



AU9225248

(12) PATENT ABRIDGMENT (11) Document No. AU-B-25248/92
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 654877

(54) Title
A COMBINATION DOOR AND WINDOW

International Patent Classification(s)
(51)⁵ **E06B 003/46 E06B 003/26 E06B 007/30**

(21) Application No. : **25248/92** (22) Application Date : **22.09.92**

(30) Priority Data

(31) Number (32) Date (33) Country
PK8533 24.09.91 AU AUSTRALIA

(43) Publication Date : **25.03.93**

(44) Publication Date of Accepted Application : **24.11.94**

(71) Applicant(s)
GEORGE STUART WOODSTOCK KIBBLE; ANTHONY EDWARD HERRELL

(72) Inventor(s)
GEORGE STUART WOODSTOCK KIBBLE; ANTHONY EDWARD HERRELL

(74) Attorney or Agent
CULLEN & CO , GPO Box 1074, BRISBANE QLD 4001

(56) Prior Art Documents
AU 417481 62324/73 B60J 1/16
AU 41218/68 B60J 5/00
EP 358874

(57) Claim

1. A sliding door assembly comprising at least one slidable glass door member, characterised in that the door member has a sliding window assembly mounted therein.

654877

1

AUSTRALIA

Patents Act 1990

COMPLETE SPECIFICATION
FOR A STANDARD PATENT

Name of Applicants: GEORGE STUART WOODSTOCK KIBBLE
 ANTHONY EDWARD HERRELL

Actual Inventors: GEORGE STUART WOODSTOCK KIBBLE
 ANTHONY EDWARD HERRELL

Address for Service: CULLEN & CO.,
 Patent & Trade Mark Attorneys,
 240 Queen Street,
 Brisbane, Qld. 4000,
 Australia.

Invention Title: A COMBINATION DOOR AND WINDOW

Details of Associated Provisional Applications: No. PK8533 filed
24 September 1991

The following statement is a full description of this invention,
including the best method of performing it known to us:

THIS INVENTION relates to a combination door and window assembly. In particular, the invention is directed to a sliding glass door incorporating at least one sliding window. The invention also relates to an adaptor frame for converting a conventional sliding glass door to incorporate a window.

Sliding glass doors are popular constructional features of residential and commercial buildings, such as motels. A sliding door assembly typically comprises a door frame fixed to a wall of a building around an aperture, and two door members or portions mounted in the frame. One door portion is typically fixed in position, and the other is slidable within the frame, parallel to the fixed door portion. The two portions are normally closely spaced to allow sealing to be effected between the two portions when the sliding door portion is closed. Each portion normally comprises a rectangular metal frame, typically of aluminium, having a glass panel fitted therein. In some sliding doors, the glass within each portion is divided into upper and lower sections by a metal crossbeam or transom.

Sliding glass doors are relatively simple and economic to manufacture and install. Further, since most of the wall aperture is occupied by glass, the sliding door allows light to enter the room and thereby create a light and airy atmosphere.

However, conventional glass sliding doors have the inherent disadvantage of not permitting any ventilation when the door is closed. Although the door can be opened to allow ventilation, the open door no longer provides any security. For example, an opened door will no longer restrain small children, and, in the absence of constant adult supervision, the children may wander outside into potentially dangerous situations. If the sliding door opens onto an area containing a pool, legislation may require that the door be self-closing or otherwise kept closed, thereby preventing any ventilation.

Even if the door is opened, the maximum open area which can be achieved for ventilation is 50% of the total aperture in the building.

Australian patent no. 542395 discloses a door having



a sliding panel and a security grille. By opening the panel but keeping the door closed, ventilation can be obtained without compromising security.

5 Australian patent no. 514896 describes a door assembly comprising a main door having a wicket door to permit ventilation while the main door is closed.

10 However, the known doors with windows are hinged wooden doors, i.e. doors which pivot about a vertical axis. Hitherto, the close spacing of the relatively movable portions of sliding doors has precluded the use of windows in sliding glass doors. That is, if a window were to be inserted in the fixed and/or sliding portion of a sliding door, the window assembly itself, or the opening of the window, would interfere with the sliding movement of the movable portion.

15 Further, the glass construction of the doors did not readily permit the installation of window assemblies in the door portions or members.

It is an object of the present invention to provide a sliding door having at least one window.

20 It is another object of the present invention to provide an adaptor frame to enable at least one window to be retrofitted to a conventional sliding door.

25 In one broad form, the present invention provides a sliding door assembly comprising at least one slidable glass door member, characterised in that the door member has a sliding window assembly mounted therein.

30 Typically, the door assembly comprises two glass door members, one of which is slidable, and the other may be fixed or slidable. Preferably, at least one sliding window assembly is mounted in each door member.

35 Conventional glass sliding doors may be converted to the sliding door/window assembly of this invention. Each door member of a conventional sliding door normally comprises a frame adapted to hold a glass panel. Typically, the glass panel is received within a channel defined in the frame and located generally in the central plane of the frame. In the preferred embodiment of this invention, an adaptor frame is fitted to the frame of a door member in place of the glass panel. The adaptor frame has a projection extending



3a

longitudinally therearound which is adapted to be snap-fitted

92

28



into the channel of the frame of the door member. A sliding window assembly is then fitted to the adaptor frame.

5 The projection on the adaptor frame is offset from the central plane of the adaptor frame so that when the window assembly is fitted to the adaptor frame, the central plane of the window assembly will be offset relative to the central plane of the door frame. The window assembly fitted to a door member is offset on the opposite side of the door member to the other door member, thereby enabling the two door members to continue sliding past each other in close relationship.

10 Each sliding window assembly may be of conventional design comprising two window members mounted in a frame, at least one window member being slidable. Each window assembly may also comprise a security screen and/or insect screen.

15 Typically, the area within the frame of each door member is substantially fully occupied by one or more window assemblies. The door members are approximately of equal size, and the window members within each window assembly are approximately of equal size.

20 In order that the invention may be more fully understood and put into practice, a preferred embodiment thereof will not be described with reference to the accompanying drawings, in which:

25 Fig. 1 is an elevation of a sliding door incorporating windows, according to one embodiment of this invention,

Fig. 2 is an exploded partial perspective view illustrating the frame construction of the door of Fig. 1,

30 Fig. 3 is a sectional view of the window jamb and adaptor frame,

Fig. 4 is a sectional view of the window head and adaptor frame, and

Fig. 5 is a sectional view of the window sill and adaptor frame.

35 Referring to Fig. 1, the sliding door 10 of the illustrated embodiment comprises a rectangular frame 11 fixed to the wall defining the aperture for the door 10. The door frame 11 comprises opposed jamb members, a head and sill. A door member or portion 12 is fixedly mounted in one half of

the door frame 11, and a movable door member or portion 13 is slidable within tracks defined by the head and sill of door frame 11. The movable portion 13 slides parallel to fixed portion 12 in close relationship thereto. When the movable portion 13 is closed, a seal closes the space between the two door portions 12, 13. To ensure good sealing, the two portions 12, 13 are normally mounted close together with sufficient clearance only to permit relative sliding movement.

In a conventional sliding door, each portion 12, 13 typically comprises a rectangular metal frame within which a sheet of glass is mounted. The frame is provided with a channel around its inside, within which the edges of the glass panel are received and held. The illustrated embodiment will be described with reference to its construction by modification or retrofitting of a conventional sliding door.

In the illustrated embodiment, each portion 12, 13 is divided into two by a transom 14. However, it will be apparent to those skilled in the art that the provision of a transom 14 is purely optional.

Each of the four segments of the sliding door contains a sliding window assembly comprising a rectangular frame 18 having a fixed portion 15 and a sliding portion 16. The sliding portion 16 slides parallel to the fixed portion 15. A security screen 17 is suitably provided on each window frame, on the outside of the sliding window portion 16. The security screen 17 may have insect mesh on the inside thereof for screening purposes.

Figs. 2-5 illustrate the retrofitting of the window assemblies to a sliding door. To install the window assemblies, each portion 12, 13 of the door is removed from the frame 11, the head section of the frame of each portion and the transom 14 are removed, and the glass is removed from the frame of each portion. An adaptor frame 20 is then fitted to the peripheral frame of each door portion 12, 13. In the specific embodiment illustrated in Fig. 1, two adaptor frames will be fitted to each door portion, separated by transom 14.

The adaptor frame 20 is of channel section consisting of a central web portion having flanges along its edges defining the sides of the channel. Two parallel spaced

flanges having barb-like edges extend longitudinally along the channel section 20 on the side of the web portion opposite the side walls, as shown more clearly in Fig. 3. The fitting 21 formed by these flanges is designed to be inserted into the channel in the frame of the door portion in which the glass panel was previously inserted. Thus, as illustrated in Fig. 2, the fitting 21 on the jamb of adaptor frame 20 is snap-fitted into the channel in the jamb of the frame of door portion 12 to thereby mount a vertical section of the adaptor frame 20 to the existing frame of door portion 12. (For clarity, only a portion of the length of the adaptor frame 20 is illustrated in Fig. 2). A similar procedure is used for the other jamb, the head and sill of the adaptor frame.

The frame 18 of a window assembly is received within the side walls of the channel section of adaptor frame 20. Sealing members 22 are located in longitudinal channels 23 along the inside of the side walls of the adaptor frame 20, to seal the space between the window frame 18 and adaptor frame 20.

The window frame 18 and each window assembly are generally of conventional construction and therefore are not described or illustrated in detail in this application.

To minimise costs, the glass panels removed from the existing door portions may be cut to size and used in the window assemblies.

In a typical retrofitting procedure, the bottom or sill section of the adaptor frame 20 is first fitted to the bottom or sill section of the frame of a door portion by snap-fitting portion 21 into the channel in which the glass sheet was previously inserted. The side or jamb sections of the adaptor frame 20 are then fitted in a similar manner to the opposed side or jamb sections of the frame of the door portion. A window assembly 18 is then slidably inserted between the opposed side sections of the adaptor frame 20 to sit within the bottom section of the adaptor frame. The head or top transverse section of the adaptor frame 20 is then placed over the corresponding section of the window frame 18 (as shown in Fig. 4), and the transom 14 is snap-fitted onto the upstanding portion 21, to thereby complete the

installation of a sliding window assembly in the lower half of a door portion.

5 The above procedure is repeated for the window assembly in the upper half of the door portion. The head of the frame of the door portion, which was previously removed to enable the adaptor frame and the window assemblies to be fitted, is snap-fitted onto the top transverse section of the adaptor frame to complete the installation of the window assembly in the upper half.

10 The overall thickness of the window assembly is significantly greater than the thickness of the original glass panel. If the window assemblies were mounted centrally relative to the plane of each door portion, the window assemblies would interfere with the opening of the door. To overcome this problem, the fitting 21 is located off centre relative to the central plane of adaptor frame 20, as shown in Fig. 2. In this manner, the extra thickness of the window assembly will extend to one side only of each door portion. By orientating the adaptor frames 20 in opposite senses or directions in the two door portions 12, 13, the window assemblies will protrude in opposite (diverging) directions, and therefore will not interfere with the opening of the door 10. This allows each window assembly to be opened regardless of whether the door is opened or closed.

25 The window assemblies in door portions 12, 13 are reversed left-to-right in orientation as shown in Fig. 1.

30 A particular advantage of the door 10 illustrated in Fig. 1, is that it enables up to 75% of the wall opening to be used for ventilation. In each window assembly, the movable portion is approximately the same size as the fixed portion. By opening each movable window portion fully, and opening the movable door portion 13 half way, the fixed window portions will overlap, leaving approximately three quarters of the total aperture open for ventilation.

35 Even when the door is closed, 50% of the available aperture can be used for ventilation.

The abovedescribed door enables security to be maintained, while permitting variable ventilation.

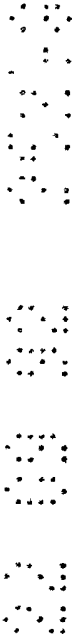
Although the door has been described with reference

to its conversion from a conventional sliding door, it will be
apparent to those skilled in the art that the door can be
constructed in the first instance to incorporate the sliding
window assemblies. If the window assemblies are installed at
5 manufacturing stage, the fitting 21 can be incorporated onto
the frame of each window assembly, thereby avoiding the need
for a separate adaptor frame.

The foregoing describes only one embodiment of the
invention, and modifications which are obvious to those
10 skilled in the art may be made thereto without departing from
the scope of the invention. For example, each door portion
may be slidable, and each window portion within each window
assembly may be slidable.

5

10



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A sliding door assembly comprising at least one slidable glass door member, characterised in that the door member has a sliding window assembly mounted therein.

5 2. A sliding door assembly comprising a plurality of glass door members, at least one of which is slidable, characterised in that at least one of the door members has a sliding window assembly mounted therein.

10 3. A sliding door assembly as claimed in claim 2, wherein each door member has a sliding window assembly mounted therein.

4. A sliding door assembly as claimed in any preceding claim, wherein each said door member having a sliding window assembly comprises a first frame adapted to hold a glass panel therein, an adaptor frame fitted to the first frame in place
15 of the glass panel, and the window assembly fitted to the adaptor frame.

5. A sliding door assembly as claimed in claim 4,
20 wherein the first frame defines a channel within which a glass panel may be received, and the adaptor frame comprises a projection extending longitudinally therealong and snap-fitted into the channel in place of the glass panel.

6. A sliding door assembly as claimed in claim 5,
25 wherein the projection is offset from the central plane of the adaptor frame such that the central plane of the window assembly fitted to the adaptor frame is offset to one side of the central plane of the door frame.

7. A sliding door assembly as claimed in any preceding claim, wherein the sliding window assembly comprises a



plurality of window members located within a window frame, at least one window member being slidable.

8. A sliding door assembly as claimed in claim 7, wherein the window assembly further comprises a security screen fitted thereto.

9. A sliding door assembly as claimed in claim 7 or 8, wherein the door members are approximately of equal size, and the area of each door member is substantially occupied by one or more sliding window assemblies, each window assembly comprising two window members of approximately equal size.

10. A sliding door assembly substantially as hereinbefore described with reference to the accompanying drawings.

DATED this 22ND day of SEPT. 1992

GEORGE STUART WOODSTOCK KIBBLE and ANTHONY EDWARD HERRELL
By their Patent Attorneys
CULLEN & CO.

ABSTRACT

5 A sliding door assembly (10) comprises two door members (12, 13) within a door frame (11), at least one of the door members being slidable parallel to the other. A sliding window assembly (15, 16) is fitted to one or both door members (12, 13). Each window assembly may be opened to provide ventilation even when the door (10) is closed. Each window assembly (15, 16) is offset mounted to its respective door member on the opposite side to the other door member, so as to permit the two door members to slide in closely spaced relationship. Each window assembly may be fitted to an existing door member by replacing its glass panel with an adaptor frame (20) snap-fitted to the frame of the door member and fitting the window assembly to the adaptor frame (20).

10

15

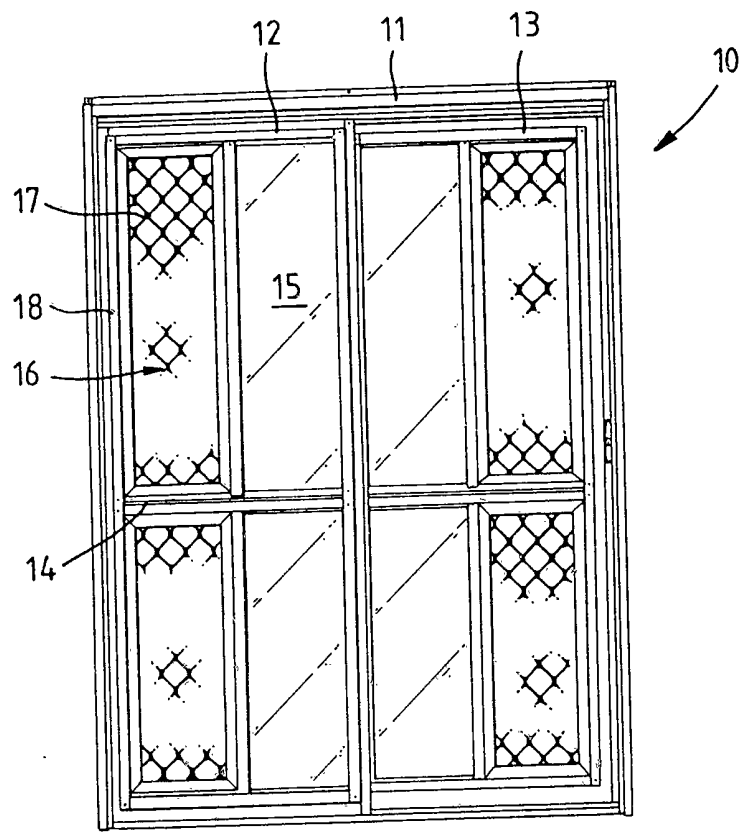


Fig. 1.

22 23 21 20 24

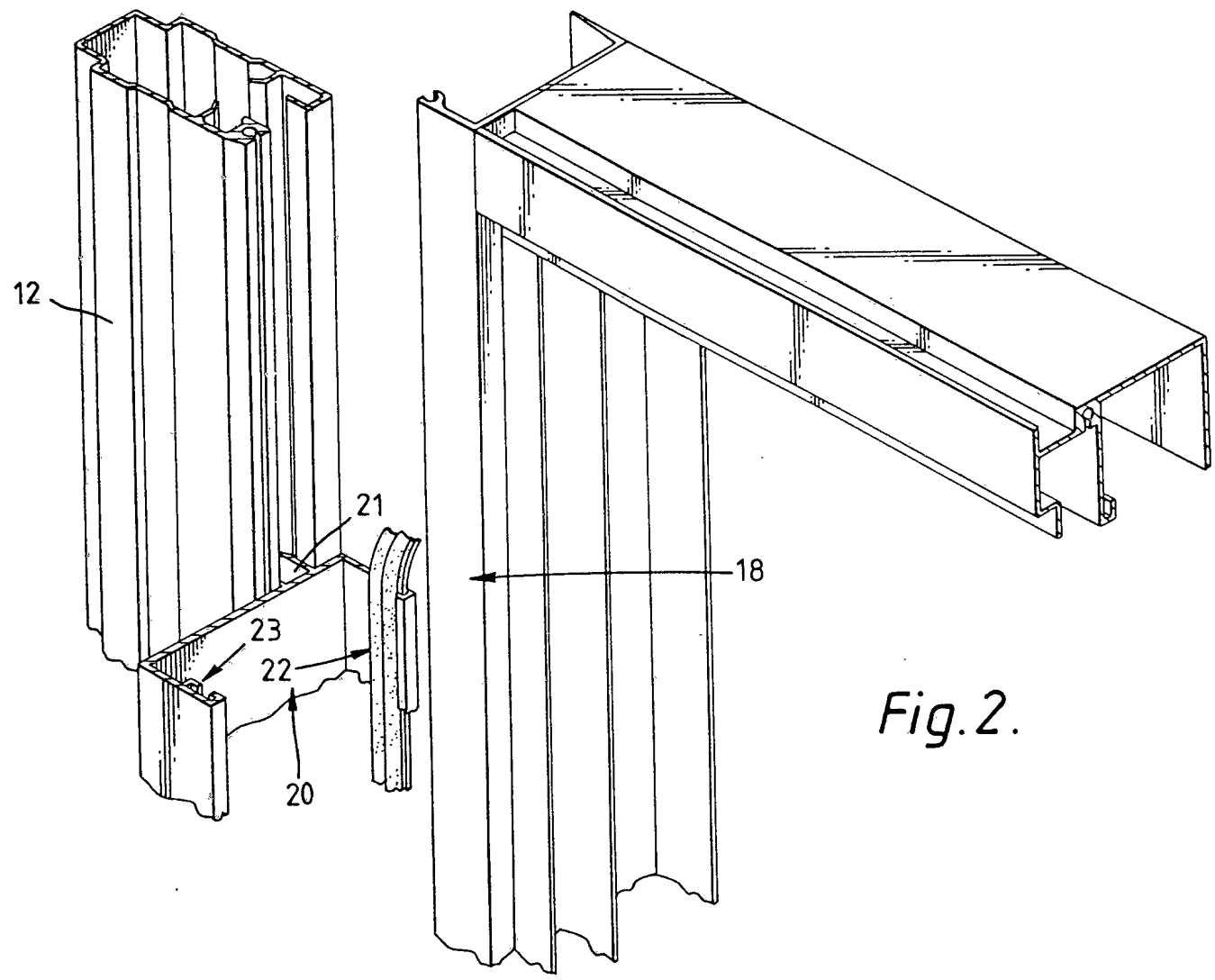


Fig. 2.

2/3

25248/92

25248/92

3/3

Fig.3.

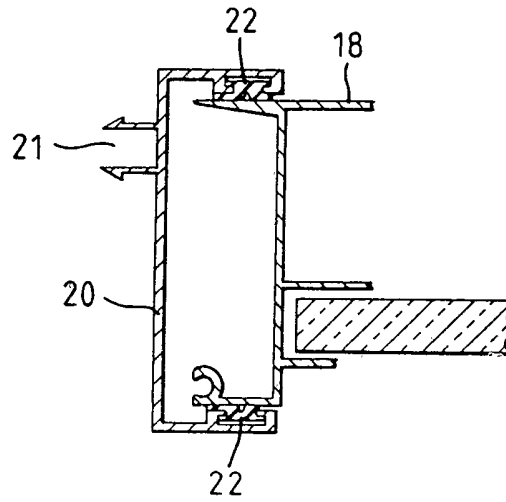


Fig.4.

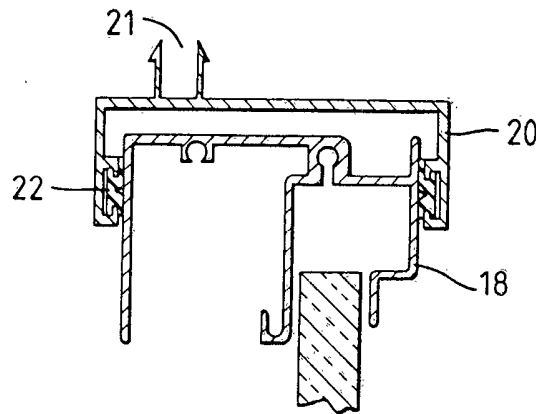


Fig.5.

