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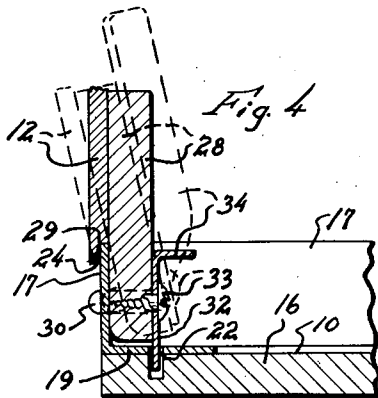
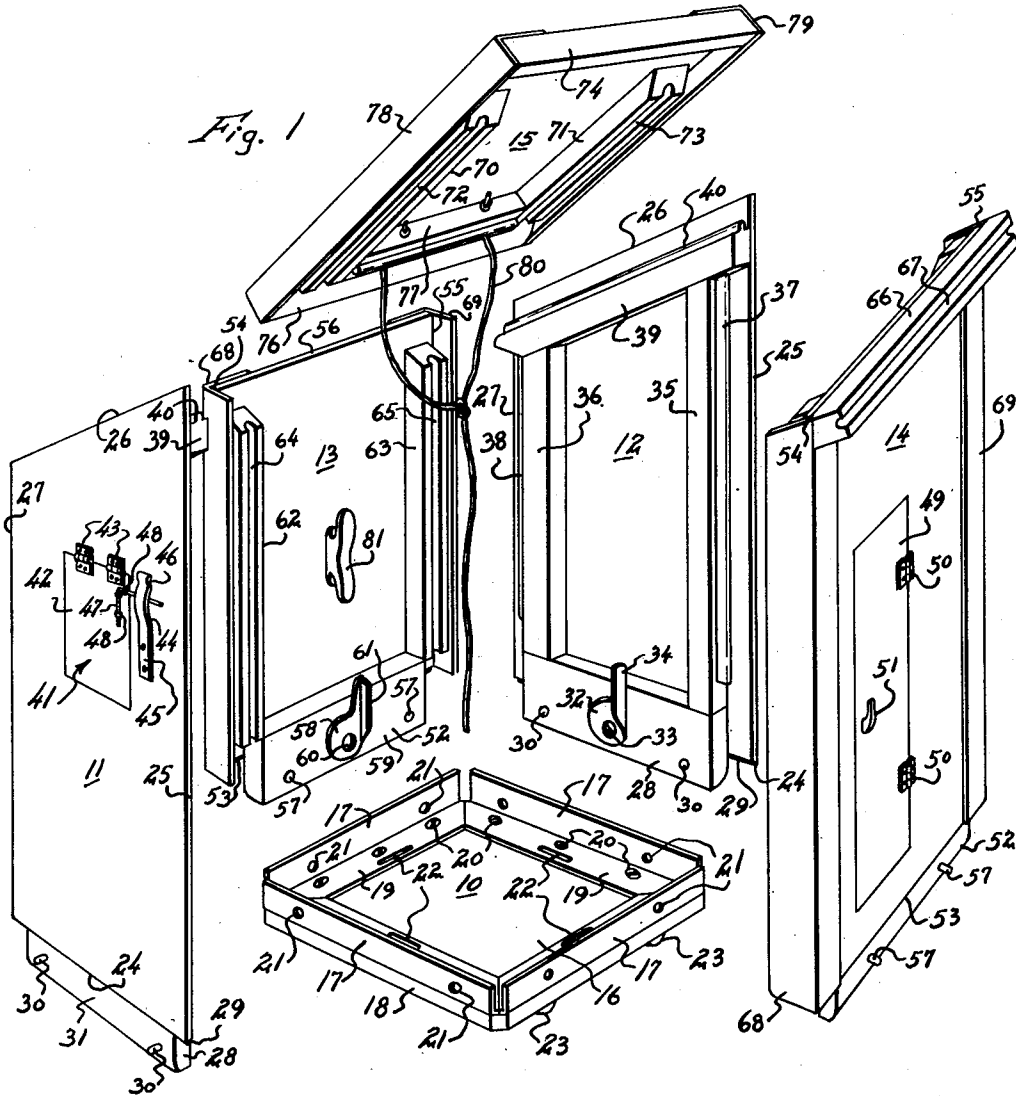
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SMALL BUILDING CONSTRUCTION

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SMALL BUILDING CONSTRUCTION

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4 Claims. (Cl. 20—2)

This invention relates to small building construction and more particularly to a structure of the inter-locking wall panel type.

Many prior building structures have been proposed in which pre-fabricated wall sections have special cooperation with load bearing members or in which the wall sections themselves provide load bearing quality. In many cases, the complexity of the sections requires additional expense which offsets the labor saved in rapid construction. In the main, pre-fabricated buildings have not been too successful from the economic viewpoint because the wall or shell structure of dwellings and commercial buildings constitutes but a fraction of the total building expense. Where the wall structure must be in addition to, or provide its own load bearing quality, it becomes very difficult even to effect any saving with such structure. As a consequence, there has been strong reaction in the minds of many people against any type of pre-fabricated structure. My invention contemplates utilizing a special type of pre-fabrication in situations where substantial economy of material and labor can be effected. There is a large class of miscellaneous buildings which are smaller than dwellings or commercial structures and which do not require load bearing columns to accommodate large spans of roof area and to support other heavy portions of the building. These same miscellaneous buildings are also of a type in which the wall construction (floors and roofs are herein considered bottom and top walls) constitute the bulk of the building expense.

To mention a few of the buildings within the purview of my invention, I contemplate the construction of dark houses and fish houses for winter fishing, animal and fowl shelters, small bunk houses and cabins, tool sheds and bird houses.

It is therefore an important object of my invention to provide an inexpensive and simple small building construction which may be quickly assembled and disassembled with a minimum of effort.

It is another object of the invention to provide a panel construction which can interfit with other panels, the interfitting connection lending strength sufficient for normal usage of the panels and requiring no expensive separate studs or bracing members at the medial areas of the panels.

It is a further object of the invention to provide a side wall and bottom wall interconnection which can be made and broken despite icy weather conditions, yet which will, when properly assembled, resist all the stress and abuse to which such buildings are normally subjected.

It is a still further object of the invention to provide a paneled building structure in which the members are designed for interlocking construction in a prescribed sequence so that the last member applied supplies a keying effect to tightly bind the building together in secure and stable condition without the use of nails, bolts, screws and other independent fastening means.

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These and other objects and advantages of my invention will more fully appear from the following description made in connection with the accompanying drawings, wherein like reference characters refer to the same or similar parts throughout the several views, and in which:

Fig. 1 is an exploded view of my small building construction showing the various walls in perspective and in generally oriented position ready for assemblage;

Fig. 2 is a horizontal section taken through the medial area of my building in assembled condition;

Fig. 3 is a vertical section taken on the line 3—3 of Fig. 2; and

Fig. 4 is an enlarged detail segment of the junction between a side wall and the base wall, the view also showing the cam latch in locked position. The dotted line position of the side wall indicates angulation of the wall structures before rocking to locked position.

Referring now more particularly to the drawings, my small building construction contemplates a plurality of wall structures and more specifically a base wall or floor member 10, a side wall 11, a second side wall 12, an end rear wall 13 and another end or front wall 14, and a top wall or roof 15. All of these plurality of wall members may be constructed of a single sheet of durable material such as plywood and not requiring any pillars, columns or stud members for load-bearing qualities. The entire strength of my building construction is obtained from the wall structures themselves and from the structure at the junctions between the edges of the walls.

The base of floor 10 consists of a rectilinear sheet 16 which is provided with upstanding flanges 17 mounted peripherally of the edges 18 as shown in Fig. 1. The upstanding flange members 17 may be constructed of angle iron with the lower or base portion 19 secured peripherally of the upper face of sheet 16 by such means as screws 20 passing through the flange 19 as shown. The upstanding flange portions 17 are provided with openings or recesses 21 for a purpose to be described later in this specification. The base flanges 19 are provided with slots or openings 22 and the sheet or board 16 may likewise have a slotted cut forming a portion of the slot 22 in registry with the upper portion in the base flange 19. The base wall or floor 10 may be provided with skids 23 which are useful in transporting the building over snow and ice when it is used as a fish house during the winter.

Adapted to cooperate with the base member 10 are the upstanding side walls 11, 12, 13 and 14 and each of these walls may likewise be constructed of plywood or similar material and preferably in a single panel. The side walls 11 and 12 may be identical, and since the structure of side wall 12 is more clearly shown in Fig. 1, it will be described as typical of the two walls. Side wall 12 is rectilinear in shape, having a lower edge 24, a front vertical edge 25, a top edge 26 and a rear vertical edge 27. A rail member 28 is secured to the inner surface of the panel 12 in offset relation and depends below the lower edge 24 of the panel. The rail member 28 is preferably in parallel edge relation with the lower edge 24 of the panel 12 and forms an elongated straight groove 29 at the bottom corner as shown in Figs. 1 and 4. The rail member 28 is provided with prong means 30 which extend through the rail to form laterally extending pins as shown in Fig. 1 and more particularly with respect to the side wall 11 which is a counterpart of side wall 12. The prongs or pins 30 extend preferably at right angles from the inner face 31 of rail member 28 and are adapted to underlie the lower edge 24 of the side wall panel 11 or 12.

The prong or pin means 30 are adapted to cooperate with the holes or recesses 21 formed in the upstanding

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flange member 17 but it is to be understood that the juncture could have a reversal of the members so that the prong means could be secured to the inner face of upstanding flange 17 while the rail 31 could be provided with the cooperating holes or recesses. The inner face of rail 28, at the opposite side of the rail from the prong extensions 30, is provided with a pivotally mounted cam latch 32, the latch having an off-center mounting to a screw or other fastening means 33 which is adapted to be secured to the inside wall of rail 28. The cam member may be constructed of sheet metal and has an out-turned portion 34 which may be used for a thumb-engaging area to assist in actuating the cam member. The cam is adapted to cooperate with the slot 22 as will be hereinafter more fully described.

Also secured to the inside surface of wall members 11 and 12 are upstanding brace members 35 and 36 at the front and rear respectively of the panels. Each of the braces 35 is formed with a forwardly extending tongue 37 and each of the rearwardly formed braces 36 is likewise formed with an outwardly extending tongue 38. Toward the upper edge of the panels 11 and 12 is secured a top brace 39 in a parallel relation with the upper edge 26 and this upper brace is also provided with an outwardly extending tongue 40 as shown. The panel 11, as previously mentioned, can be identical to the panel or side wall 12 but in the instant disclosure of Fig. 1 is further provided with a window assembly 41. The window pane proper is disposed in an opening formed through the panel 11 and has a shutter member 42 which is adapted to completely cover the window and make the small building particularly adaptable as a dark house for fishing. The sheet 42 may be hinged at 43 to the panel 11 and adjustably secured by holding means 44 which in turn consists of a spring bracket 45 secured to the panel 11 and having a bent portion 46 at the outward end thereof to engage from the under portion an L-shaped rod 47 which is secured to sheet 42 by such means as staples 48.

The end walls or the rear and front paneled walls 13 and 14 are of similar form in their essential features but in the instant case the rear wall 13 is shorter than the front wall 14 so as to correspond to the pitch of the upper edges 26 of the side walls 11 and 12. The front wall or panel 14 is further provided with a door 49 which may be hingedly mounted at 50 to the front panel 14 as shown. Conventional door knob and latch mechanism is indicated generally at 51. Each of the end panels 13 and 14 is provided with a rail member 52 which is attached to the inner face of panel 13 much in the same manner as rails 28 were attached to the inner and lower faces of side walls 11 and 12. The end panel 13 has a similar lower edge 53, one side edge 54 and another side edge 55 as well as a top edge 56, all as shown in Figs. 1 and 3. The rail 52 is secured in offset and depending relation with the lower edge 53 and has prong means 57 which extend through the rail 52 and have outwardly extending pins disposed in a manner similar to that in the case of prongs 30 and the rail members 28. A manual cam latch 58 is likewise pivotally attached to the inner face 59 of rail member 52 and has the same pivotal fastener 60 and manual thumb-engaging portions 61 as previously noted. Along the side edges 54 and 55 are disposed a pair of braces 62 and 63, the braces being provided with grooves 64 and 65 respectively for forming a groove interconnection with the tongues 38 of the brace members 36 on the side walls 11 and 12. The front wall 14 is additionally provided with a horizontal and upwardly angulated brace member 66, the member being provided with a forward groove 67 as shown in Figs. 1 and 3. The end walls 13 and 14 are also provided with outer flange or angle members 68 and 69 at the edges 54 and 55 respectively. The flanges may be in the form of angle irons with a fixed flange at the outer

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face of panel 13 and a gripping flange extending in spaced relation to the side of the edges of the panels 13 and 14 so as to form a second groove for engaging the side edges 25 and 27 of each of the side walls 11 and 12.

The top wall or roof 15 is likewise formed of a sheet of material such as plywood and has side brace members 70 and 71 as shown, each of these brace members being provided with grooves 72 and 73 respectively. A depending brace 74 is secured to the forward edge of top wall 15 and is provided with a rearwardly extending tongue 75, as shown more particularly in Fig. 3. The rear portion of the top wall member 15 has a pair of brace members 76 and 77 which lie in spaced parallel relation and are adapted to receive in edgewise relation the top edge of rear panel 13. The top panel or roof 15 may likewise be equipped with angle iron members 78 and 79, each of the members being secured to the top surface thereof and having a depending flange portion lying in spaced relation with the side edges so as to overlie and grip the top edges of side walls 11 and 12. Fastening means may be provided for securing and locking the entire structure together and such means may take numerous forms such as the rope member 80 which is tied to the brace 77 and depends from the top wall 15 for latching to a stay 81 secured to some other portion of the structure such as the inside of rear wall 13.

In the use and operation of my small building construction, the base wall or floor 10 is positioned on firm footing with the flange members 17 extending upwardly as shown in Fig. 1. One of the side wall members 11 or 12 is then brought to position with the elongated straight groove 29 resting on the top edge of flange 17 in the angulation depicted by dotted line in Fig. 4. The wall is then rocked with the groove 29 in engagement with flange 17 so that the prong members 30 will enter and engage the holes or recesses 21, and the cam latch 32 will then overlie the slot 22 so that it may be rotated to lock the wall structures together as shown in the full line representation of Fig. 4. At this point, the structure is unstable with respect to the base 10 but nevertheless the side wall 11 will remain in upstanding position. The side wall 12 is then brought to the corresponding flange 17 at the opposite side of the structure and the previously noted procedure is repeated. Either of the end walls 13 or 14 is next brought to its corresponding upstanding flange 17 and also latched in position. It will be noted that the rail 59 which is attached to the end walls 13 and 14 is not coextensive with the full width of the panels since it must lie in abutting relation between rails 28 which are already in position in face-to-face relation with the upstanding flange 17. When the rear wall 13 and the front wall 14 are rotated up into position, the rail 59 will thus further lock and prevent dislocation of the wall members one from the other. The cam latch 58 is then operated to secure the end walls in position as shown in detail in Fig. 2. It will be noted that the flange or angle iron members 68 and 69 will overlie the edges of the side walls and will hold them in secure relation to further prevent dislocation of the walls.

With the structure thus far assembled, the top wall or roof 15 is brought to the forward brace member 66 of front wall 14 so that the groove 75 of the forward brace 74 will engage the groove 67 and the top wall is then swung downwardly so that the grooved rails 70, 71, 76 and 77 will all engage top edges of the remaining walls as shown in the sectional view of Fig. 3. The angle irons 78 and 79 will have their spaced depending flange portions in overlying engagement with the side walls and will thus completely lock and securely tie the structure together. To finish the securing of the wall structures, the rope member 80 may be tied to stay 81 and the structure is then completely assembled and ready to withstand violent weather conditions. The structure as illustrated has been applied to fish houses where two fishermen can comfortably sit within the structure, it being understood that an

opening would be formed through the floor or bottom wall 10 if it is desired to use the house for the purpose of spearing or otherwise directly fishing through a hole in the ice. The structure can be assembled in a matter of several minutes by one or two men and does not require any independent fastening means such as nails, bolts, screws and the like. Thus where the fingers of the operator are chilled, it is not necessary to do any detailed work which will require careful manipulation.

An important feature of the invention lies in the strength of the interlocking junctures and also the ease and simplicity with which the building may be constructed. Since the prong members rock easily into locked position and do not require sliding one surface against the other, it may be seen that the lack of lubrication or even the formation of ice along the junctures will not prevent the assembly and disassembly of the paneled structure. Furthermore, the leverage obtained by the long upstanding walls about the grooved contact at the bottom edges is such as to easily break loose any icy formation or any other corrosion which may tend to make the junctures stick together. For the purposes of transportation, the base or floor member 10 may be utilized as a sled or boat, the other wall members being supported upon the base and the runners utilized for pulling the entire assemblage of panels to the location where it is desired to construct the building.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportion of the various parts without departing from the scope of my invention.

What is claimed is:

1. A small building construction comprising, a rectangular base wall having an upstanding peripheral flange secured thereabout, a plurality of upstanding paneled side walls each having a bottom edge supported in mating relation upon said upstanding peripheral flange and each having a depending marginal rail lying in laterally offset relation with respect to the bottom edge, said rail abutting laterally the upstanding peripheral flange, each of said side walls further having a top edge and a pair of side edges and being releasably connected to a side edge of another side wall, a roof panel interlockably connected to the top edges of the respective side walls, and cooperative fastening means formed laterally on opposed abutting portions of said upstanding peripheral flange and each of the marginal rails, whereby in the disassembly of said building construction said roof may be removed from its interlocking connection with the top edges of the side walls and each of the walls then rocked on its bottom edge to separate its rail from the abutting peripheral flange and thereby to disengage the cooperative fastening means and to release the side edge connection.

2. In a dismountable building construction having a base, a plurality of upstanding panels and a roof, an improved cooperative edge junction between the base and each of said panels comprising, a rail offset outwardly

and laterally of an edge of each of said panels, said rail defining with the panel edge an elongated groove, an upstanding flange member secured peripherally about the base, said flange having a straight upper edge received in said elongated groove and supporting each upstanding panel, prong means secured to and extending outwardly from one of said rail and said flange members and directed toward the other, and recess means formed in the other of said rail and flange members receiving the prong means, each of said upstanding panels having separable side edge connection with an adjacent panel and having releasable engagement with the roof whereby the roof may be separated from the panels and the panels from each other, the cooperative edge junction being broken by rocking the panel about the upper edge of the flange to withdraw said prong means from the recess means.

3. The subject matter set forth in claim 2 and a latch mounted on each of said rails and extended downwardly into retractable engagement with the base to prevent rocking of the panel until said latch is retracted from the base.

4. A building construction comprising a horizontal base, a plurality of vertical wall-forming panels, each having an upper edge, a lower edge and a pair of side edges, said panels being releasably interconnected at their side edges, a roof releasably fastened to the upper edges of said panels, an offset rail secured marginally of each of said panels at the lower edge thereof and projecting therebeyond, an upstanding flange secured peripherally of said base and terminating upwardly in a horizontal edge, the lower edge of each panel defining a groove in which is received the horizontal edge of the flange and supporting the panel thereon, prong means secured to said offset rail and extending laterally beneath the lower edge of each panel, recess means in the upstanding flange receiving the prong means in mating relation, an extensible latch secured to each of said offset rails and directed downwardly toward the base, a cooperating latch receiving member formed in the base inwardly of the upstanding flange member, whereby in the disassembly of said building construction the roof may be removed from its releasable fastening to the upper edges of the panels, the extensible latch of each panel retracted from its cooperating latch and each panel then rocked on its bottom edge to separate the prong means from the recess means and hence permit each panel to be raised from its supported relation with said flange.

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