My invention relates to improvements in porch or garden house enclosures. My porch or garden house enclosure provides a dismantlable panel-supporting frame work and enclosure for the side walls of a porch or garden house and is particularly useful in conjunction with a skeleton roof-supporting frame work and fabric roof, although my dismantlable side wall construction need not be supported or braced by such skeleton frame work and preferably is not in contact therewith at all.

Novel features of construction embodied in my invention include a simplified combination of shapes of side wall frame members from which a large multiple of frame combinations to receive and hold wall panels, door panels and truss constructions may be built up to suit particular outlines or designs of porch or garden house structures. Also I provide a novel combination of skeleton frame work for a canvas or fabric roof with a seal between the roof and wall and novel means for dismantlable inter-lock between the screen or window panels and my dismantlable frame whereby the entire section or the intermediate panels may be assembled and disassembled readily and with facility.

In the drawings:
Fig. 1 is a perspective showing my dismantlable wall enclosure and roof in position upon a slab foundation, the shape of the enclosure or garden house being particularly adapted for attachment to a building in a porch-like relationship or adapted for independent, self-supported disposition without reference to any adjacent structure.

Fig. 2 is an elevation of a portion of the structure shown in Fig. 1, fragmentary portions being broken away to exhibit certain features of construction, the entire view being enlarged and areas being omitted to consolidate the view as will be apparent from a comparison with Fig. 1.

Fig. 3 is a section on line 3-3 of Fig. 1 to show my dismantlable wall elements and the tubular skeleton roof-supporting frame work in horizontal section, the panels and the door being foreshortened and the view in general being enlarged.

Fig. 4 is a section taken in general on line 4-4 of Fig. 1 and is greatly enlarged.

Fig. 5 is a horizontal section through my dismantlable wall in which the various panels are foreshortened in a manner similar to those shown in Fig. 3. The view is taken of an end wall to exhibit my novel manner of attachment of such a wall to an adjacent building structure, a portion of which is shown fragmentarily.

Fig. 6 is a section on line 5-5 of Fig. 2 and shows a lower portion of one of my panels and the assembly thereof with a base insert, a portion of a base plate in supported relationship upon a slab foundation being fragmentarily shown.

Fig. 7 is a section on line 7-7 of Fig. 1 and shows a detail of the junction of a side wall cap with a canvas or fabric roof and the seal in the inter-structural space between my side wall and a tubular roof supporting member.

Fig. 8 is a fragmentary detail of a portion of the roof seal and tubular weight for the seal used in the inter-structural space between roof and side wall according to my invention.

Fig. 9 shows details of the junctions of structural members showing the means of securing the structural members together. My porch or garden house is assemblable upon any convenient base such as a concrete slab or any suitable surface upon which the sills 11 may be supported and secured. These sills are H-shaped in cross section as shown most clearly in Fig. 6 and the initial step in building my readily assemblable and dismantlable enclosure wall includes the securing of sills 11 to the slab 10 along a line delineating the bottom of each of the walls. I secure the sills 11 to the slab 10 by means of screws 12 extending through the web 13 of the H-shaped sill 11 and into suitable fastening sleeves 14 which are embedded in the slab 10.

Extending upwardly from the sills 11 I provide at spaced points any one of three principal structural elements which may be compared to studs in frame house construction. Representative specimens of these structural elements are seen in cross section in Fig. 3. One of them is the corner piece 20. Another is stud piece 21 and the third is a door frame element 22. Each of these is conveniently made as an extruded metal form, but, of course, any manufacturing technique satisfactory to produce the general cross section shown in Fig. 3 is satisfactory provided it forms a deep channel 23 and a shallow channel 24. The form of the door frame element 22 desirably has an L-shaped cross section due to the provision of flange 25 to provide a seal and frame for a door 26. Each door frame element also has flanges 27 to embrace such a structural member as stud piece 21 and an intermediate channel rib at 28 to be received in the shallow channel 24 of the stud piece 21. (It also is adapted to receive and interlock with the corner piece 20.) The structural members such as floor plates 11, corner pieces 20, studs 21 and door frames 22 may be assembled as shown in Figs. 1 and 2 to provide frame openings for panels 30, or doors 26, the reception of which into the wall structure will be described below. Then along the top margin of the complete wall is a cap 31 which is very deeply channeled at 32 and is provided with a wide shallow channel 33.

In Figs. 2 and 9 it will be seen that it is merely necessary to cut away certain portions of structural members 20 and 21 so as to leave a tongue 34 receivable either in one of the channels formed by the H cross section of plate 13 or in the deep channel 32 of cap 31. Any suitable means may be used for securing this tongue 34 in a channel, as for instance by pin or screw 35.

The construction of panels 30 is described more completely in my United States Patent Application, Serial No. 728,229, filed February 13, 1947, now Patent No. 2,630,891, issued March 10, 1953. It is sufficient to state here that the side frames 38 of these panels are channeled at 39 so that screening of any suitable material at 40 may be held in place by retainer wire 41 pressed into the channels 39 to lock the screen material 40 in position. My panel material 30 is receivable either in the shallow channel 24 or deep channel 32 of cap 31. In Fig. 1 is a perspective view of a portion of a panel 30, the channel 23 of which is a deeper channel such as 23 or 32. I provide curved plate springs 45 secured at one end of each spring by a drive screw or rivet 46 and there are sufficient of these springs to exert sufficient bias against a margin of a panel 30 to assure a firm seal of the opposite side of the panel in a shallow groove 24. Each of these panels, when assembled with the remaining wall structure is thrust laterally into a deep channel 23 and then is placed in position so that the springs 45 may press it into the opposite channel 24. The panel is sufficiently short so that there is no compli-
cation with respect to the cap 31 and floor plate 11. The panel, after insertion laterally as above described is then thrust upwardly into the deep channel 32 of the cap 31, where it is held against the bias of the springs 48 while an insert 47 is placed in position as shown most clearly in Fig. 6 with the lower margin thereof in the groove of plate 11 whereby to present an upper face 48 demarked by flange 49 upon which the panel 30 may rest. The insert 47 is receivable between the structural members 20 and 21 in the same manner, so far as lateral displacement is concerned, that the panel 30 is positioned between the structural members 20 and 21.

From the above description it will be apparent that I have provided a set of readily assembleable and dismantleable wall enclosure elements, which may be cut to size in the initial construction of a porch or garden house enclosure merely through the use of a hack saw. A small drill to make the hole for pin or screw 35 completes the set of tools necessary for this work.

As thus far described, the knock-down wall enclosure element may be used to enclose any other type of building with equal expedience. It is, however, especially designed to receive and cooperate with a special roof or canvas or the like which may be supported, for example, on a more or less permanent skeleton frame, on which the roof may be rolled up as an awning if desired, or from which the roof is readily removable, and the enclosing knock-down wall structure is likewise removable with facility when it becomes time to dismantle the structure for the winter.

The permanent frame may be of any desirable construction. For purposes of illustration here I have shown a row of stanchions or posts 55 which are set slightly inwardly from the wall. These posts are used solely for the support of the roof, the wall being self-supporting.

The stanchions carry any suitable number of rafters 56 spanned by the roof fabric 57. Where weather conditions require protection against rain, the rafters 56 may be inclined as indicated in Figs. 1 and 4. Desirably they project over the knock-down wall structure and are connected along the eave by a frame member 58. The present invention is not concerned with the manner in which this permanent skeleton frame is erected. Therefore, it is merely for exemplification that the frame pipes are shown in welded connection.

The upper portion of the roof canvas 57 hangs over the eaves at 59. Any gable-like areas, such as 51 in Fig. 1 are closed by the canvas as shown in Fig. 7 at 61 and the rafter 56 at the end of the enclosure may be positioned directly over cap 31 as shown.

To make the space between the cap 31 and the frame member 58 over rafter 56 insect-proof, I sew a flap 70 to the canvas 57 at 71 just inside the frame member 58 or sew a similar flap 72 at 73 somewhat above the line of the cap 31. This flap is continuous along the roof margin or above the cap 31 and provides a hem at 74 for the reception of a weight tube 75 which is of such size, when encompassed by the hem 74, that it may rest in the channel 33 of cap 31.

Of course, where the flap is used in conjunction with a set of rafters 56, the flap is notched as at 76 in Fig. 8 so that the rafter may pass and be embraced by the flap. In conjunction with such rafters 56 in Fig. 8 the flaps between the rafters so that the discontinuous hem may be disposed below the rafters before the tube 75 is inserted in the hem. Thus the flap comprises a seal.

Assuming the existence of some sort of a skeleton framework of the desired dimensions already erected upon some foundation such as the concrete floor shown in 10 in Fig. 1, the erection of my enclosure proceeds as follows:

Sill 11 is laid upon the slab 10 to delineate the position of the wall adjacent the stanchions 55, a gap being left for the door 26 and the door frame. Panels 30 adequate to close the delineated wall space are prefabricated and disposed in readiness to be inserted in the proper grooves when the corner pieces and intermediate pieces are assembled upon the floor plate 11. As indicated in Figs. 2 and 9 the ends of the lengths cut for the corner pieces and intermediate pieces are cut away with an ordinary hack saw to provide the tongues 34 to be received in the upper grooves of the sills. If the sills are to be secured to the slab 10 suitable holes are drilled for this purpose and screws 13 are used as indicated above.

The tongues 34 for suitable corner pieces and suitable intermediate pieces are inserted into the upper ends thereof. The tongue of the sill and the corner pieces and intermediate pieces are supported in a vertical position until the tongues in the upper ends thereof are inserted into the deep downwardly facing channel 32 of cap 31. Pins or screws 35 are inserted to hold these tongues in their respective positions. The spaces between the corner pieces and intermediate pieces are then ready for closure by panels 30, which are inserted into the deep channels against springs 45 and then slidably moved laterally into the shallow channels 24 as above described.

The doorway is framed by the door frame members 22, which need not be as in Figs. 2 and 9 to provide tongues 34, since the door frame pieces 22 are supported against lateral displacement by an intermediate piece 21 received directly in the channel of door frame piece 22 as described above. One of the door frame pieces is provided with suitable means so as to be secured to door 26 by screws or other suitable fastening means. If, as indicated at 81 in Fig. 5, the porch or screen enclosure is to be secured to a building 82, one of the sill channels is used as an upright member 110 secured to the building in the same way that the sill 11 is secured to the slab 10. It thus provides a shallow channel to receive a side of a standard panel 30 (see Fig. 5).

The parts and pieces described above are particularly adaptable to many and differing physical environments and adjoining structures since a corner piece 20 and intermediate piece 21, a sill 11, or a door frame 22 or any combination of these may be used to independently erect or to attach my novel structure to any type of architecture. It is characteristic of all of the devices disclosed that the extruded frame elements are so positioned as to provide at one side of each removable panel a deep channel and at the other side thereof a shallow channel. The panels themselves comprise such which may be closed with screening or glazing or otherwise as desired. Each panel is assembled against the biasing springs 45 in a deep groove and then moved laterally into the shallow groove at its opposite side.

When the wall has been erected weight tubes 75 may be received in the hem of the flaps and in the channel 33 of the cap 31; and the roofed, screened and sealed structure is ready for use. Also it is readily dismantlable by reversing the process described above, although obviously the skeleton frame formed by stanchions 55 and rafters 56 will normally be left upon the slab for future use.

I claim:

1. In a structure of the character described including a wall, a skeletonized stanchioned and raftered shelter independent of said wall, said shelter having a flexible roof covering thereon, said roof covering being attached to said shelter by a weight member carried by the hem and resting by gravity against the top of the wall, whereby said wall, flap and covering cooperate to constitute a closure for said skeletonized shelter.

2. The structure of claim 1 in which the wall is provided with a door in a downward facing channel and the weight member is received in said channel whereby the flap is in sealing relationship between the wall and covering.

3. The structure of claim 2 in which the shelter is provided with an eave, said flap being secured to the covering in spaced relation to the eave of the shelter and the rafter extends to said eave, the flap being notched along its hemmed edge to pass the rafter.
4. In a structure of the character described, a raftered frame work having an eave, a wall beneath said eave and having a cap provided with an upwardly opening channel having a bottom and side flanges, a room surface upon said raftered frame work and a flap secured to the the roof surface and positioned to depend therefrom, said flap being provided with a hem and a weight in said hem, said weight being receivable into said channel to engage the hem with the channel bottom and a side flange thereof to seal the flap to the wall.

5. The structure of claim 4 wherein said flap is secured to the roof surface between said surface and the rafter, said flap having openings aligned with said rafter between said hem and said roof surface through which said rafter extend, said hem being discontinuous through said openings to permit hem portions between rafters to be lowered below the level of the rafters for engagement with the weight and channel.

6. In a building structure the combination with a skeletonized frame providing support, rafter and eave structure, of a flexible web of roofing spanning the rafter and eave structure and having a depending margin, an anchorage flap connected with said web, and a weight connected with said flap for tensioning said web independently of the free margin thereof, and a wall independent of said frame, said wall having a top edge channel to receive said weight and coacting with said flap and web to seal said frame to said wall.

7. The device of claim 6 in which the said flap has a hem through which said weight longitudinally extends and which encloses the weight within said channel.

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