

April 9, 1963

R. L. HOLMES

3,084,612

AIR CONDITIONER ADAPTER UNIT

Filed Feb. 14, 1961

3 Sheets-Sheet 1

FIG. 1

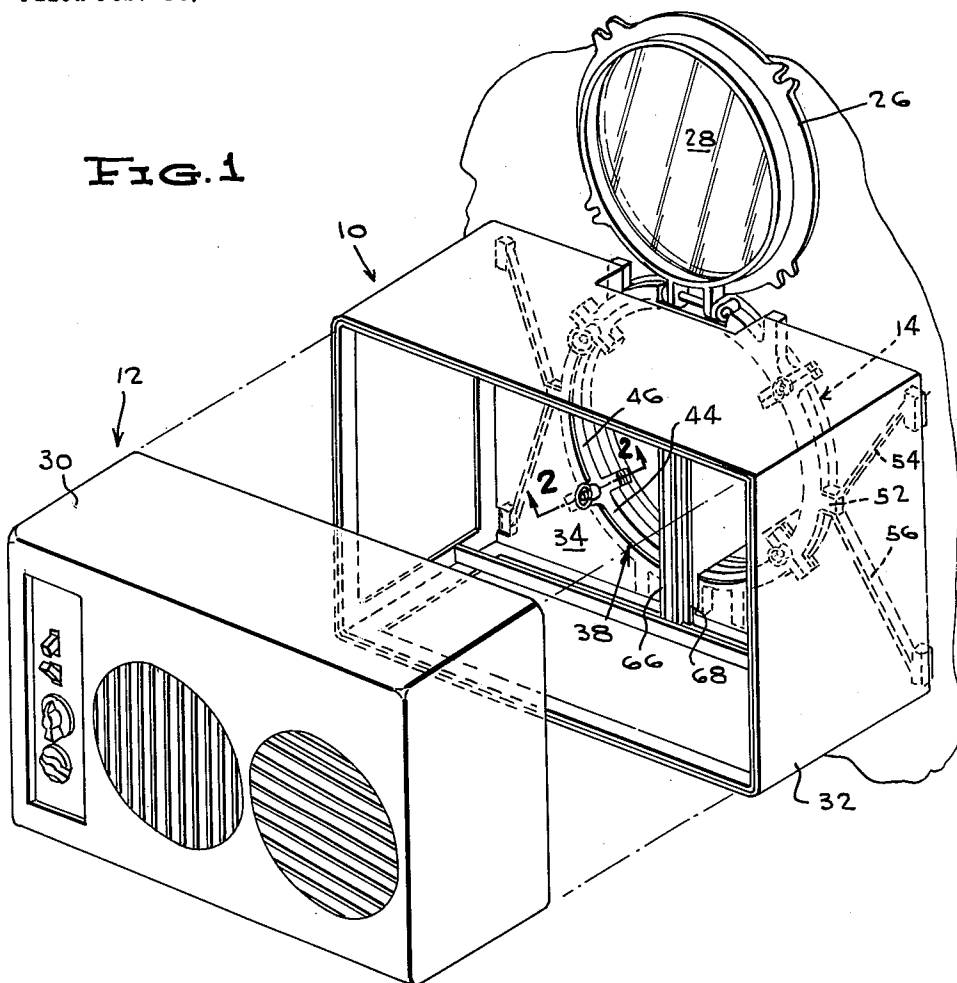
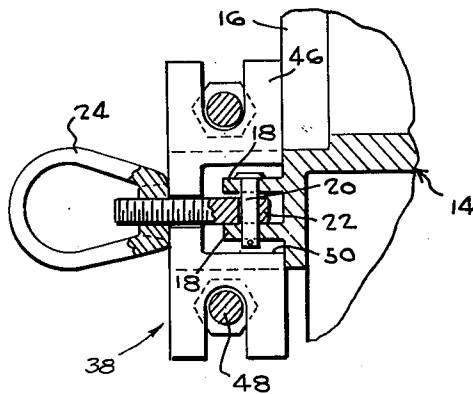


FIG. 2



INVENTOR.
RALPH L. HOLMES
BY

McMorrow, Berman & Davidson
ATTORNEYS

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R. L. HOLMES

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FIG. 3

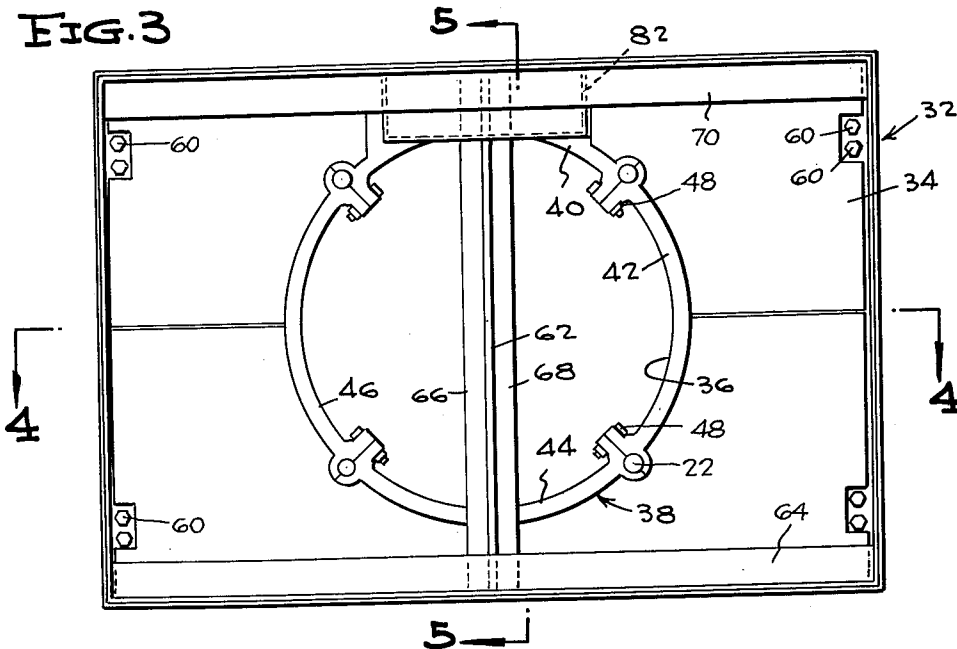
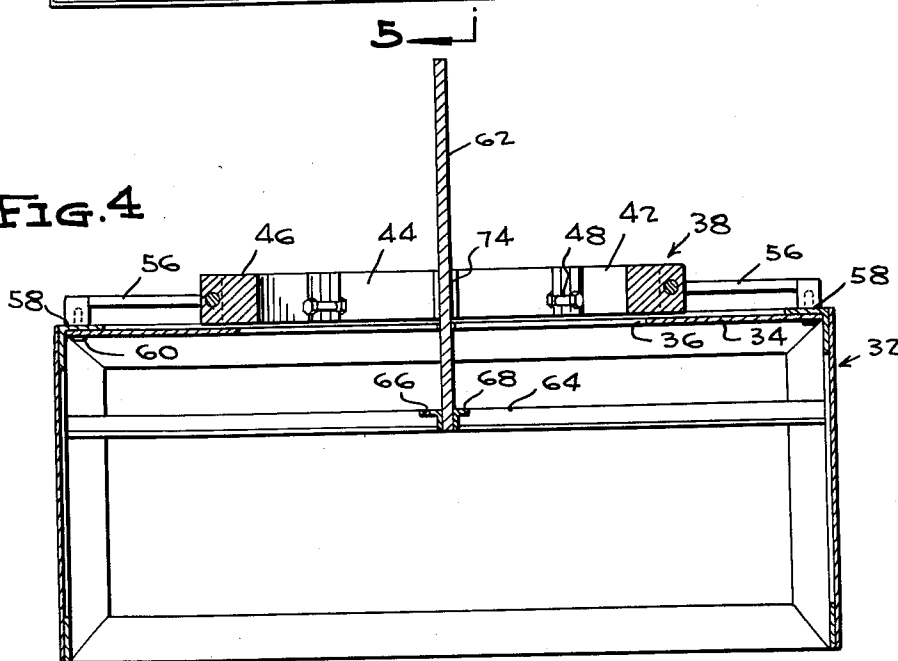


FIG. 4



INVENTOR.
RALPH L. HOLMES
BY

McMorrow, Serman & Davidson
ATTORNEYS

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R. L. HOLMES

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FIG. 5

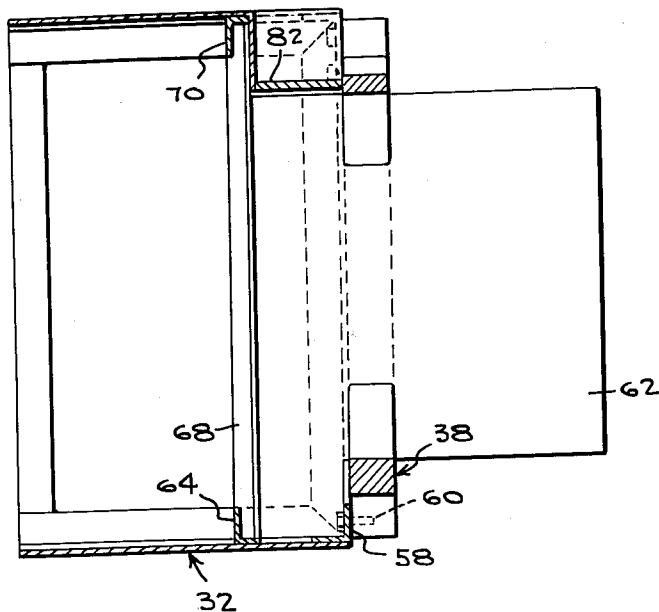
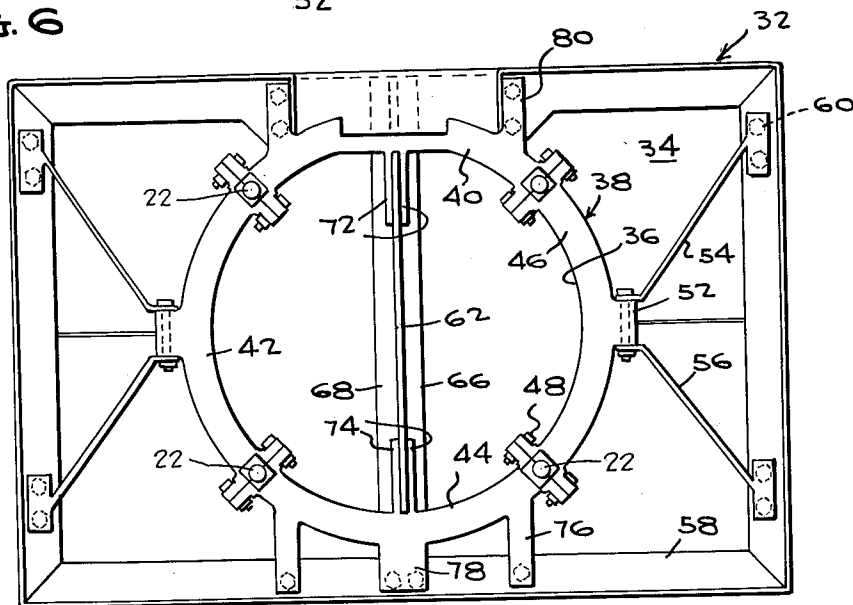


FIG. 6



INVENTOR.
RALPH L. HOLMES

BY

McMorrow, Pisman & Davidson
ATTORNEYS

1

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AIR CONDITIONER ADAPTER UNIT

Ralph L. Holmes, 5545 Canehill Ave., Lakewood, Calif.

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4 Claims. (Cl. 98-94)

The present invention relates to an adapter unit for supporting an air conditioner on a ship's porthole.

Presently in use are air conditioners adapted for mounting in a window opening. The desirability of having an air conditioner on board a ship is obvious. The mounting of an air conditioner in the bulkhead of a ship is impractical in most cases for the reason that the ship's sides must be made weatherproof for periods of stormy weather.

An object of the present invention is to provide an adapter unit for mounting an air conditioner over a porthole in the side of a ship in such a manner as to not alter the use of the porthole when the air conditioner unit has been removed therefrom.

Another object of the present invention is to provide an adapter unit for mounting an air conditioner on the ship's porthole which is simple in structure, one which is easily and with facility attached to the porthole and as easily removed therefrom, one which may be manufactured in any size to accommodate any size air conditioner, and one which is economically feasible.

These and other objects and advantages of the present invention will be fully apparent from the following description when taken in conjunction with the annexed drawings, in which:

FIGURE 1 is an isometric view of the adapter unit of the present invention shown installed upon the flange of a ship's porthole, an air conditioner being shown in position for insertion into the unit;

FIGURE 2 is a view on an enlarged scale, taken on the line 2-2 of FIGURE 1;

FIGURE 3 is a front elevational view;

FIGURE 4 is a view taken on the line 4-4 of FIGURE 3;

FIGURE 5 is a view taken on the line 5-5 of FIGURE 3; and

FIGURE 6 is a rear elevational view.

Referring in greater detail to the drawings in which like numerals indicate like parts throughout the several views, the adapter unit of the present invention is designated in FIGURE 1 by the reference numeral 10, the reference numeral 12 designates generally an air conditioner unit, and the numeral 14 designates generally a porthole in the side of a ship.

The porthole 14 includes an annular flange 16 having spaced pairs of lugs 18 projecting outwardly therefrom. The lugs 18 are provided with registering holes in which is inserted a pivot pin 20. An eye-bolt 22 receives the pin 20 through its eye so that the bolt 22 swings freely about the pin 20 as an axis. A thumb nut 24 is mounted on the bolt 22. Hingedly mounted to the flange 16 is a portlight frame 26 carrying a disc of glass 28. When the porthole is in closed condition, the frame 26 is bolted by the bolts 22 to the flange 16.

The air conditioner 12 includes a housing 30 having in its rear face an inlet for fresh air and an outlet for spent air, such construction being conventional and the inlet for fresh air being laterally spaced from the outlet for spent air.

The adapter unit 10 comprises an open ended casing 32 conformably shaped to receive the air conditioner housing 30. A panel or backing 34 provided with an opening 36 extends over the rear open end of the casing 32 and is secured thereto.

Projecting from the backing 34 is a mounting means constructed so as to be supported by and secured to the

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flange 16 of the porthole 14. Such mounting means is provided with a pair of openings so that when the air conditioner housing 30 is inserted through the open front end of the casing 32 and slid into position within the casing 32, the inlet for fresh air and the outlet for spent air are in registry with the aforesaid openings in the mounting means.

Specifically, the mounting means consists in a ring 38 formed from four ring sections 40, 42, 44, and 46. The ring sections 40, 42, 44, and 46, are secured together by bolt and nut assemblies 48, as shown most clearly in FIGURE 6.

The confronting ends of the ring sections 40, 42, 44, and 46, are cut away, as at 50 in FIGURE 2, to provide a recess to receive loosely therein the lugs 18 which project from the porthole flange 16.

Attaching means is provided for securing the mounting means to the casing 32, such means comprising a mounting lug 52 which projects outwardly from each side of the ring 38 and support members 54 and 56 project outwardly at an angle from the mounting lug 52 and have their free ends fixedly secured to the rearward end of the casing 32.

The rearward end of the casing 32 is provided with a flange 58 extending therearound and the free ends of the support members 54 and 56 are anchored by stud bolts 60 to the flange 58.

A vertically disposed partition plate 62 extends diametrically across the ring 38 and subdivides the space within the ring 38 and the two openings. An angle member 64 extends from one side of the casing 32 to the other side inwardly of the backing 34 and forms a support for two vertically disposed angle members 66 and 68 which are arranged so as to form a slot for the free edge portion of the partition-plate 62. Another angle member 70 extends across the upper ends of the members 66 and 68 and is secured to the top of the casing 32, as shown most clearly in FIGURE 5.

Two pairs of spaced projections 72 and 74 project upwardly and downwardly from the inner periphery of the ring 38 and engage the sides of the partition plate 62 so that the portion one end of the plate 62 is outwardly of and spaced from the ring 38 and the other end abuts against the rear face of the air conditioner housing 30 when the latter has been positioned within the casing 32.

Other support members 76 and 78 project from the ring section 44 and have their free ends secured by stud bolts 60 to the adjacent portion of the casing flange 58. Similarly, other support members 80 project upwardly from the ring section 40 and are similarly secured to the flange 58.

A portion of the partition plate 62 extends into the casing 32 below the opening 36 and the backing 34 at the upper end of the partition plate 62 terminates on the underside of a box structure 82 which seals off the interior of the casing 32 from the hinge connection of the porthole flange 16 to the porthole frame 26.

In use, the mounting unit 10 is easily and with facility attached to the flange 16 of the porthole 14, using the eye-bolts 22 already provided and connected to the flange 16 and securing the thumb nuts 24 on the bolts 22 by reaching through the open front of the casing 32.

When the unit 10 is installed on the flange 16, the housing 30 of the air conditioner 12 is easily and with facility slipped into the forward end of the casing 32 and positioned so that its back abuts the members 66 and 68, permitting the partition plate 62 to subdivide the space behind the air conditioner 12 into an inlet space and an outlet space each in registry with the appropriate opening in the ring 38 and in registry with the inlet and outlet of the air conditioner 12.

What is claimed is:

1. An adapter unit for attaching to a ship porthole an air conditioner having a housing provided on the back face with a fresh air inlet and a spent air outlet, said unit comprising an open ended casing conformably shaped to receive said air conditioner housing, a backing extending over the rear open end of said casing, mounting means constructed so as to be supported by and secured to said porthole and projecting from said backing, and attaching means for securing said mounting means to said casing, there being a pair of openings in said mounting means, said casing being adapted for insertion of said air conditioner housing through the open front end and slidable into position within said casing so that the inlet and outlet are in registry with the openings in said mounting means.

2. An adapter unit for attaching to a ship porthole an air conditioner having a housing provided on the back face with a fresh air inlet and a spent air outlet, said unit comprising an open ended casing conformably shaped to receive said air conditioner housing, a backing provided with an opening extending over the rear open end of said casing, mounting means embodying a ring supported in said backing over said opening and detachably secured to said porthole, attaching means for securing said mounting means to said casing, and means subdividing the space in said ring into a pair of openings, said casing being adapted for insertion of said air conditioner housing through the open front end and slidable into position within said casing so that the inlet and outlet are in registry with the openings in said ring.

3. An adapter unit for attaching to the annular flange of a ship porthole an air conditioner having a housing provided on the back face with a fresh air inlet and a spent air outlet, said unit comprising an open ended cas-

ing conformably shaped to receive said air conditioner housing, a backing provided with an opening extending over the rear open end of said casing, mounting means embodying a ring supported in said backing over said opening and detachably secured to said flange of said porthole, attaching means for securing said mounting means to said casing, and means subdividing the space in said ring into a pair of openings, said casing being adapted for insertion of said air conditioner housing through the open front end and slidable into position within said casing so that the inlet and outlet are in registry with the openings in said ring.

4. An adapter unit for attaching to the annular flange of a ship porthole an air conditioner having a housing provided on the back face with a fresh air inlet and a spent air outlet, said unit comprising an open ended casing conformably shaped to receive said air conditioner housing, a backing provided with an opening extending over the rear open end of said casing, mounting means embodying a ring supported in said backing over said opening and detachably secured to said flange of said porthole, attaching means for securing said mounting means to said casing, and means subdividing the space in said ring into a pair of openings, said means embodying a vertically disposed partition plate extending diametrically across said ring and having one end abutting said housing when the latter is in the aforesaid position and having a portion adjacent the other end projecting out of and spaced from said porthole.

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