M. MOISTER.

SHEET METAL BUILDING.

APPLICATION FILED MAY 22, 1915.

1,196,133.

Patented Aug. 29, 1916.

4 SHEETS—SHEET 1.

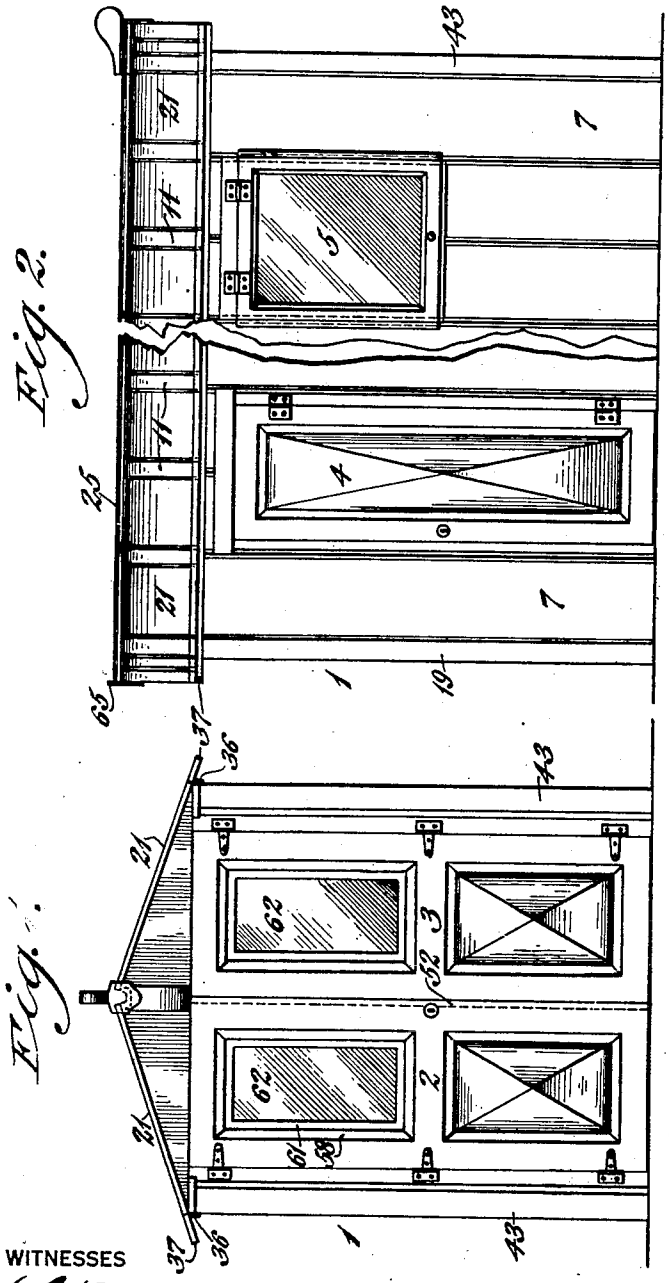

Fig. 2.



Fig. 3.

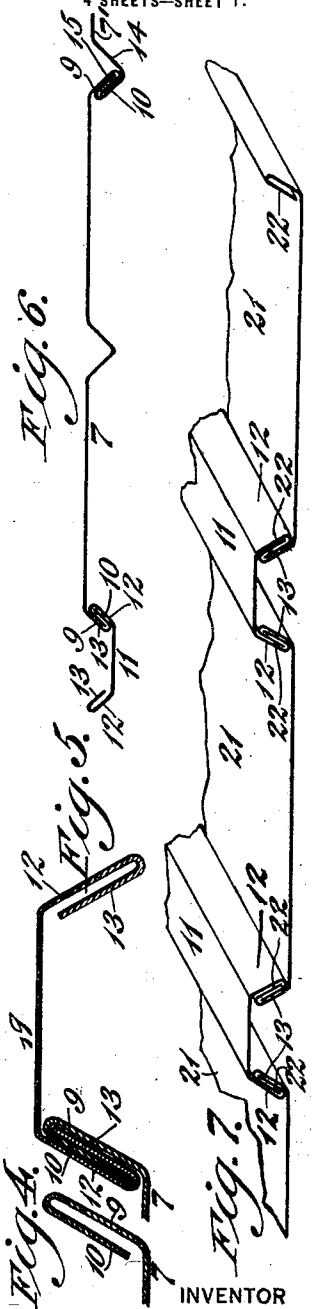

Fig. 6.



Fig. 5.



Fig. 4.



Fig. 7.

WITNESSES

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Fig. 3.

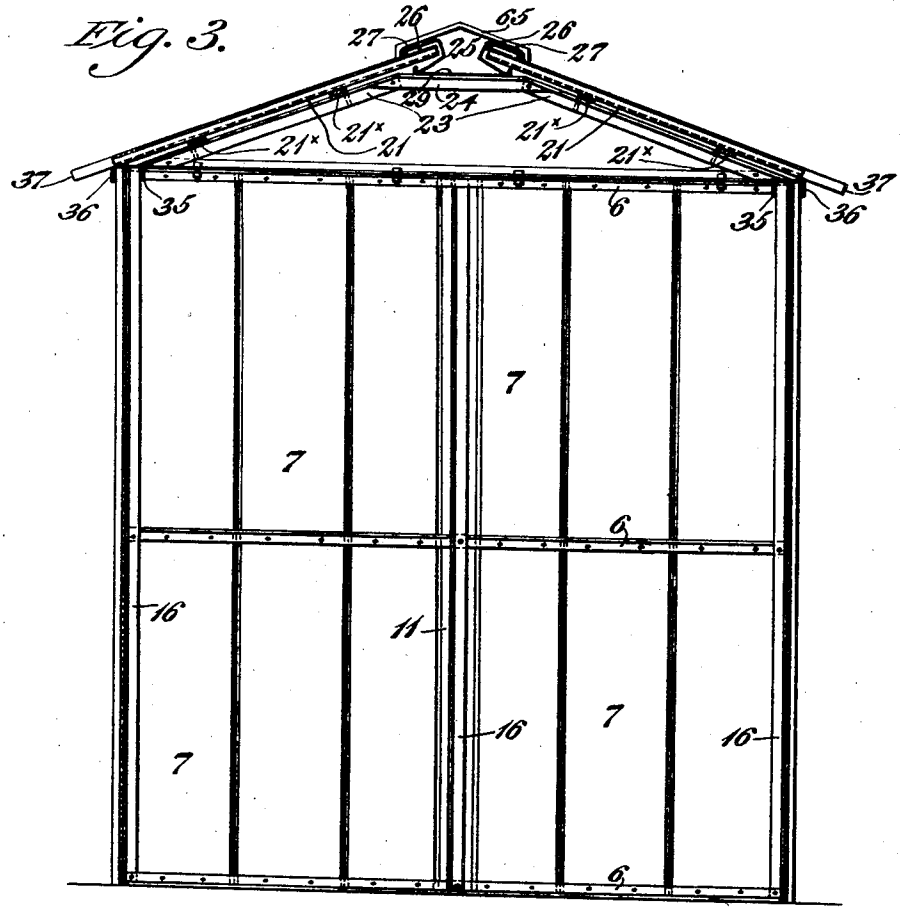



Fig. 8.

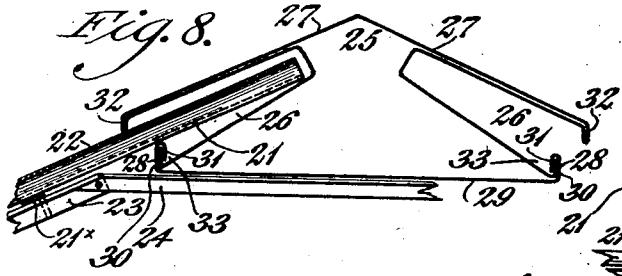



Fig. 9.

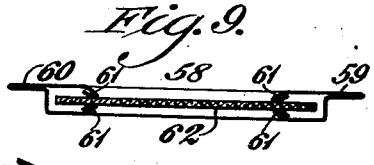



Fig. 10.

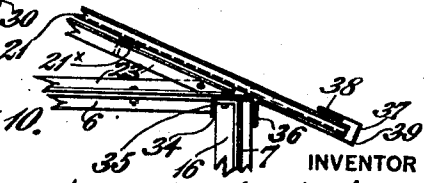
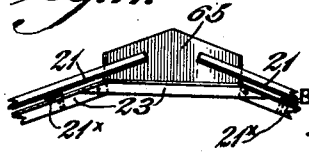



Fig. 11.

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4 SHEETS—SHEET 3.

Fig. 13.

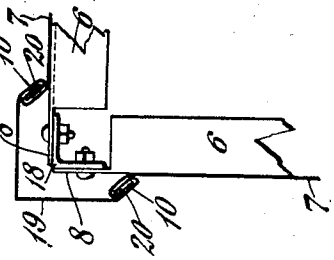


Fig. 15.

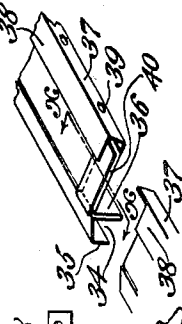


Fig. 16.

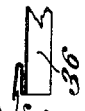


Fig. 12.

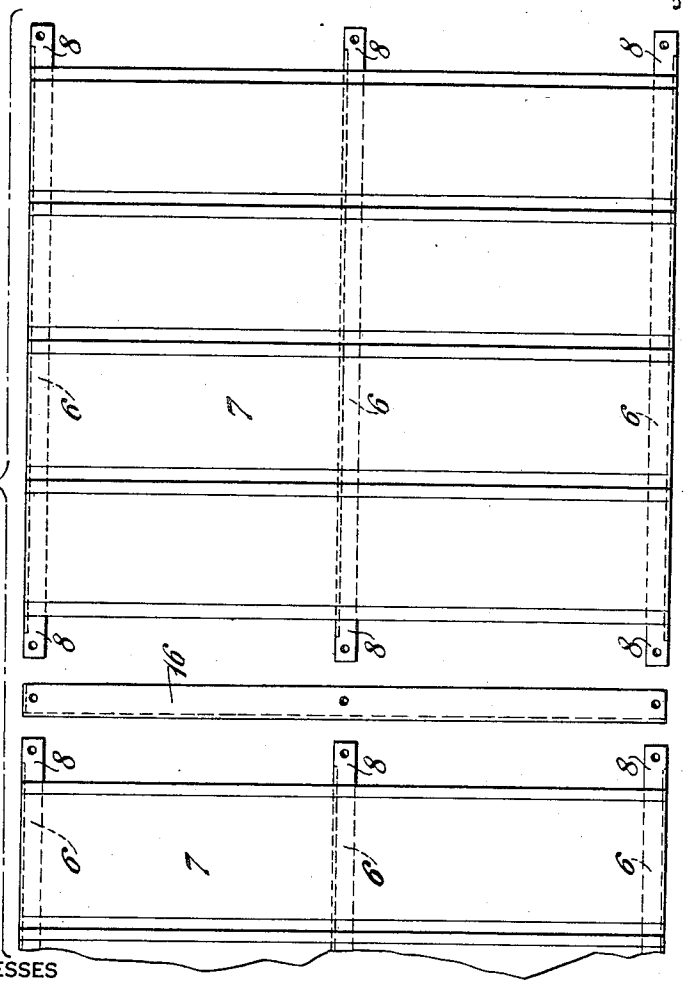
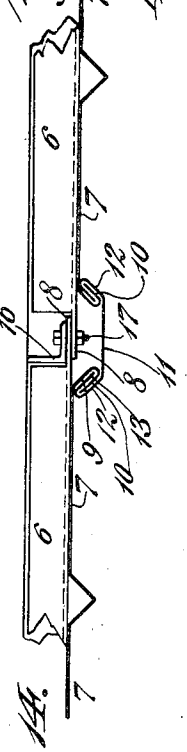


Fig. 14.



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4 SHEETS—SHEET 4.

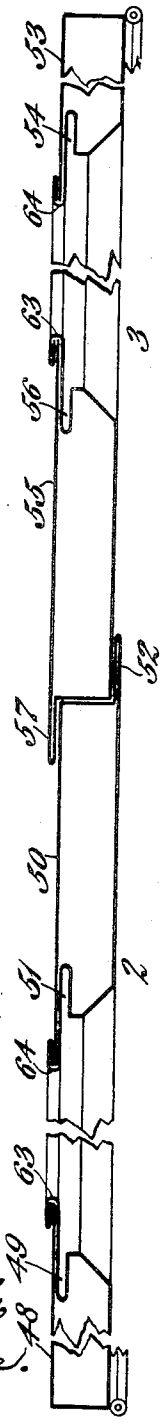

Fig. 17.

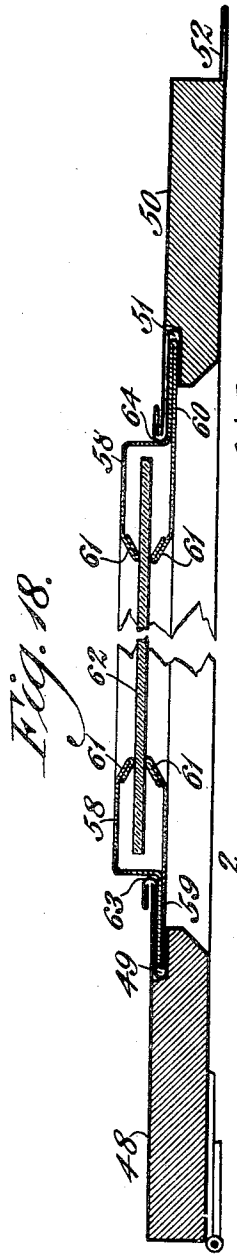

Fig. 18.

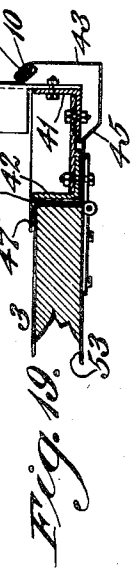

Fig. 19.

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# UNITED STATES PATENT OFFICE.

MARTIN MOISTER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO AMOS EDGAR HOOVER, OF PHILADELPHIA, PENNSYLVANIA.

## SHEET-METAL BUILDING.

1,196,133. Specification of Letters Patent. Patented Aug. 29, 1916.

Application filed May 22, 1915. Serial No. 29,720.

*To all whom it may concern:*

Be it known that I, MARTIN MOISTER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Sheet-Metal Building, of which the following is a specification.

My invention relates to a new and novel sheet metal building or house construction, which is designed to be constructed in the shop, conveyed in a knockdown state to the desired point, and thereupon erected by proper interengagement of the parts to form a strong and durable structure, and it consists of a novel construction of side sections for the walls thereof.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same will be found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described.

Figure 1 is a front elevation of a metal building embodying my invention. Fig. 2 is a side elevation thereof, broken away. Fig. 3 is a transverse vertical section showing the rear of the building. Fig. 4 is a sectional view of one end of one of the plates showing the form of flange employed. Fig. 5 is a sectional view showing the flange in interlocking engagement with the flange of the connecting member. Fig. 6 is a diagrammatic view showing the manner of connecting the side edges of the plate and of the connecting member. Fig. 7 is a perspective view, broken away, of the roof plates employed, and showing the manner of connecting the same. Fig. 8 is a diagrammatic view of the ridge roll on an enlarged scale, showing one end of the roof section in position with respect thereto. Fig. 9 is a horizontal section of one of the sashes employed. Fig. 10 is a sectional view of a portion of the upper edge of the building. Fig. 11 is a sectional view showing one end of the upper portion of the roof. Fig. 12 is a detail view showing the construction of the side plates employed. Fig. 13 is a detail view of a corner of the building. Fig. 14 is a diagrammatic view showing the manner of connecting the side plates. Fig. 15 is a perspective view of portions of adjacent gutter sections employed. Fig. 16 is a section on line *x*—*x*, Fig. 15. Fig. 17 is a diagrammatic view, broken away, of the door employed. Fig. 18 is a sectional view, broken away, with a door and sash in position. Fig. 19 is a horizontal sectional view of a front corner of a building showing the manner of hinging the door. Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates a sheet metal building or house adapted for any suitable use, which is here shown at the front end as provided with the doors 2 and 3, while one side wall thereof is shown as provided with a door 4 and window 5. The side walls and rear end walls are formed of sections, the same comprising a plurality of horizontally extending angle bars 6, to which are attached in any desired manner a plate or plates of sheet metal 7, with the ends 8 of the angle irons extending beyond each edge of the said plate or plates. The vertical edges of the metal plates 7 are bent or extend outwardly at 9, and are then bent inwardly to form a flange 10 spaced from the edge 9, said flange 10 forming means for interlocking engagement. This engagement may be with an adjacent section or with a connecting member 11, the edges of which are bent or extend angularly as at 12, and are provided with an inturned flange 13 forming a space between same and the edge 12, in order that the edge of a plate 7 can be connected with an adjacent edge of the connecting member 11 by longitudinally sliding the respective flanges 10 and 13 in the respective spaces therefor, as best understood from Fig. 5.

In some instances, I may desire to connect two plates 7 and 7′ with the angle iron 6 to form a section, in which event I form a double bend as at 14, on one edge of one of the plates as 7′, see Fig. 6, and I further provide the double bend with a flange 15 properly extending in order to engage with the flange 10 of an adjacent plate 7, the connection between these plates being formed by sliding the flanges longitudinally, as previously stated, and then securing the two plates to the angle bars 6, it being understood that the other edge of the plate 7 is

provided with a flange similar to the flange 10, as previously described.

It will be understood that the side plates are shipped in the manner seen in Fig. 12, and that when the same are to be erected, a vertical angle iron 16 is connected with the extending ends 8 of adjacent sections by any suitable means, as for example, by bolts 17, see Fig. 14. When this connection has been made, a space exists between the flanged edges of the plates 7 of the two sections, and the flanges 13 of the connecting member 11 are caused to interengage with the flanges 10 of the two plates 7 and the parts are slid into proper position in the manner already described, the connecting member 11 thus serving to connect the plates and closing the spaces therebetween, as will be understood from Fig. 14. It will be understood from this that the building can be made the desired length and width by connecting the requisite number of sections.

At the corners of the building, I provide an angle iron 18, to which is connected the extending ends 8 of the angle irons 6, see Fig. 13, of the two corner sections 7, and the flanges 10 of the plates 7 are connected by a V-shaped coupling member 19 provided with suitable flanges 20 to engage with the flanges 10 of the said side plate, the V-coupling member being slid longitudinally into position after the sides and ends are erected.

The roof is suitably formed of sections of somewhat similar construction to the side sections already described. The roof structure in itself while illustrated in the drawings and referred to in the specification, forms no part of this application, which is confined to the wall structure as such. In order, however, to explain the construction of a roof structure which can be applied in the manner illustrated in the drawings, to my wall structure, I describe it as follows: In Fig. 7, it will be seen that the roof sections are formed of plates 21, the edges of which are bent or formed with flanges 22. These plates are suitably secured to angle irons 21× with their edges extending beyond the edges of the plates 21, to be secured together when the sections are in place. A space exists between the edges of the plate 21, and I close the same by the connecting members 11 as described. These members 11 are slid into proper position with their flanges in engagement with the flanges of the adjacent plates 21, so that a strong and watertight roof construction results. The roof sections are suitably supported by trusses 23, which are connected at one end with the upper angle irons 6 of the side sections and with a cross-piece 24 at their inner edges. I provide a ridge roll 25, which is provided with pockets 26 in each side for receiving the inner ends of the roof sections 21, and, as shown in Fig. 8, the ridge roll is formed of sheet metal bent to form the angular top faces 27, the metal being bent back upon itself to form the said pockets 26 and the lower edge of the metal being bent upwardly to form an extending flange 28. The bottom of the ridge roll is formed of a plate 29, having its ends bent up at 30 and downwardly to form a flange 31, which is caused to engage with the flange 28 previously described. The inner or upper edges of the roof section are seated in pockets 26, and in order that these edges are positively protected, I preferably form a downwardly extending flange 32 on the upper portion of the ridge roll to engage with the outer upper face of the roof sections 22. As will be clearly understood from Fig. 8, the flanges 28 and 31 form a channel 33 beneath the roof sections, which channel preferably extends the length of the building, so that any drippings which might reach the inner portion of the ridge roll will be prevented from entering the building and will be carried off by the channel 33.

I also provide a gutter which is formed of sheet metal bent to form a groove 34, formed by the downwardly extending flanges 35 and 36, and in which groove is adapted to be seated the upper end of the side plate, and over which the roof sections are situated in order that the said gutter will be suitably held in place.

As will be understood from Figs. 10 and 15, the gutter is formed with a bottom wall having an angularly extending face 37, provided with an inwardly extending flange 38, the member 37 having suitable openings 39 therein to permit escape of the water. The gutters are formed in sections, in order that the same can be suitably connected, depending upon the size of the building, and as will be understood from Figs. 15 and 16, the metal will be bent to form a pocket 40 at one end of each of the gutter sections, into which the opposite end of the adjacent section can enter in order that the gutters will be suitably connected and form a continuous gutter.

In order to pivotally mount the doors at the front of the building, I provide the two vertically extending angle irons 41 and 42, which are connected together in any suitable manner, and I provide a corner piece 43, having a flange 44 to engage with the flange 10 of a side member 7, see Fig. 19, the opposite end of the corner piece being bent inwardly as at 44, 45 and 46 to conform to the shape of the angle iron 42 to which it is connected, and the edge of the metal is bent to form an extending rim 47, which is situated back of the door to prevent the moisture and water from entering the building. The doors are suitably hinged to the angle iron 42 so that the same are suitably supported. The doors are preferably formed in the manner illustrated in Figs. 17 and 18,

and they comprise an end bar 48 of sheet metal suitably bent to form a pocket 49, while the center frame 50 is also formed of sheet metal bent to form a pocket 51 and an extending tongue 52, which is adapted to lie against the face of the other door, which as seen in Fig. 17, is composed of the end bar 53 hinged to an angle iron and having the pocket 54 therein and a center frame 55 having a pocket 56 therein, said center frame also having a tongue 57, which seats upon the outer side of the other door, as will be evident.

Each pair of pockets 49 and 51, and 54 and 56, are in suitable alinement and are adapted to receive a suitable portion of the panels or window frames, whichever it is desired to employ.

As shown in Fig. 18, the window sashes are formed of sheet metal bent to form the frame portions 58, having extending tongues 59 and 60 on the opposite sides, each of which is adapted to be slid into a pocket 49 and 51 of the door and the frame portion 58 of the sash is provided with the inwardly extending wings 61 spaced apart, and between which the windowpane 62 is slid and held in position. It will be noted that the frame portion 58 of the sash is preferably in engagement with the curved edges 63 and 64 respectively of the end bars and center frame of the door.

At the rear of the ridge roll, I provide a plate 65 serving as a stop against which the roof sections abut.

By means of the above described construction, the various parts of the building can be shipped to the desired destination and can be quickly and easily set up by the interlocking connection of the various parts, and any desired size of building may be made by shipping the necessary number of the different parts.

As was previously stated, the wall sections are suitably brought together in order that the extending ends 8 and the angle bars 6 may be connected with the vertical angle irons 16, and the connecting members 11 are then slid into proper position with their flanges engaging the flanges of the side plates 7. The corners of the buildings are completed by sliding the coupling member 19 into proper position with its flanges 20 engaging the flanges 10 of the plates 7 which are located at the corners. The gutter sections are then placed upon the upper edge of the side walls with one edge of each section seated in the pocket 40 of the next adjacent gutter section, in order that a continuous gutter will be formed along the side wall of the building in proper position to receive the rain or water from the roof sections. The truss bars 23 are suitably connected with the upper angle irons 6 with their inner ends connected by the cross-bars 24. The roof sections are suitably connected by their angle irons with the truss bars 23 and the openings between the roof sections are suitably closed by the connecting member 11, which are slid into position having their flanges in engagement with the flanges of the roof sections. The inner or upper edges of the roof sections are seated within the pockets 26, as previously described, and the channel 38 beneath the roof section will prevent any moisture or dripping from reaching the interior of the building. The doors are hinged to the angle iron 42 at the front edges of the building, as will be evident.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a sheet metal building, the combination of a plurality of wall sections each comprising horizontally extending angle irons, sheet plates secured thereto with the ends of the irons projecting beyond the edges of the plates, and each plate having at its edge an inturned flange, an upright angle iron connected with the extending ends of the adjacent horizontal angle irons, and a coupling member having inturned flanges for sliding engagement with the flanges of plates of adjacent sections and serving to close the space therebetween.

2. In a sheet metal building, the combination of a plurality of wall sections each comprising horizontally extending angle irons, sheet plates secured thereto with the ends of the irons projecting beyond the edges of the plates, and each plate having an inturned flange at its edge, an upright angle iron connected with the extending ends of the adjacent horizontal angle irons, and a coupling member having inturned flanges for sliding engagement with the flanges of plates of adjacent sections and serving to close the space therebetween, V-shaped coupling members having flanges engaging the flanges of the plates of adjacent sections at the corners.

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Witnesses:
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