

[54] PET DOOR DEVICE

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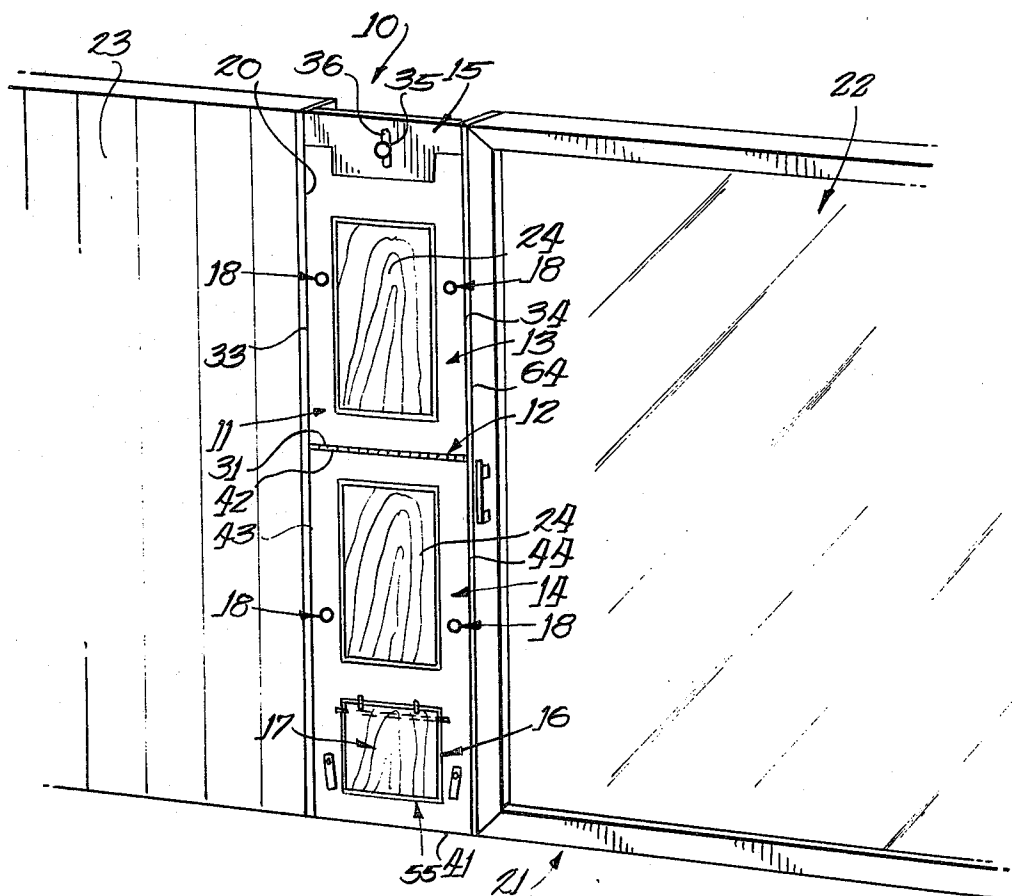
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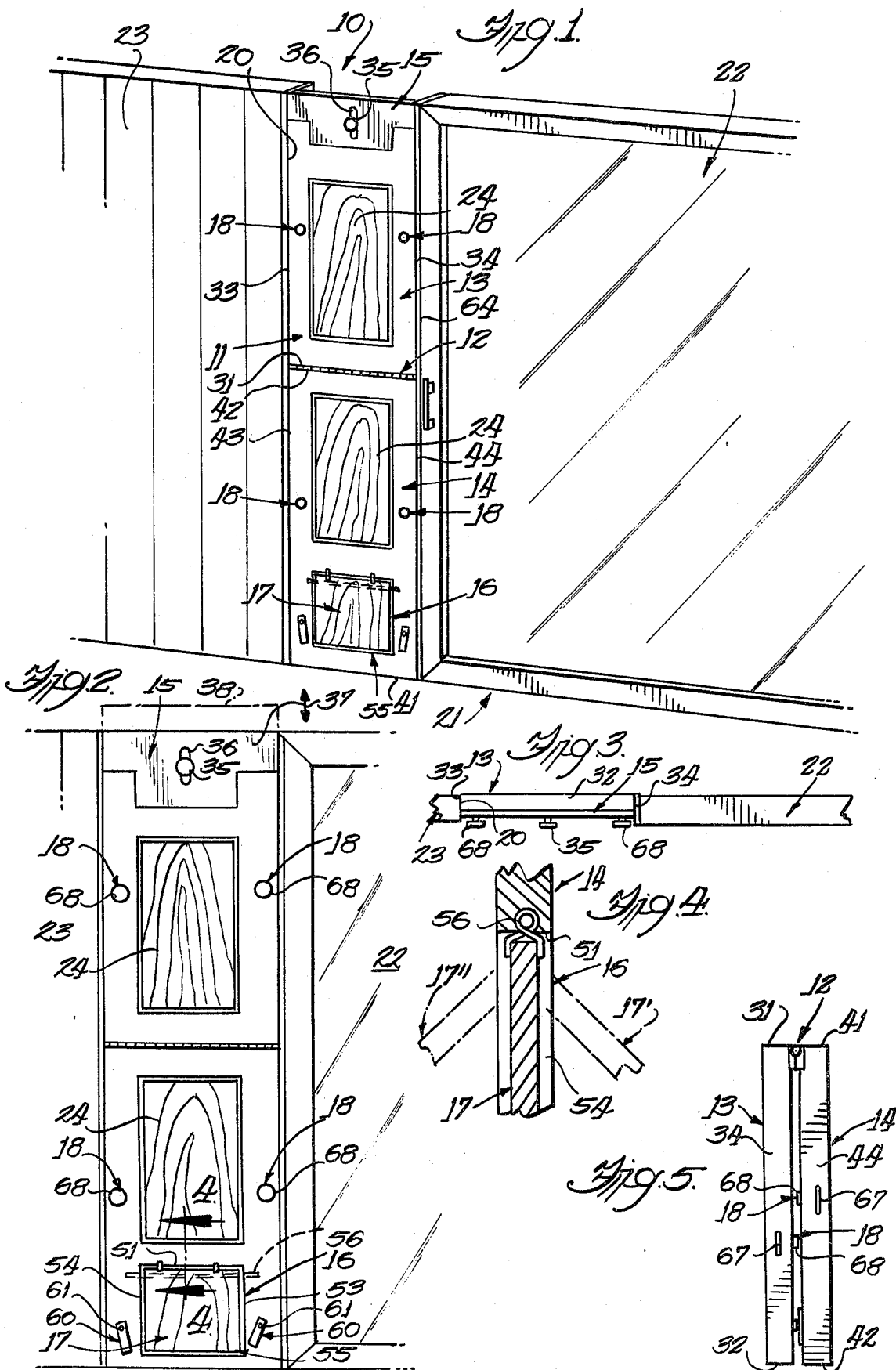
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ABSTRACT

A pet door device intended for installation in the door frame of a pair of overlapping sliding doors such the type providing exits and entries to homes and the like, the device to be mounted adjacent one side edge of the door frame and permitting a pet, such as a dog or cat, to pass therethrough from an indoor locality to an adjacent outdoor locality and return again indoors when so desired, the device consisting of a vertical door hinged across its middle section to divide the door into a top panel and a bottom panel permitting the door to be folded in half for storage and carrying purposes, the top panel having a sliding plate connected to the top edge thereof and extending the full width thereof and adjustable to vertically extend the height of the door to custom fit the door frame in which the door is mounted, the bottom panel including a pet passageway therethrough which is closed by a pet actuated swinging door panel permitting the pet to pass in either direction therethrough without assistance, and door retaining means adapted to detachably attach the door to the door frame in the selected position.

1 Claim, 5 Drawing Figures





PET DOOR DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to door structures and more particularly to a novel and improved pet door device adapted for the passage of small animals, such as dogs and cats, therethrough without requiring human assistance.

2. Description of the Prior Art

There have long been in use in the prior art devices intended to be inserted into a door or wall and which provides a hole or passageway therethrough enabling a pet, such as a dog, cat, or the like, to pass outwardly therethrough and subsequently return therethrough at will, some of such devices being actuated by the pet with other of such devices being actuated by the pet's human owner. However, all of such devices require substantial alteration of existing doors or walls, such as by cutting operations, drilling, or the like resulting in a permanent defacing of such door, wall or the like with the associated difficulties and time consuming problems of installation.

Further, once such devices are so installed in such doors or walls, should an individual later wish to remove the same it can only be accomplished by a severe patching job on such door or wall, or replacement of the modified door with a new unmodified door, such requiring a substantial cost to the individual.

In addition, such devices are not suited for the more popular sliding entryway doors, such as of the pair of overlapping glass sliding patio doors, which do not permit any alteration or modification to be made therethrough without endangering the glass surface. In such cases, prior to the present invention, the pet owner had no alternative but to attempt to install the prior art pet door devices through a wall of the house, such being exceptionally time consuming, very difficult, and requiring special tools and expertise so that professional installation by individuals other than the homeowner was normally required.

SUMMARY OF THE INVENTION

The present invention recognizes the problem of the homeowner who owns a small pet and wishes to provide a means for the pet to exit and enter the home without disturbing the owner, with the most desirable place for such means involving a sliding type door providing the normal outside home exit and entry, with the present invention providing a novel solution thereto in the form of a door structure adapted to be mounted in the sliding door frame requiring no alteration or modification to the sliding doors and which may form a permanent portion of the door frame or which may be readily removed therefrom when desired without leaving any markings or indication that the same had ever been installed in such door frame.

It is a feature of the present invention to provide a pet door device specifically intended for installation in the door frame of a horizontally sliding door in a manner to provide a pet door therein to accommodate animals of different sizes therethrough, such door being actuated by the pet without requiring assistance, and with such device being readily attached to and detached from the door frame without requiring any modification thereof.

A further feature of the invention provides a pet door device specifically intended for use with horizontally

sliding type house doors providing house exists and entrances and which may be installed in the door frame in a weather tight manner for keeping out the elements, such as rain, snow, drafts, and the like while providing a pet actuated swinging door permitting freedom of movement of the pet at will indoors or outdoors therethrough.

Yet still a further feature of the invention provides a pet door device intended for installation in the door frame of a horizontal sliding type door and which is relatively simple in its construction and which therefore may be readily manufactured at a relatively low cost and by simple manufacturing methods.

The provision of a pet door device intended for installation in the door frames of horizontally sliding doors without requiring alterations or modifications to the doors, such as briefly outlined above, and possessing the stated advantages, constitutes the principal features of the present invention. The provision of a pet door device which is relatively devoid of moving parts and which therefore is unlikely to get out of order; one which is rugged and durable and which therefore may be guaranteed by the manufacturer to withstand many years of intended usage; one which is aesthetically pleasing and refined in appearance so as to provide a pleasing addition to the home while providing a pet door for freedom of movement of the pet without bother to the owner; one which is adapted to be installed in the door frame associated with any normal conventional type horizontal sliding doors, such as glass patio doors and the like, without any modification or alteration thereof; one which is adapted to be folded in half to reduce the size thereof for ease of transportation and carrying, and which yet is readily unfolded to the normal installed position without requiring any special tools or expertise; and one which, otherwise, is well adapted to perform the services required of it, are further desirable features which have been borne in mind in the production and development of the present invention.

Other features and advantages of this invention will be apparent during the course of the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings forming a part of this specification, and in which like reference characters are employed to designate like parts throughout the same:

FIG. 1 is a perspective view of the interior surface of a wall having a sliding door mounted therein and illustrating a pet door device constructed in accordance with the present invention installed in the door frame;

FIG. 2 is a front elevational view of the pet door device installed in the door frame;

FIG. 3 is a top plan view of the pet door device in the door frame;

FIG. 4 is an enlarged cross-sectional view taken along Line 4—4 of FIG. 2;

FIG. 5 is a side elevational view of the door in the folded position for purposes of storage and carrying.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings there is illustrated a preferred form of a pet door device constructed in accordance with the present invention and which is desig-

nated in its entirety by the reference numeral 10, and which is comprised of a vertical door structure 11 divided across its middle by a horizontally extending hinge 12 to form a top door panel 13 and a bottom door panel 14. The door panel 13 having a horizontal plate 15 mounted for vertical movement adjacent the top edge of the top panel and adjustable in a manner to extend the vertical height of the door structure 11 to match the door frame in which it is to be installed. The bottom panel 14 is provided with a passageway 16 extending therethrough and which is closed by a pet actuated swinging door 17 permitting the pet to pass freely therethrough in either direction. Locking devices 18 are provided on the door structure 11 to detachably attach the door structure adjacent a side edge 20 of a vertical horizontally extending door frame, such as designated generally by reference numeral 21, having a glass sliding door 22 disposed therein for horizontal sliding movement thereof in a direction toward and away from the wall 23. For ease of illustration the top horizontal section of the door frame 21 has been eliminated in order to show the preferred installation of the device 10 in the door frame.

The door device 10 may be manufactured out of metal, wood, or any other suitable satisfactory material providing an aesthetically pleasing and refined appearance, with the preferred embodiment being manufactured out of wood having decorative panels 24 defined thereon in a manner providing an aesthetically pleasing and refined appearance to the door structure 11. The swinging door panel 17 may be made out of the same materials as the door structure, or may be made out of a hard rubber, plastic, or the like providing a smooth surface to be contacted by the pet when passing into and out of the passageway thus reducing the risk of possible injury to the pet which might be encountered with the sharp edges of a metal swinging door or the possibility of obtaining a splinter or the like from a wooden swinging door.

The vertical top panel 13 includes a horizontal bottom end edge 31, a horizontal top end edge 32, and opposed vertical side edges 33 and 34. The plate 15 is formed of a flat material, extends the full width of the top panel 13, and is disposed in juxtaposition with the interior surface of the top end portion of the top panel and is adjustably secured thereto for vertical movement relative thereto by a fastener 35 extending outwardly of the top panel and received in vertical slot 36 provided in the sliding plate, the fastener being a hand operated bolt, screw or the like adapted to be released from the plate, the plate being adjusted to the desired vertical position in the direction such as indicated by arrow 37, one of such positions being illustrated in phantom configuration by numeral 38, after which the fastener 35 is tightened to retain the plate firmly in position relative to the top panel.

The bottom panel 14 has a horizontal bottom end edge 41, a horizontal top end edge 42, and opposed vertical side edges 43 and 44, the top end edge 42 being hingedly connected to the top panel bottom end edge 31 by the hinge 12 which is of a piano type continuous hinge extending the full width of the door structure 11.

The passageway 16 is formed in the bottom portion of the bottom panel 14 and is of a rectangular configuration which may be of a size to accommodate various types and sizes of pets therethrough, the passageway including a top edge 51, a bottom edge 52, and op-

posed side edges 53 and 54. The door panel 17 is of a flat material of a size and shape to fit within passageway 16 in a manner having close clearance with the respective passageway sides 51-54 and yet permitting freedom of movement of the door panel 17 therethrough, it being understood that appropriate flexible weather tight seals 55 are disposed about the peripheral edges of the door 17 and adapted to flexibly engage the passageway perimeter edges in a manner to form a weather tight seal therewith. The door 17 is swingably mounted to passageway top edge 51 by a pivot fastener 56 providing swinging movement of the door panel about the horizontal pivot in either direction out of the plane of the door structure 11, the pivot 56 being of a spring loaded type acting to return the door panel 17 to the normally closed position and retain the same in such closed position while still permitting a pet to actuate the door in a manner to pass through the passageway in either direction, example positions of the door swung out of the plane of the door structure 11 being shown in phantom configuration in FIG. 4 and designated generally by reference numerals 17' and 17''. To lock the swinging door panel 17 co-planar with the bottom panel 14 there are provided a pair of transversely spaced apart locking members 60 each having one end pivotally fastened to the interior surface of the bottom panel by pivots 61 with the members adapted to pivot in a horizontal plane parallel to the bottom panel and project into the opening of the passageway 16 to engage the door panel 17 in a locking manner, such as by being received in grooves or recesses (not shown) disposed in the side edges of the swinging door panel, thus preventing the swinging movement of the door panel and locking the same in the closed position.

To detachably attach the door structure 11 to the door frame 21, the door is unfolded from the position of FIG. 5 to the vertical co-planar position of the bottom and top panels, after which the bottom panel bottom end 41 is fitted into the bottom of the door frame, the door structure 11 then moved slidably sideways until the side edges 33 and 43 are engaged in the side frame 20 of the door frame, with the plate 15 then being vertically adjusted until it firmly engages in the top horizontal frame section of the door frame such that the door structure 11 is now firmly attached in the door frame 21 adjacent side frame section 20. To provide a more permanent type attachment it is preferred that the sliding door 22 normally engaging side frame section 20 be moved into a position adjacent to door structure sides 34 and 44, with the sliding door 22 then being locked in position in the normal manner with door structure 11 interposed between the vertical side edge 64 of the door 22 and the side frame section 20 of the door frame. To allow for any inaccuracies in the mating of the door structure 11 in the mounted position, such as due to any misalignments of vertical surfaces such that the door structure would not be firmly squeezed completely along the side surfaces thereof between the sliding door and the side frame section, there are provided four locking devices 18 each extending outwardly of the interior surfaces of the top and bottom panel with each locking device having a horizontally disposed rectangularly shaped flat plunger type member 67 associated therewith and disposed interiorly of the door structure operatively connected to the locking device handle 68 in a manner such that rotation of the handle about its axis in one direction will effect the hor-

izontal outward movement of the associated plunger 67 from the associated side edge of the door structure in a manner to engage with the adjacent sliding door or door frame section, with rotation of the handle in the opposite direction about its axis serving to withdraw the plunger back into the door structure. In this manner the plungers 67 frictionally engage the side frame section 20 of the door frame 21 adjacent door surfaces 33 and 43, and on the opposite surfaces 34 and 44 engage the vertical edge of the sliding door 22.

There is thus disclosed a pet door device specifically intended for mounting in a door frame of a pair of horizontally sliding doors, such as glass patio doors and the like, in a manner requiring no modification or alteration to the door or door frame and which may be readily attached and detached from the frame leaving no markings thereon, or which may remain for as long a period of time as desired while still permitting operation of the sliding doors in the conventional manner.

It is to be understood that the form of this invention herewith shown and described is to be taken as a preferred example of the same, and that this invention is not to be limited to the exact arrangement of parts shown in the accompanying drawings or described in this specification as various changes in the details of construction as to shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention, the scope of the novel concepts thereof, or the scope of the sub-joined claims.

Having thus described the invention, what is claimed is:

1. A pet door device intended for installation in the door frame of a pair of overlapping horizontally sliding doors normally associated in the providing of outside home exits and entries, the device intended to be mounted adjacent a vertically extending side frame section of the door frame in a manner permitting a pet, such as a dog, cat or the like to pass freely therethrough from an indoor locality when so desired, the device comprising:

- a substantially flat door structure having a vertical bottom panel and a vertical top panel, the bottom panel including a top end edge, a bottom end edge, and opposed side edges; the top panel being equal in width and thickness and of substantially the same length as the bottom panel and having a top end edge, a bottom end edge, and opposed side edges;
- a horizontally extending hinge pivotally interconnecting the top panel bottom edge to the bottom panel top edge providing relative pivotal movement thereof between an inoperative storage and carrying position where the panels are disposed in spaced apart side-by-side parallelism, and an operative position where the panels are disposed in vertical co-planar alignment with the respective side edges defining the side edges of the door structure, the door structure adapted to be vertically disposed adjacent a vertical side frame of the door frame and extend horizontally co-planar with the door frame outwardly from the side frame;
- a flat plate member extending the full width of the top panel and disposed in juxtaposition with the interior surface of the top edge portion of the top panel, a vertical slot disposed centrally of the plate and extending therethrough, a fastener threadedly received in the top interior surface of the top panel

and projecting normal thereof adapted to be received in the slot of the plate, the projection guiding the vertical adjusted movement of the plate and serving to lock the plate to the adjusted position to retain the selected vertical height thereof relative to the top panel;

a plurality of locking mechanism associated with the respective side edges of the top and bottom panels to detachably connect the door structure within the door frame without requiring modification or alteration of the door frame, each locking mechanism including a knob rotatably supported on the interior surface of the respective panel adjacent the associated side edge thereof and projecting normal thereto and adapted to rotate in either direction about its axis, each knob having operatively connected thereto a horizontally disposed plunger disposed interiorly of the door structure for horizontal reciprocal movement outwardly and inwardly of the associated door structure side edge, rotation of the locking knob in one direction effecting the horizontal outward movement of the associated plunger in a manner to engage a vertical supporting surface disposed adjacent the door structure, with rotation of the knob in the opposite direction effecting the inward movement of the plunger interiorly of the door structure inwardly of the plane of the door side edge;

a rectangular opening extending transversely through the bottom panel of a size and shape defining a passageway therethrough for a pet;

a pet actuated door panel swingably mounted on the bottom panel adjacent the top edge of the passageway for swinging movement about a horizontal axis in either direction out of the plane of the bottom panel between a normally closed position disposed co-planar with the bottom panel in a manner closing the passageway and an open position disposed out of the plane of the bottom panel in a manner to open the passageway, the pet actuated door panel being swingably mounted on the bottom panel by a horizontally extending hinge connected to the top edge of the passageway and extending downwardly therefrom to have the opposite end connected to the door panel, the hinge being resiliently biased by a coiled spring to retain the door panel in the normally closed position and to effect the return of the door panel to the closed position after each time it is swung out of the same to permit a pet to pass therethrough, the door swinging panel being adapted to be solely operated by the pet passing in either direction therethrough without requiring any assistance from others; and

a locking device associated with the swinging door panel and adapted to lock the door panel in the normally closed position, the locking device comprising a pair of transversely spaced apart rectangularly shaped flat locking members, one locking member disposed on each side of the passageway and having one end pivotally connected to the interior surface of the bottom panel providing rotative movement of the locking member about the pivot in a horizontal plane parallel to the bottom panel, the free end of each locking member adapted to be swung into the plane of the passageway and detachably engage the swinging door panel in a manner to retain the same in the closed position preventing any swinging movement thereof.

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