

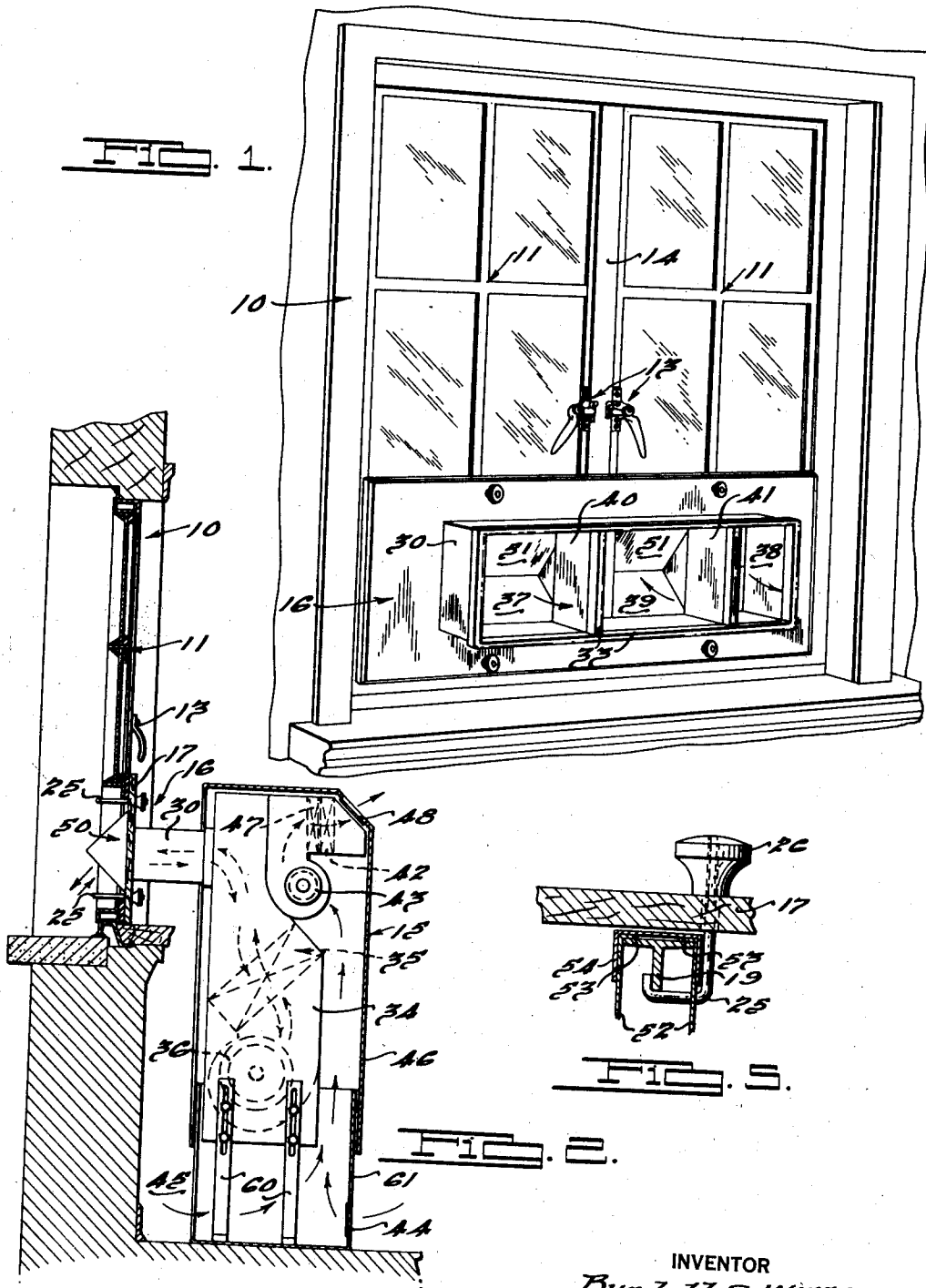
June 29, 1943.

B. S. WILLIAMS
CASEMENT WINDOW ADAPTER

2,322,904

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2 Sheets-Sheet 1



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FIG. 3.

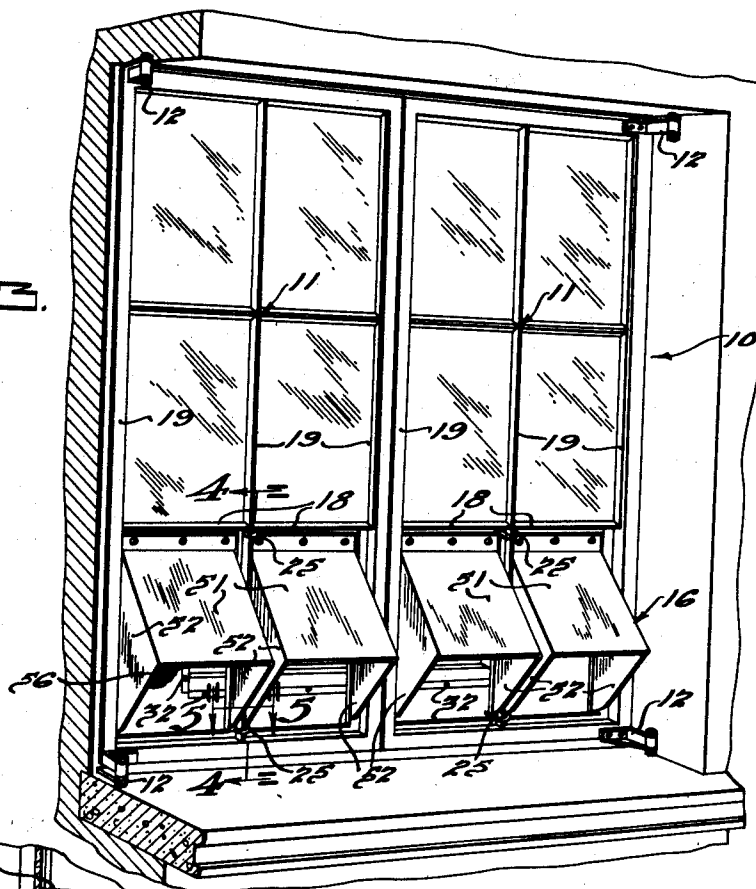
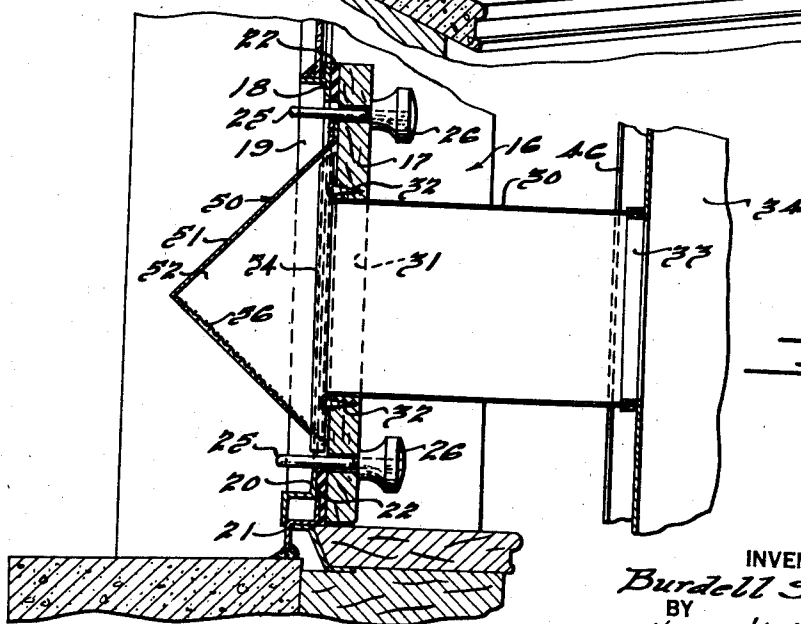


FIG. 4.



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CASEMENT WINDOW ADAPTER

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3 Claims. (Cl. 98—94)

My invention has to do with the adaptation of an air cooled window unit to structures having casement windows. Such windows comprise panes of glass held in frames which may be fixed in place or may be pivotally mounted to swing out of the plane of the window rather than move vertically in the manner of sash-guided windows. Sash type windows which move vertically may be raised and lowered to accommodate a duct which admits outside air for cooling the condenser of a mechanical refrigerating system and which also provides a means of escape of the air from the unit after doing the condenser cooling work. With casement windows this would be impossible unless special provision were made for adapting the window to this purpose. It is the principal object of my invention to provide means which may be readily assembled with a casement window to permit association therewith of an air cooled air conditioning unit.

The objects and advantages of my invention will be apparent from the following specification taken in connection with the accompanying drawings which set forth a preferred embodiment of the invention and wherein like numerals refer to like parts throughout.

In the drawings, Fig. 1 is an inside elevation in perspective of a casement window having two hinged window frames associated therewith and with the duct adapter of the present invention associated therewith;

Fig. 2 is a vertical section through a window such as shown in Fig. 1 with the window adapter in position and an air cooled unit associated therewith;

Fig. 3 is an outside elevation in perspective of the window and adapter shown in Fig. 1;

Fig. 4 is an enlarged vertical section taken along line 4—4 of Fig. 3 looking in the direction of the arrows; and,

Fig. 5 is an enlarged horizontal section taken along line 5—5 of Fig. 3 and looking in the direction of the arrows.

In Figs. 1, 2, and 3 it may be seen that the invention is adapted to be applied to casement windows 10 which may have panes mounted in hinged frames, such as frames 11, which are hinged on the outside of the structure as by means of hinges 12 and retained in closed position by latching handles 13 adapted to embrace a portion of a central upright post 14. It may be realized from this construction that the ordinary window duct extending from an air cooled unit inside of the room would not be suitable, since first of all it would be at least partially blocked

by the central post 14 and, secondly, in order to permit outside air to circulate through the window duct the frames 11 would have to be swung open which would admit birds, insects, and other foreign objects to the room and also defeat the purpose of the air conditioning unit.

In order to apply an air conditioning unit, such as unit 15, which is adapted to be placed upon the floor of the room closely adjacent the window, to windows of this sort I have provided a window adapter 16 which may be associated with the casement window after removal of the lowermost row of panes from the frames 11. The adapter comprises a panel, such as board 17, of sufficient dimensions to cover the row of spaces where the removed panes were held, with its edges overlapping portions of the pane-supporting frame, such as the horizontal upper angle bar 18, the vertical side angle bars 19, and the lower angle bar 20, as well as portions of the outer frame 21, by means of which the window is associated with the building. Preferably, strips of sponge rubber, such as strips 22, are applied between the edges of the board and the portions of the window frame adjacent thereto in order to seal the openings left by removal of the window panes and to deaden the vibrations and noises which may originate in the air conditioning unit and be transmitted through the structure thereof and the duct adapter. The board is retained in position by readily removable clamping means, such as hook bolts 25, having hooks at the outer end thereof which clamp over the intermediate vertical angle bars 19 of each frame and threaded inner ends extending through the board 17 and engaged by manually removable nuts 26. Four such holding means are preferably provided for stability. The board may be quickly associated with the window or removed therefrom in order that the exterior surfaces of the remaining window panes may be washed, etc. No permanent disfigurement of the window is necessary and the air conditioning unit may be dispensed with and the window returned to its normal condition by replacing the removed panes, a procedure which is both inexpensive and easily performed.

A duct 30 is attached to the board 17 which is provided with an opening 31 of sufficient size to accommodate the desired volume of air for cooling the condenser of the associated unit 15, preferably by passing the duct through the opening and fastening the outwardly flanged edge thereof to the board as by means of screws 32. The inner end of the duct is preferably provided with a rubber beading 33 against which the back wall

of the air conditioning unit condenser compartment 34 is placed, the condenser compartment being provided with passages through which cooling air may be drawn and ejected, which match with passages in the duct 30. As seen in Figs. 2 and 4, the condenser compartment 34 contains a condenser 35 over which air may be drawn and/or forced by a blower 36 in accordance with usual practice. In the particular embodiment disclosed, the window duct 30 is provided with side passages 37 and 38 and a central passage 39 by means of vertical partitions 40 and 41, each of which is also provided with a rubber beading 33 on its inner edge. The passages 37, 38, and 39 communicate with corresponding passages (not shown) in the condenser compartment 34 through which air is drawn into the blower 36 through the ends of the condenser 35 from the passages 37 and 38 and is ejected by the blower 36 through the center of the condenser 35 and the central passage 39. Such a construction of condenser compartment and the internal arrangement thereof is well known in the art and need not be detailed for the purpose of the present invention. As is also well known in the art the refrigerant is evaporated in an evaporator 42 across which air from the room may be conducted by a blower 43, the air being drawn into the blower 43 through an inlet grille 44 or through the space 45 between the wall of the room and the open back of the cabinet 46 which gives a decorative outward appearance to the front, sides and top of the unit. The unit may also be provided with a filter 47 for the purpose of removing dust and other foreign matter from the air. Preferably the air is ejected from the upper front corner of the unit through a grille 48 lying in a plane at substantially 45° inclination so as to direct the air upwardly and outwardly across the room.

In order to prevent rain water from entering the duct 30 and passing through the unit to the interior of the room, I preferably provide a plurality of hoods 50, each of which substantially occupies the space left by a removed window pane. The hood preferably comprises a front wall 51 which is fastened at its upper edge to the board 17 above the duct opening, and side walls 52 which progressively increase in depth so that the front wall 51 slopes angularly downward. The edges of the side walls 52 are flanged outward as at 53 (Fig. 5) and fit into an upright channel member 54 fastened to board 17 in position to embrace the upright angle bars 19 of the window frame. The channel member 54 is of such width as to accommodate the angle bar 19 and adjacent side walls 52 of the hoods with the bar 19 overlying the adjacent flanges 53 whereby to prevent outward movement of the hoods 50. When the hook bolts 25 are drawn up tight the hoods are clamped in position and prevented from rattling or fluttering. Preferably, a screen 56 is placed across the downwardly directed end of each hood 50 in order to prevent birds and insects from entering the duct 30. It may be seen in Fig. 3 that the hoods present a symmetrical appearance from the exterior even though the opening 31 may not be of the same size as the row of open window frames with which it is associated.

As is usual practice in such constructions the condenser compartment 34, upon which is mounted the evaporator 42 and evaporator blower 43, is preferably supported upon legs 60 having adjustable connection to the condenser compart-

ment in order that the unit may be adapted to window sills of varying height. Also, the decorative cabinet 46 may be composed of an upper, principal cabinet telescoping over a lower extensible portion 61 in order that such vertical movement may be accommodated.

It is to be appreciated that while the present invention has been shown in association with the outwardly swinging portions of a certain type of casement window it may nevertheless be associated with any window, even of the vertically movable sash guided type. The principal object of the present invention, however, is to permit the ready application of an air cooled air conditioning unit to a room having rows of window lights in fixed position or mounted in hinged frames.

Having described a preferred embodiment of the present invention, it should be apparent to those skilled in the art that the same permits of modification in arrangement and detail. All such modifications as come within the scope of the following claims are considered a part of my invention.

I claim:

1. A window adapter for permitting association of a floor mounted air cooled air conditioning unit with a window comprising a panel of sufficient size to embrace the edges of a horizontal row of window light frames from which the panes of glass have been removed and provided with an opening therethrough of sufficient size to accommodate the volume of air required to cool the condenser of the air cooled unit to be associated therewith, an inwardly extending duct fastened to said panel at the edges of said opening for the purpose of connecting said opening with the condenser compartment of the air cooled unit, a plurality of fastening means engageable with said panel and portions of the window light frames from which the panes of glass have been removed for removably positioning said panel with respect to said window, and a plurality of downwardly opening hoods mounted on the outer surface of said panel and overhanging said opening, each of said hoods being so located as to extend through an individual window light frame, said hoods being fastened to said panel at their upper edges only and provided with side walls having laterally extending flanges at their inner edges adapted to be received between said panel and said window frame, said securing means operating to draw said panel and frame together with said flanges therebetween.

2. A window adapter for permitting association of a floor mounted air cooled air conditioning unit with a window comprising a panel of sufficient size to embrace the edges of a horizontal row of window light frames from which the panes of glass have been removed and provided with an opening therethrough of sufficient size to accommodate the volume of air required to cool the condenser of the air cooled unit to be associated therewith, an inwardly extending duct fastened to said panel at the edges of said opening for the purpose of connecting said opening with the condenser compartment of the air cooled unit, a plurality of fastening means engageable with said panel and portions of the window light frames from which the panes of glass have been removed for removably retaining said panel in a predetermined position with respect to said panel, and a plurality of downwardly opening hoods mounted on the outer surface of said panel and overhanging said opening, each of said hoods being so located as to extend through an individual window

light frame, said hoods being fastened to said panel at their upper edges only and provided with side walls having laterally extending flanges at their inner edges adapted to be engaged by vertical portions of the window light frame and clamped between the latter and said panel by said securing means, and means carried by said panel for retaining said flanged edges in engagement with said vertical portions of the window light frame.

3. A window adapter for permitting association of a floor mounted air cooled air conditioning unit with a window comprising a panel of sufficient size to embrace the edges of a horizontal row of window light frames from which the panes of glass have been removed and provided with an opening therethrough of sufficient size to accommodate the volume of air required to cool the condenser of the air cooled unit to be associated therewith, an inwardly extending duct fastened to said panel at the edges of said opening for the purpose of connecting said opening with the condenser compartment of the air cooled unit, a

plurality of fastening means engageable with said panel and portions of the window light frames from which the panes of glass have been removed for removably positioning said panel with respect to said window, and a plurality of downwardly opening hoods mounted on the outer surface of said panel and overhanging said opening, each of said hoods being so located as to extend through an individual window light frame, said hoods being fastened to said panel at their upper edges only and provided with side walls having laterally extending flanges at their inner edges adapted to be engaged by vertical portions of the window light frame, and said panel being provided with vertically extending channel members in which said vertical portions of the window light frame and the flanged edges of said hoods may be engaged, said securing means acting to draw said panel and said frame together to thereby clamp the flanged edges between said channel members and said vertical window portions.

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