This invention relates to means for removably securing in place an inner lining of a demountable metal building structure of the type shown in my copending application Serial No. 445,545 on which Patent No. 2,832,445 issued April 29, 1958.

The building structure is based upon a number of posts 10 which receive outside panels 11 and 12 across the outer face, and from which panels interlaced flanges 13 and 14 enter a slot 15 in a post 10. These panels 11 and 12 are removably attached to the post 10 by latch members 16 and 17 which are rockably carried by the panels 11 and 12 and engage over the inside of the post 10. The invention contemplates the use of a building wall or a ceiling wherein such a wall type construction is employed. The invention is equally as well applied to a ceiling as it is to the side walls of this type of building.

It is the primary purpose of the invention to provide means for mounting and retaining inside wall panels generally of an insulating nature in such a manner that these inner panels will be securely held in place to provide a continuous ceiling or wall as the case may be and at the same time permit these panels to be removed when the building is to be disassembled.

A further important object of the invention is to provide means 112 means which will consist of a member integrally carried by either a post or by a ceiling cross member, and to which a yielding, frictional engaging device may be applied to in turn engage over the inside faces of the liner panels.

These and many other objects and advantages of the invention will become apparent to those versed in the art in the following description of one particular form, reference being made to the accompanying drawings, in which:

FIG. 1 is a detail in transverse horizontal section through a wall supporting post and embodying the invention;

FIG. 2 is a view in perspective of a fragmentary length of the inner panel retaining means;

FIG. 3 is a view in perspective of a ceiling supporting member; and

FIG. 4 is a view in sectional view through a ceiling supporting member to which the invention is applied.

Referring to the application of the present invention to the side wall, FIG. 1, there is a post 10 vertically disposed, and across the outer sides of which overlap adjacent panel end portions 11 and 12. From these end portions 11 and 12, there extend flanges 13 and 14 respectively into a slot 15 from the outer face of the post 10. These panels 11 and 12 are held in compressive engagement against the post 10 by any suitable means, such as by the latches 16 and 17 carried by the panels 11 and 12 respectively engaging over the inside face of the post 10.

To this structure is applied my present invention. Post 10 is provided with a rib 18 extending normally from the central portion of the inside face 19 of the post 10. This rib 18 tapers from a transverse width at the face 19 to a maximum width at the outer end 20. This taper is preferably on the order of a width of one-sixteenth of an inch at the face 19 to a width of one-eighth of an inch at the outer end 20. The opposite sides of the rib 18 are provided with corrugations 21. The extent of the rib 18 from the face 19 is made to be less than the maximum thickness of panels to be superimposed against the post 10. Normally this thickness would not exceed in any event five-eighths inch, and most generally a lesser thickness of panel would be employed. As indicated in FIG. 1, end portions 22 and 23 of panels 24 and 25 respectively are shown as being vertically disposed and lying against the overlapping portions of the latches 16 and 17 which interleave between the post face 19 and the back sides of the panels 24 and 25. Of course in some instances, the panels 24 and 25 may bear directly by their end portions 22 and 23 against the face 19. In any event, these panel ends 22 and 23 overlap the face 19 on respective sides of the central rib 18 which is understood to extend longitudinally the entire length of the inside of the post 10.

A securing member generally designated by the numeral 26, FIG. 2, is made to have a head 27 from which wings 28 and 29 extend laterally from spaced apart corrugated flanges 30 and 31 extending from the back side of the head 27. These flanges 30 and 31 are inclined one toward the other to have their free ends 32 and 33 in close proximity one with the other. The flanges 30 and 31 at least are made out of a spring-like metal so that they may be yieldingly spread apart.

This member 26 may be made in discrete lengths less than the height of the inside of the wall to be erected from panels 24 and 25, or may be made in a continuous length from a floor to a ceiling. In any event, the member 26 is entered over the ends of the panel portions 22 and 23 to have the flanges 30 and 31 straddle the rib 18 and pass downwardly on the outer sides thereof. The head 27 by means of its wings 28 and 29 is pressed firmly against the faces of the portions 22 and 23, FIG. 1, to have the flanges 30 and 31 engage along the corrugations 21 of the rib 18 and retain the wings 28 and 29 in compressive engagement against these portions 22 and 23 to in turn urge the end portions of the panels toward the face 19 of the post 10. By reason of the flanges 30 and 31 being inclined one toward the other toward their free ends, they are readily spread apart to pass over the outer portion of the rib 18, the widest portion, and then spring back over the corrugations so that the corrugations of the flanges 30 and 31 provided longitudinally thereof will engage firmly and snugly with the corrugations 21 of the rib. The corrugations plus the tapered effect of the rib 18 firmly retain the retaining member 26 and thus securely hold the inner panel members 24 and 25 snugly in place. By prying the member 26 outwardly, the members 24 and 25 can be released for removing them either for repairs or for replacement in case the building is to be demounted.

A similar structure is employed to hold panels 24 and 25, that is like panels, through their adjacent end portions 22 and 23 firmly against ceiling supporting members generally designated by the numeral 34 which may be a duplicate of the post 10 with the rib 18 downwardly, or as herein shown in FIG. 4, by the member 34 specifically which has a generally cross, transverse section with the rib 18 depending therefrom, extending downwardly centrally between the two side flanges 35 and 36, and from between which there is a rib 37 extending vertically. The vertical rib 37, while not herein shown as having other members attached thereto, serves very well for attaching members constituting a truss if so desired to support the member 34 across wide spans.

In any event, in the ceiling structure, FIG. 4, the same retaining member 26 is employed to have the wings 28 and 29 come up under the panel end portions 22 and 23 and urge them against the flanges 35 and 36 by means of the retainer flanges 30 and 31 engaging the rib 18 and entering corrugations extending longitudinally on each side of the rib 18.

In this manner, the end portions 22 and 23 are snugly
3 urged and retained against the undersides of the supporting member 34, specifically along the undersides of the flanges 35 and 36. Normally the supporting member 34 in the ceiling, and the post 10 in the side walls, would be spaced apart in each instance the more or less standard width of four feet of the panels 24 and 25 so that the extent of the panel between supporting members is relatively small. Therefore the retaining means 26 in conjunction with the tapered rib 18 is entirely adequate and sufficient to support the panels. In fact, the support may be had by employing smooth faced flanges 30 and 31 and smooth faced sides of the rib 18 so long as there is a taper in the rib 18 as above indicated. However to insure against accidental displacement, it is preferred that the corrugations be employed not only in the retaining member 26, but also on the respective sides of the rib 18.

While I have herein shown and described my invention in the one particular form, it is obvious that structural changes may be employed particularly in the shaping of the head of the retaining member 26 without departing from the spirit of the invention. As indicated in FIG. 2, the head 27 in this one specific form is made to have the wing sections formed of an underlapping section of the head metal proper designated by the numeral 40 and 41 being folded from the outer longitudinal edges of the head 27 and carried back inwardly thereunder, and from these metal portions 40 and 41 extend the flanges 30 and 31, all in an integral manner. Structural changes deviating from the description of the invention may be employed within the limitations of the following claim.

I claim:
A device for securing ends of panels to an intervening member comprising a rib extending longitudinally along said member and toward which said panel ends are directed; said rib having a truncated isosceles triangular cross-section with the base thereof spaced from said member; a plurality of closely spaced corrugations extending longitudinally along the sides of the rib; and a retainer engageable over said rib and comprising an elongated head, a pair of elongated elastic flanges carried by the head in spaced apart relation, said flanges extending from the head and inclined one toward the other to free ends in close proximity one with the other, and each of said flanges having longitudinal corrugations conforming to the corrugations along said rib sides; said retainer, when engaged over said rib, lapping along said rib sides with said flanges following the inclined sides of the ribs with said flange ends being spaced closer together than are the flanges at said head, and upon withdrawal of the retainer from said rib, the flange and rib corrugations causing the flanges to spread apart and snap one toward the other progressively resisting withdrawal by step by step increasing pressure grip of the flanges on the rib sides by reason of the spreading apart of the flange ends throughout the travel from those sides.

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