Dec. 29, 1953 A. B. HAMMITT ET AL 2,664,177

FLASHING CONSTRUCTION

Filed Oct. 10, 1947 2 Sheets-Sheet 1

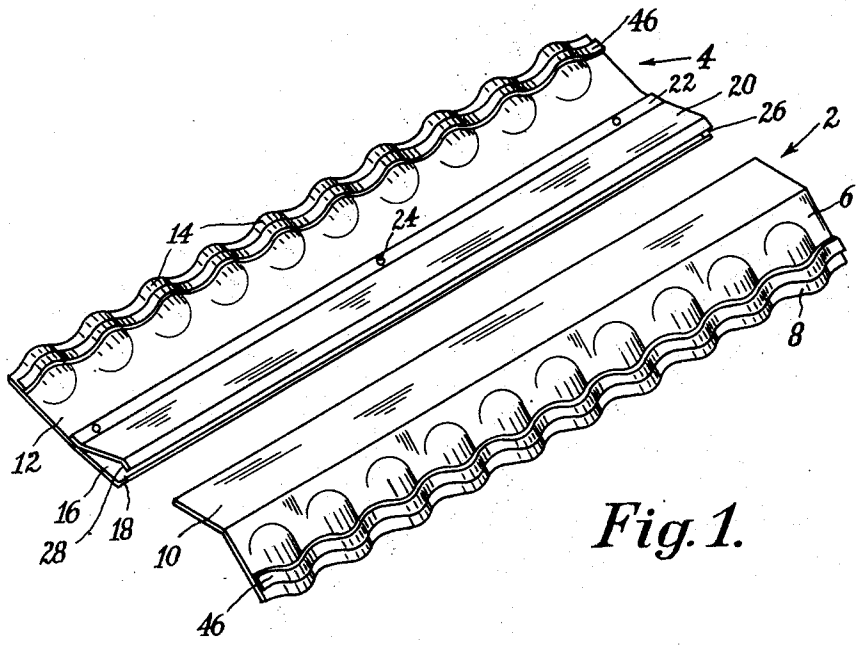


Fig. 1.

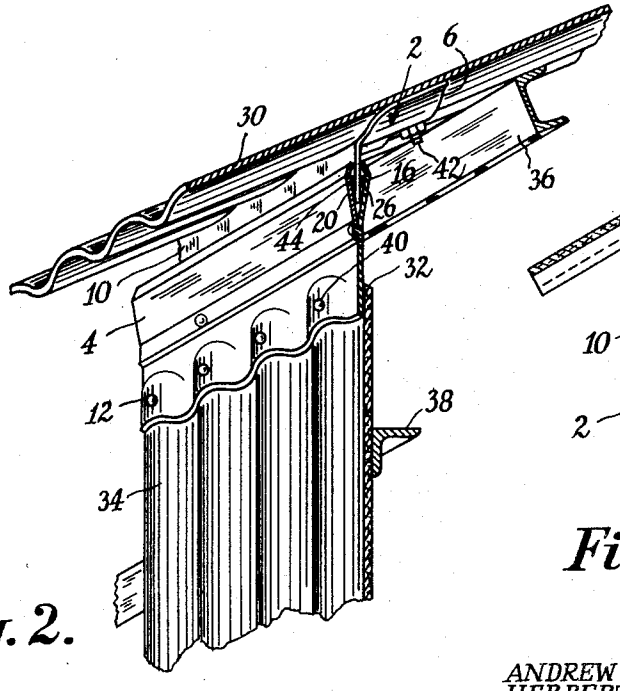


Fig. 2.

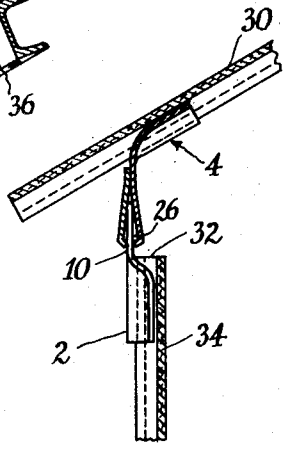


Fig. 3.

INVENTORS:
ANDREW B. HAMMITT
HERBERT L. BIRUM, JR.
BY
Albert Sperry.
ATTORNEY

Dec. 29, 1953 A. B. HAMMITT ET AL 2,664,177

FLASHING CONSTRUCTION

Filed Oct. 10, 1947 2 Sheets-Sheet 2

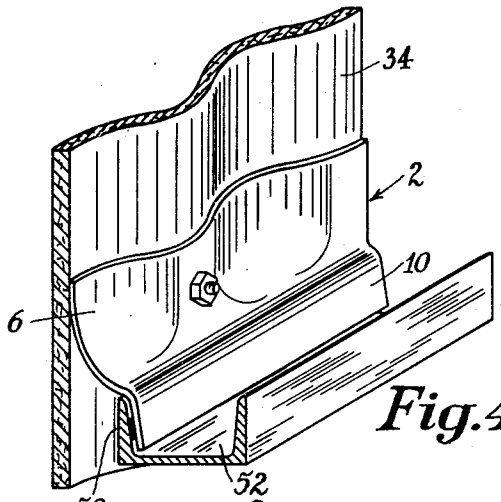


Fig. 4.

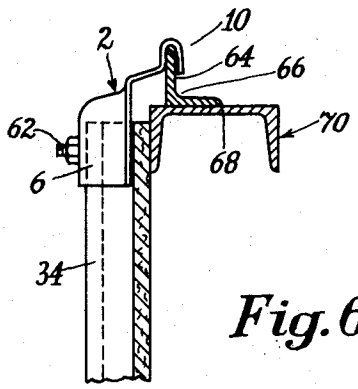


Fig. 6.

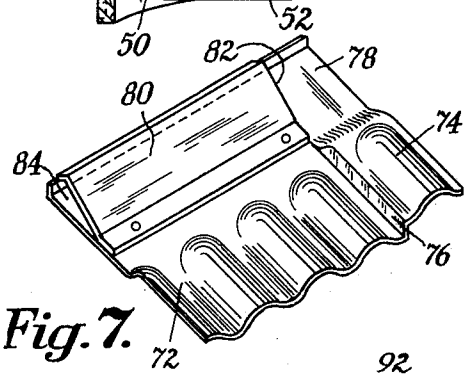


Fig. 7.

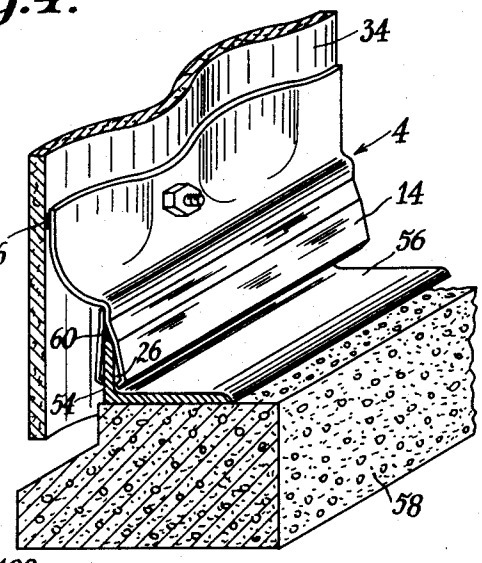


Fig. 5.

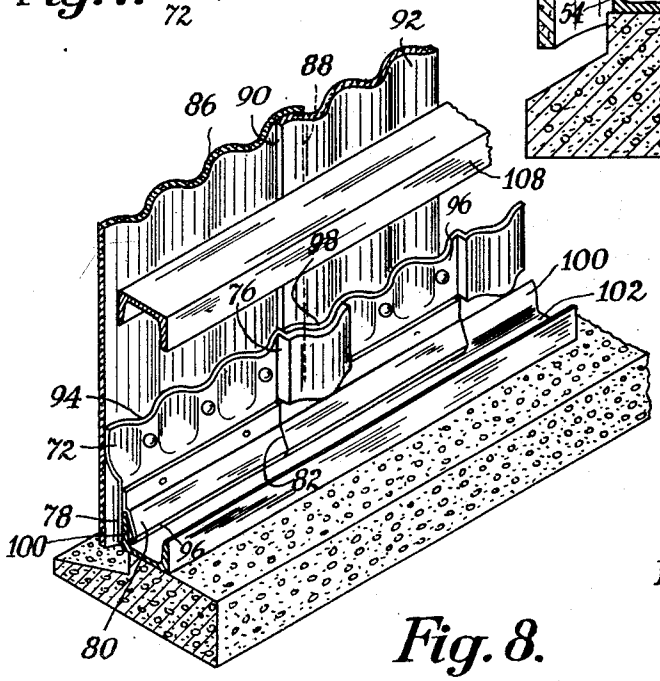


Fig. 8.

INVENTORS:
ANDREW B. HAMMITT
HERBERT L. BIRUM, JR.
BY
Albert Sperry
ATTORNEY

Patented Dec. 29, 1953

2,664,177

UNITED STATES PATENT OFFICE

2,664,177

FLASHING CONSTRUCTION

Andrew B. Hammitt and Herbert L. Birum, Jr.,
Trenton, N. J.

Application October 10, 1947, Serial No. 779,166

5 Claims. (Cl. 189—1)

1

This invention relates to flashing, and more particularly to flashing suitable for use in corrugated roofing and siding construction so as to seal or prevent the leakage of rain about the edges of the corrugated material adjacent the doors, windows, eaves, cornices or elsewhere.

It is customary in the building trade to provide flashing for the eaves, adjacent window heads and sills, and at the base or bottom of the wall structure so as to keep rain or moisture from seeping in and causing deterioration of the interior of the construction. This phase of construction work is particularly troublesome in structures formed by applying sheets of material such as corrugated cement-asbestos compositions to a structural framework since the corrugations in the material leave relatively large interstices which must be adequately sealed.

Heretofore numerous methods have been devised to achieve this result. The most common method used is to provide pre-formed strips of sealing material fashioned to conform to the corrugations in the sheets to be engaged thereby. These strips are sometimes reinforced with metal or other suitable material to receive and support bolts or nails by which the strips are secured to the adjacent structural framework members. However, such sealing strips are frequently unsatisfactory and imperfect as a sealing means. Moreover, the sealing strips heretofore provided are not adapted for use in many locations and do not lend themselves to changes and variation to meet different structural conditions. Thus, for example prior molded plastic strips are particularly unwieldy at the eaves where large roof rolls must be used in conjunction with the strips of material to adequately seal the eave joints. Furthermore, the thickness of the strip material necessary to insure a tight strong connection between overlapping sheets causes the corrugated sheeting to be displaced substantially outwardly from the building structure, and various labor and time consuming methods have to be used to correct this deficiency.

The present invention, however, considerably simplifies the flashing construction, and overcomes defects heretofore encountered. Briefly, it contemplates the use of strips formed of material such as metal having portions thereof shaped or deformable so as to conform to the corrugations in the sheeting. In its preferred form, hereafter described, the present invention contemplates the use of two types of metal stripping, either in combination or alone. One of said metal strips has a corrugated portion with a flat portion extending at an angle thereto and

2

the other strip has a corrugated portion together with a slotted portion adapted to receive the flat portion of the other strip or to receive and retain the extending flange of a purlin or other structural member of the framework of a building. By applying these members to the portions of the building structure where flashing is required, and by using bitumastic paint therewith, tight water-proof seals may be effected while using a minimum number of structural elements. Furthermore, limited thickness of the metal material serves to avoid the problem of sheet displacement, and insures a neater more economical job.

An object of the present invention is to provide new and effective flashing members for use in building construction.

Another object of the invention is to provide flashing members which are especially designed for use with corrugated sheet material.

A further object of the invention is to provide novel types of flashing members which may be readily and economically produced.

A further object of the present invention is to reduce the time and labor necessary to apply flashing to a building structure.

These and other objects and features of the invention will be readily perceived from the following description thereof in which reference is made to the figures of the accompanying drawing.

In the drawings:

Fig. 1 is a perspective view of preferred forms of interfitting flashing members embodying the present invention but arranged in spaced relation;

Fig. 2 is a perspective view of a portion of an eave construction utilizing the flashing members shown in Fig. 1;

Fig. 3 is a diagrammatic cross sectional view illustrating an alternative arrangement of members shown in Fig. 1;

Fig. 4 is a perspective view showing flashing embodying the present invention as applied over a window head, parts being broken away and shown in section;

Fig. 5 is a perspective view showing the improved flashing applied along the footing at the foundation line of a building, parts being broken away and shown in section;

Fig. 6 is a sectional view showing flashing embodying the present invention applied under a window sill;

Fig. 7 is a perspective view of an alternative form of flashing member embodying the present invention; and

Fig. 8 is a perspective view showing the alternate form of the invention shown in Fig. 7 as it is applied along the footing at the foundation line, parts being broken away and shown in section.

In that form of the invention shown in Fig. 1 the flashing comprises a male member 2 and a female member 4. The male member 2 is preferably formed from a unitary sheet of suitable material such as galvanized sheet iron, although it may be made of deformable material such as lead, soft copper or the like if desired. The member 2 has a body portion 6 with corrugations 8 formed therein of suitable or standard size to correspond with and fit the surface of the corrugations of the sheet material to be employed. However, the body portion 6 may be varied so as to conform to various types of corrugated sheets with which the flashing is to be used. The male member 2 also embodies a tongue or sealing portion 10 integral with body portion 6. The sealing portion 10 may be angularly disposed with respect to the body portion and presents a substantially smooth, flat and uncorrugated surface adapted to engage or cooperate with the female member 4 to form an effective or watertight seal or to be shaped to engage a member of the structural framework of the building as hereafter described.

The female member 4 is also preferably formed from a unitary sheet of material such as galvanized iron, lead, soft copper or the like and has a body portion 12 having corrugations 14 formed therein to fit the surface of the corrugations in the sheet material with which the flashing is to be used. The female member has engaging means 16 formed integral with the body portion 12 and extending therefrom in the form of a flat uncorrugated extension. A flange 18 preferably is formed to extend along the free edge of said engaging means so as to project inwardly at an angle thereto. A retaining member 20 is formed of material similar to that of the body and is provided with a foot 22 which bears against the flat surface of the engaging means 16 and is secured thereto by means of rivets 24 or by spot welding or in any other suitable manner. The retaining means extends from the foot 22 at a suitable angle so that it will be inclined outwardly away from the engaging means 16 and cooperate therewith to form a slot 26 adapted to receive the sealing portion 10 of the male member. The free edge of the retaining member 20 is preferably formed with an inturned flange 28 which cooperates with flange 18 on the engaging means 16 so as to define the edges of the slot 26 extending throughout the length of said female member. The resiliency of the sheet material, when using galvanized iron or the like, allows the slot to be varied in width so as to adjust itself for ready insertion of the sealing portion 10 of the male member or for insertion of other elements of various sizes with which the flashing member is to be used. Relative movement of the free edges of the engaging means 16 and retaining means 20 also allows access to the slot for the insertion of a mastic or sealing composition into the slot 26 when such material is used.

Figs. 2 to 6 illustrate typical applications of the flashing members shown in Fig. 1. In the construction shown in Fig. 2 the flashing members are used in combination at the eaves to seal the space between the sloping roof sheets 30 and the upper edges 32 of the siding sheets 34. The roof sheets 30 are secured in place on the purlin 36 whereas the siding sheets 34 are secured to the girt 38 of the building framework. The female flashing member 4 is positioned adjacent the upper edge 32 of the siding sheet 34 with its corrugated body portion 12 overlying and fitting closely against the exterior surface of the corrugations. The member 4 is secured in place by means of bolts or other suitable fastening means 40 with the slot 26 between the engaging means 16 and retaining member 20 facing upward and projecting above the edges 32 of the siding sheets 34 and toward the roofing sheets 30.

The male member 2 is positioned so that its corrugated body portion 6 is in contact with and fits closely against the underside of the corrugations in the roof sheets 30 and is secured in position by means of bolts or other fastening means 42. The sealing portion 10 of the member 2 is positioned so that it extends downward from the roof sheets 30 and into the upwardly facing slot 26 in the female member so as to cooperate therewith in sealing the space between the siding and roof sheets. If desired bitumastic paint, Robertson putty or other similar mastic substance or sealing material 44 may be placed in the slot 26 so as to insure a watertight seal. Similar sealing material may be applied to the corrugated body portions of the members 2 and 4 or to the adjacent surfaces of the sheets or to both to seal the space therebetween, if desired. Such a sealing composition is indicated at 46 in Fig. 1 and consists of a strip of felt saturated with bituminous material or other deformable sealing composition carried by the flashing members and extending throughout the length of the corrugated body portion in position to be pressed securely against the sheet material to form a watertight seal when the flashing members are secured to the sheets.

In applying the flashing shown in Figs. 1 and 2 to a building the members 4 are preferably applied to the siding sheets before the roof sheets are secured in place. Thereafter the male members 2 are secured in place on the roof sheets and each roof sheet is lowered onto the roof supports or purlins 36 in position so that the sealing member 10 will enter the slot 26 in the female member 4 to effect proper sealing relation of the members. When the roof sheets are properly positioned the sealing member 10 of the male member 2 will effect a relatively tight engagement and be squeezed between the cooperating walls of the retaining member 20 and the engaging means 16 of the female member 4. The inturned flanges 18 and 28 then should engage the opposite faces of the sealing portion 10 of the male member and serve to hold the sealing compound 44 in the slot 26. When thus positioned the roofing sheets 30 are secured in place on the purlins 36 by means of the bolts 42 or otherwise.

While the flashing members 2 and 4 are preferably formed, arranged and applied as shown in Fig. 2, it will be apparent that the flashing members may be reversed as shown in Fig. 3. In this case the male member 2 will be secured to the siding sheets 34 and the sealing portion 10 is formed or bent to extend vertically upward beyond the edges 32 of the siding sheets. The female member 4 is then secured to the roof sheets 30 and the engaging and retaining portions are formed or bent to present a downwardly facing slot 26 into which the sealing portion 10 projects.

As further shown in Figs. 4 and 5 each of the members 2 and 4 may be used independently and

at other points in a building structure where flashing is customarily applied. Thus, for example, in Fig. 4, the male member 2 may be used as a flashing member at the head or lintel over a door or window. For this purpose the member 2 is secured to the inner surface of the siding sheet 34 in such position that the corrugated body portion 6 is in sealing engagement with the inner surface of the corrugated sheet near the lower edge thereof and above the upwardly extending flange 50 of the lintel 52 over the window opening. The sealing portion or tongue 10 is positioned to extend downward in sealing contact with the flange 50 and preferably adjacent the inner face of the flange as shown. A sealing composition may be placed between the sealing portion 10 and the flange 50 if desired in order to insure a tight weather-proof construction.

Instead of using the male flashing member 2 for sealing the space above a lintel or head and in similar locations, the female flashing member 4 may be used. In order to illustrate such an alternative, the female member may be applied as flashing adjacent the foundation line as shown in Fig. 5. In such locations the female member 4 is secured to the siding sheet 34 with the recess 26 facing downward to receive the upwardly extending flange 54 of the angle iron 56 which is positioned on and secured to the footing or foundation 58. As in the previously described constructions a sealing compound 60 may be placed in the slot 26 and paint or a sealing composition may be applied to the exterior of the female body member 14 or to the inner face of the sheet 34 as shown at 46.

As shown in Fig. 6 the male flashing member 2 may be used adjacent a window or door sill. For this purpose the member 2 is secured to the siding sheet 34 so that the corrugated body portion 6 thereof overlies the exterior surface of the corrugations of the sheet. The flashing member is secured in this position by means of bolts or other suitable fastening means 62 and the sealing portion 10 of the male member is then bent or turned inwardly so as to extend over and embrace the upwardly facing flange 64 of the angle iron sill member 66, secured to the web 68 of the girt 70. As in each of the above examples bitumastic paint or other similar sealing substances may be applied between the sheet and flashing to increase the effectiveness of the construction and insure a water-tight and weatherproof installation.

Figs. 7 and 8 illustrate an alternate form of our invention adapted to extend across the overlapping edges of corrugated sheets. Fig. 7 discloses a female member embodying this form of the invention, but the construction thereof is equally applicable to the male member. In this form of the invention the corrugated body portion is divided into a main section 72 and an end section 74 which are joined by the offset or step portion 76 which corresponds in height to the thickness of the corrugated sheet material with which it is to be used. The end section 74 is thus positioned to fit the corrugations in an overlapping sheet of material whereas the main section of the body portion will fit snugly against an underlying sheet. Ordinarily the end section need only embody one corrugation since it is generally applied so as to overlie the opposite end of the main section of an adjacent flashing member.

The engaging portion 78 of the flashing member in this form of the invention is not offset but is in the form of a flat strip extending the full length of the flashing. However the retaining member 80 terminates in alignment with the offset 76 so that when adjacent flashing members are overlapped the retaining members of the flashing members will have their adjacent ends 82 in abutment and aligned to form a continuous slot 84 for receiving the sealing portion of complementary male members or a flange of the structural framework.

The use of this form of our invention is particularly desirable where it is necessary to extend the flashing over the edges of overlapping sheets or across more than one sheet of corrugated material, as in the eaves or along the foundation of a structure. As shown in Fig. 8 female members embodying this modification are employed to seal the space between siding and a foundation. In this figure the sheet of corrugated material 86 has a vertical edge 88 which overlaps the edge 90 of a sheet 92. The flashing member 94 secured to the sheet 86 is positioned so that the main section 72 will fit the corrugations of the sheet whereas the end section 74 is offset at 76 to fit the edge 90 of the sheet 92 and overlie one corrugation thereof. The retaining member 80 of flashing member 94 terminates at a point approximately in line with the offset 76 adjacent the edge 90 of sheet 92. In this way a flashing member 96 may be applied to sheet 92 in such a position that the end 98 of the main section of flashing member 96 underlies the end section 74 of the flashing member 94 and the adjacent ends of the engaging portions 78 are overlapped whereas the adjacent ends of the retaining members 80 on the flashing members 94 and 96 are brought into abutting relation and cooperate to form a continuous, straight, downwardly facing slot 84 into which the upwardly extending flange 100 of the footing member 102 extends to provide an effective seal. For greater speed of application the flashing members may be applied to the corrugated sheets by proceeding from right to left as seen in Fig. 8 so that each end section 74 may be placed in overlapping relation with the end 98 of a previously applied flashing member.

In each of the forms of the invention illustrated the structure is capable of easy application and the bolts which secure the sheets of corrugated material together at the edges or in place on the structural framework of the building may often be used to secure the flashing in place. A permanent water-tight and weather-tight seal is provided with a limited number of parts, each of which is further capable of independent use as a flashing member. The adaptability and flexibility of the members employed renders it possible to meet any conditions which may be encountered without resorting to special constructions or requiring difficult fabrication on the job.

While various alternative forms and uses of flashing members embodying the present invention have been shown and described, the invention is capable of many other applications and the flashing members may be produced in other alternative shapes. In view thereof it should be understood that the constructions herein described and shown in the drawings are intended to represent typical and preferred forms of the invention and are intended for illustrative purposes only and are not intended to limit the scope of our invention.

We claim:

1. A building construction having an eave formed by a purlin supported corrugated roofing

sheet and an independently supported corrugated siding sheet, and flashing sealing the space between said sheets including two flashing members, each of which is formed with a corrugated body portion, one of said flashing members having its body portion secured in engagement with said roofing sheet and the other of said flashing members having its body portion secured to the siding sheet, each of said flashing members having a portion projecting beyond said corrugated body and presenting a substantially flat surface extending in a plane transverse to the corrugations of said body portion, there being a retaining member secured to one of said flashing members and cooperating with the flat portion thereof to form a longitudinally extending slot, the flat portion of the other flashing member extending into said slot and cooperating therewith to form a seal between said flashing members.

2. A building construction comprising a structural iron framework element having an upwardly projecting flange extending along the outer edge thereof, corrugated sheet material supported in place independently of said framework element and positioned with an edge of said sheet material located adjacent said outer edge of said element, and a strip of flashing material extending lengthwise of said framework element and formed along one edge thereof with corrugations fitting closely in engagement with the corrugations in said sheet material and formed along the opposite edge thereof with a longitudinally extending portion presenting a slot embracing the upper edge of said flange on the framework element, said flashing strip closing the space between said corrugated sheet material and said framework element.

3. A building construction comprising a framework having corrugated sheet material secured thereto on the side wall of the building, an elongated strip of flashing material extending horizontally along an edge of the sheet material and having one edge of the strip conforming to said corrugations and engaging the same, the opposite edge of said strip being formed with a straight longitudinally extending slot, and means supported independently of said sheet material extending parallel to said edge of the sheet material and cooperating with said flashing, said means presenting a longitudinally extending portion extending into said slot and embraced thereby to close the space between said corrugated sheet material and said means.

4. A building construction comprising flashing material closing the space between a sheet of corrugated siding material and an independently supported adjacent straight horizontally extending member, said flashing material being in the form of an elongated strip of metal having one longitudinal edge portion thereof corrugated to conform to the corrugated sheet to which it is applied and having the opposite longitudinal edge portion thereof provided with a straight slot embracing said adjacent straight, horizontally extending member.

5. A building construction having an eave formed by a purlin supported corrugated roofing sheet and an independently supported corrugated siding sheet, and flashing sealing the space between said sheets including two flashing members, each of which is formed with a corrugated body portion, one of said flashing members having its body portion secured in engagement with said roofing sheet and the other of said flashing members having its body portion secured to the siding sheet, said flashing members having portions secured to their respective body portions and presenting a longitudinally extending tongue and slot formation fitting together to form a seal between said sheets.

ANDREW B. HAMMITT.
HERBERT L. BIRUM, JR.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
899,817	Ward	Sept. 29, 1908
1,205,501	Allsteadt	Nov. 21, 1916
1,852,955	Crampton	Apr. 5, 1932
1,881,438	Fischer	Oct. 11, 1932
2,209,399	Hall	July 30, 1940
2,260,438	Cheney	Oct. 28, 1941
2,330,819	Faure et al.	Oct. 5, 1943

FOREIGN PATENTS

Number	Country	Date
454,752	Great Britain	Oct. 7, 1936