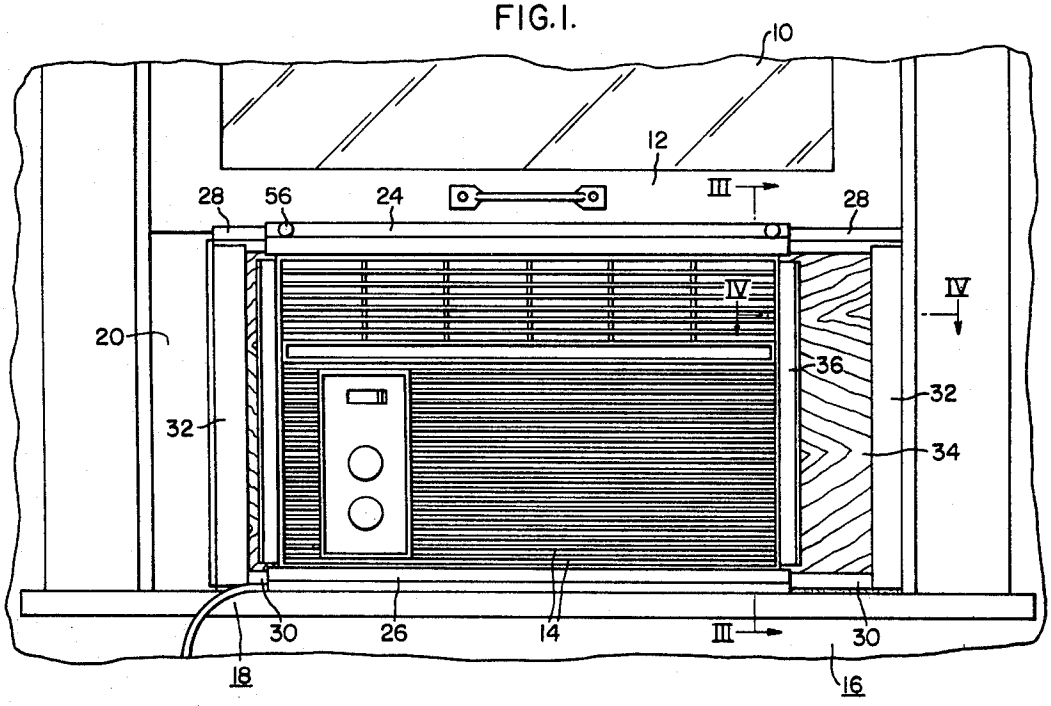
Nov. 4, 1969 W. H. APPEL 3,476,033

ROOM AIR-CONDITIONER IMPROVED MOUNTING ARRANGEMENT

Filed Nov. 24, 1967 3 Sheets-Sheet 1

FIG. 1.



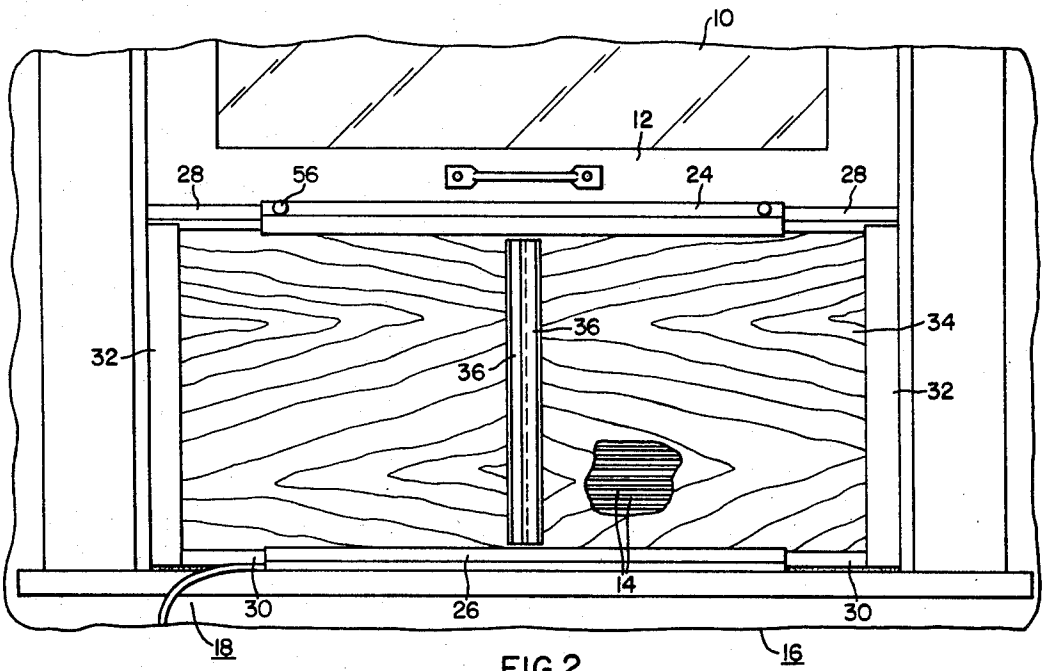


FIG. 2.

WITNESSES

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ROOM AIR-CONDITIONER IMPROVED MOUNTING ARRANGEMENT

Filed Nov. 24, 1967 3 Sheets-Sheet 2

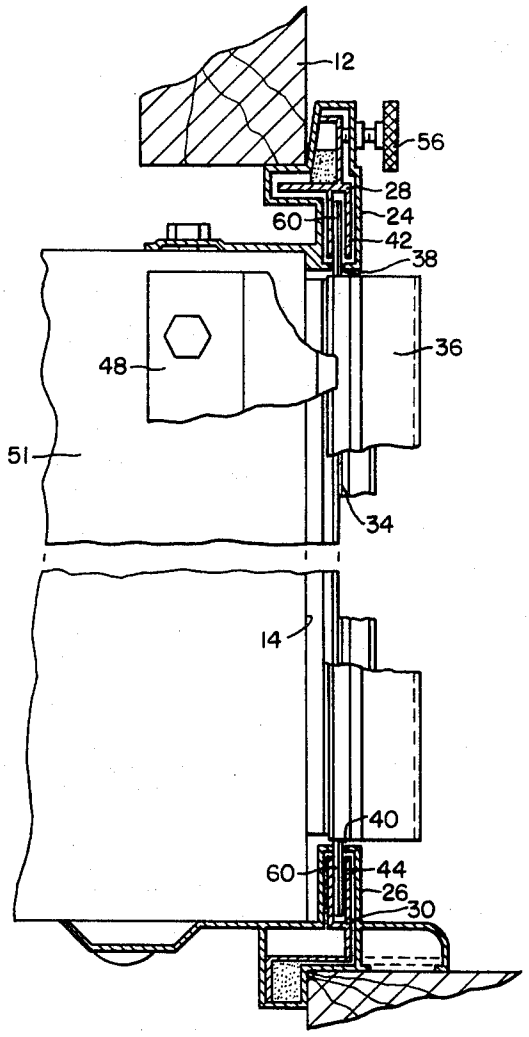


FIG.3.

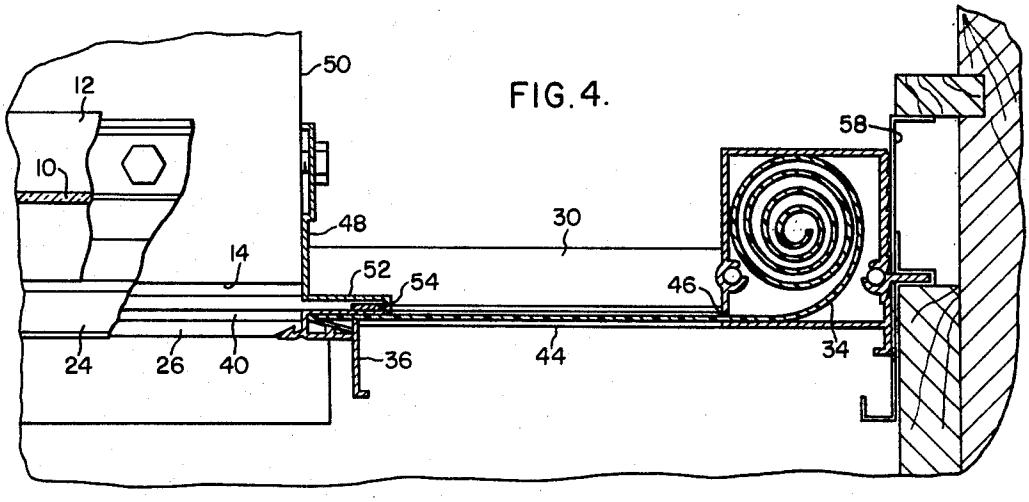


FIG.4.

Nov. 4, 1969 W. H. APPEL 3,476,033

ROOM AIR-CONDITIONER IMPROVED MOUNTING ARRANGEMENT

Filed Nov. 24, 1967 3 Sheets-Sheet 3

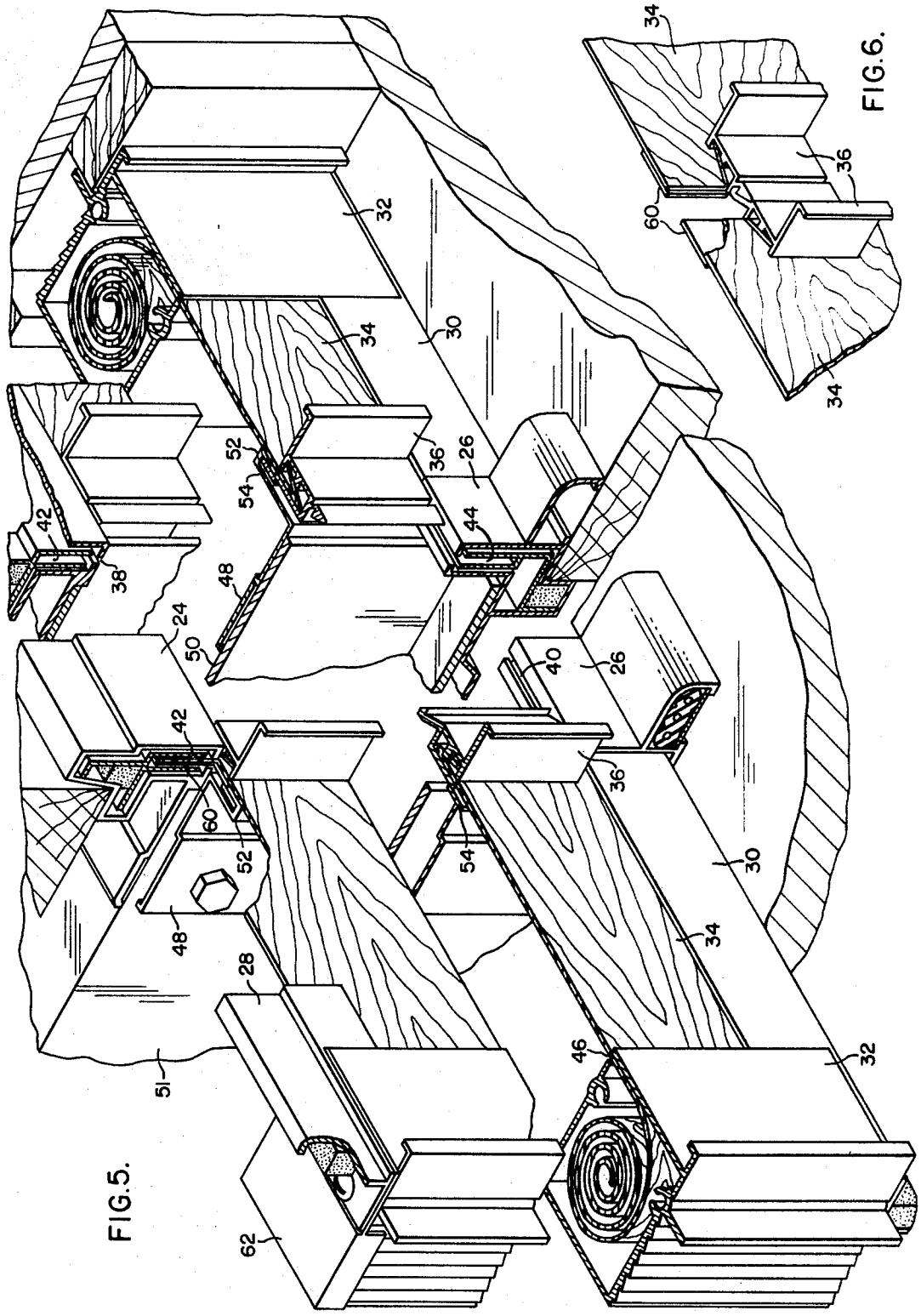


FIG.5.

FIG.6.

United States Patent Office 3,476,033 Patented Nov. 4, 1969

3,476,033

ROOM AIR-CONDITIONER IMPROVED MOUNTING ARRANGEMENT

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Filed Nov. 24, 1967, Ser. No. 685,698
Int. Cl. E06b 7/02, 9/08; F24f 13/08
U.S. Cl. 98—94 5 Claims

ABSTRACT OF THE DISCLOSURE

The titled apparatus in which a flexible sheet or curtain in compact, retracted form, at a front edge of a room air-conditioner casing is extendable into planar form, in one direction, to cover the gap between the casing and the facing building element, and also in the other direction across the front of the casing to provide a decorative cover for the casing front during inoperative periods of the air-conditioner.

CROSS REFERENCE TO RELATED APPLICATION

Copending, commonly-owned, Ulich U.S. patent application Ser. No. 685,699 also entiled "Room Air-Conditioner Improved Mounting Arrangement," discloses considerable subject matter common to my application.

BACKGROUND OF THE INVENTION

Field of the invention

The invention pertains to room air-conditioner mounting arrangements in which provision is made for closing that space formed between the air-conditioner and the building structure defining the open space in which the air-conditioner is mounted.

Description of the prior art

Known room air-conditioner mounting arrangements in which one or more retractable-extendable wings are provided on the air-conditioner casing for extension into a position closing the gaps defined between the air-conditioner casing and the facing building element are exemplified by the U.S. Patents 2,814,244, 2,946,274, 3,030,873, 3,134,319 and Metcalfe U.S. patent application Ser. No. 476,105. As shown, these arrangements provide for the extended wings to lie in a generally vertical plane which intersects the air-conditioner casing at some intermediate location along the casing depth (front-to-rear dimension).

SUMMARY OF THE INVENTION

In accordance with my invention, it is contemplated that a flexible curtain or sheet be arranged in compact form adjacent a front edge of an air-conditioner front in a disposition that the curtain may be extended out to cover the gap between the casing and the facing building element for normal air-conditioner operation, and also drawn across the face of the air-conditioner front to provide a decorative cover during non-operative periods.

DRAWING DESCRIPTION

FIGURE 1 is a face view of one type of room air-conditioner and one mounting arrangement according to the invention installed in a conventional double-hung window opening, but with only the right wing extended out to its installed position;

FIG. 2 is a face view of an installation as in FIGURE 1 but with both of the wings extended out to their installed position, and with the sheet means moved to a position providing a decorative cover for the front face of the air-conditioner;

FIG. 3 is a vertical sectional view through the mounting arrangement parts corresponding to one taken along the line III—III of FIG. 1, but with the left wall of the casing being shown in elevation and partly broken;

FIG. 4 is mainly a horizontal section corresponding to one taken along the line IV—IV of FIG. 1, but with certain parts of the air-conditioner casing being shown in plan and partly broken;

FIG. 5 is a partly broken and sectioned perspective view illustrating numerous details of the mounting arrangement; and

FIG. 6 is a fragmentary perspective view of the upper ends of the sheet pulls and the associated portions of the sheet when the sheet is disposed to provide a decorative cover for the front of the air-conditioner.

Referring to FIGURE 1, the room air-conditioner is shown mounted in a window opening in which a vertically-slidable inner sash **10** is lowered until its rail **12** seats upon the mounting arrangement structure which generally frames the front face **14** of the air-conditioner. The right closure wing generally designated **16** is shown extended outwardly to the facing right side of the window frame, while the left closure wing generally designated **18** is shown in its retracted position, which leaves a gap **20** between the air-conditioner and facing left side of the window frame. It will be appreciated that with the final installation of the air-conditioner in the window using the mounting arrangement, the left wing is also extended out to engage the left side of the window frame.

In FIGURE 2, both wings **16** and **18** are shown extended outwardly to close the gaps between the air-conditioner and facing window frame sides, and the closure curtains or sheets are also drawn across the front face of the air-conditioner to provide a decorative cover for the face of the air-conditioner. This is the position of the closure which may be used for storage of the air-conditioner in the window during non-operating seasons, or to cover the air-conditioner face when not in use during an operating season.

The main parts of the mounting arrangement seen in FIGS. 1 and 2 include: the top and bottom guide tracks **24** and **26** secured to the top and bottom walls, respectively, of the air-conditioner casing; the three-sided frames for each closure wing **16** and **18** comprising top and bottom horizontal slide members **28** and **30** having their outboard ends rigidly connected to the top and bottom ends, respectively, of the vertically-disposed, hollow, sheet housing **32**; the flexible sheet **34** retractable into a compact form in the housing and adapted to be pulled out of the housing into generally planar form; and, the vertically-disposed sheet pull members **36** attached to the one vertical sheet edge which always remains outside of the housing **32**. The opposite closure wings **16** and **18** are substantially mirror images of each other and therefore corresponding parts of both wings are identified by the same numerals.

The particulars of the currently preferred embodiment of my invention for commercial purposes, and which includes numerous details contributed mostly by another, are best seen in FIGS. 3–6. Description of such particulars is largedly omitted herein, although shown in the drawing, and reference should be had to the previously noted copending Ulich patent application for a full exposition thereof.

For present purposes, it may be seen from FIGS. 3 and 5 that both the top and bottom guide tracks **24** and **26** include hollow sections in which are telescopically received the top and bottom slides **28** and **30**, respectively. The tracks **24** and **26** have open slits **38** and **40**, extending for the lengths of the tracks and facing each other, for slidably capturing the top and bottom margins of the

sheets 34. The substantially vertical plane defined between the slits of the tracks lies closely in front of the front face 14 of the room air-conditioner casing. The slides 28 and 30 include narrow channel sections 42 and 44, respectively, having their open edges facing each other and aligned with the track slits to also capture the top and bottom margins of the sheets in slidable relation. Thus, with this arrangement, the sheets may be slid relative to the channels, relative to the tracks, and the channels themselves may also be slid relative to the tracks with or without the sheets being carried along.

As shown in FIGS. 4 and 5, the members 32 for housing the sheets 34 in retracted form are hollow structures into which most of the self-coiling sheet retracts through slot 46 to assume its compact form. To the extent that the sheets are pulled out of their housings, they are held in a generally planar form by their top and bottom margins being captured by the slide channels and track slots. The leading or outer lateral edge of the sheet is held flat by the pull handle 36. The currently preferred sheet material is described in the noted copending Metcalfe patent application and is a material identified by the trademark "Mylar" and manufactured by Du Pont.

It will be observed from FIGS. 4 and 5 that a vertically disposed lock retainer member 48 provided on each side wall 50 and 51 of the casing includes an interference portion 52 disposed in a plane to engage with an offset flange 54 on the pull handle 36. The interference portion serves as a stop to retain the handle and its captured edge of the sheet adjacent the air-conditioner side as the sheet housing 32 is moved out to its position engaging the window frame side. To lock the closure wings out in their installed position, the lock screws 56 are tightened to secure the top slide 28 relative to the top track 24. To stabilize the sheet housing 32 at the window frame side, various arrangements may be used; the preferred one illustrated includes an adjustable clip 58 accommodating various thickness sash tracks.

The pull handles 36 for the sheets are constructed in the preferred embodiment with top and bottom tabs or projections 60, as best shown in FIGS. 3, 5 and 6, which fit in the slide channels and track slots for movement therein along with the sheet margins. This arrangement provides stability in guiding the handle during its movement, as well as preventing the self-coiling nature of the described sheet material from rotating the handles.

Each sheet housing 32 is capped on at least the top with a cover 62, suitable gasket material for sealing various parts to each other and to the window frame structure is provided at appropriate locations, and other structural features which provide convenience in use of the mounting arrangement are incorporated in the preferred embodiment shown, which is now contemplated as the best mode of carrying out the invention. As noted before, details of many of these contributions by another are described in the copending Ulich patent application.

However, it will be appreciated that my inventive concept is applicable to other structural forms of somewhat simpler character. For example, the flexible sheet material can be of a non-self-coiling character, such as a tambour type sheet which would permit the omission of certain features closely related to the character of the self-coiling sheet material. The flexible curtain could also take the form of an accordion-pleated member having a compact, retracted form adjacent a front edge of the casing and extendable both toward the window frame and across the casing front in a flattened, generally planar form.

Also it will be appreciated that while the arrangement is shown applied to an air-conditioner of the type commonly used in single and double hung vertically sliding windows, the arrangement also is readily applicable to air-conditioners specially designed for installation in horizontal slider windows and casement windows, for example, in which a single gap may be defined between the top side of the casing and the top side of the window frame. In such an arrangement the sheet housings would be horizontally disposed at the top side of the casing for vertical movement and would contain a single sheet of sufficient length to extend from the bottom side of the air-conditioner casing to the extended position of the housing abutting the top side of the window frame.

The arrangement is also applicable in connection with an air-conditioning unit of the character which is hung substantially completely outside of a window and a connecting duct between the window opening and the air-conditioning casing proper is provided. For such an air-conditioner, the closure frame structure of the invention is mounted at the room end of the duct located in the window opening. Hence, in such an arrangement the room end of the duct may be considered to be the casing front in the sense in which the term the casing front is used in this patent application.

Finally, the arrangement may be incorporated in a rigid frame unit apart from the air-conditioner casing itself, with the frame dimensioned to fit a particular size air-conditioner casing, following the concept of Melcalfe U.S. Patent 3,030,873.

Since the closure arrangement is located at the extreme front face of the air-conditioner casing, most of the weight of the air-conditioner must be supported from a location outside of the window opening. Thus, various support brackets for supporting the weight of the air-conditioner from the window sill or from the building structure in other ways shall be provided. Since these means for supporting the weight of the air-conditioner form no part of the present invention, no particular way of supporting the casing is shown.

In summary as to how the closure arrangement of the invention is used, the air-conditioning unit carrying the closure arrangement is placed in the window opening and seats upon whatever support means is provided. The sheet housings are in their retracted position adjacent the sides of the air-conditioner casing. After the lower sash of the window is lowered to engage the top track, the wings are extended by moving the opposite housings out into engagement with the respective sides of the window frame. The pull handles engaging the lock retainer bars at each side of the casing prevent the outer lateral edges of the sheets attached to the pull handles from following along with the housings and thus the sheets are drawn out of the housings. With the wings extended and held by the lock screws, the unit may be operated for air-conditioning purposes. If it is desired to cover the face of the air-conditioner as shown in FIG. 2, both of the pull handles are moved toward each other to draw additional curtain or sheet material out of the housings. The handles are held in their centered position by the overlapping engagement of mating parts of the handles, although the friction of the sheet material margins in their tracks also tends to maintain the sheet material at any position it is placed by movement of the handles.

I claim:

1. The combination of a room air-conditioner and a closure arrangement therefor comprising flexible sheet means supported in compact retracted from adjacent a front edge of the air-conditioner casing, and extendable both outwardly from the casing to block the space between the casing side and facing building element, and also across at least a portion of the face of said casing to provide a decorative cover therefor.

2. The combination of a room air-conditioner and a closure arrangement therefor of the type in which a flexible curtain of compact form in retracted position at a casing side of a room air-conditioner is extendable into a generally planar form toward the building element facing said casing side to block the space between said casing side and building element, including:

means supporting said flexible curtain adjacent a front

edge of said casing side for extension across at least a portion of the front of said casing in a generally planar form to provide a decorative cover for said casing front while a portion of said curtain remains extended toward said building element to block said space.

3. The combination of a room air-conditioner and a closure arrangement for selectively blocking the otherwise open space between a front edge of said room air-conditioner casing front and a generally parallel, spaced-apart, building element defining one side of the building opening into which said casing front is positioned, and for selectively covering at least a portion of the front face of said casing front, including:

flexible sheet means in compact form supported adjacent said front edge of said casing front; and

means for extending into generally planar form at least a portion of said sheet means toward said building element from said front edge, with said casing front being generally exposed, in one disposition of said sheet means adapted to permit operation of said room air-conditioner; and

for extending at least a portion of said sheet means into generally planar form overlying at least a portion of said casing front, in another disposition of said sheet means, providing a decorative cover for said casing front.

4. An arrangement according to claim 3 wherein: said sheet means in said compact form is coiled.

5. An arrangement according to claim 3 wherein: said sheet extending means includes track means at one pair of opposite forward edges of said casing; and frame means carried by said track means, said frame means supporting said sheet means in said compact form.

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MEYER PERLIN, Primary Examiner

U.S. Cl. X.R.

62—262; 160—25