Feb. 22, 1966 R. P. ORR 3,236,011

BUILDING TRIM

Filed May 8, 1962 3 Sheets-Sheet 1

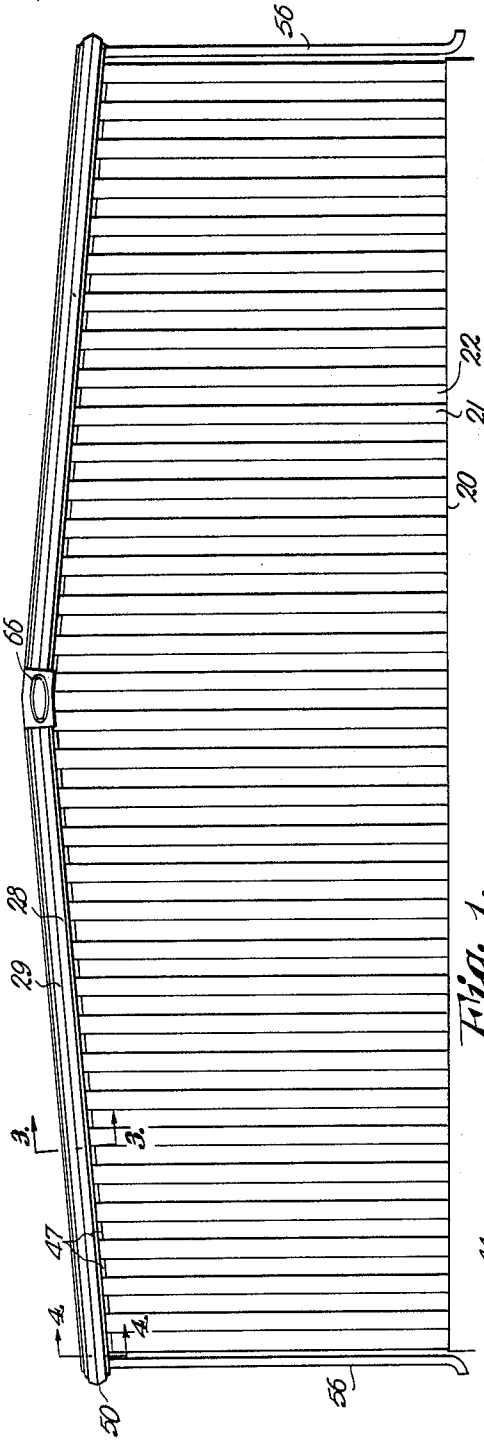


Fig. 1.

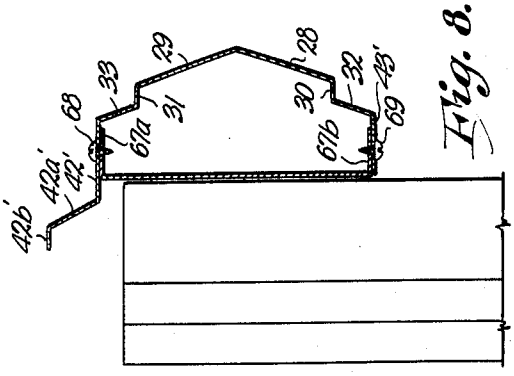


Fig. 2.

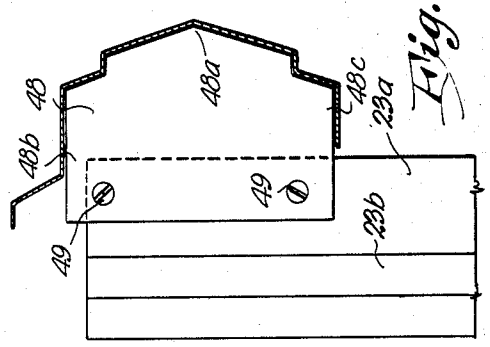


Fig. 4.

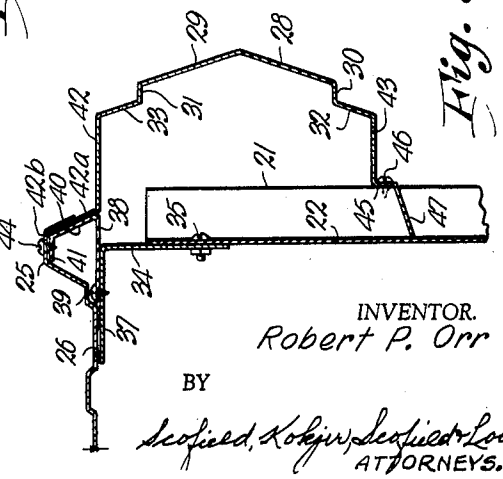


Fig. 3.

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BUILDING TRIM

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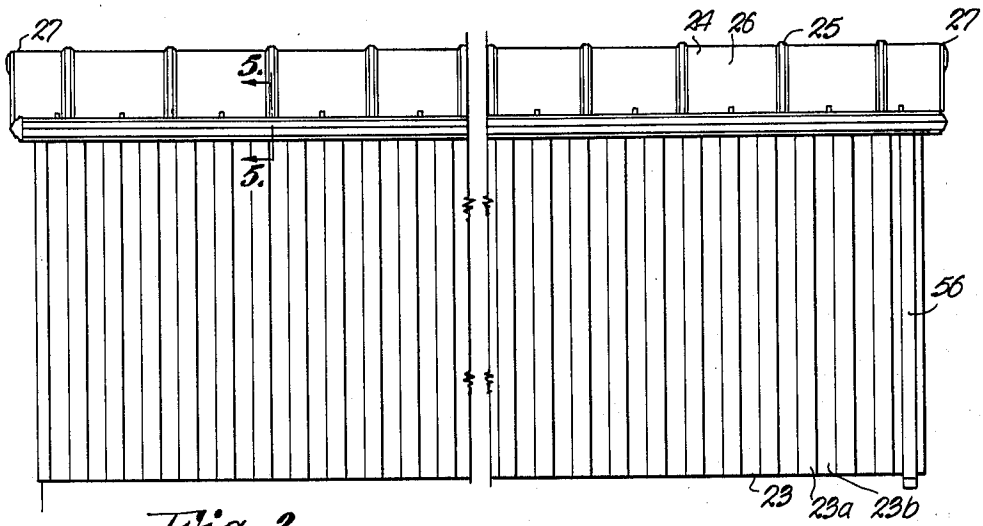


Fig. 2.

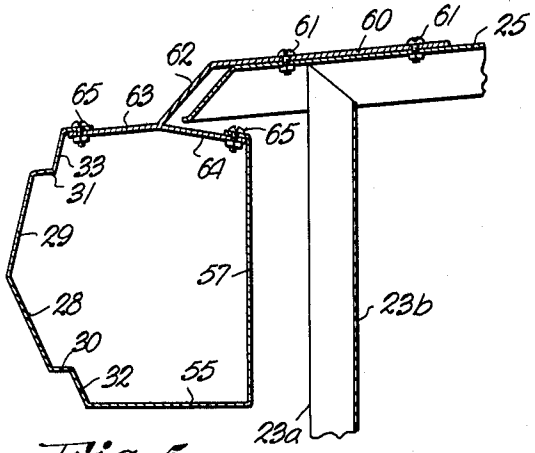


Fig. 5.

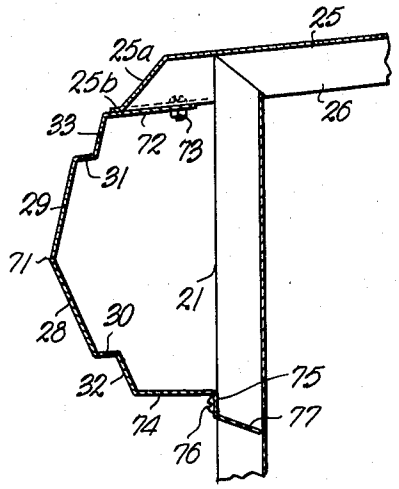


Fig. 7.

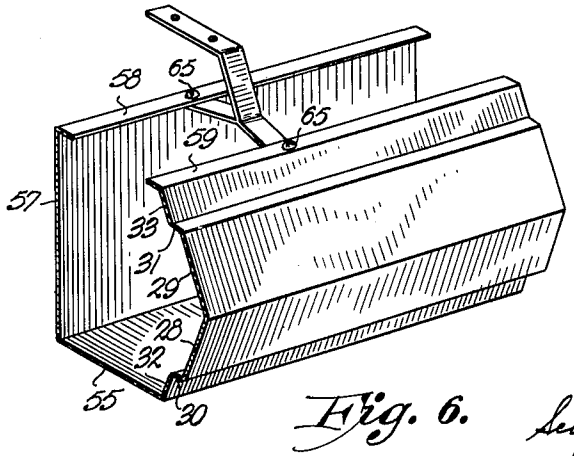


Fig. 6.

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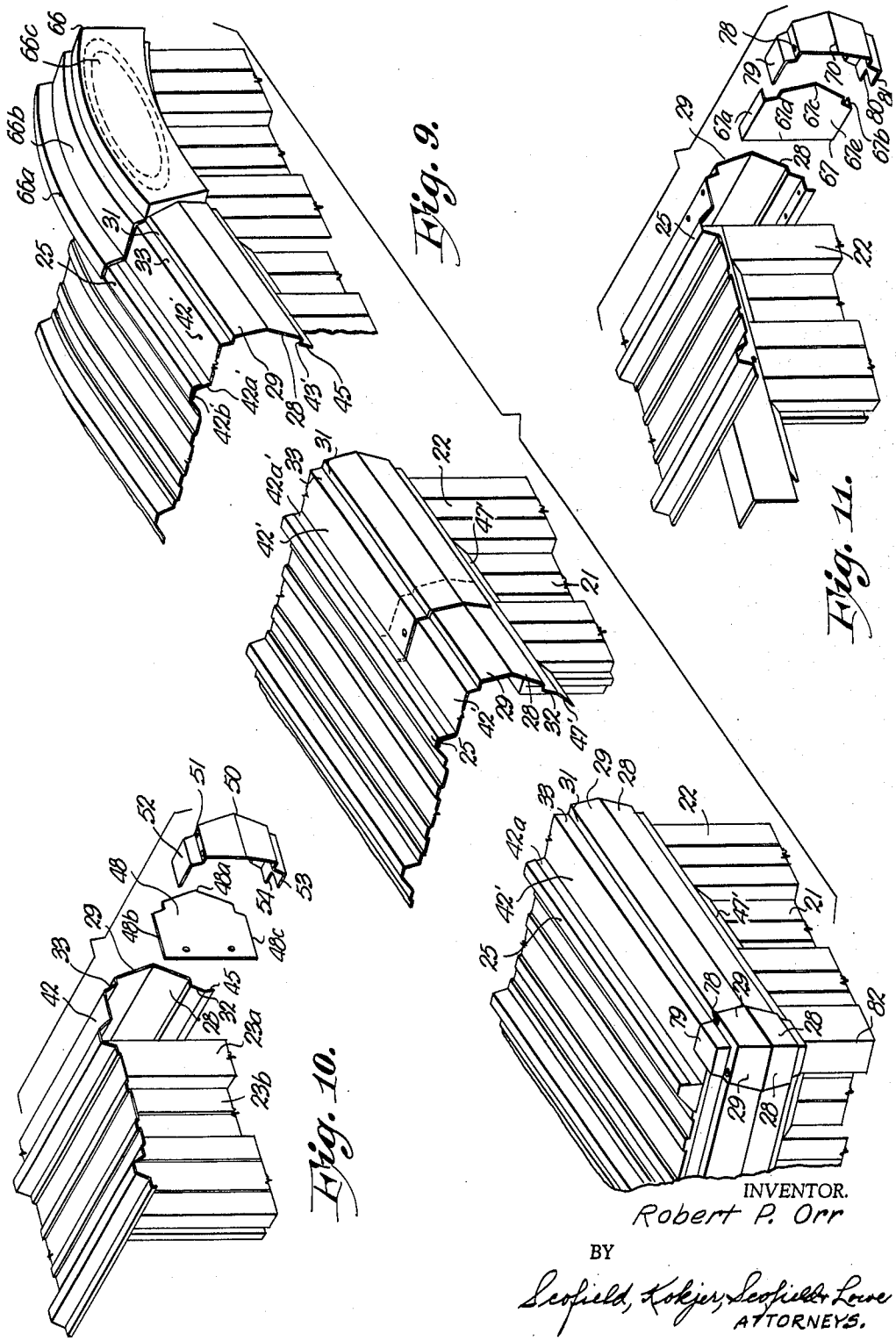
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BUILDING TRIM

Filed May 8, 1962 3 Sheets-Sheet 3



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United States Patent Office 3,236,011 Patented Feb. 22, 1966

3,236,011

BUILDING TRIM

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Filed May 8, 1962, Ser. No. 193,154
3 Claims. (Cl. 52—94)

This invention relates to eave and gable trim constructions for rigid frame or like metal buildings and refers more particularly to such eave and gable trim constructions which may or may not include a gutter in the eave portion of the trim.

An object of the invention is to provide eave and gable trim constructions for rigid frame or like metal buildings which may be applied to either steep or low angled roofs.

Another object of the invention is to provide trim constructions for the eaves and gables of rigid frame or like metal buildings of any desired roof slope or pitch wherein the trim presents substantially the same appearance to the ground observer at eave and gable independently of the slant of the roof.

Another object of the invention is to provide metal building eave and gable trim constructions which may incorporate an effective gutter construction in the eave portion of the trim without varying the appearance of the building trim.

Another object of the invention is to provide eave and gable trim constructions for metal buildings with means for mounting the trim on the building, both eave and gable, which minimize the problem of leakage into the trim and also minimize leakage into the building due to the attachment of the trim to the roof panels.

Another object of the invention is to provide metal building eave and gable trim which is continuous and which may be employed with corrugated wall panels and roof panels, the building trim supported by and engaging any such corrugated panels in such manner as to attractively and continuously trim the building, blend into the panel systems and the corrugations thereof, cooperate in and aid the sealing of the building eave and gable and which is relatively easily applied and removed for inspection, replacement and repair of parts thereof.

Another object of the invention is to provide an effective, attractive eave and gable trim construction for metal buildings which is relatively inexpensive per se, relatively inexpensive to apply, strong and rigid in long continuous use and of simple yet attractive appearance, the trim cooperating with the panels and panel members of the building to not only enhance and improve the appearance of the building, but enhance and improve the weather resistant characteristics thereof.

Other and further objects of the invention will appear in the course of the following description thereof.

In the drawings, which form a part of the instant specification and are to be read in conjunction therewith, embodiments of the invention are shown and, in the various views, like numerals are employed to indicate like parts.

FIG. 1 is an elevation of the rear end wall of a low-pitch rigid frame building having corrugated wall and roof panels on which the subject building trim (gable portion) has been applied.

FIG. 2 is a side view of elevation of the side wall of the building of FIG. 1 showing the eave trim applied thereto.

FIG. 3 is a view taken along the line 3—3 of FIG. 1 in the direction of the arrows, showing a transverse cross section of the gable trim of the type adapted to mate with gutter type eave trim (FIGS. 5 and 6).

FIG. 4 is a view taken along the line 4—4 of FIG. 1

in the direction of the arrows, also showing a transverse cross section of gable trim of the type adapted to mate with gutter type eave trim (FIGS. 5 and 6).

FIG. 5 is a view taken along the line 5—5 of FIG. 2 in the direction of the arrows, it being noted that the eave trim illustrated is of the gutter type.

FIG. 6 is a perspective view from above the gutter construtcion of FIG. 5.

FIG. 7 is a view similar to that of FIG. 5 but illustrating the nongutter type eave trim.

FIG. 8 is a view similar to that of FIG. 4 and taken along the same line, but showing the cross section of the gable trim where a nongutter eave trim is to be employed, FIG. 3 and FIG. 4 (as noted) illustrating the gable trim where gutter type eave trim is to be employed.

FIG. 9 is a perspective view from above the gable trim of the type to mate with eave trim of the nongutter type applied to a metal building of the type shown in FIGS. 1 and 2, the portion of the eave trim shown of the nongutter type.

FIG. 10 is a perspective view from above the termination of the gable trim of the type to mate with eave trim of the gutter type showing the application of the bird stop therein and the corner piece of the trim to connect the gable trim to the gutter type eave trim, this view including the structure of FIG. 4 and showing the corner at the left-hand side of FIG. 1 and the right-hand side of FIG. 2.

FIG. 11 is a perspective view from above similar to that of FIG. 10 and showing the lower left-hand corner of FIG. 9 exploded, including the structure of FIG. 8 and showing the bird stop and the corner trim piece to make the transition from the gable trim into the nongutter type eave trim.

Patent 2,871,997, H. G. Simpson et al., issued February 3, 1959, "Low-Pitch Rigid Frame Building" discloses a low-pitch rigid frame building of the type illustrated in the drawings. Patent 2,815,831, Hield et al., issued December 10, 1957, "Column and Rafter Assembly for Rigid Frame Buildings" discloses a steeper pitch rigid frame building also of a type to which it is contemplated the disclosed and subject building trim will be applied. The Roger Hield design Patents 178,659 and 178,605 issued September 4, 1956 and August 28, 1956, respectively, for "Building Panel" illustrate typical metal roof panels applicable to rigid frame or other metal buildings of the types noted with which the said building trim construction may cooperate and interengage. The roof panel of the design Patent 178,605 is that shown in the drawings. The side wall panels illustrated are vertically corrugated sheets joined together at their overlapping longitudinal edges. The construction shown has corrugations of square or rectangular form in transverse cross section, spaced by recess of like construction, but such structure or shaping of the corrugations and recesses is not mandatory.

As noted in the description of the drawings, both eave gutter type and eave nongutter type trim constructions and the gable trim constructions mating therewith are illustrated in the drawings. The complete gable and eave trim construction which includes eave gutters (seen in FIGS. 1–6, inclusive, and 10) will be first described.

Referring then to the noted figures, and particularly to FIGS. 1 and 2, at **20** is designated the rear end wall of a low-pitch rigid frame building, this rear end wall made up of vertically corrugated, edge overlapping, metal panels or sheets. As previously described, the wall panels are furnished with square shaped or rectangular shaped corrugations **21** with corresponding recessed portions **22** between the said corrugations in a "hill and valley" arrangement. These panels are typically connected to one another along their longitudinal edges by suitable con-

ventional means such as bolts. Side wall **23** is also made up of the same vertically corrugated panels with corrugations **21** and valleys **22** therebetween. The roof of the rigid frame building illustrated is made up of overlapping and interengaged metal roof panels having large corrugations **25** spaced by valleys **26** generally having small corrugations thereon in the manner of the Hield patent above-noted. Roof **24** has two sides which slope upwardly and meet at their upper juncture in a ridge **27**. Typically, but not necessarily, the vertical side panels are connected to horizontally extending girts (not shown), the latter fixed to the vertical columns of the rigid frame. The roof panels are conventionally attached to purlins, the latter generally fixed to the rafter members of the rigid frame. These relationships are discussed in the rigid frame Hield and Simpson patents, supra, and will not be detailed here. What is assumed for the purposes of this specification is that a rigid frame building is present having side and end walls and a roof, corrugated panels employed on all the wall and roof panels supported in any conventional manner on the rigid frame.

The ostensible purpose of the trim is to cover up the vertical wall and roof eave and gable junctures and present a pleasing design or decorative appearance whereby to enhance the over-all appearance of the building. Thus, the configuration of the outside face of the trim members (both eave and gable) in all cases comprises a plurality of like configured panel members or sheets **28–33**, inclusive, in a certain geometrical relationship. Additionally, certain portions of this configured facing is preferably painted in certain arrays to achieve a distinctive appearance. However, the particular arrangement, shaping or configuration of the panels of the facing and the painting thereof have no relationship to the mechanical construction herein described and that particular configuration shown is not unique, particular or necessary except in so far as it is preferably but not necessarily identical continuously around the building.

In FIG. 3 is shown a cross-sectional view of the gutter connecting type gable trim member in engagement with the rear (or front) wall panels and the roof panel sheets. Fixed to the upper inside face of the rear end wall vertical panels are conventional gable closure members. The first of these is a continuous strip L-shaped in transverse cross section having a downward-extending leg **34** connected by bolts **35** to the rear end wall vertical panel inside faces and a roof panel paralleling upper leg **37**. The second gable closure member is hook shaped in transverse cross section, having a base flange **38** screwed to the first member upper leg **37** by screws **39** and with outer legs **40** and **41** connected to the outer edge thereof. The two said gable closure members continuously extend under the outer edge of the outermost roof panel sheet and inwardly of the upper end of the end wall panels whereby to weather seal the space therebetween.

Aside from the outer decorative configured faces of the trim members, which are numbered the same on all portions of the trim (gable and eave) in the various views, the gable trim has an upper spacing panel or strip **42** and a lower spacing panel or strip **43** running the entire length thereof whereby to position the decorated facing thereof at the desired distance from the roof and wall panels to which it is connected. The connection to the outermost edge of the roof panels is made by angled continuous flanges **42***a* and **42***b* which overlie the legs **40** and **41** of the upper second gable closure member in close fitting relationship thereto. Flanges **42***a* and **42***b* are themselves overlaid by the outer panels of the large roof panel edge corrugation **25**. Screws **44** fix the overlying large corrugation **25** to leg or flange **42***b* of the gable trim and both of these to the upper gable closure member leg **41**.

Turning to the lower connection of the trim to the rear end wall panels, a continuous downwardly extending flange **45** connected to the inner edge of panel **43**

overlies vertical corrugations **21** of the rear end wall panels and is fixed thereto by screws **46**. Between the said corrugations are positioned seal flaps **47**, connected to the lower edge of flange **45** and extending inwardly to abut against valleys or recesses **22** when screws **46** are tightened down. A complete sealing engagement at upper and lower extremities is thus provided for the gable trim member. The trim member construction for the rear and front walls of the building is identical, independent of what types of door and/or window constructions are furnished in either the rear or front walls.

Referring particularly to FIGS. 4 and 10, therein is shown the method of and means for providing a bird stop into the gutter mating gable trim from the gutter eave trim. The manner of connection together and sealing of the vertical side and end walls of the building is not illustrated as it is conventional, but usually comprises a vertical L-shaped interior corner trim communicating between the edge corrugation valleys of the end edges of the vertical end and side walls tied through said valleys to an exterior corner trim comprising a single member overlying the corrugations on the end edges of the said side and end vertical walls. With the gable trim coming down the end wall of the building as seen in FIG. 10 and tied to the roof panel outer edge and end wall panel tops, bird stop **48**, configured in its outer edge **48***a* to fit the trim design configuration and in its upper and lower edges **48***b* and **48***c* to fit against the spacing panels **42** and **43**, is fastened by screws **49** to the end corrugation **23***a* of the end side panel. The portion of the gable trim projecting beyond the said side panel corrugation is engaged by a corner member generally designated **50** having its end wall portion configured to overlie the gable trim outer surface as best seen in lower left-hand corner of FIG. 9 (which, although showing a nongutter gable-eave trim connection, is structurally strictly analogous to the gutter-type gable trim and gutter eave trim connection of FIG. 10 in the use of a corner member). Screw holes **51** are provided to engage and overlie screw holes positioned adjacent the end of the gutter trim (FIGS. 5 and 6) and gable trim (FIGS. 3, 4 and 10) in the decorative facing portions **30** and **31**. A cap flange **52** on the corner member **50** overlies and seals the gutter trim-gable trim upper panels or portions, the latter **42** in the gable trim and **58** in the gutter trim. A lower panel **53** is notched as at **54** to overlie in close fit the conventional exterior vertical corner trim (best seen in FIG. 9) in sealing fashion.

Referring to FIGS. 5 and 6, therein the gutter construction is shown. While the outer decorative face of the gutter trim is configured like that of the outer decorative face of the gable trim previously described (the parts also numbered correspondingly) the rest of the gutter trim is entirely different from the gable trim. Lower wall **55** serves as the base of the gutter to carry water therein and may be penetrated at selected intervals by suitable down spouts of conventional type, such as the down spouts per se seen at **56**. The gutter trim constructions of both side walls are identical. Substantially vertically extending gutter rear wall **57** is of the same height as or substantially the same height as the front configured gutter face. Rear wall **57** has continuously inwardly (relative to the gutter) extending flange **58** integral with or fixed to the upper edge thereof. Continuously fixed to the upper edge of configured flange **33** in the gutter front face is inwardly-extending flange **59** opposing flange **58**. It should be noted in FIG. 5 that, relative to a line drawn normal to floor **55** of the gutter, which is substantially horizontal, the configured outer face of the gutter is canted. Such canting is dependent on the angle of the roof line and is substantially precisely equal thereto whereby a single corner member **50** may make a right angle connection between the upwardly canted gable trim and the horizontal eave trim with symmetrical faces thereof. Gutter suspension or

support members comprise elongate engaging bars or strips **60** which are attached by bolts **61** to corrugations **25** of the roof panels, on the flat upper surfaces thereof. Downwardly angled strip **62** roughly parallels the conventionally inwardly-indented ends of the roof panels and has inwardly and outwardly-extending legs **63** and **64** which are bolted to flanges **58** and **59** by bolts **65**. Positioning of bars **60** on the upper surfaces of flanges or corrugations **25** minimizes the water contact therewith in rain and the like with the bolt holes of bolts **61** thus aiding in sealing.

Turning to the nongutter gable and eave trim shown in FIGS. 7, 8, 9 and 11, the gable trim will be first described. Reference is made to FIGS. 8 and 9, FIG. 8 showing a cross section immediately at the corner as in FIG. 4, FIG. 11 showing an exploded view of the corner analogous to FIG. 10, with FIG. 9 showing a perspective exploded view of the gable trim, the corner and a short portion of the eave trim. Turning first to the gable trim, it should be noted that all the portions thereof are identical to the parts of the gable trim of the gutter type trim and therefore will be numbered the same, but primed. The only difference is that the panels **42'** and **43'** are slightly of lesser length than the panels **42** and **43**. The identical engagement of the upper portion of the gable trim with the roof edge corrugation and the lower end of the gable trim with the vertical corrugated panels as seen in FIG. 3 will not again be redescribed.

A decorative ridge piece generally designated **66** may be provided to overlie the innermost and uppermost gable trim members and the outermost roof panel corrugation. Innermost L-shaped flange member **66*a*** overlies the top of the outermost roof panel corrugation and the leg **42*a'*** of the gable trim member. Outwardly-extending flange **66*b*** overlies spacing panel **42'**, while configured panels or flanges (unnumbered) overlie each of the configured face members **28–33** while providing an outer indicia carrying flat face **66*c***. Suitable seal members overlying the corrugations and fitting into the recesses of the vertical panels may be provided on the under side thereof (in the manner of members **45'** and **47'**) attached to a lower spacing panel (not seen) overlying the spacing panels **43'** of the gable trim. Suitable bolts (not shown) may be employed engaging any of the upper and lower flanges (such as **66*a*** or **66*b***) of decorative piece **66** to connect same to the underlying gable trim members and roof panel outer corrugation **25**.

Turning to the bird stop for the nongutter gable and eave trim construction, this is best seen in FIGS. 8 and 11. The bird stop, generally designated **67**, has an upper flange **67*a*** which underlies spacing panel **42'** and is fixed thereto by screws **68** and a lower flange **67*b*** fixed to the inside surface of lower spacing panel **43'** by screws **69**. Edge **67*c*** is configured to interengage the eave face of a corner member generally designated **70**, which eave face is like configured to the **28–33** decorative configuration of all the trim members. Edge **67*d*** of face **67*e*** is straight.

Turning to FIG. 7, therein is seen the nongutter eave trim member which is fixed to the under side of the roof panels and to the upper end of the vertical side wall panels. As previously noted, the roof panels have corrugations **25** and valleys **26** therebetween. Additionally, it is conventional to form the corrugations downwardly at the lower ends thereof (**25*a***) whereby to provide an outer end **25*b*** at the same level as the recesses or valleys **26**. The eave nongutter trim (generally designated **71**) has the same outwardly configured faces **28–33**. A continuous upper spacing flange **72** is connected to the corrugations **25** by bolts **73** so that the corrugation ends **25*b*** rest on the upper surface thereof to form a continuous seal. Lower spacing flange **74** extends inwardly to abut with its inner end the side wall corrugations **21** on the outer surface thereof. A vertical flange **75** overlies the said outer surface of the corrugations and is fixed thereto by screws or bolts **76**. Seal flaps or flanges **77** are connected at their outer edges to flange **75** and extend into the recesses between the corrugations **21** to achieve a weather tight seal. Spacing flange **72** extends outwardly sufficiently past spacing flange **74** that the configured faces **22–33** are angled relative to the vertical at an angle equivalent to the angle of slant of the roof (as previously noted relative to the gutter outer facing in FIG. 5). In this manner the corner member **70** with symmetrical faces thereon at 90° to one another can effect a continuous closure of the eave and gutter trims. The two symmetrical faces of the corner member **70** are each configured in the same manner as the configured faces **28–33**. Screw or bolt holes **78** permit connection of corner member **70** to configured flanges **30** and **31** with cap flange **79** overlying the upper corner ends of both the gable and eave trims and particularly face **42'** of the former. A notch **80** is provided in the lower corner piece flange **81** whereby to snugly fit the conventional vertical corner trim **82** (FIG. 9) of the building.

From the foregoing it will be seen that this invention is one well adapted to attain all of the ends and objects hereinabove set forth together with other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

As many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. A gable trim construction for a corrugated sheet panelled building comprising, in combination, an inclined roof panel having an upwardly protruding elongate roof rib extending in the direction of the incline and defining the outer terminal inclined edge of the roof panel, a vertical end wall panel having parallel corrugations defining outwardly directed vertical wall ribs with channels therebetween and terminating at an upper end of the wall panel, said upper end being adjacent to and extending along said roof rib to provide therewith a gable juncture, and trim means for the gable juncture comprising an elongate member trough-shaped in transverse section and having upper and lower spacing flanges each extending inwardly at a substantial angle to the vertical end wall panel and running substantially parallel to said roof rib, a configured base portion communicating between and connecting the outer edges of the spacing flanges, a first elongate sealing strip member for said gable juncture being L-shaped in transverse cross section and having one face thereof abutting the underside of the roof panel inwardly of the roof rib and the other face of said strip member abutting the inner face of the upper end of the end wall panel, means connecting the sealing strip member to the roof panel and the end wall panel, said connecting means including a second elongate sealing strip member overlying with a member thereof the first sealing strip portion next the roof panel and closely underlying with the remainder portion thereof of the roof rib, means connecting said second sealing strip member with the first sealing strip member and the roof rib, means connecting said upper spacing flange in continuously underlying relation with a portion of the roof rib and means connecting the lower spacing flange in interengaging and overlying relation with the wall ribs.

2. A construction as in claim **1** wherein the outer edges of the upper and lower spacing flanges extend outwardly substantially the same distance from the end wall panel.

3. A construction as in claim **1** wherein the means connecting the lower flange with respect to said wall

ribs comprises a transverse flange at the outer end of the lower flange secured to said wall ribs and sealing flaps projecting from said transverse flange into said channels.

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