Dec. 12, 1950 G. L. ELY 2,534,192

ELEVATOR

Filed July 28, 1948 2 Sheets-Sheet 1

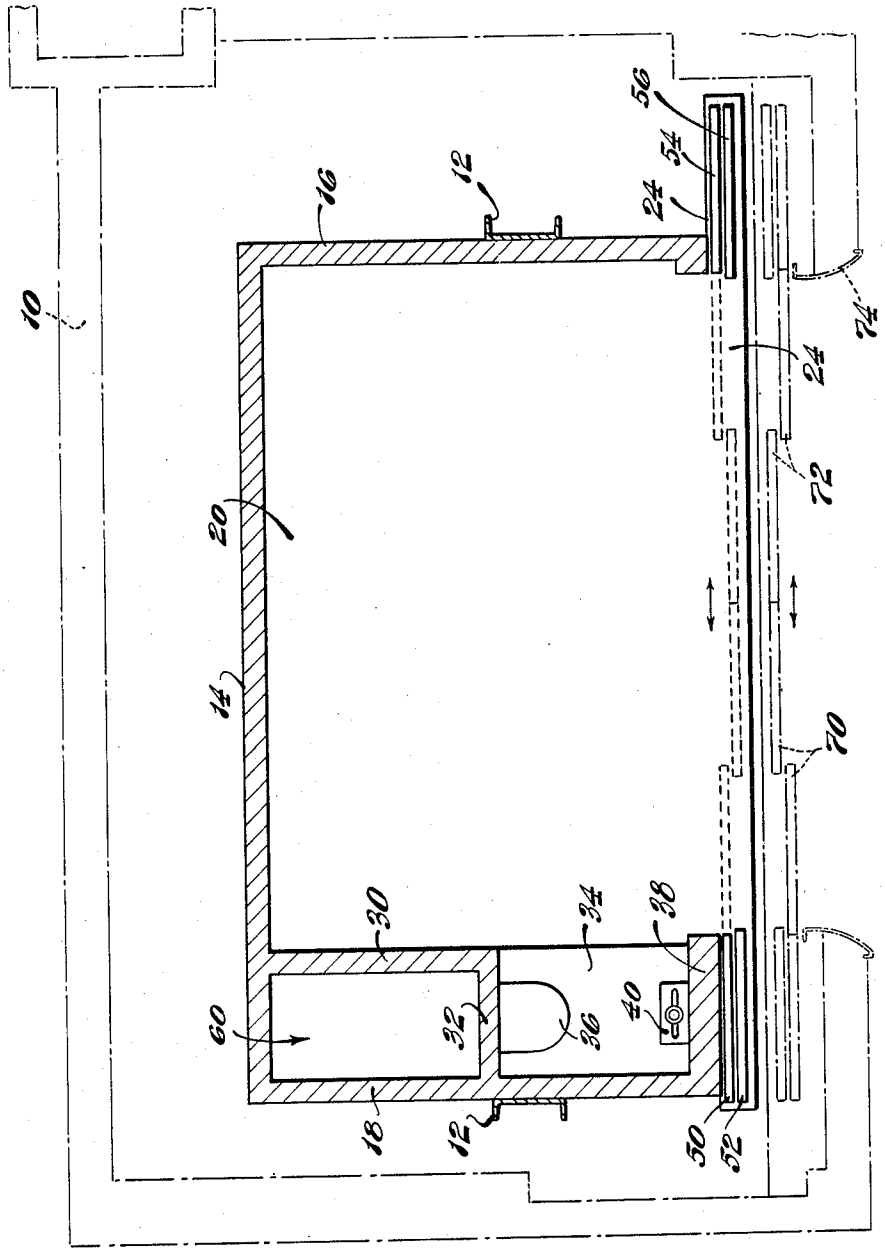


Fig. 1

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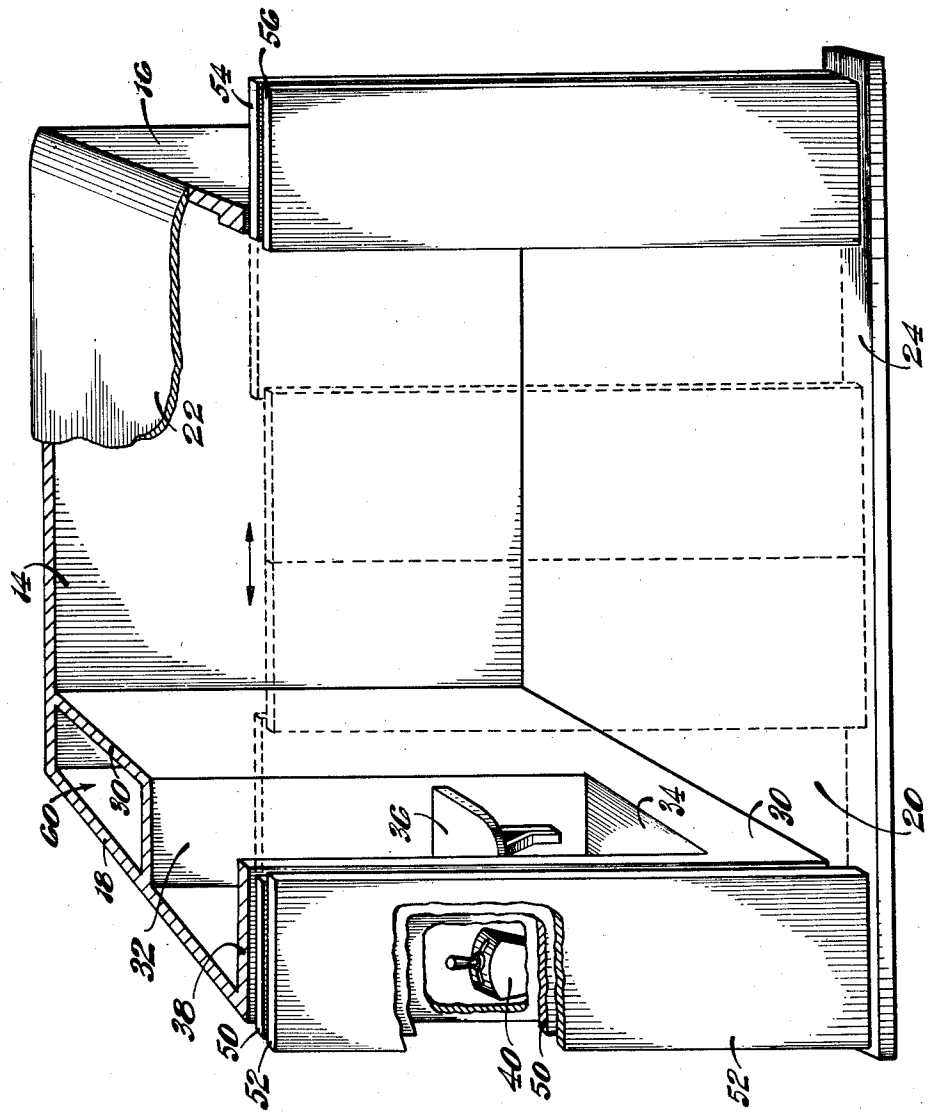


Fig. 2

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2,534,192

ELEVATOR

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8 Claims. (Cl. 187—1)

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My invention relates to elevators and particularly to closed car elevators used to convey passengers in stores and office buildings.

The most important object of my invention is to increase the efficiency of elevator operation in terms of loading and unloading time, or trips per hour, and operator efficiency.

Another object of my invention is to secure maximum safety of elevator operation.

The most important feature of my invention resides in an elevator car having an entrance as wide as the passenger space within it, thus eliminating the crowding and jostling incident to the operation of conventional cars in which the entrance is constricted to less than half the width of the passenger space.

Another feature of the invention consists in the provision of separated compartments for the operator and the passengers, the operator's booth being raised above the floor level of the passenger compartment, not only to free the operator from passenger interference but also to afford him a clear, unimpeded view of the car and the area adjacent the elevator doors on each floor of the building.

It has been determined that an elevator constructed in accordance with the invention makes several more trips per hour than a conventional type, because the time consumed at each stop is materially lessened. Consequently the space in the building assigned for elevator shafts is more usefully employed, passengers receive faster service, and operator fatigue is reduced to a minimum.

These and other objects and features of the invention, together with incident advantages, will more readily be understood and appreciated from the following detailed description of a preferred embodiment thereof selected for purposes of illustration and shown in the accompanying drawings, in which:

Fig. 1 is a view in horizontal cross section of an elevator constructed in accordance with my invention, and

Fig. 2 is a view in perspective of the elevator, the roof being largely broken away to expose the interior.

As shown in Fig. 1 the elevator of my invention is disposed in a well or shaft of a building, the shaft being defined by walls shown in broken lines at 10. An opposed pair of vertical girders 12 serve as guides along which the car slides. The mechanism for raising and lowering the car forms no part of my invention and is not shown in the drawings.

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The elevator car is constructed of steel, wood or combinations thereof and includes a full length rear wall 14, and end walls 16 and 18, all supported on a floor 20 and covered by a roof 22. The floor 20 extends forwardly of the end walls 16 and 18 to form a ledge 24 running across the full width of the elevator and extending laterally beyond the wall 16 by an amount equalling approximately one fifth of the distance between the end walls 16 and 18.

A partition 30 extends forwardly from the rear wall 14 parallel to the end walls and spaced from the wall 18 by an amount also equalling one fifth of the distance between the end walls 16 and 18. At the front of the car the partition 30 is cut away to form an alcove or booth barbed by a short transverse wall 32 and provided with a floor 34 raised a foot or more above the level of the floor 20. Within the booth a seat 36 is mounted on the short wall 32, and the front of the booth is formed by a second short transverse wall 38 again equal in width to one fifth the distance between the end walls 16 and 18. Door controlling mechanism 40 is secured to the inner surface of the wall 38 and disposed at a height convenient for an operator occupying the booth.

It will be evident that the car provides passenger space on the floor 20 which is separated from the operator's booth and that there is no front wall which covers any portion of the passenger area. Inasmuch as laws and ordinances usually require that elevators be provided with doors, I employ two pairs of sliding doors each of which is equal in width to one quarter of the distance from the end wall 16 to the partition 30. One pair 50 and 52 when open (shown in full lines) stand in completely overlapped relation in front of the wall 38 which forms the forward end of the operator's booth. The other pair of doors 54 and 56, when open, are also completely overlapped and stand on the lateral extension of the ledge 24.

When the doors are to be closed the doors 50 and 54 advance toward each other to close the quarter spaces adjacent the sides of the opening, while the doors 52 and 56 are advanced further until they meet and close the inner quarters of the opening. The closed position of the doors is shown in broken lines in both figures. The door operating mechanism forms no part of my invention and is not shown on the drawings.

It will be observed that there is a small enclosure 60 formed by the walls 14, 18, 30 and 32. The enclosure 60 may be utilized for storage of various articles or used as a clothes locker for

the operator, a suitable access door (not shown) being provided.

At each floor of the building I provide pairs of sliding doors 70 and 72 (shown in broken lines) and a mirror 74 disposed on the jamb to afford the operator a view of conditions out of range of direct view.

It might be thought that the maximum space for passengers is not fully employed by the arrangement shown and described, because of the lateral extension of the ledge 24 and because of the space occupied between the partition 30 and the wall 18. However, nothing is lost because of the extension of the ledge, since adjacent elevators cannot practically be disposed so closely together as to make that space available. Moreover the space occupied by the operator is no more than is required in conventional types. The great decrease in loading and unloading time effected by the full front opening more than compensates for the loss to passengers of the enclosure 60.

In addition to speeding up the operation of the elevator, the arrangement of my invention reduces the jostling of the passengers and renders the service more comfortable. The operator is not only protected from crowding but is also raised to a commanding position in which he has better control of the elevator, better vision, and is less subject to fatigue because the work is easier.

Variations from the arrangement shown and described will suggest themselves to those skilled in the art, but the invention is not limited to the details herein shown but is to be measured by reference to the appended claims.

Having now described and illustrated a preferred embodiment of the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. An elevator comprising walls forming a car entirely open at one side, a booth adjacent said open side and raised above the level of the car floor, and a plurality of opposed sliding doors carried by the car and movable either entirely to cover or entirely to expose said open side.

2. An elevator as defined in claim 1 wherein door controlling mechanism is disposed in said booth.

3. An elevator comprising a floor, rear and side walls disposed on said floor, walls forming a booth adjacent one of said side walls, the width of said booth being approximately one fifth the distance between the side walls, and opposed sliding doors arranged to move across the floor either to cover or completely expose the front of the car between the booth and the opposite end wall.

4. An elevator comprising a first floor, rear and side walls forming three sides of a substantially rectangular enclosure, walls forming a booth adjacent one of said side walls, a second floor for said booth raised above the level of said first floor, and doors arranged to cover or reveal the fourth side of the rectangular enclosure.

5. An elevator car comprising walls forming an enclosure having a floor and side walls, an opening in one side of said enclosure, partitions defining an elevated compartment at one end of said enclosure adjacent said opening, said partitions being constructed and arranged to define within the car a chamber communicating with the opening and substantially as wide as said opening, and two opposed pairs of doors mounted on the car and movable from a retracted position in which said opening is entirely unobstructed to an extended position in which the opening is entirely closed.

6. An elevator car comprising walls forming an enclosure having a floor, and side walls, an opening in one side of said enclosure, partitions dividing the enclosure into an elevated compartment adjacent the opening and a chamber communicating with the opening and substantially as wide as said opening, and two opposed pairs of doors mounted on the car and movable from a retracted position in which said opening is entirely unobstructed to an extended position in which the opening is entirely closed.

7. An elevator car comprising a compartment formed by a floor and a plurality of side walls with an opening extending across one side of said compartment, opposed doors movable from a position at either side of said opening in which said opening is completely unobstructed to a position in which said opening is fully closed, and walls forming a booth disposed adjacent to and communicating with said large compartment, said booth having a floor elevated above the level of the large compartment.

8. An elevator car comprising walls and a floor forming an enclosure, one side of said enclosure being open, means for closing and opening said open side of the enclosure, said means being so constructed and arranged as to present no obstruction to access to the enclosure when in the open position, and partitions and an elevated floor defining a compartment at one end of said enclosure adjacent said opening and communicating with said enclosure.

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The following references are of record in the file of this patent:

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