Sept. 1, 1942. A. B. HUBBARD 2,294,664

CLAMP FOR WINDOW SILL AIR CONDITIONERS

Filed Oct. 22, 1940

Fig. 1.

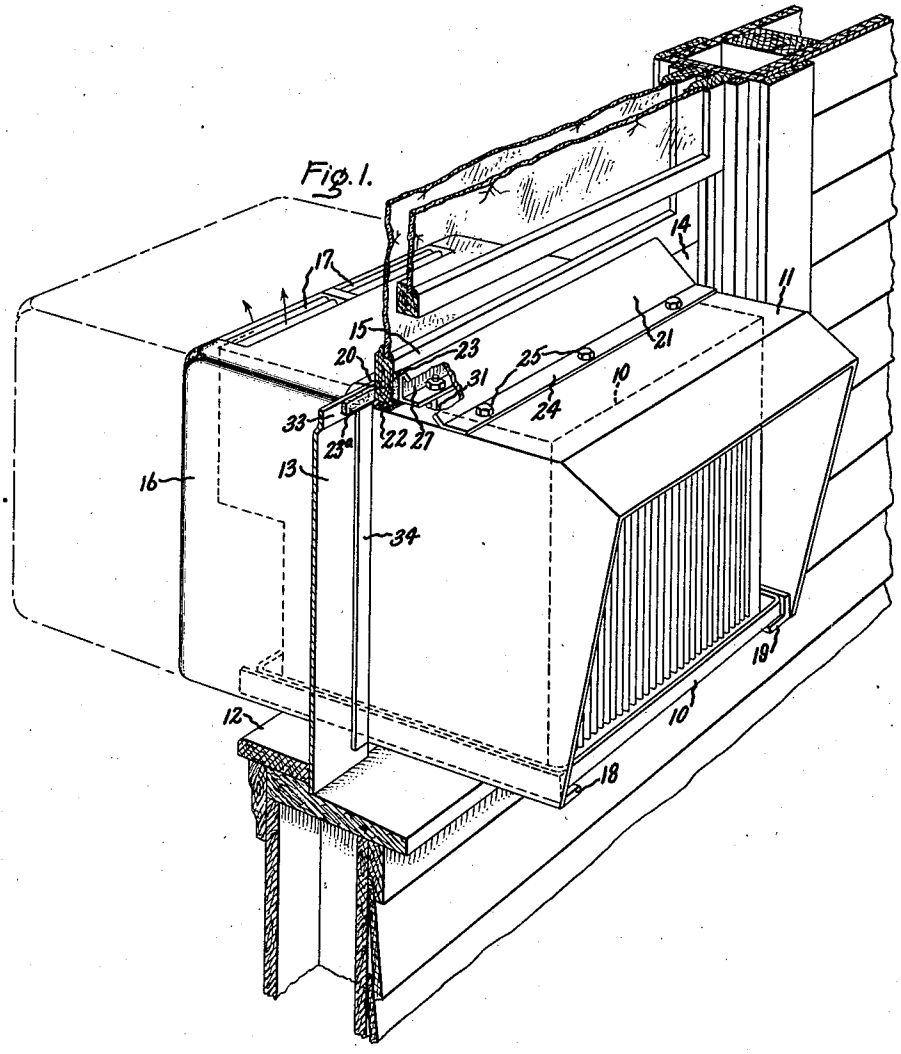
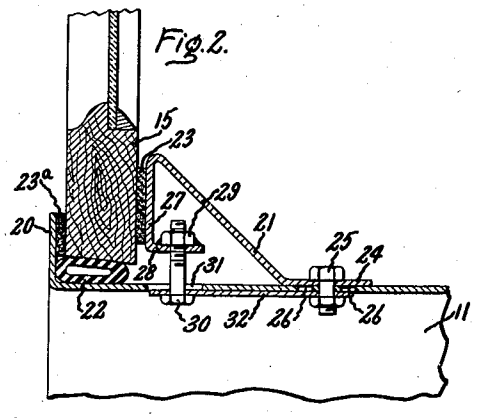


Fig. 2.



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CLAMP FOR WINDOW SILL AIR CONDITIONERS

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5 Claims. (Cl. 98—94)

My invention relates to air conditioning apparatus and the like and particularly to devices for mounting air conditioning or ventilating units in window openings.

Ventilating or air conditioning devices for rooms frequently are constructed as units which may be mounted within a window opening. Various arrangements have been provided for sealing the window opening about the sides of the unit. It is desirable that the sealing arrangement be simple and require a minimum change of the standard window construction and minimum possible damage to the window structure. Furthermore, it is desirable that the device be readily removable.

It is an object of my invention to provide an improved device for removably mounting an air conditioning unit or similar apparatus in a window opening.

Another object of my invention is to provide an improved device for mounting an air conditioning unit or the like in a window opening which shall not require the person installing the apparatus to work from outside the window opening.

Further objects and advantages of my invention will become apparent as the following description proceeds, and the features of novelty which characterize my invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of my invention, reference may be had to the accompanying drawing in which Fig. 1 is a perspective view partly in section of an air conditioner mounted within a window opening by a device embodying my invention, and Fig. 2 is an enlarged sectional end elevation view of the window clamping portion of the apparatus shown in Fig. 1.

In general, the apparatus shown in the drawing, comprises a housing arranged to be mounted within a window opening and provided to receive an air conditioning or ventilating unit which may be placed in and removed from the housing without interfering with the connections securing the housing in the window opening. In order to clamp the window sash in a position adjacent the housing, an inclined metal plate is secured to the housing and extends at an angle toward the window sash, a portion of the plate resting against the sash either directly or through a suitable pad or gasket. A clamping device such as a series of bolts is provided for drawing the plate toward the housing whereby it is also drawn against the window sash and clamps the sash in position. The bolt heads or other suitable operating members of the device are accessible from within the housing when the air conditioning unit is removed therefrom, and it is not necessary to reach the outside of the unit in order to operate the clamping means.

Referring now to the drawing, in Fig. 1, I have shown an air conditioning unit 10 mounted within a housing 11 which is secured in a window opening on a window sill 12. The spaces between the housing and the sides of the window opening are closed by suitable panels 13 and 14, and a window sash 15 rests adjacent the top of the housing; the window opening is thus closed on all sides of the housing 11. The air conditioning unit 10 is provided with a suitable finished case or cabinet 16 arranged on the room side of the window; the cabinet 16 may be removed as indicated by the dot and dash lines thereby providing access to the air conditioning unit 10. The unit 10 is arranged to circulate air and to discharge it through suitable louvered openings 17 in the cabinet 16 and thence into the room. The housing 11 extends almost entirely outside the window opening and is provided with suitable guide rails 18 and 19 extending into the room for receiving the air conditioning unit 10 about half of which is enclosed by the housing while the other half is in the room where it is covered by the cabinet 16. It is desirable that the window sash be held securely in position adjacent the housing, and in order to accomplish this, I provide a suitable stop or flange 20 on the housing arranged to extend along the inner side of the window sash and an inclined elongated rectangular plate 21 which may be drawn down toward the housing and against the sash to press the sash against the flange and thereby clamp it in position. Suitable sealing gaskets 22 may be provided below the sash and suitable gaskets or pads 23 and 23a may, if desired, be arranged on the outer and inner sides, respectively, of the sash to prevent damage to the sash during the clamping operation. The plate 21 is provided with a flange 24 along one longitudinal edge thereof which is secured to the housing by a plurality of bolts 25 or by other suitable devices. The bolts 25 pass through holes 26 as indicated in Fig. 2; the holes 26 are arranged in groups or series, each series comprising a plurality of holes so that the position of the plate 21 may be varied to accommodate window sashes of different sizes by selecting a suitable row of holes parallel to the sash. Plate 21 along its other longitudinal edge is provided with a flange 27 which lies ad-

jacent the window sash 15 and extends toward the housing in a plane parallel to the sash; the flange 27 is inturned as indicated at 28, and is provided with a plurality of nuts 29 welded thereto. Flange 28 may be drawn toward the housing 11 by turning bolts 30 which extend through the housing 11 and are threaded in the nuts 29. The heads of the bolts 30 by which the clamping device is operated pass through elongated opening 31 in the housing and are accessible from within the housing. It will be clear from Fig. 2 that when the bolts 30 are tightened to draw the flange 28 from the housing, the flange 27 will be pressed toward the window sash 15 and will clamp the sash between the flanges 20 and 27, thereby securely holding the window in its lowered position adjacent the top of the housing. Straps 32 are provided to maintain the spacing of the pairs of bolts 25 and 30.

When an air conditioning unit is to be installed in the window opening, the housing 11 is first placed on the sill and the panels 13 and 14 selected of a size to close the openings at either side of the housing are secured in place by suitable screws or other devices (not shown). The bolts 25 are then placed in a suitable row of the holes 26 such that the flange 27 will fit against the window sash 15 or will be sufficiently close thereto to accommodate the strip 23. The window is then lowered in place between the flanges 20 and 27 and the bolts 30 are turned to draw the plate 21 toward the housing and against the window sash 15. The air conditioning unit 10 is then slid into place on the guides 18 and 19 and the cabinet 16 placed over the portion of the unit projecting into the room. The plate 21, it will be noted, constitutes a continuation of the housing 11, both the plate and the housing being finished in a suitable manner to present a pleasing appearance from the outside. The panels 13 and 14 are provided with top portions which constitute continuations of the flange 20 on the housing, the top flange of the panel 13 being indicated at 33; the housing is provided with suitable flanges to which the panels 13 and 14 may be secured, the one of these flanges to which the panel 13 is secured being shown at 34 in Fig. 1.

From the foregoing, it will be apparent that I have provided a simple and easily installed arrangement for mounting an air conditioning unit in a window opening, the mounting being so arranged that it may be installed in the window without requiring access from the outside. Furthermore, the mounting provides a pleasing appearance and is weather-proof and may be installed without changing the window construction and without damage to the woodwork about the window.

While I have described my invention in connection with a particular air conditioning unit, other applications will readily be apparent to those skilled in the art. I do not, therefore, desire my invention to be limited to the particular construction shown and described, and I intend in the accompanying claims to cover all modifications within the spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A device for securing air conditioning apparatus or the like in a window opening comprising a housing arranged to fit within a window opening, and means including an elongated substantially rectangular sheet metal member arranged to extend laterally at an angle between said housing and a window sash for holding the window sash in position adjacent said housing, said member having one of its longitudinal edges secured to said housing and its other longitudinal edge arranged to rest adjacent the window sash, said means including a clamping device having an operating member accessible from within said housing for drawing said other edge toward said housing whereby said strip is forced toward the window sash to hold the sash in position adjacent said housing.

2. A device for securing air conditioning apparatus or the like in a window opening comprising a housing arranged to fit within a window opening, a stop secured to the top of said housing and adapted to engage one side of a window sash, and means including an elongated substantially rectangular sheet metal member having one longitudinal edge secured to said housing and arranged to extend angularly toward the other side of the window sash for securely connecting the window sash to said housing, said means including a clamping device having an operating member accessible from inside said housing for drawing the other longitudinal edge of said strip toward said housing and toward the window sash whereby the sash is clamped between said stop and said sheet metal member.

3. In combination, a housing for mounting air conditioning apparatus or the like in a window opening and clamping means for securing a window sash in place adjacent the housing, said clamping means comprising a stop on said housing adapted to engage one side of the window sash and an elongated substantially rectangular sheet metal plate arranged to extend angularly of the sash on the other side from said stop and having one of its longitudinal edges secured to said housing and its other longitudinal edge arranged to lie adjacent the window sash, said plate being adjustable on said housing to accommodate window sashes of different widths, and means including an operating member accessible from inside said housing for drawing said other edge of said plate toward said housing and toward the window sash whereby the sash is clamped securely between said stop and said sheet metal plate.

4. In combination, a housing for mounting air conditioning apparatus or the like in a window opening and clamping means for securing a window sash in place adjacent the housing, said clamping means comprising a flange on said housing arranged to engage the inner side of the window sash and an elongated substantially rectangular sheet metal plate arranged to extend angularly of the sash on the other side of said flange, said sheet metal plate having a finished surface and constituting an extended portion of the surface of said housing, said sheet metal plate having one of its longitudinal edges secured to the housing and its other longitudinal edge arranged to lie adjacent the window sash, and means including an operating member accessible from inside said housing for drawing said other edge of said plate toward said housing and toward the window sash whereby the sash is clamped securely between said flange and said sheet metal plate.

5. In combination, a housing for maintaining air conditioning apparatus or the like in a window opening and clamping means for securing a window sash in place adjacent the housing, said clamping means comprising a flange on said housing arranged to engage the inner side of the win-

dow sash and an elongated substantially rectangular sheet metal plate arranged to extend angularly of the sash on the other side from said flange, said sheet metal plate constituting an extended portion of the surface of said housing and having one of its longitudinal edges throughout its length in engagement with said housing and secured thereto and having a portion adjacent its other longitudinal edge extended toward said housing to provide a flange in a plane parallel to the sash, and means engaging said extended portion and the top wall of said housing and having an operating member accessible from inside said housing for drawing said extended portion of said plate toward said housing and toward the window sash whereby the sash is clamped securely between said flange on said housing and said sheet metal plate.

ALBERT B. HUBBARD.