail-matter is properly delivered to the intended floor in each case, where it becomes accessible to the intended parties.

In the following specification and particularly pointed out in the claims at the end thereof, is found a full description of the invention, together with its operation, parts and construction which latter is also illustrated in the accompanying drawings, in which:—

Figure 1, in a vertical, sectional view of a building, shows my invention applied to the various stories of the same. Fig. 2, shows the same parts in a similar view, the front side of the elevator-shaft being removed however. Fig. 3, in a similar view shows the same parts, the plane of section being taken at right angles to the preceding views and passes through the elevator-shaft. Fig. 4, shows the shape of the mail receivers modified, also the form of their suspension. Fig. 5, shows another modified form of suspension. Fig. 6, is an end-view of the mail receivers shown in Fig. 5. Fig. 7, shows still another form of suspension.

In the drawing 10, indicates a suitable, box-shaped receiver, there being one for every upper story of the building, meaning thereby the stories above the one where the postman delivers the mail. These boxes are sub-divided by partitions 11, to produce compartments 12, there being such a compartment for each room, flat, or apartment

of a floor in case these latter are so arranged, four flats being assumed in this case. Ropes or cables 13, are provided, secured to and passing over drums or sheaves 14, mounted on a shaft 15, which is supported at the upper end of an elevator-well or shaft 16, which extends through the various stories of the building. The location of this elevator-shaft is preferably such that access to it may be had from the hall in each particular story, openings 17, being provided for such purpose in the front-wall of the elevator shaft.

The use and operation of the system is as follows: The mail-man upon arrival on the delivery floor causes the boxes from the various floors to appear behind the opening in the wall thereat as shown in Fig. 2. He next proceeds to distribute the mail for the various flat-dwellers, depositing the same in the compartments designated for each and in the proper box for each particular floor. He then causes rotation of the sheaves so that the cables are wound upon them whereby the various boxes are elevated. The arrangement and construction is such that each box comes to a stop behind the opening in the hall of the proper floor for which it serves, as shown in Fig. 3, and in dotted lines in Fig. 2, after which they remain stationary so that each flat-dweller may obtain his mail. The intention is that these boxes remain in such position until the postman lowers them temporarily at the next delivery, so that it is not necessary to be at the opening when the mail arrives and the same may be taken out at any time between deliveries.

The stoppage of the various boxes at various elevations, each at its proper floor, notwithstanding all of them are operated by the same mechanism, may be accomplished in several ways. In the preferred form shown in Figs. 1, 2, and 3, the boxes are arranged side by side and each has a cable and each cable is connected to an individual sheave. These latter are of graduated diameters so that, notwithstanding they are all mounted upon and rotated by the same shaft, their elevating action is different, and while all boxes move at the same time and stop at the same time, those hoisted on the smaller sheaves are not raised so high. Guide-rollers 18, may become necessary in this case as shown. In Fig. 4, I show the boxes as indicated by 10' arranged

one above the other and one cable is provided at each one of their ends. The sheaves in this case are of equal diameter, or a drum 14' may be used for both cables. The cables are fastened to the upper box and intermediate cables 13' connect these boxes to each other. These latter cables are of proper length to suit the distance between the openings in the various stories so that when the upper box has reached its position opposite its opening in the uppermost story, the entire series of boxes hang suspended in proper relation with reference to the openings in the various stories so as to appear behind them in proper register. Only light cables or ropes being necessary, the slack when the boxes are down, will readily take care of itself. Spring-actuated rollers 19, as shown in Figs. 5, and 6, might however be provided on the boxes to which one end of each of these intermediate cables is secured and the springs of which are wound by the unwinding of the ropes when the boxes are raised, and which when released take up the slack.

In another arrangement shown in Fig. 7, the cables 13², one opposite each end of the receivers 10² pass through eye-lugs 20, projecting from their ends. The openings of these eye-lugs are of different, graduated diameters, and buttons 21 are provided on the cables oppositely arranged and properly spaced. The uppermost receiver has the smallest sized eye-lugs and is engaged by the smallest button on the cables, these buttons being merely sufficiently larger to prevent them from passing through these lugs, but are free to pass through all others below. The receiver below is raised by the next larger buttons and all as shown in the drawing.

As motive power it is preferable to use a small electric-motor 22, suitably connected to shaft 15, and controlled by a switch 23, located so as to be accessible to the mail-man. The operation of the motor as to length of time is preferably controlled automatically by means traveling with the moving parts and acting again upon this switch to throw it out of contact when the boxes have arrived in proper position. The lower box for instance may be used for such purpose acting upon the switch by means of a rod 24, slidably supported. A lockable door 25, is preferably provided at the lower floor, accessible only to the mail-man, and which may also control access to the switch. Compartments 12, may each have also a lockable door, the keys thereto being held by the corresponding flat-dwellers. The postman would have a master key controlling all of them. Another and perhaps preferable way would be to have the boxes without doors and to provide the doors for them within openings 17, behind which these boxes come

to a stop, there being a door 26, for each box. The boxes themselves, that is within the shaft, would thus be always open and the mail-man would require no key for them. In either event however a flat dweller would have access only to his particular compartment and be excluded from all others.

A suitable signal may be provided which operates while the elevators are in motion, to preclude possibility of accidents by persons above thrusting their hands into the well during that time. This signal may consist of electric lamps 27, one provided near each opening 17, and controlled by the same means, (switch) which controls the operation of the motor, so that it acts simultaneously with this latter, both being included in one circuit. A notice with appropriate instructions would be posted adjacently. Suitable guiding means to hold the boxes to their proper positions, particularly while in motion, are provided. They may consist of wires 28, stretched taut and on which the boxes move up and down, being held thereto by eye-lugs 29. The elevator-shaft may be an independent shaft built up against the walls or recessed into the same. The outfit may obviously be also used by the dwellers for the purpose of sending their mail out, which they deposit in these boxes before they are lowered. The outfit may of course be also used in connection with other matter which is to be elevated and distributed similar to mail-matter.

Having described my invention, I claim as new:

1. In means for elevating mail, the combination of a series of suitable receivers, ropes or cables on which they are suspended so as to be side by side when each receiver is in its lowest position, sheaves to which the ropes are connected, a shaft on which the sheaves are mounted, and means to rotate the shaft so as to rotate all sheaves simultaneously for the purpose of winding the ropes upon them, the diameter of the sheaves being graduated so that the ropes travel with different speeds.

2. In means for elevating mail, the combination with the structural parts of a building, of an elevator-well which extends through the various stories thereof and is provided with openings permitting communication between it and each mail-receiving story, a series of mail-receivers, one for each of these stories, they being sub-divided into compartments to any corresponding subdivision of these stories, there being such a compartment for each subdivided apartment of the story, means to suspend these receivers in the well, devices to manipulate these suspending-means to move the receivers from a normal, lower position, to one where each receiver is opposite the opening to the story to which it appertains and doors controlling communication between each receiver and its

corresponding story, there being a separate door for each compartment in each receiver.

3. In means for elevating mail, the combination with the structural parts of a building, of an elevator-well which extends through the various stories of the same and is provided with openings, one opposite each mail receiving story, mail-receivers, means to suspend them in a manner that all occupy a normal, lowest position on the story where they are charged and opposite the opening thereat which is of a size to permit simultaneously access to all the receivers, and devices to manipulate their suspending means to lift the receivers, each to a position opposite the opening on its particular story which latter openings are of a size limited to permit access only to its particular receiver.

4. In means for elevating mail, the combination with the structural parts of a building, of an elevator-well which extends through the various stories of the same and is provided with openings, one opposite each mail-receiving story, mail receivers, means to suspend them in a manner that all occupy a normal, lowest position on the floor where they are charged and opposite the opening thereat which latter is of a size to permit simultaneously access to all the receivers, a door for this opening which controls this access to all the receivers, devices to manipulate their suspending means in a manner to lift them from opposite this larger opening,

to a position in which each is opposite the opening on its particular story, which latter openings are of a size corresponding to the particular receiver and doors of complementary size to control access to each receiver after they have been raised to be opposite their respective openings.

5. In means for elevating mail, the combination with the structural parts of a building, of an elevator-well which extends through the various stories thereof and which has openings whereby communication may be had between it and the various mail-receiving stories, a series of suitable mail-receivers, one for each mail-receiving story, ropes to which each of said receivers is permanently connected and whereby they are supported in the elevator-well, winding means in the upper part of this well to which each of the ropes is permanently connected and devices to operate these suspending means so that the receivers are simultaneously reciprocated within the well and lifted, all simultaneously, from their lowermost position to one opposite the openings to their respective stories.

In testimony whereof, I hereunto set my signature in the presence of two witnesses.

ALBA D. ARCHIBALD.

Witnesses:

C. SPENGEL,
A. E. PAINTER.