July 16, 1957 R. J. CALLAN 2,799,062

SEALING STRIP

Filed April 7, 1954 2 Sheets-Sheet 1

FIG. 1.

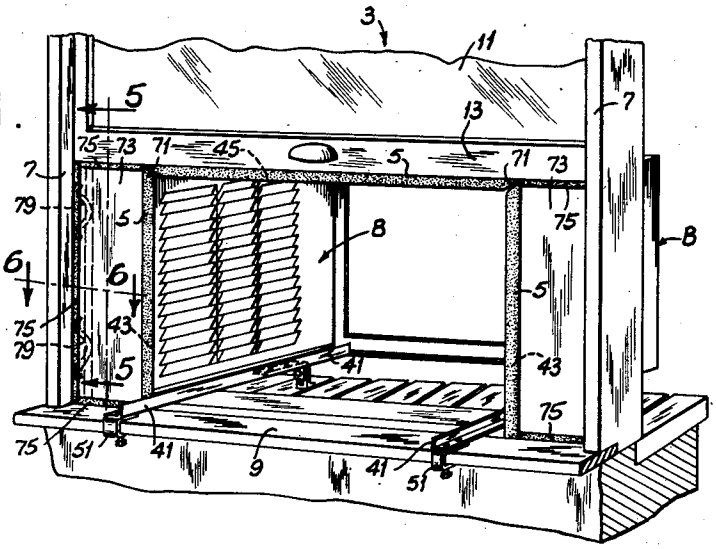
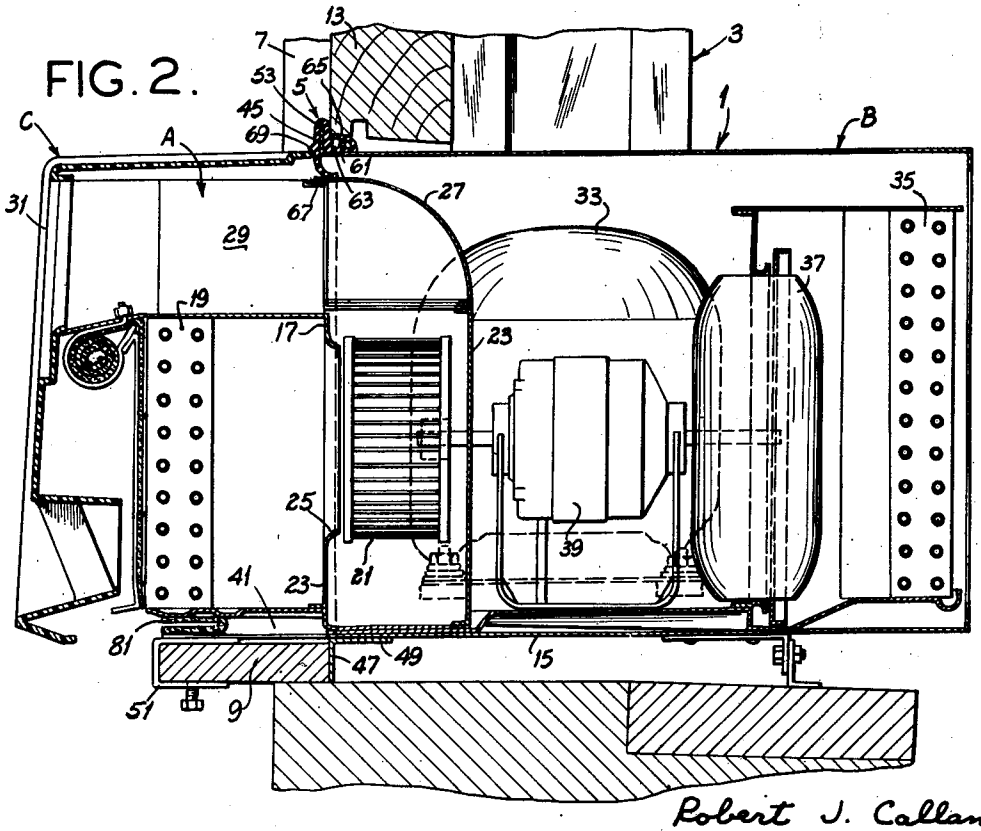


FIG. 2.



Robert J. Callan,
Inventor.
Koenig and Pope,
Attorneys.

July 16, 1957 R. J. CALLAN 2,799,062

SEALING STRIP

Filed April 7, 1954 2 Sheets-Sheet 2

FIG. 3.

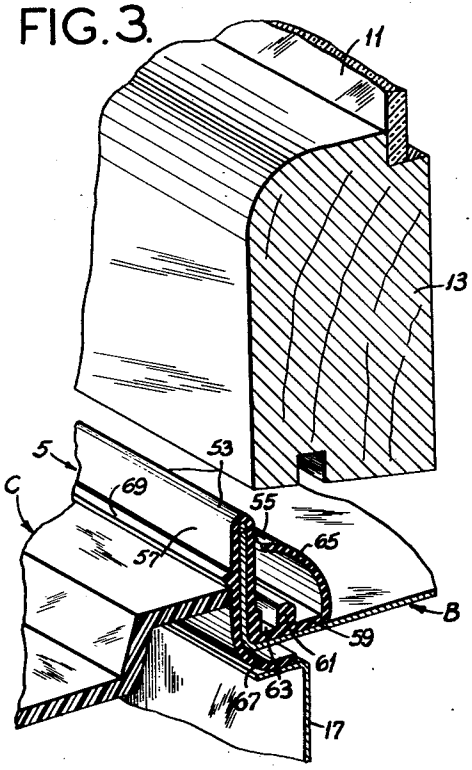


FIG. 4.

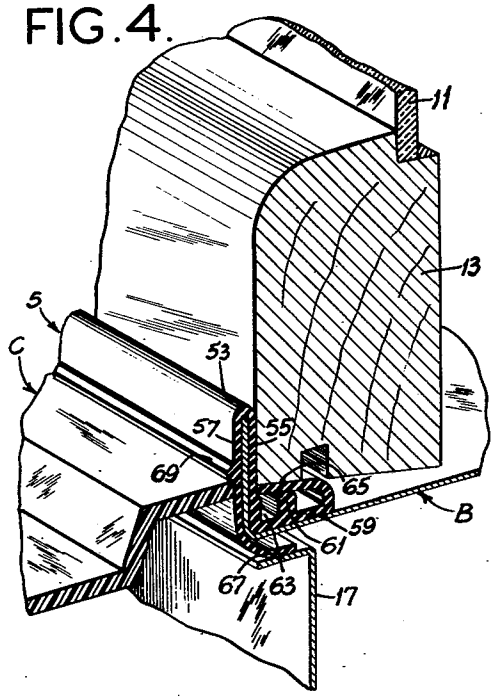


FIG. 5.

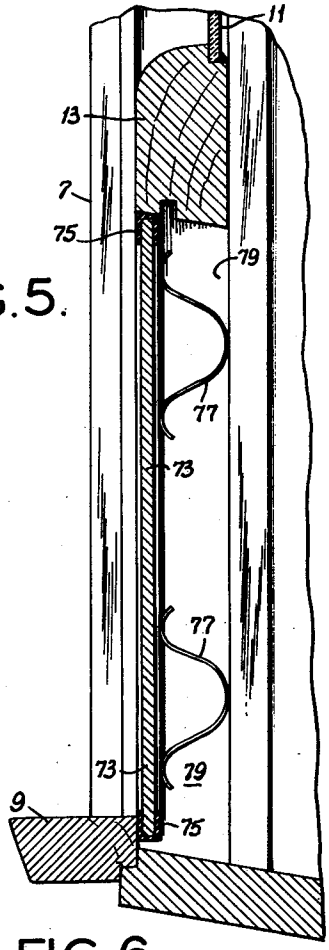
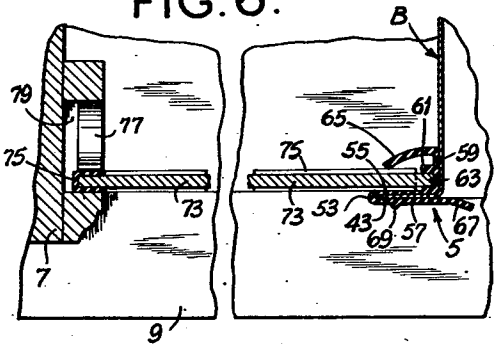


FIG. 6.



Robert J. Callan,
Inventor.
Koenig and Pope,
Attorneys.

United States Patent Office 2,799,062 Patented July 16, 1957

2,799,062

SEALING STRIP

Robert J. Callan, Affton, Mo., assignor to Magic Chef, Inc., St. Louis, Mo., a corporation of New Jersey

Application April 7, 1954, Serial No. 421,605

5 Claims. (Cl. 20—69)

This invention relates to sealing strips, and more particularly to a sealing strip for use with an appliance such as an air conditioner which is mounted in a double-hung window.

Among the several objects of the invention may be noted the provision of a sealing strip of the class described which is adapted to provide a seal not only between the top of the appliance and the lower rail of the lower sash of the window, but also between the sides of the appliance and filler panels such as are usually provided to fill in spaces between the sides of the appliances and the sides of the window frame; the provision of a sealing strip of this class which is further adapted to provide a seal between component parts of the appliance, as between the usual bulkhead and exterior cabinet of a room air conditioner and between the usual removable interior cabinet and the exterior cabinet; and the provision of a sealing strip such as described which is economical to manufacture and simplifies the installation of the appliance in a window. Other objects and features will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the constructions hereinafter described, the scope of the invention being indicated in the following claims.

In the accompanying drawings, in which one of various possible embodiments of the invention is illustrated,

Fig. 1 is a view in perspective illustrating an installation of the exterior cabinet of a room air conditioner in a double-hung window utilizing a sealing strip of this invention, prior to insertion of the refrigeration unit of the air conditioner in the exterior cabinet;

Fig. 2 is an enlarged vertical longitudinal cross section showing the refrigeration unit and the interior cabinet in place;

Fig. 3 is an enlarged cross section in perspective showing the lower sash raised;

Fig. 4 is a view similar to Fig. 3 illustrating the lower sash lowered;

Fig. 5 is an enlarged vertical cross section taken on line 5—5 of Fig. 1; and,

Fig. 6 is an enlarged horizontal cross section taken on line 6—6 of Fig. 1, parts being broken away.

Corresponding reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings, there is shown a typical installation of a room air conditioner (designated in its entirety by reference character 1) in a double-hung window 3 utilizing a sealing strip 5 of this invention. The sides of the window frame are designated 7. The window sill is designated 9. The lower sash of the window is indicated at 11, and the lower rail of the lower sash is designated 13. The air conditioner 1, as herein illustrated, is of the type disclosed in my copending application entitled Air Circulation Systems, Serial No. 416,317, filed March 15, 1954. In general, it comprises a refrigeration unit A (Fig. 2) which fits in an open-bottom exterior cabinet B. Unit A comprises a base 15 in the form of a pan. A bulkhead 17 extends upward from the base 15 adjacent its inside or front end. An evaporator 19 is mounted on the base in front of the bulkhead. On the outside of the bulkhead is a centrifugal fan 21. Air is drawn into the fan housing 23 through an opening 25 in the bulkhead and delivered into a hood 27. From the hood, the air flows through a duct 29 to an outlet 31 at the top of the front of the removable interior cabinet C of the air conditioner. The top of the interior cabinet C constitutes the top of the duct. There is also shown the usual compressor 33, condenser 35, condenser fan 37, and motor 39 for driving both fans 21 and 37. The base 15 is slidable on rails 41 into the exterior cabinet B to a position where the bulkhead is at the front end of the exterior cabinet. As thus installed, the base 15 serves as a bottom for the exterior cabinet. The rails 41 extend along the lower edges of the sides of the exterior cabinet, and project inward from the front end of the cabinet.

The exterior cabinet B, at its forward end, has side flanges 43 (see Fig. 6), a top flange 45 (see Fig. 2), and a bottom flange 47 generally in the same plane as the bulkhead 17. The side and top flanges, as shown, may be integral with the sides and top of the cabinet. The bottom flange 47 is the downwardly extending leg of an angle bar 49 which extends transversely between the rails 41 and which is secured as by welding to the bottom of the rails. In installing the air conditioner, the exterior cabinet B including the rails 41 is placed in the window before unit A is installed. The inner end of the cabinet is generally centered between the sides 7 of the window frame and is longitudinally positioned with flange 47 engaging the outer edge of the window sill 9 (see Fig. 2). This determines a position of the exterior cabinet in which its inner end (including top flange 45) is slightly forward of the inside face of the lower rail 13 of the lower sash of the window. The projecting forward ends of the rails 41 overlie the window sill 9, and clamps 51 secured to the rails 41 are employed to clamp the rails to the sill.

After the installation of the exterior cabinet B as described, the sealing strip 5 is applied to extend around the side and top flanges 43 and 45 at the inner end of the exterior cabinet. This is accomplished with the lower sash raised. The sealing strip is cut from a continuous strip to have a length corresponding to twice the height plus the width of the exterior cabinet. The strip may be formed of rubber or any other suitable material, including various plastics and metal. It is made as by extrusion to have such shape in cross section as to provide a channel section 53 for receiving the side and top flanges 43 and 45. The depth of channel section 53 is greater than its width. One side 55 of the channel section 53 is narrower than the other side 57. A web 59 extends laterally outward from the outer edge of the narrow side 55. This web has a rib 61 on its side toward the base of the channel 53 providing a filler-panel-receiving groove 63 between the rib and side 55. A reentrant curved skirt 65 extends from the outer edge of the web toward the narrow side of the channel over the groove 63. The portion of the wide side 57 extending beyond the narrow side is designated 67. A longitudinal bead 69 projects laterally outward from the wide side 57. In order to fit the sealing strip 5 around the top corners of the inner end of the exterior cabinet, it is notched as indicated at 71 where it is bent around the corners. The sealing strip is applied with the narrow side 55 on the outside of flanges 43 and 45, and with web 59 engaging the sides and top of the cabinet.

Filler panels 73 are cut to fit in the spaces between the sides of the exterior cabinet and the sides of the window

frame, and are provided with plan channel-section sealing strips **75** extending around their bottom, outside and top edges. The filler panels **73** are fitted in the stated spaces with their inner edges received in the groove **63** in the portions of the sealing strip at the sides of the exterior cabinet. Skirt **65** may be readily bent away from the narrow side **55** of channel **53** to fit the inner edges of the panels in the groove. Spring clips **77** are set in the sash channels **79** in the sides of the window frame to retain the panels in sealing engagement with the outer edge of the window sill and the inner sides of the sash channels.

After the filler panels are in place, the unit A is inserted into the exterior cabinet B to the point where the bulkhead **17** is located at the inner end of the cabinet as shown best in Fig. 2. In sliding the unit A into the exterior cabinet, the top and sides of the bulkhead engage the portion **67** of side **57** which projects beyond the web **59**, and bend it outward as shown in Figs. 2–4. This provides a seal between the top and sides of the exterior cabinet at its inner end and the bulkhead. The lower sash **11** is then lowered so that the lower rail **13** of the sash (which slides downward on the outside of the channel **53**) engages the skirt **65** and bends it downward as shown in Figs. 2 and 4. The lower rail also engages the portions of the sealing strips **75** along the top edges of the filler panels **73** (see Fig. 5). This provides a seal all along the lower rail of the lower sash. A felt strip **81** is tucked in between the base and the window sill. Finally, the interior cabinet C is applied to enclose the inwardly projecting portion of unit A. The top and side edges of the outer end of the interior cabinet engage the side **57** of the channel **53** within the bead **69**, the latter providing a trim to cover any discrepancies in the fit between the interior cabinet and the sealing strip.

From the above, it will be seen that the single sealing strip **5** provides an air-tight seal between the top of the inner end of the exterior cabinet B and the lower sash, between the sides of the inner end of the exterior cabinet and the filler panels **73**, between the top and sides of the exterior cabinet at its inner end with the bulkhead **17**, and between the top and sides of the removable interior cabinet C at its outer end and the inner end of the exterior cabinet. It eliminates any necessity for the use of mastic such as has heretofore been employed for caulking along the sides of the exterior cabinet, and greatly simplifies the installation of the air conditioner in a window.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A sealing strip for use with an appliance which is mounted in a window opening, said strip being of such shape in cross section as to provide a flange-receiving channel, the depth of said channel being greater than its width, and a web extending laterally outward from the outer edge of one side of the channel, said web having a filler-panel-receiving groove in the side thereof toward the base of the channel, and a skirt extending from the outer edge of the web toward the channel over the groove.

2. A sealing strip for use with an appliance which is mounted in a window opening, said strip being of such shape in cross section as to provide a flange-receiving channel, the depth of said channel being greater than its width, and a web extending laterally outward from the outer edge of one side of the channel, said web having a filler-panel-receiving groove in the side thereof toward the base of the channel, a longitudinal bead projecting laterally outward from the other side of the channel, and a re-entrant curved skirt extending from the outer edge of the web toward the channel over the groove.

3. A sealing strip for use with an appliance which is mounted in a window opening, said strip being of such shape in cross section as to provide a flange-receiving channel, the depth of said channel being greater than its width, one side of the channel being narrower than the other, a web extending laterally outward from the outer edge of said narrower side of the channel, said web having a filler-panel-receiving groove in the side thereof toward the base of the channel, and a skirt extending from the outer edge of the web toward said narrower side of the channel over the groove.

4. A sealing strip for use with an appliance which is mounted in a window opening, said strip being of such shape in cross section as to provide a flange-receiving channel, the depth of said channel being greater than its width, one side of the channel being narrower than the other, and a web extending laterally outward from the outer edge of said narrower side of the channel, said web having a filler-panel-receiving groove in the side thereof toward the base of the channel, and a longitudinal bead projecting laterally outward from the wider side of the channel, and a re-entrant curved skirt extending from the outer edge of the web toward the narrower side of the channel over the groove.

5. A sealing strip for use with an appliance which is mounted in a window opening, said strip being of such shape in cross section as to provide a flange-receiving channel, the depth of said channel being greater than its width, one side of the channel being narrower than the other, and a web extending laterally outward from the outer edge of said narrower side of the channel, said web having a rib on the side thereof toward the base of the channel providing a filler-panel-receiving groove between the rib and said narrower side of the channel, a longitudinal bead projecting laterally outward from the wider side of the channel, and a re-entrant curved skirt extending from the outer edge of the web toward the narrower side of the channel over the groove.

References Cited in the file of this patent

UNITED STATES PATENTS

2,215,889	Swedman	Sept. 24, 1940
2,234,771	Moore	Mar. 11, 1941
2,269,205	Hubbard	Jan. 6, 1942
2,296,024	Drake	Sept. 15, 1942
2,311,045	Goulooze	Feb. 16, 1943
2,316,704	Moore	Apr. 13, 1943
2,469,955	Eberhart	May 10, 1949
2,638,755	Borgerd	May 19, 1953
2,684,508	Meyers et al.	July 27, 1954