Dec. 2, 1969 M. D. ULICH 3,481,264

ROOM AIR-CONDITIONER WINDOW MOUNT ARRANGEMENT

Filed Jan. 8, 1968 2 Sheets-Sheet 1

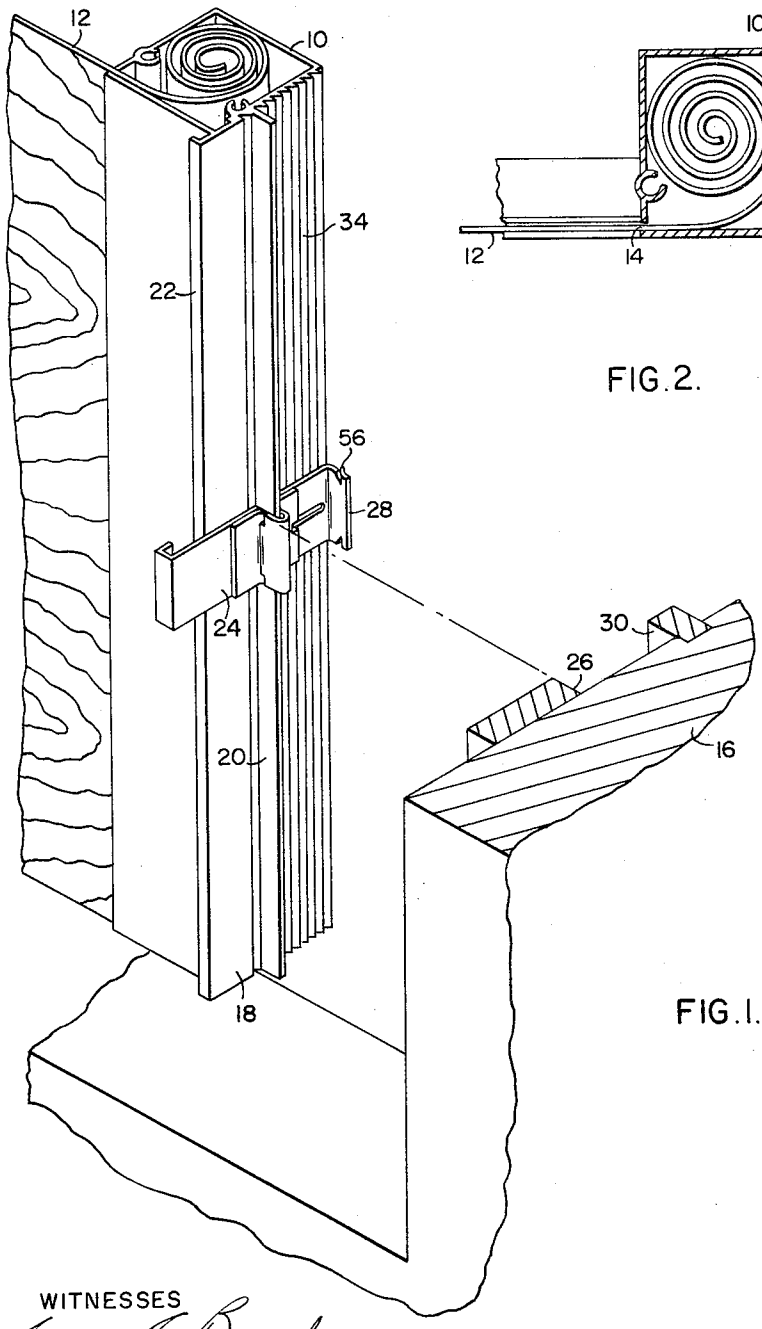


FIG. 1.

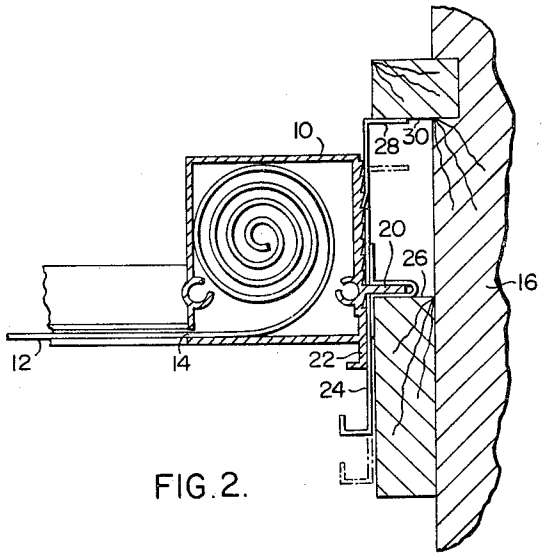


FIG. 2.

WITNESSES

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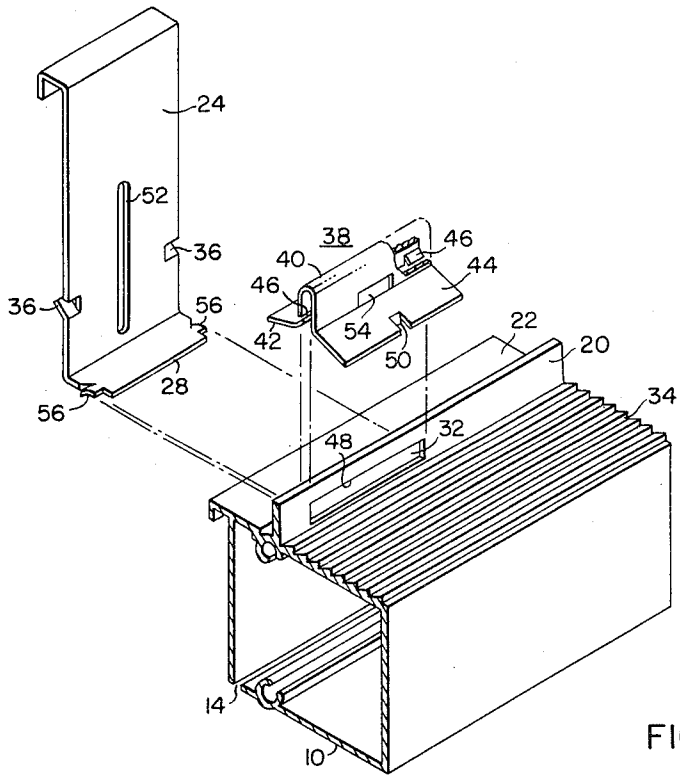


FIG. 3.

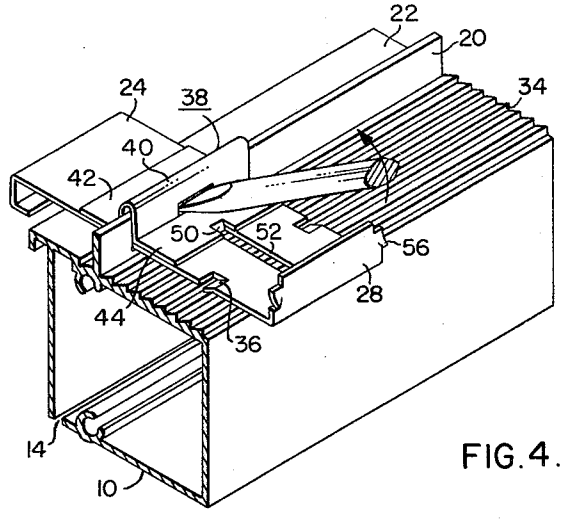


FIG. 4.

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ROOM AIR-CONDITIONER WINDOW MOUNT ARRANGEMENT

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Int. Cl. E06b 7/03
U.S. Cl. 98—94 9 Claims

ABSTRACT OF THE DISCLOSURE

For mounting room air-conditioners provided with an extendible closure frame movable out from the air conditioner to engage with a window frame, the end member of the closure frame has a locking clip movable in ratcheted fashion to engage with the window sash channel to stabilize the end member of the frame in the plane of the sash channel.

BACKGROUND OF THE INVENTION

Field of the invention

The invention pertains to the art of mounting room air-conditioners in windows, and pertains particularly to means for stabilizing an extendible closure frame relative to a window sash channel.

Description of the prior art

Arrangements of which I am aware for locking and stabilizing the end members of extendible closure frames associated with window mounted room air-conditioners are exemplified by those arrangements found in U.S. Patents 2,946,274, 3,030,873, and 3,134,319. In the first noted patent, a compressible gasket along the edge of the end member stabilizes the frame by the frictional engagement of the gasket in the sash channel of the window. In the second noted patent, an angle flange is adjusted laterally on the end member to the width of the channel and is tightened in place by screws before the frame is finally extended and locked. In the third patent, the lateral adjustment of a channel on the end member is done automatically by engagement of the channel with a portion of the sash channel as the frame is extended outwardly. While each of these three arrangements includes means for accommodating different width sash channels, each is considered to be lacking in one respect or another, such as requiring undue manipulation to fit a particular sash channel width, or as not being sufficiently positive in insuring stabilization of the end member relative to the sash channel.

The arrangement of my invention is believed superior to that of the prior art teachings in that it is relatively inexpensive, operates very simply and is substantially foolproof in use, and provides good stabilization of the end member in different channel widths.

SUMMARY OF THE INVENTION

The gist of my invention is the provision of flange means on the end member disposed to abut one face of the sash channel, and clip means mounted in ratcheted relation on the end member and movable away from the flange to a position abutting the opposite face of the sash channel, this arrangement permitting the closure frame to be extended to its final position before the clip means is moved to stabilize the end member.

DRAWING DESCRIPTION

FIGURE 1 is a perspective view of the end portion of a closure frame for a room air-conditioner having an arrangement according to the invention, and being disposed in a position to be moved into engagement with the illustrated sash channel of the window frame;

FIG. 2 is a sectional view taken through the end member and window frame illustrating the end member in position, and the locking clip of the arrangement in alternate positions;

FIG. 3 is an exploded perspective view of a portion of the end member and the parts of the arrangement before assembly; and

FIG. 4 is a fragmentary perspective view of the arrangement according to the invention with the lock clip extended and illustrating how it may be returned to its minimum width position for future use.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The basic closure frame arrangement to which my invention is applied is not of particular significance so long as it includes an end member intended to be moved into stabilized relation with a window frame sash channel. The parts of the closure frame shown are of the type detailed in Metcalfe U.S. patent application Ser. No. 476,105, and my U.S. patent application Ser. No. 685,699 to which reference should be had for additional detail.

In the type closure frame illustrated, the main part of the end member is a hollow curtain-housing **10** which is generally square in lateral cross section, and contains a self-coiling curtain **12** (FIGS. 1 and 2) which is played out of the longitudinal slot **14** at one corner of the housing as the housing is moved out toward the sash channel of the window frame **16**. The end wall **18** of the housing **10** carries a longitudinally-extending, outwardly-projecting flange **20** which may be formed as an integral part of the extruded aluminum housing. The housing also preferably carries a forwardly-projecting, L-shaped flange **22** along its outer front corner serving as a finger grasp for extending the frame away from the air conditioner as a finger grasp and for pulling the flange **20** up against the one face of the sash channel during manipulation of the locking clip **24**.

The locking clip **24** is of an elongated Z-shape and is shown in broken line position in FIG. 2 before it has been moved into its solid line position locking the end member to the sash channel.

In the stabilized position of the closure frame means, the flange **20** generally abuts one face **26** (FIGS. 1 and 2) of the sash channel, while the outer end portion **28** of the locking clip **24** abuts the opposite face **30** of the sash channel. The end **28** of the locking clip holds its position spaced from the flange **20** the width of the sash channel by virtue of ratcheted relation between the end wall **18** and the locking clip.

The preferred way of providing the ratcheted relation between the clip **24** and the end member **10** is best seen in FIG. 3. As there shown, the flange **20** is provided with a cutout or opening **32** defined on one side by the

exterior face of the end wall **18**. The locking clip **24** is manipulated through the cutout **32** so that its web or main portion (also designated **24**) will lie against the exterior face of the end wall **18** of the end member **10**. The part of the end wall exterior face on the outer side of flange **20** has sawtooth grooves **34** inclined toward what will be the outside of the window as the frame and housing **10** are installed.

At about one-half inch (corresponding to the narrowest sash channel normally encountered) from the end portion **28** on the lock clip **24**, detent means **36** are provided at opposite edges of the main portion **24** of the locking clip. These detent means may simply be tabs struck in a direction to lie in conforming relation in the interdental spaces of the sawtooth grooves **34** and permit the clip to be moved in ratcheting fashion in a direction moving the end portion **28** of the clip away from the flange **20**, but preventing the reverse direction of movement so long as the clip **24** is held reasonably tightly against the exterior face of the end wall **18**.

To hold the lock clip **24** (FIGS. 3 and 4) in place so that the detents **36** bear reasonably tightly against the grooves **34**, and to guide the clip **24** in its movement, a retainer clip **38** is provided to seat upon the flange **20** and bear against the main portion of the lock clip **24**. The retainer clip includes a central saddle portion **40** and opposite wings **42** and **44**. The angle formed between the bottom faces of the two wings is slightly less than 180° so that when the retainer clip **38** is seated in position, both wings bear rather tightly against the clip **24**.

The retainer clip **38** includes a pair of lugs **46** struck inwardly adjacent the junction between the wing **42** and the saddle portion **40**, at opposite edges of the saddle. These lugs hook against the upper edge **48** (as viewed in FIGS. 3 and 4) of the cutout **32** when the retainer clip is pushed down into position to hold it in position. The wing **44** is provided with a downwardly-directed prong **50** at the middle of its edge remote from the saddle. This prong is received in a slot **52** extending along the central portion of the locking clip **24** to guide the locking clip and prevent it from skewing as it is moved into its locking position.

The retainer clip also has a slot **54**, extending along the inside corner formed at the juncture of wing **44** and the saddle, useful for releasing the pressure of the retainer clip wing **44** against the lock clip to permit sliding the lock clip back to an initial position. It will be appreciated that after the lock clip has been advanced to a position such as the FIG. 2 solid line position, that the ratcheted arrangement prevents the lock clip from being moved entirely back to its initial position without in some way releasing the bearing of the retainer clip wing **44** against the lock clip. This is accomplished by inserting the screwdriver (FIG. 4) in the slot **54** and pulling it upwardly in the direction shown by the arrow until the retainer clip wing **44** is pulled up sufficiently to slide the lock clip **24** back to a minimum width position.

The end portion **28** (FIGS. 3 and 4) of the lock clip may also be provided with teeth **56** which dig into the sash channel face **30** for adding stability to the clip in its final position.

To insure a full understanding of the way in which the locking arrangement is used, the following is noted. The end member is pulled away from the air-conditioning until the flange **20** is in the sash channel and closely adjacent the channel face **26**. This results automatically when the air-conditioner is properly set since the air-conditioner is located in the window so that the front face of the window sash bears against the unit at a location corresponding to the plane of the flange **20**. The end member is held out in this extended position by a thumb screw or other suitable means provided on the particular closure frame for this purpose. Then the locking clip is pushed in a direction towards the outdoors by pushing against the forward leg of the clip, and preferably by holding the L-flange **22** of the end member with the finger tips to insure that the flange **20** stays closely adjacent the face **26** of the sash channel. As the lock clip is moved the detents **36** move across successive grooves **34** until the end portion **28** of the lock clip bears against the opposite face **30** of the sash channel. The teeth **56**, if provided, dig into this face **30** to a slight degree to help stabilize the lock clip **24**. The movement of the lock clip has been guided in a direction perpendicular to the housing **10** by the prong **50** and slot **52** relationship. When the air-conditioner is to be removed from the window, the closure frame is moved back toward its retracted position to pull the flange **20** and end portion **28** of the lock clip out of the channel. Then the locking clip end **28** may be sprung slightly away from the groove face to return the lock clip toward its initial position. In most cases it is not necessary to return it completely to its minimum width position as explained in connection with FIG. 4 unless the air-conditioner will subsequently be placed in a window having a narrower sash track than in the previously used window.

It is preferred that the flange **20** extend for the length of the housing end to provide a full seal. The flange may be recessed slightly on its face abutting the channel face **26** where the retainer clip **40** seats on the flange so that the exposed faces are flush for a more perfect seal, but this is not considered necessary usually since the clips are preferably made of relatively thin stock spring steel.

It will be appreciated that the arrangement according to the invention is applicable to closure forms used on air-conditioners for either vertically or horizontally slidable windows.

I claim as my invention:

1. In a room air-conditioner window mounting arrangement;

an extendible frame end member movable into engagement with the window sash channel, said frame end member including first means for abutting one of the opposing faces of said sash channel, and including second means movable laterally relative to said abutting means for abutting the other of said opposing faces of said sash channel to stabilize said end member in said channel against lateral movement, said second means being mounted on said end member in ratcheted relation to said first abutting means so that said second means will hold at a distance from said first abutting means corresponding to the width of said sash channel.

2. An arrangement according to claim **1** wherein:

said first abutting means comprises flange means extending for substantially the length of said end member.

3. An arrangement according to claim **2** including

a lock clip carrying said second abutting means thereon and having detent means formed integrally therein and projecting toward said end member, said end member including a series of grooves thereon against which said detent means engage.

4. An arrangement according to claim **3** including:

a retainer clip for urging said lock clip against said end member, said retainer clip including a saddle portion seating on said flange, and outwardly-directed wing portions bearing against said lock clip to hold said detent means in said end member grooves.

5. An arrangement according to claim **4** wherein:

said flange includes a portion thereof defining a cutout portion in which said lock clip is slidably received.

6. An arrangement according to claim **4** wherein:

said lock and retainer clips include complementary engaging means for guiding the movement of and preventing skewing of said lock clip.

7. An arrangement according to claim **6** wherein:

said complementary engaging means comprise a tab

on one of said clips and a slot on the other of said clips.

8. An arrangement according to claim 5 wherein:

said retainer clip includes means received in said cut-out portion for holding said retainer clip on said flange with said wing portions bearing against said lock clip.

9. An arrangement according to claim 4 wherein:

said retainer clip includes slot means adapted to be engaged by a tool for spreading said saddle portion and lifting said detent means from said grooves.

References Cited

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