R. F. DOWNEY.

KNOCKDOWN METALLIC HOUSE.

APPLICATION FILED AUG. 10, 1914.

1,153,292.

Patented Sept. 14, 1915.

3 SHEETS—SHEET 1.

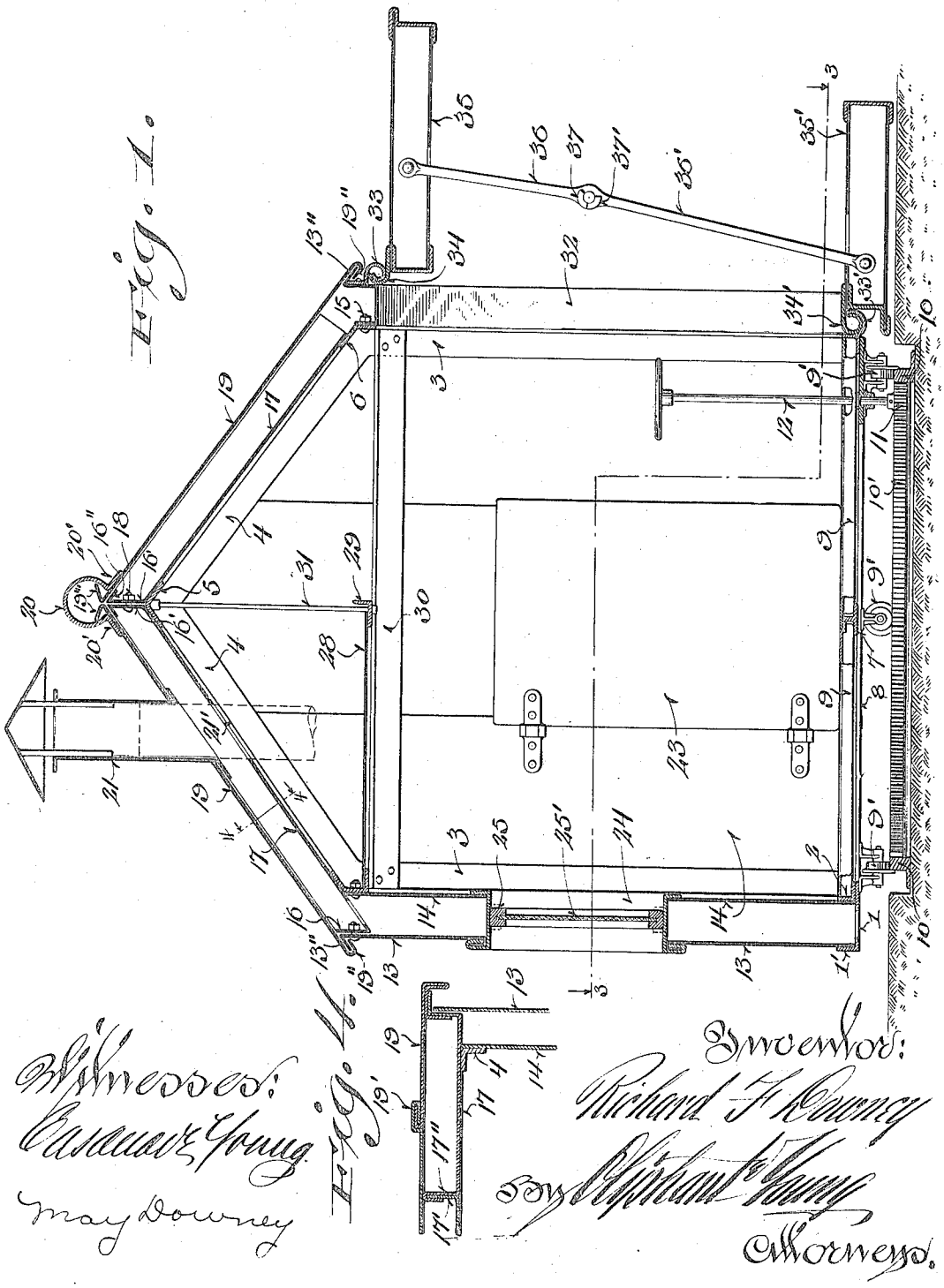


Fig. 1.

Witnesses:
Casmore Young
May Downey

Inventor:
Richard F. Downey
By Richard Young
Attorneys.

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3 SHEETS—SHEET 2.

Fig. 2.

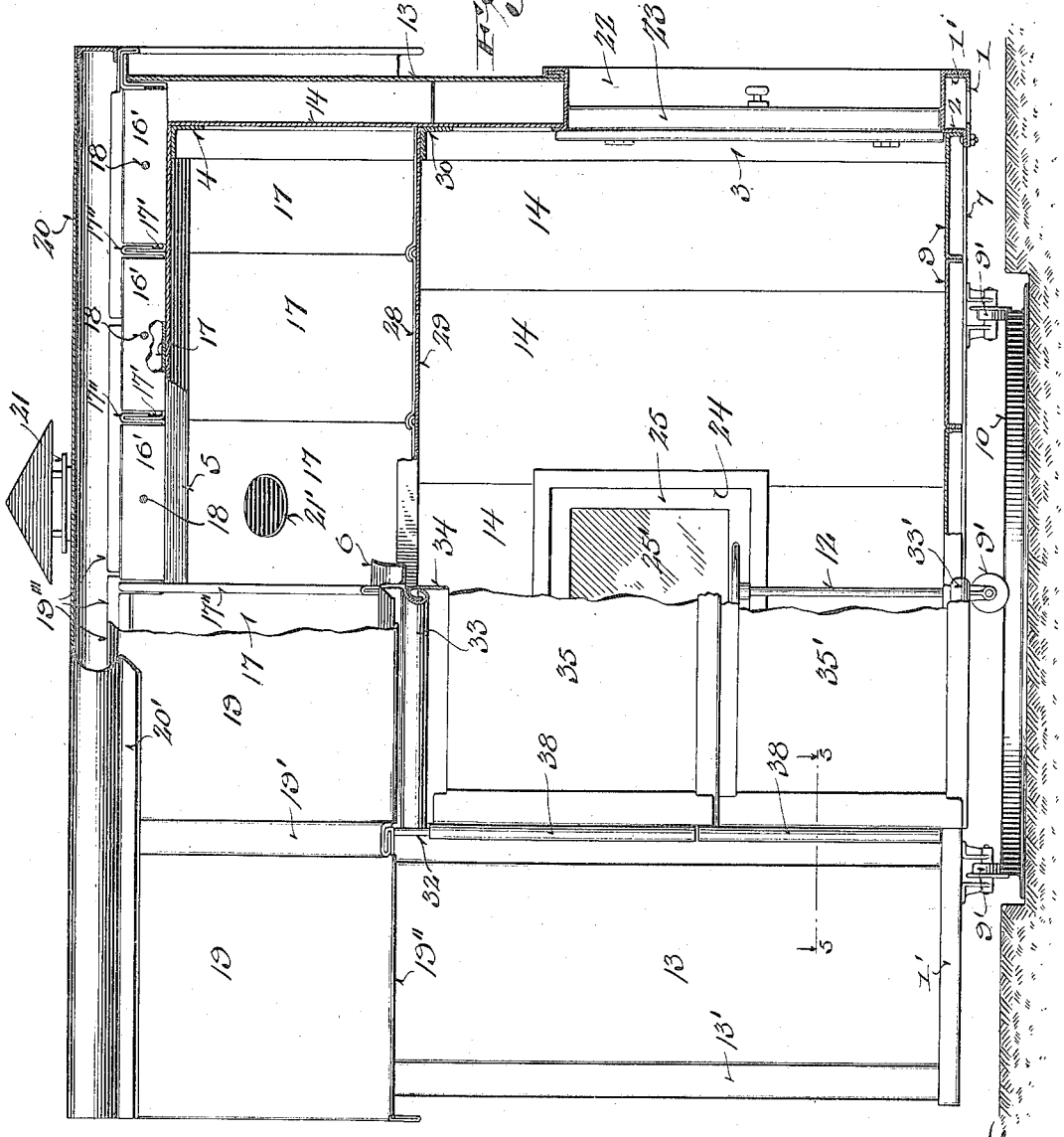
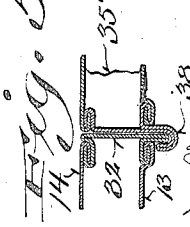


Fig. 5.



Witnesses:
Cassius Young
May Downey

Inventor:
Richard F. Downey
by Clystenes Young
Attorneys.

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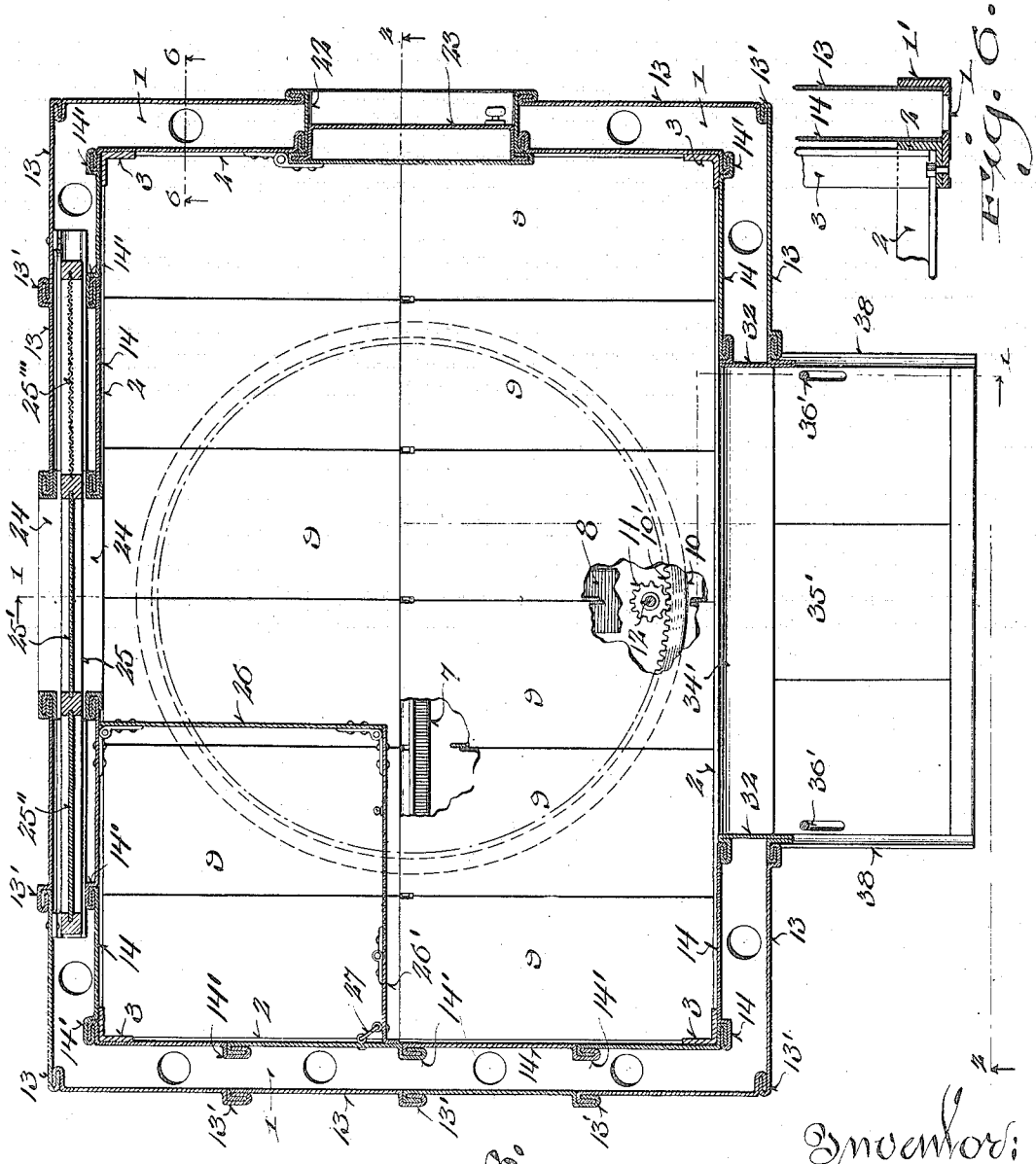


Fig. 6.

Fig. 5.

Witnesses:
Casmare Young
May Downey.

Inventor:
Richard F. Downey
by Popham & Young
Attorneys.

UNITED STATES PATENT OFFICE.

RICHARD F. DOWNEY, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO BADGER STEEL HOUSE COMPANY, OF MILWAUKEE, WISCONSIN.

KNOCKDOWN METALLIC HOUSE.

1,153,292. Specification of Letters Patent. Patented Sept. 14, 1915.

Application filed August 10, 1914. Serial No. 356,061.

To all whom it may concern:

Be it known that I, RICHARD F. DOWNEY, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Knockdown Metallic Houses; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple, effective and conveniently arranged knockdown metallic house, to be utilized for various purposes, the same being especially adapted for dwellings of invalids wherein sanitation is an essential feature.

Specific objects of my invention are to provide horizontally swinging side-wall sections which may be opened or closed depending upon weather conditions and, when opened, these swinging sections form the roof and flooring of a porch; to provide hollow ground sills adapted to receive inner and outer panels forming the side walls of the house, whereby air spaces are formed; to provide a slidable window divided into compartments whereby a screen section, window glass section, or blind section may be brought into alinement with the casing or window opening; to provide simple and economical interlocked inner and outer roof panels and means for connecting and supporting the same; to provide foldable hinged panels in connection with the inner walls of the house, whereby the floor space may be divided into sections or rooms, and to provide means under control of an operator whereby the house may be revolved upon a supporting base.

With the above and other objects in view the invention consists in certain peculiarities of construction and combination of parts as hereinafter set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings Figure 1 represents a cross-section of a metallic house embodying the features of my invention, the section being indicated by line 1—1 of Fig. 3; Fig. 2, a side elevation of the same, partly in section, as indicated by line 2—2 of Fig. 3; Fig. 3, a sectional plan view of the house, the section being indicated by line 3—3 of Fig. 1; Fig. 4, a detailed cross-section of the roof panels, the section being indicated by line 4—4 of Fig. 1; Fig. 5, a detailed cross-section of one of the corner joints between the fixed sides of the house and the swinging side sections thereof, the section being indicated by line 5—5 of Fig. 2, and Fig. 6, a detailed section view upon an enlarged scale of the supporting sill and frame connections.

Referring by characters to the drawings, 1 represents an apertured angle-iron beam having an upturned flange 1′ and spaced from the flange 1′ and secured to the beam is a floor-supporting angle-iron 2, the same, together with the beam, constituting a hollow sill which forms the ground member of the house. Extending upwardly from the corners of the sill are angle-iron uprights 3, which uprights are connected by roof beam sections 4, the same being secured together by a combing plate 5. At the intersection of the roof-beam sections 4 and uprights 3, the same are connected by tie-plates 6, which tie-plates are arranged parallel to the combing plate. The sills are also longitudinally connected by a T-beam 7 and a cross-beam 8 and supported between the longitudinally disposed floor-supporting angle-irons 2 and the T-beam 7 are metallic floor plates 9 having downturned flanges, whereby said plates are stiffened. Thus it will be seen that the floor can readily be removed in sections or assembled. The cross-beam 8 and T-beam 7 each carry flanged rollers 9′ which are adapted to ride upon a circular bed-piece 10, the same constituting a turret-support for the house. The bed-piece is also provided with a circular rack 10′ into which is meshed a pinion 11 that is carried upon a spindle 12, which spindle is suitable supported in a bearing that depends from the cross-beam, the said spindle having at its upper end a hand-wheel, whereby the house may be revolved through rotation of the gear-connection between the house and bed-piece.

The side and end sheathings of the house are formed by panels 13 which are joined together by interlocking seamed edges 13′ that are in slidable union, the corner panels being similarly connected. The wall panels 14 are of similar construction having interlocking sliding joints 14′ which, together with the sheathing joints, are vertically disposed. Thus these panel sections may be fitted together in any desired widths or

lengths and thereafter their lower edges are socketed within the sill member, the outer sheathing being adapted to have sliding fit with the upturned flange 1′ of the sill member, while the wall sheathing is similarly fitted against the upturned flange of the floor-supporting angle-iron 2 of the sill.

The upper ends of the wall sheathing plates are secured to the tie-plates 6 by bolts 15 and the upper ends of the sheathing plates 13 terminate with obliquely disposed outwardly extended flanges 13″. The upper ends of the sheathing plates 13 are arranged to abut vertically disposed end flanges 16 of ceiling plates 17, which ceiling plates are arranged to rest upon the tie-plate 6 and combing-plate 5. As best shown in Fig. 4, the ceiling plates are formed with upturned flanges 17′, 17″, the latter being folded over to effect interlocking union with the flange 17′ of the juxtaposed ceiling plate. Thus the ceiling plates are interlocked in a series of any desired length. The combing ends of the ceiling plates are formed with vertically disposed flanges 16′ which terminate with obliquely disposed downturned flanges 16″, the flanges 16′ of opposite ceiling plate sections being adapted to abut each other and are secured by bolts 18. The lower ends of the ceiling plates 17 adjacent to the flanges 16 are provided with a series of perforations whereby air currents traveling up through the sill beams are directed over the ceiling plates to form insulators. Thus the walls are thoroughly ventilated.

As best shown in Figs. 4 and 1, the ceiling plates have fitted thereover roofing plates 19, which are in slidable union by means of interlocking end joints 19′. These roofing plates are fitted over the ceiling plates and are adapted to rest upon the flanges 17′ and their lower ends are provided with inturned flanges 19″ for interlocking engagement with the flanges 13″ of the sheathing plates 13, whereby eaves are formed at the joint. The upper ends of the roofing plates are also formed with obliquely disposed flared flanges 19‴ at the point of abutment of said roofing plates. These flanges 19‴ form longitudinal runways for a crowning tube 20 which is slidably fitted to the flanges of the roofing plate, the said crowning tube being provided with oblique terminal flanges 20′ that rest upon the faces of the roofing-plates, whereby a tight joint is formed at the combing union of said roofing plates and the latter are thus held in position.

As best shown in Fig. 1, one of the roofing plates 19 may be provided with a chimney cap 21, which chimney-cap is alined with an aperture 21′ in the adjacent ceiling-plate 17, whereby the smoke-pipe of a stove may be inserted to form a draft flue.

At one end of the house a door-frame 22 is arranged in seam-joint connection with the wall plates 14 and sheathing plates 13 and a double walled door 23 is arranged in hinge connection with one of the wall plates, whereby access may be had to the dwelling. The inner and outer sheathing plates 14, 13, respectively, in one of the side walls of the house, are each formed with metallic window casings 24, between which a slidable window frame 25 is fitted, the same being adapted to slide back and forth between the sheathing and walls 13 in suitable guides. This window-casing is provided with a glass section 25′, a blind section 25″, and a screen section 25‴. Hence, when the casing is shifted any one of these sections may be brought into alinement with the casing as desired.

One of the walls of the house has hinged thereto a partition section 26, which partition section, in turn, may be formed into one or a series of hinge sections 26′, whereby a compartment or room may be divided off if desired, in which instance the end section of the series is secured by a link 27 to the wall of the house, it being understood that one of the sections is provided with a door for access to the divided compartment. The compartment may be closed with ceiling-plates 28, which ceiling-plates, as best shown in Fig. 1 of the drawings, are supported upon flanges of the tie-plates 6 and a central tie-beam 29 that is, in turn, secured to cross-beams 30, which latter cross-beams are connected by bolts to the uprights 3. The tie-beam 29 may, as shown in Fig. 1, be connected to the combing-plate 5, by reach-bars 31.

As best shown in Figs. 1 and 2 of the drawings, one of the side sections of the house is formed with a porch opening therein, which porch opening comprises a rectangular frame 32 that is in seamed union with the sheathing and wall plates of the side wall. The frame 32 is formed with horizontally disposed hinge members 33, 33′, which hinge members have fitted therein pintle members 34, 34′, of hollow ceiling and floor sections 35, 35′, respectively. These hinged sections are connected by links 36, 36′, and, as best shown in Fig. 1, when the said ceiling and floor sections are swung outwardly, they are supported by the links, the joint of which is provided with stop-lugs 37, 37′. When it is desired to close the porch sections, the joint between the links is inwardly broken, whereby said porch sections will swing inwardly, particular attention being called to the fact that, owing to their link connection, the weight of the ceiling section will balance or to a certain extent compensate for the weight of the floor section, whereby they may be closed by exerting a slight force.

As best shown in Fig. 5, when the sections are closed, a tight joint is formed in connection with the vertically disposed ends of said

sections by a U-shaped flange 38, which flange engages a projecting flange of the casing member 32.

From the foregoing description it is obvious that the house may be knocked down or assembled by those unskilled in the art of building, owing to the fact that the elements comprising the house are composed of units arranged to be joined together by interlocking seams. It is also obvious that a convenient porch can be formed by swinging the floor and roof members outwardly and that the swinging partitions within the house can be moved to form various compartments, it being understood that a number of such partitions may be utilized if desired. It is also apparent that the house can readily be revolved about a common center to aline the porch with any desired point of the compass and that said house can be thoroughly sterilized owing to the fact that it is metallic and therefore germproof. The air space between the walls and sheathing will also serve as an insulator to prevent the rays of the sun from increasing the temperature within the compartments. Thus an extremely convenient and sanitary house will result which can be readily knocked down and nested for shipment.

I claim:

1. In a metallic house having sheathing plates terminating at their upper ends with outwardly flared flanges, the combination of a roof structure comprising ceiling plates the companion side edges of which are provided with vertically interlocked flanges in slidable union, roofing plates supported upon the interlocked ceiling plate flanges, the said roofing plates being provided with horizontally disposed interlocked flanges in slidable union with each other and breaking joint with the ceiling plate, flanges, means for securing the upper ends of the roofing plates together, and inturned flanges extending from the lower ends of said roofing plates for interlocked union with the outwardly flared end flanges of the sheathing plates.

2. In a metallic house having sheathing plates terminating at their upper ends with outwardly extended flanges, the combination of a roof structure comprising ceiling plates the companion side edges of which are provided with vertically disposed interlocked flanges in slidable union, vertically disposed end flanges projecting from the matched ends of the ceiling plates, means for securing the same together, vertically disposed flanges projecting from the lower ends of the ceiling plates, means for securing the last-mentioned flanges to the upper ends of the sheathing plates, roofing plates supported upon the interlocked ceiling-plate flanges, said roofing plates being supported upon the interlocked flanges of the ceiling plates, the said roofing plates being provided with horizontally disposed interlocked flanges in slidable union with each other and breaking joints with the ceiling plate flanges, the upper ends of the roofing plates being provided with obliquely disposed flanges adapted to abut each other over the flanged connection of the ceiling plates means for locking the obliquely disposed flanged ends of the roofing plates together, and inturned flanges extending from the lower ends of the roofing plates for engagement with the outwardly flared end flanges of the sheathing plates.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

RICHARD F. DOWNEY.

Witnesses:

CASANAVE YOUNG,

M. E. DOWNEY.