

[54] **RUNNER AND METHOD OF MAKING SAME**

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[22] Filed: Sept. 7, 1973

[21] Appl. No.: 395,325

[52] U.S. Cl.: 52/735; 52/242; 29/155 R

[51] Int. Cl.: E04C 3/30; B23P 17/00

[58] Field of Search: 52/238-243,
52/735, 290, 730-732, 481, 479, 508;
29/513, 155 R

[56] **References Cited**

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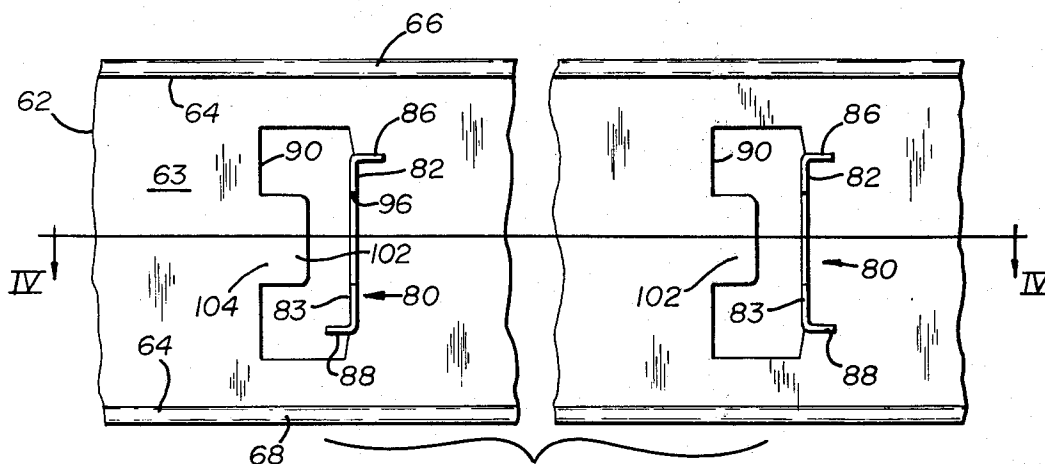
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[57] ABSTRACT

A runner for assembling wall panels into a wall, the runner having a web and a side flange, the inner panel support being provided by a support member disposed transverse of the web and spaced from the side flange.

13 Claims, 5 Drawing Figures



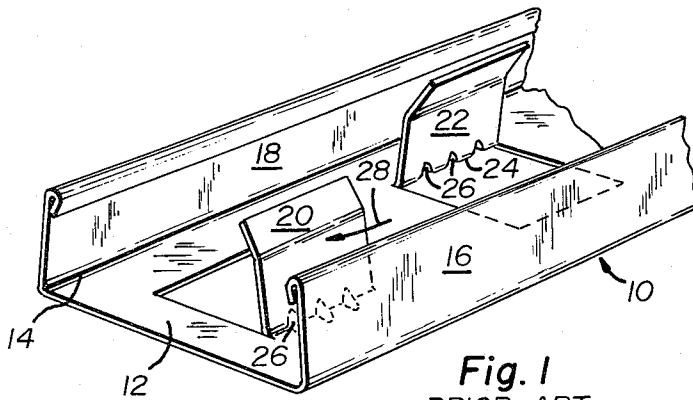


Fig. 1
PRIOR ART

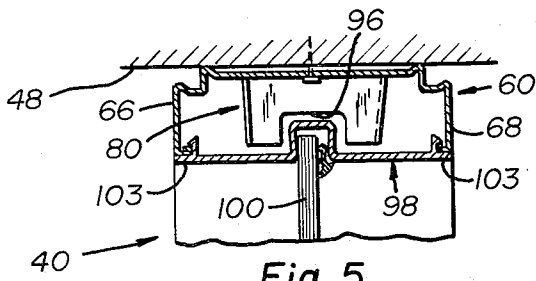


Fig. 5

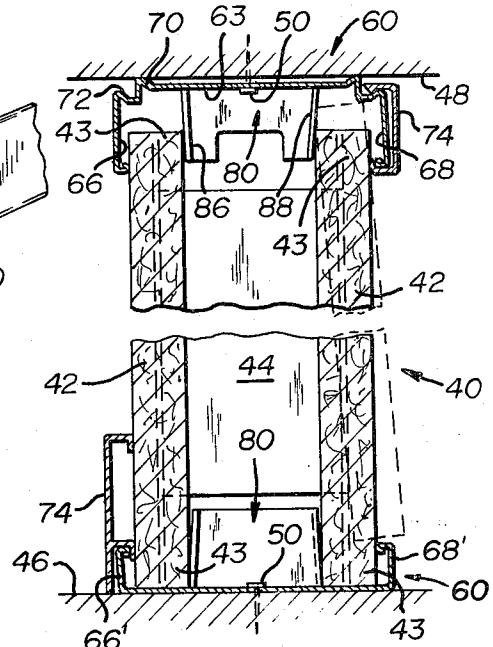


Fig. 2

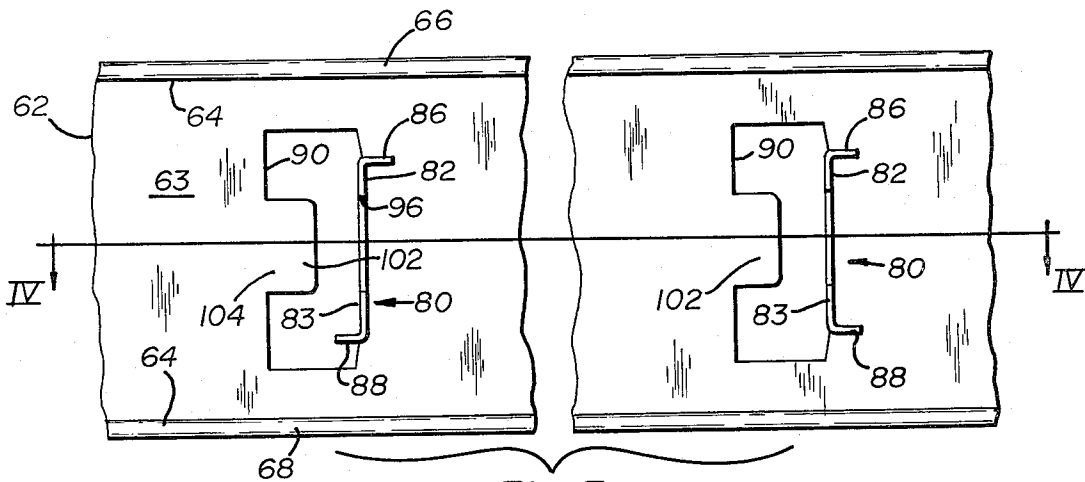


Fig. 3

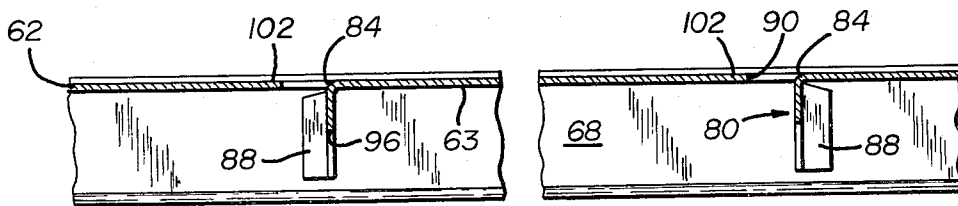


Fig. 4

RUNNER AND METHOD OF MAKING SAME

BACKGROUND OF THE INVENTION

In the assembly of wall panels to define a wall, it is conventional and in most cases, essential, to receive and retain the edges of the panels in elongate channel members called runners. Particularly this is true in constructions made from gypsum wallboard. The runners are secured to the floor and ceiling, thereby fixing the position of the wall with respect thereto. Such runners may have a variety of shapes, but invariably they require an inner panel supporting surface for each panel, and a side flange angularly depending from the runner exterior to the panel, to hide the irregular edges characteristic of such panels. For walls of the cavity type, which permit the storage of utilities and the use of two rows of wallboard each of which is decorated on only the exterior face, two rows of inner supporting surfaces and two side flanges are required.

The runners can be manufactured in a variety of ways and from a variety of materials. One of the most inexpensive is to roll-form metal sheets into the desired channel shape. However, a roll-formed runner for a cavity wall is difficult to form because of the need for the inner supporting surfaces. Thus, it may be shaped as shown, for example, in U.S. Pat. No. 2,909,251. Considerable amounts of metal are utilized in this construction, however, so that shapes utilizing less metal have a cost advantage.

A reduction in metal can be achieved by lancing the inner support surfaces out of the web which joins the two side flanges together. That is, the web need not be one solid piece the full length of the runner. Conventionally this has been done in the manner shown in FIG. 1, wherein the inner support surfaces are tabs bent out from the web along a longitudinal junction line, to a position extending generally parallel to the side flanges with which they cooperate to hold a panel edge. Such a construction, however, suffers from the lack of sufficient transverse support for the lanced tabs. The result is that, as the panels are pushed against the tabs during the mounting of the panels within the runners, the tabs tend to permanently bend inwardly back towards the web of the runner. Such deflection of the tabs results in a loose fit of the panels within the runner, which usually is an unacceptable condition. Even if the contractor is careful, in the erection of the panels, to minimize such bending of the tabs, the tabs still are subjected to repeated transverse forces resulting from blows delivered to the face of the panel during use.

Thus there is a need for a runner which can be formed by lancing techniques, to save metal, but which at the same time is structurally sound.

SUMMARY OF THE INVENTION

The invention relates to a runner for mounting wall panels in a wall and a method of making the same, which runner has a panel support member depending from the web characterized by its transverse position within the runner. Such a member not only has a superior resistance to transversely directed, panel-delivered forces, but it also permits the use of a lancing technique. More specifically, there is provided an elongate runner for receiving and retaining an edge of at least one wall panel disposed between a floor and a ceiling, the runner comprising an elongate web, at least one side flange depending angularly from the elongate web

along at least a portion of one side margin thereof, and at least one support member depending angularly from the elongate web, the support member being disposed generally transverse of the elongate web, the side margin of the support member nearest the one side flange being spaced therefrom by a distance sufficient to admit the edge of the wall panel to be retained between the side flange and the support member, whereby the support member provides resistance to transverse forces imposed upon the panel.

Accordingly, it is an object of the invention to provide a runner and an improved method of making the same, which has as the inner panel support member a portion which will adequately resist transversely directed forces delivered by the panels especially during the erection of the panels.

It is another object of the invention to provide such a runner by roll-forming and lancing techniques.

It is a related object of the invention to provide such a runner in inexpensive form.

Other objects and advantages will become apparent upon reference to the following brief description of the drawings and the detailed description of the embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a fragmentary perspective view of a runner constructed in accordance with the teachings of the prior art;

FIG. 2 is an elevational view in transverse section showing a runner constructed in accordance with the invention, and utilized in a wall assembly;

FIG. 3 is a plan view of the runner shown in FIG. 2, illustrating several forms of the invention;

FIG. 4 is a sectional view taken generally along the line IV—IV of FIG. 3; and

FIG. 5 is a fragmentary elevational view in transverse section similar to FIG. 2, but illustrating an additional feature of the runner.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The runner of the invention may be used in the assembly of any kind of wall panel to define any kind of wall fixed between floor and ceiling, but preferably it is intended for use with gypsum wallboards to define a cavity wall, the runner serving either as a ceiling runner, a floor runner, or both.

Heretofore, one conventional runner 10 has been formed so as to have the construction shown in FIG. 1. That is, a metal sheet was roll-formed so as to bend the side margins 14 of the web 12 so as to form side flanges 16 and 18, and thereafter the inner panel support members were formed by lancing out tabs 20 and 22 from the web. The lancing operation cut the tabs along three sides and bent the tabs along a longitudinally extending junction line 24. Corrugations 26 having a short projection above the web 12 were subsequently pressed into the junction line 24 to stiffen the flange. These, however, have been found to be insufficient to resist forces frequently transmitted in the direction of arrow 28 by the panels.

In accordance with the invention, the runner 60 is used to erect a wall 40 comprising, in addition, conventional wall panels 42 mounted at their horizontal edges 43 in the runners 60 to form two spaced apart rows. The panels are held therein by free-floating studs 44 of

the type, for example, disclosed in U.S. Pat. No. 3,732,657. The runner is anchored to the floor 46 and/or ceiling 48 by conventional means 50 such as screws or nails.

Turning now to FIGS. 3 and 4 in particular, the runner 60 has an elongate web 62 and a face surface 63 thereof, the side margins 64 of the web being provided with side flanges 66 and 68 angularly depending or projecting therefrom. As shown, the actual junction of the side flanges to the web is by a bent portion 70 which provides a shadow-creating shoulder 72 in the manner taught by copending U.S. application Ser. No. 263,351 filed on June 8, 1972, commonly owned with the instant application. This shoulder may cooperate with an optional trim element 74. However, the runner 60 may omit portion 70, particularly when used as shown as a floor runner. In that event side flanges 66' and 68' are directed immediately away from the face 63 in generally a single plane. The flanges 66' and 68' must be shorter than flanges 66 and 68 on the ceiling runner, to permit the panel to be lifted into position as shown in phantom. Optionally, a base 74 can be mounted over either flange 66' or 68' if a greater height is desired.

In accordance with one aspect of the invention, the inner support of the panels is provided by support member or rib 80, joined to and projecting from the face 63 of the web 62. Member 80 is provided with opposed faces 82 and 83, and is disposed transversely to the web along a transversely extending junction or fold line 84 (FIG. 4). The side margins 86 and 88 of the support member 80 may be bent to form flange portions which project a short distance longitudinally along the runner. These flange portions provide greater longitudinal support than is provided by a mere edge. However, if the panels are inserted into the runners without the necessity for significant longitudinal movements, either or both flange portions 86 and 88 can be omitted. It will be readily appreciated that the flange portions 86 and 88 are spaced from the adjacent side flanges 66 and 68, respectively, by a distance which is sufficient to admit the edges 43 of the panel therebetween, thus retaining the panel as shown in FIG. 2.

To insure unimpeded sliding movement of the panels within the runner, as is often necessary in the assembly of the wall, each of the flange portions 86 and 88 preferably is formed so as to project in only one direction from face 82 or 83 of the support member 80, rather than in both. Thus, a panel slid in the direction in which the flange portion projects, will not be impeded or even impaled by the flange portion. Instead it will cam against the junction of the flange portion with the rest of the support member, and with little effort, move on. As shown on the right-hand sides of FIGS. 3 and 4, flange portion 88 may project the same direction as flange portion 86. Or as shown on the left-hand side, it may project in the opposite direction, requiring panels supported by it to be slid in that same opposite direction.

The method of making the runner 60, in addition to that already apparent from the above description, proceeds in the following manner. A metal sheet is conventionally rolled so as to bend the side flanges 66 and 68. The panel support member 80 is formed by lancing it out of the web, forming an adjacent aperture or cut-out 90, the support member being bent away from face 63 along fold line 84. During or subsequent to that bending step, flange portions 86 and 88 are bent in the de-

sired longitudinal direction. Thus, it will be apparent that the area of the cut-out equals the sum of the surface areas of one face of the support member 80 and of one face of the flange portions 86 and 88.

As particularly shown in FIG. 5, support member 80 may be provided with an optional notch 96 which is preferably centered between the runner side flanges 66 and 68. The notch performs two functions: It accommodates a snap-in glazing cover 98 optionally used to mount glass 100 in the wall 40, and it leaves in the web (FIG. 3) a tab 102. The cover 98 is preferably supported at its edges 103 by the side flanges 66 and 68. The tab 102 is useful as the place of attachment of the runner, if it is attached to the floor or ceiling with a resilient or deformable layer inbetween. As explained in my copending application Ser. No. 273,726 filed July 21, 1972, the attachment of a conventional runner to other than a rigid surface will result in the undesired deformation and warping of the runner, unless the point of attachment is isolated at least in part from the rest of the runner. Cut-out 90 serves to isolate the tab 102, except for its integral junction with the web at end 104 thereof.

Although the invention has been described by reference to certain preferred embodiments, it is not intended that it be limited thereto. For example, an aperture can be provided along the fold line 84 so that member 80 is joined to the web along only a portion of the length of the member 80, rather than substantially the full length as shown. Thus, it is intended that the invention include alternate arrangements, equivalents, and embodiments as may be covered by the scope of the following claims.

What is claimed is:

1. An elongate runner for receiving and retaining an edge of at least one wall panel disposed between a floor and a ceiling, said wall panel having a front surface and a back surface and a panel thickness defined by the distance between the front and back surfaces, and said runner comprising

an elongate web,

at least one side flange depending angularly from said elongate web along at least a portion of one side margin thereof, and

at least one support member depending angularly from said elongate web, said member being disposed generally transverse of said elongate web, the side margin of said support member nearest said one side flange being spaced therefrom by a distance substantially equal to the thickness of the wall panel to be retained between said side flange and said support member, whereby said support member provides resistance to transverse forces imposed upon said panel.

2. The runner as defined in claim 1, and further including in said web a securing tab isolated from the rest of the web except for end end of the tab integrally joined to the web.

3. The runner as defined in claim 1, and further including a notch in said support member located between the marginal portions of the runner, for the accommodation of a snap-in glazing cover supported in part by said side flange.

4. The runner as defined in claim 1, wherein at least one of said support member side margins comprises a flange portion disposed so as to project longitudinally along a portion of the runner.

5. The runner as defined in claim 4, wherein said flange portion is joined to said support member along one edge of the flange portion, whereby it projects in only one direction from said support member and will not impede a panel slid in that direction.

6. The runner as defined in claim 4, wherein the height of said support member and the height of said flange portion are substantially the same at their junction.

7. The runner as defined in claim 4, and further including a second side flange depending angularly from the web along at least a portion of the other side margin thereof, and a second flange portion joined to the opposite side margin of said support member, disposed so as to project longitudinally along a portion of the runner and spaced from said second side flange, whereby said support member is provided with a pair of panel-supporting surfaces.

8. The runner as defined in claim 7, wherein said support member and said flange portions are lanced out of said web; said web having a cut-out the area of which equals the surface area of one face of said support member plus the surface area of one face of both of said flange portions.

9. The runner as defined in claim 8, wherein said support member and said flange portions are joined to said web along a substantial portion of their lengths.

10. The runner as defined in claim 7, wherein each of said flange portions is joined to said support member along one edge of the flange portion, whereby each flange portion projects in only one direction from said

support member and will not impede a panel slid in that direction.

11. The runner as defined in claim 10, wherein said flange portions both project in the same direction and from the same face of the support member.

12. In a method of manufacturing a runner having a web, a side flange, and a panel support member, the method including the steps of

rolling a metal sheet to form an elongate web and at least one side flange depending angularly from said elongate web along at least a portion of one side margin thereof, and

lancing the support member out of the web;

the improvement comprising the steps of cutting the support member so as to retain an uncut fold line extending generally transverse of the web, and thereafter bending the support member along the fold line so as to dispose a substantial portion of the support member generally transverse of the web with the side margin of said support member nearest said side flange being spaced therefrom by a distance substantially equal to the thickness of a wall panel to be retained between said side flange and said panel support member.

13. The improved method as defined in claim 12, and further including the step of bending at least one side margin of the support member so as to form a flange portion projecting at least a short distance longitudinally of the runner.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 3,908,328

DATED : Sept. 30, 1975

INVENTOR(S) : Nels Nelsson

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Claim 2, Column 4, Line 57 "end", first occurrence, should read --an--.

Signed and Sealed this

twenty-third Day of March 1976

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks