United States Patent [19] [11] **3,893,269**
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[54] **CURBED WALLS COMPRISING PAIRS OF PLANAR PANELS AND STUDS THEREFORE**

[75] Inventors: **Nels Nelsson**, Des Plaines; **Alan C. Wendt**, Barrington, both of Ill.

[73] Assignee: **United States Gypsum Company**, Chicago, Ill.

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[52] **U.S. Cl.** **52/65**; 16/139; 52/70; 52/71; 52/245; 52/277; 52/282; 52/285; 52/488; 52/496; 52/586; 52/729; 52/731

[51] **Int. Cl.** **E04b 1/344**; E04b 2/32; E04b 2/78; E04b 2/82

[58] **Field of Search** 52/245, 277, 71, 278, 70, 52/65, 482, 285, 488, 281, 492, 280, 494, 496, 495, 624, 586, 282, 729, 731; 16/139, 146, 143, 137

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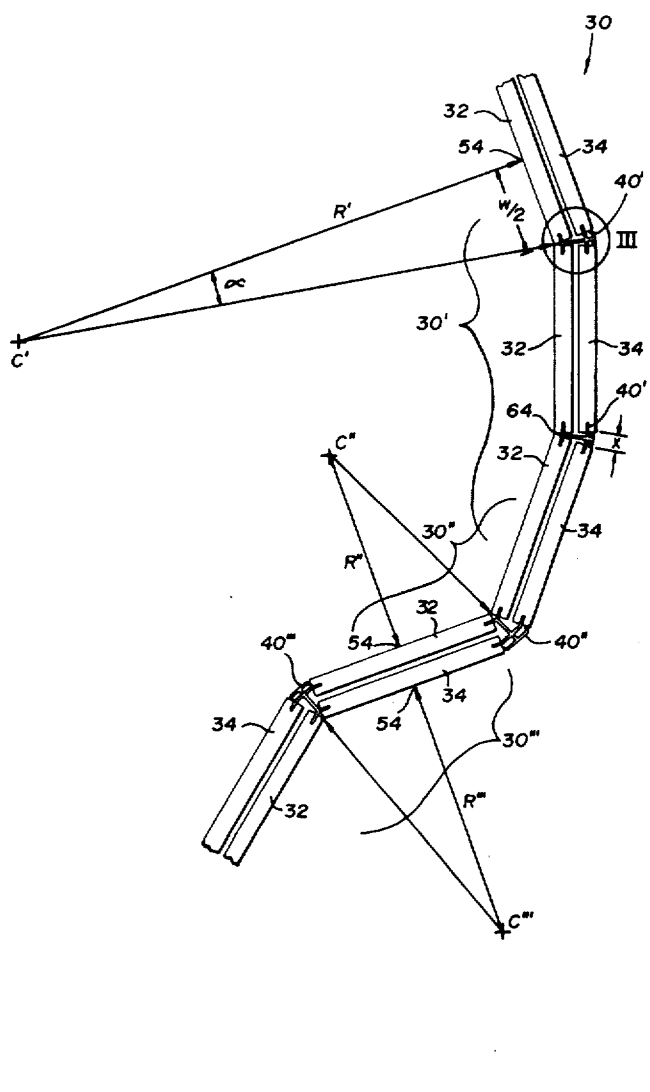
Primary Examiner—Frank L. Abbott
Assistant Examiner—Leslie A. Braun
Attorney, Agent, or Firm—Samuel Kurlandsky, Esq.; Kenneth E. Roberts, Esq.; Stanton T. Hadley, Esq.

[57] **ABSTRACT**

A curved wall formed from generally circular segments comprising planar panels non-colinearly mounted by studs having side flanges interengaging the edges of the panels, and means contacting the edges but not the face of the panels, for preventing improper convergence of the panels.

25 Claims, 7 Drawing Figures



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SHEET 1

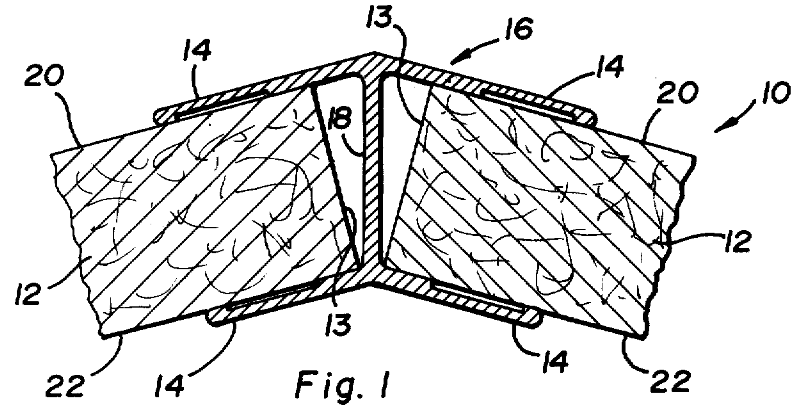

Fig. 1
Prior Art

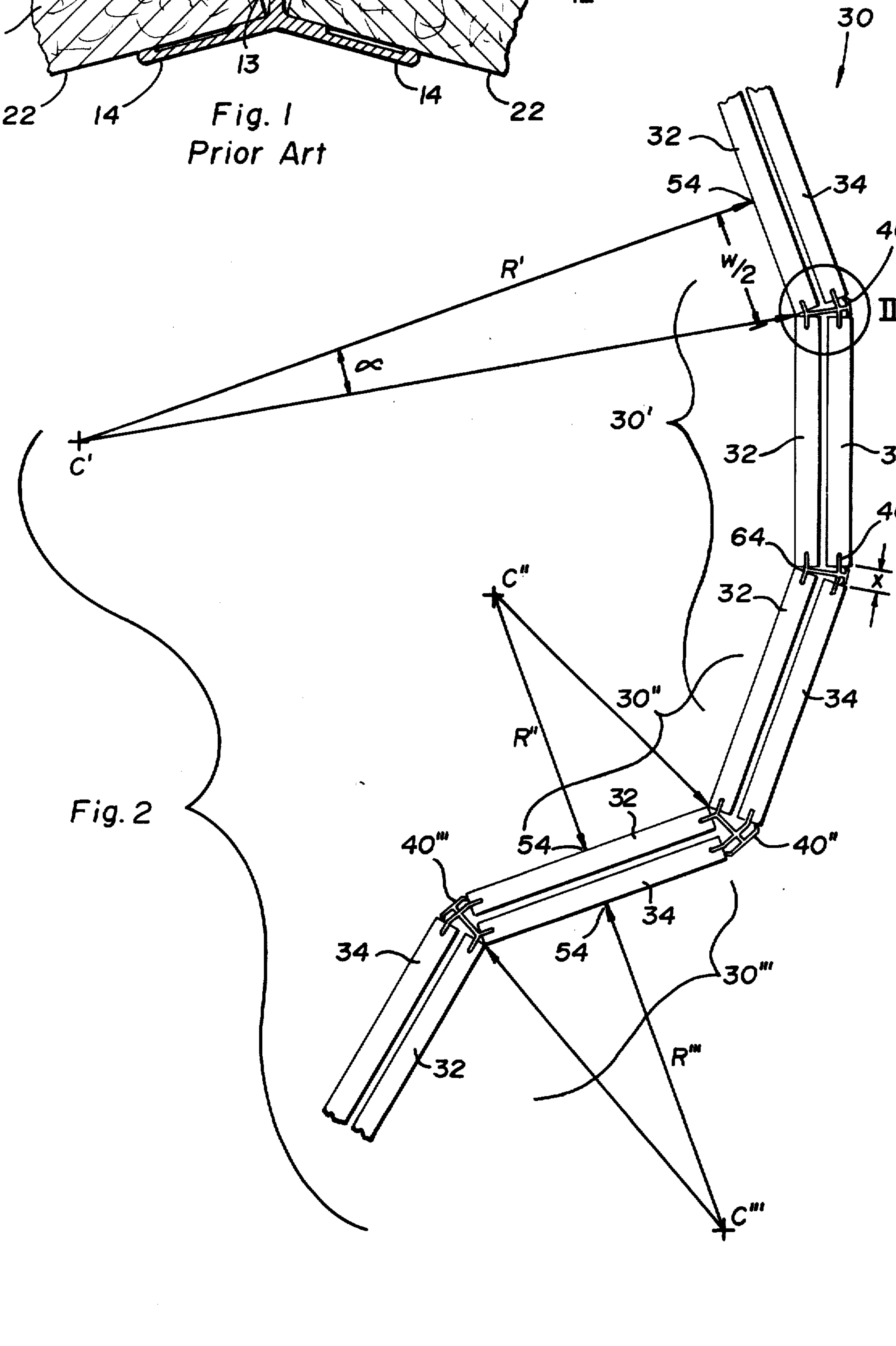

Fig. 2

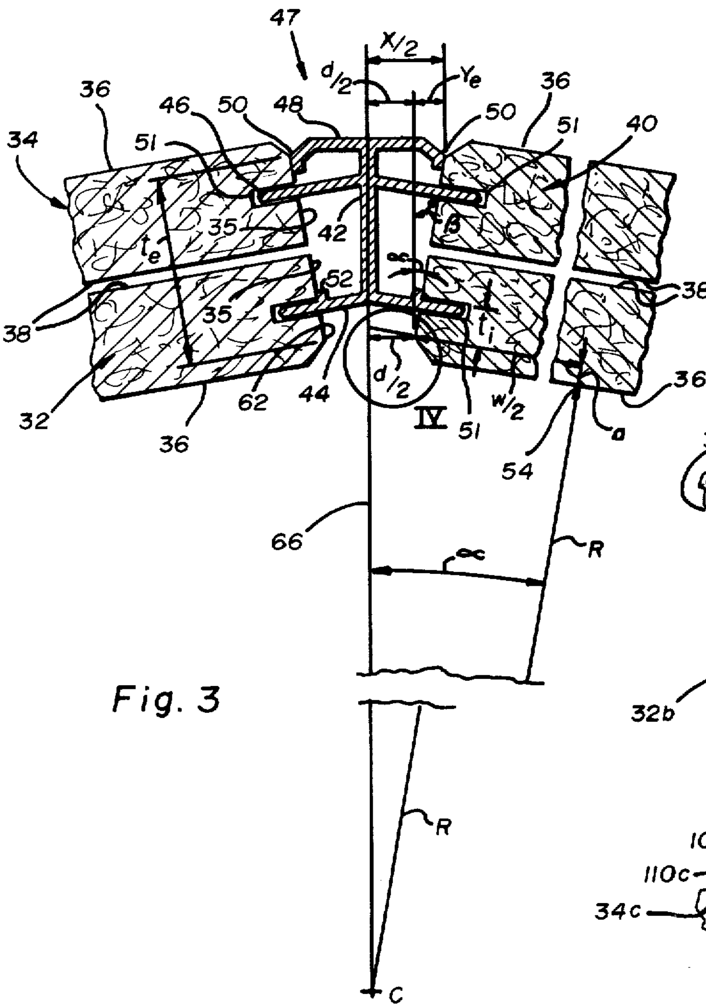

Fig. 3

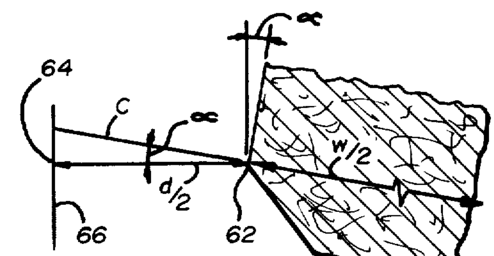

Fig. 4

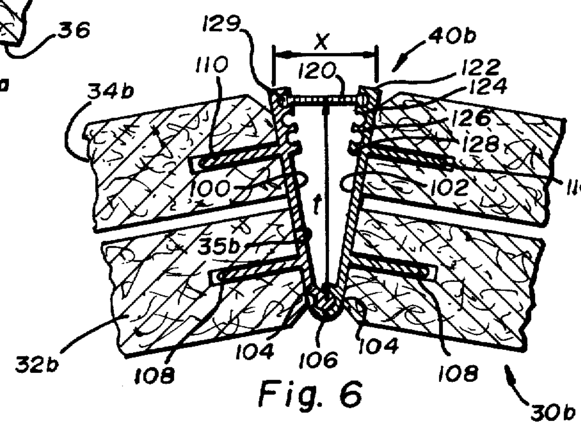

Fig. 6

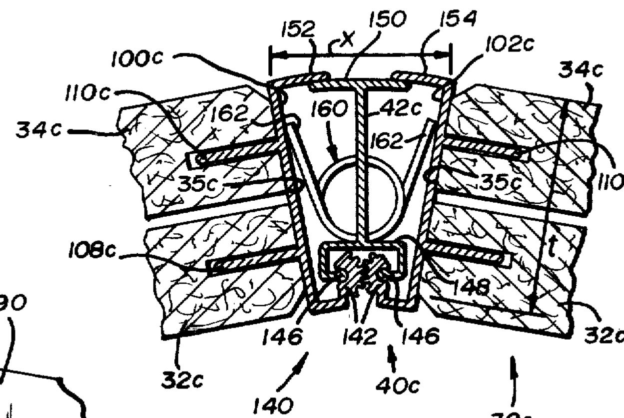

Fig. 7

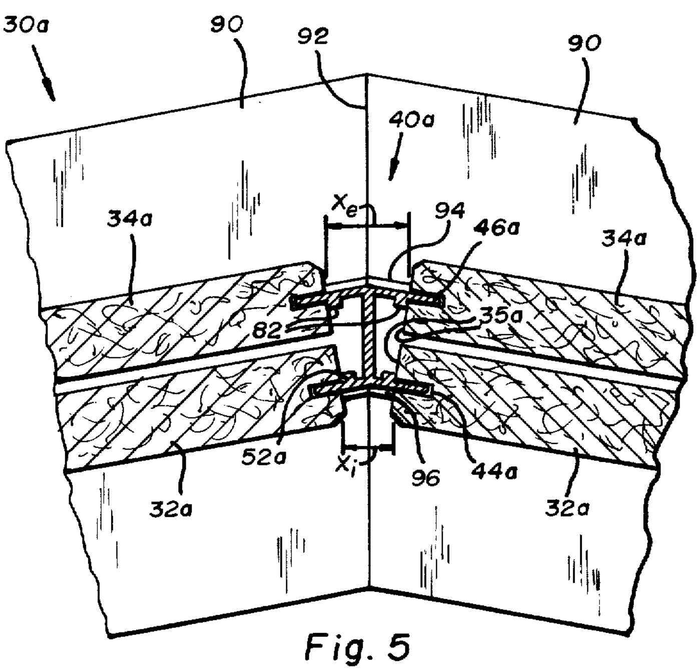

Fig. 5

CURBED WALLS COMPRISING PAIRS OF PLANAR PANELS AND STUDS THEREFORE

BACKGROUND OF THE INVENTION

In the construction of walls from planar gypsum wallboard panels, it is conventional to mount the panels in ceiling and floor runners by the use of studs of one type or another. Preferably these are hidden, floating studs, such as shown in U.S. Pat. No. 3,027,605, which interengage with the panels by a tongue-and-groove fit between flanges on the studs and kerfs in the edges of the panels. Heretofore, such panels generally have been mounted either linearly or orthogonally. No hidden stud has been taught which would permit an angle between 0° and 90°, and still cover uniformly the gap between the panels. That is, one of the main advantages of kerf-engaged panels is the fact that the joints are rendered inconspicuous, creating the appearance of a monoliithic surface. Exposure of the stud is so unattractive esthetically that the amount not hidden, if any, must be minimized.

Studs of a different type have been provided which will permit the non-colinear positioning of panels to approximate a circular wall segment. One example is shown in U.S. Pat. No. 3,349,533. However, the disadvantage of this type of stud is that it does not interengage with a kerf, but instead surrounds the complete edge, thus exposing to view a very substantial stud segment. Furthermore, for each change in the radii of curvature of the wall segment, or a change in panel thickness, an entirely new stud must be provided. Such different stud sizes result in the stockpiling of a great variety of different studs, eacn of which is of limited use.

Still another problem is that such a stud cannot accommodate more than one panel defining the thickness. This problem is particularly acute for partitions made from gypsum panels or wallboard, inasmuch as such panels conventionally have only one face, the front face, decoratively treated. Most partitions, such as landscape partitions temporarily dividing up large rooms by sections less than ceiling height, must have both exposed faces attractively decorated. For gypsum panels, this requires a pair in each section with the undecorated faces adjacent to each other. It will be readily appreciated that the use of paired gypsum panels to define each portion or section of a curved wall creates a special geometric problem if standard widths are to be used for both members of the pair. That is, unless each of the panels in the pair is properly positioned, the chord of the circle defined by the outer panel will not be centered within the arc of the chord defined by the inner panel. None of the "circular" partitions heretofore provided have dealt with this problem.

In the field of landscape partitions, adjustable piano hinges have been used to permit panel angles between 0° and 180°. However, these are screw-attached to the edge of the panels, and the entire gap between the hinge has been completely exposed. Not only is such a gap unattractive because of the appearance of the screws, by reason of its converge it is difficult to keep clean. Still other constructions, of which U.S. Pat. No. 3,592,289 is one example, use flexible hinges connected to the exposed faces of the frames of the panel. Although the hinge covers the gap, this has the same disadvantage as noted above concerning the type of structure exemplified by U.S. Pat. No. 3,349,533. That is, this construction exposes the entire hinge and thus destroys the appearance of a monolithic wall. Thus there is a need for a hinged wall segment particularly suited to gypsum panels which covers the gap at the hinge with a minimum of exposure of the hinge.

SUMMARY OF THE INVENTION

The invention concerns a generally circular wall segment for a landscape partition or a complete wall, comprising non-colinearly positioned wallboard panels and studs mounting the panels by kerf engagement of flanges of the studs, the gap between panels being covered by means which extend into contact only with the kerfed edges of the panels, and not the front or back face surfaces thereof. More specifically, there is provided studs and a generally circular wall segment comprising planar panels non-colinearly positioned to approximate a circle; each panel having a front surface and an edge surface; the studs each being positioned between two adjacent ones of said panels at their adjacent edges and interengaging the same; each of the studs being further characterized by side flanges each having means for interengaging kerfs in the adjacent panel edge surfaces; stop means for separating said adjacent edge surfaces a distance x defined by the equation:

$$x = d + t(w \cos \alpha + d)/(R+a)$$

where w = the width of the panels, t = the thickness of the wall measured from the interior point of contact of two adjacent interengaged panels if translated into contiguous positions, to the point of measurement of the distance x, R = the radius of curvature measured from the center of curvature of the wall segment to the midpoint of the interior surface of the wall segment, d = the distance, if any, the interior points of contact of said panels are actually spaced apart in the wall as assembled, a = the depth of the chamfer, if any, of the panel surface defining said interior surface, and α = the angle between R and a line extending from the center of curvature through the midpoint of the separation between said adjacent edge surfaces; and covering means adjacent the convex surface of the wall segment for covering the gap between adjacent panels. Optionally, the studs may further include means for altering the angular positioning of the kerf-interengaging means at one edge surface with respect to the kerf-interengaging means at the adjacent edge surface. This in turn requires means for altering either the width x or the thickness t. Preferably, each section of the wall segment is formed by a pair of panels, in which case the studs are provided with stop means for locating the edge surfaces of each pair in a common plane, which plane is angled with respect to the center of the stud the same amount as the plane of the edge surfaces of the next adjacent pair of panels.

Accordingly, it is an object of the invention to provide a wall segment particularly suited for gypsum panels, approximating a circular shape, and kerf-engaging studs therefor, which expose a minimum of stud surface exterior to the wall.

Another object of the invention is to provide such a wall segment wherein each portion is formed from paired panels of equal widths.

It is a related object of the invention to provide such a wall segment and studs wherein the studs have means for covering the gap and for abutting the adjacent panel edge surfaces without covering the front or back face surface of the panels.

It is another object of the invention to provide such a wall segment and studs therfor which are readily adjustable to accommodate variations in the radii of curvature of the wall segment.

It is yet another related object of the invention to provide such a wall segment wherein the number of different stud configurations required for variations in wall dimensions is minimized.

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

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a fragmentary plan view in section of a circular wall segment constructed in accordance with the prior art;

FIG. **2** is a partially schematic plan view of a wall segment constructed in accordance with the invention, illustrating several sizes of the stud used therein;

FIG. **3** is an enlarged fragment, in section, of a wall similar to that shown in FIG. **2**, modified to show a more generalized condition;

FIG. **4** is an enlarged fragment, in section, of the fragment shown in FIG. **3**;

FIG. **5** is a fragmentary plan view in section similar to FIG. **3**, but illustrating another embodiment of the invention; and

FIGS. **6–7** are fragmentary plan views in section similar to FIG. **3** but illustrating still other embodiments of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The invention concerns partitions arranged so as to form a generally circular wall or wall segment, assembled from planar panels. It will be apparent that curvature must be obtained from the means connecting such planar panels. As such, the wall or wall segment may extend the full height from floor to ceiling, being held there by conventional floor and ceiling runner track, or it may be a so-called landscape partition extending less than full height. In both cases, both faces of the wall are decorated.

Turning now to FIG. **1**, there is illustrated one mode of assembly provided heretofore to achieve a circular wall **10**. Single panels **12** are mounted so that their vertical edges **13** telescope or fit between the flanges **14** of a stud **16**, the flanges being non-orthogonally inclined to the center web **18** of the stud so as to obtain the prescribed fixed curvature of the wall. Since both surfaces **20** and **22** of the panels must be decorated, it is difficult to use conventional gypsum wallboard as the panels. Furthermore, flanges **14** extend well beyond the vertical edges **13**, thus destroying the appearance of a monolithic, unbroken wall surface.

Turning now to FIG. **2**, in accordance with one aspect of the invention, a curved wall **30** comprising generally circular segments **30'**, **30''**, and **30'''**, is assembled by mounting paired panels **32** and **34** held in a proper angular relationship to adjacent panels **32** and **34**, respectively, by studs **40'**, **40''**, and **40'''** interengaged with the vertical edge surfaces **35** of the panels (FIG. **3**). Each segment **30'**, **30''**, and **30'''** has its own radius of curvature R and center of curvature C identified by the corresponding prime. As is readily apparent from the drawing and as explained more fully hereafter, a different sized or angled stud **40** must be used in each of the three segments.

A pair of panels **32, 34** defines one section of the wall segments. Each of the paired panels has a decorated face surface **36** and an undecorated back surface **38,** positioned with the back surfaces adjacent. As such, the panels may be gypsum wallboard, but although the description hereafter shall be limited to such, other panels may also be used.

Panels such as gypsum wallboard come in conventional or standard widths, and it is thus essential that each panel of any pair be positioned so that the sectors of the circle of which each panel is a chord are concentric, one centered within the other. Otherwise, the radius of curvature cannot be maintained and/or the panels **32** (and **34**, segment **30'''**) cannot abut each other at their vertical edges. To accomplish this, the vertical edge surface **35** of paired panels **32** and **34** must be coplanar. This relationship in turn defines the geometry of the studs which must mount the panels in the manner stated. As shown in FIGS. **2** and **3**, the studs **40** comprise a center web portion **42**, paired side flanges **44** and **46** each pair of which extends from an opposite side of portion **42** at a non-orthogonal angle thereto, cover means **48** adjacent to the panel surfaces **36**, and stops **50** for separating or preventing convergence of panels **34**. The side flanges conventionally interengage with the panels at kerfs **51**. As best seen in FIG. **3**, in the embodiment illustrated, the gap cover and the stops are all formed and provided by flange **47** extending from the web portion **42** generally perpendicular thereto, at the edge of the portion **42** opposite to the edge from which flanges **44** extend. Flanges **44** also have stop ridges or ribs **52** extending perpendicularly therefrom towards flanges **46.** Ribs **52** are not needed (FIG. **2**) if adjacent panels **32** actually contact. The resulting construction provides stop means on the stud for locating the vertical edge surfaces of the paired panels in a common plane inclined at an angle alpha from the center web portion **42.** The stop means on the opposite side of the stud locates the paired panels on the opposite side in a common plane at an angle to the web portion **42** which is substantially equal to the angle alpha.

Of the parts of the stud thus enumerated, flange **47,** ribs **52** (if any), and the angle of the side flanges **44** and **46** to the center web portion are controlled by the geometry of the wall segment. FIGS. **3** and **4** best illustrate the geometry, for a wall segment identical to that shown in FIG. **2,** except that the segment has been generalized by translating panels **32** apart a distance such that each of the corners **62** thereof is spaced from the imaginary interior point of contact **64** which would exist if the corners were contiguous, by a distance $d/2$. This distance also appears in the separation of panels **34.** To achieve the proper positioning of paired panels **32** and **34,** it is essential that the width of flange **47** and the distance between the exterior surfaces of ribs **52,** be defined by the value of the radius of curvature and of the angle alpha. Angle alpha is defined by the radius of curvature drawn to the midpoint **54** of the interior surface of the wall segment, namely surface **36,** and a line extending from the center of curvature through point **64,** here identified as line **66.** Thus, let x be the distance either panels **32** or panels **34** must be separated by either flange 47 measured from stops 50, or the stop ridges 52. Then,

$$x/2 = d/2 + y, \quad (1)$$

for y = the distance the vertical edge surface 35 is separated by the stop means 50 (y_e) or rib 52 (y_i), from a plane parallel to the plane of web portion 42. As will be seen from trigononmetric relationships, for w = the width of the panels, t = the thickness of the wall measured from corners 62 to the point of contact with either stop means 50 (t_e) or rib 52 (t_i) and a = the amount of chamfer of corners 62 measured parallel to vertical edge surfaces 35, then

$$y/t = \sin\alpha = \cos\alpha \cdot \tan\alpha \quad (2)$$

But,

$$(w/2 + ( ))/(R + a) = \tan\alpha \quad (3)$$

Therefore,

$$y/t \cos\alpha = (w/2 + c)/(R + a) \quad (4)$$

$$d/2c = \cos\alpha, \text{ or} \quad (5)$$

$$d = 2c \cos\alpha. \quad (6)$$

By substitution and simplification,

$$y/t = (w \cos\alpha + d)/2(R + a) \text{ or} \quad (7)$$

$$y = (t/2)(w \cos\alpha + d)/(R + a). \quad (8)$$

Substituting Equation No. 8 into Equation No. 1,

$$x = d + t\,(w \cos\alpha + d)/(R + a). \quad (9)$$

It will be apparent that Equation No. 7 applies with equal force to the more specific condition exemplified by FIG. 2, wherein $d = 0$ as points 62 have been translated into contact. For this condition, the equation simplifies to

$$x = tw \cos\alpha/(R + a). \quad (10)$$

For panels 32 and 34 having a width of 24 inches and a chamfer a of 3/32 of an inch, x measured for flange 47 becomes equal to $24t \cos\alpha/(R + 3/32)$.

The remaining feature of the stud controlled by the geometry is the value of the angle beta at which the side flanges 44 and 46 project from web portion 42. That value will be seen to be

$$B = 90° - \alpha. \quad (11)$$

Other details of the wall, not shown, are conventional and readily apparent to one skilled in the art. Thus for a full wall, the studs 40 extend inbetween the side flanges of both ceiling and floor runners (not shown), so as to completely span the space between them. The cross section of the stud remains the same throughout its entire length.

The resulting wall built from segments 30′, 30″, and 30‴ is characterized by a covering flange 47, functioning also as a stop preventing further improper approach of adjacent panels 34, which hides the gap at the joint without protruding out over the face or front surface of the panels. The wall readily accommodates a reverse curve, as shown by segment 30‴, wherein panel 34 is adjacent to panel 32.

Turning now to FIG. 5, there is illustrated an alternate embodiment, particularly as a landscape partition, wherein both panel stop means comprise ribs on both of the side flanges. Parts similar to those previously described bear the same reference numerals to which the distinguishing suffix a has been added. Thus, wall segment 30a comprises paired panels 32a and 34a positioned with panels 32a adjacent, and panels 34a adjacent, at their vertical edge surfaces 35a. Stud 40a mounts each pair of panels 32a, 34a with surfaces 35a coplanar and with the adjacent panels the proper distance apart, by means of side flanges 44a and 46a. As in the embodiment of FIG. 3, flanges 44a are provided with stop ribs 52a. However, stud 40a differs in that flange 47 has been eliminated. In its place, stop ribs 82 project perpendicularly from flanges 46a, towards ribs 52a. Flanges 46a thus constitute the cover for the gap at the joint, as well as the means mounting the stop ribs and the panels 34a. The distances x_e, for the exterior, and x_i, for the interior are determined by the equations set forth above, as is the angle of projection of flanges 44a and 46a from the web portion 42a. As landscape partitions conventionally include a base, bases 90 are shown having intersection edges 92 coplanar with the web portion 42a. The panels may be conventionally mounted within the bases by structure not shown, or the stud 40a may telescope into shoulders 94 and 96 formed as part of the base. Base 90 may be omitted if stud 40a is used in a full height wall.

FIGS. 6 and 7 illustrate still other embodiments wherein the side flanges have been rendered rotatable or angularly adjustable, whereby the radius of curvature and the angle alpha may be varied while using the same stud. Parts similar to those previously described bear the same reference numeral, to which the distinguishing suffixes b and c, respectively, have been added.

Turning first to FIG. 6, wall segment 30b features paired planar panels 32b and 34b mounted by a stud 40b having side flanges interengaging the panels at the kerfed edges 35b of the latter so as to space the panels the proper distance apart with edges 35b of each pair of panels being coplanar. Unlike the previous embodiments, however, the side flanges comprise portions 100 and 102 hinged together at their interior edges 104 by a simple bulb and socket hinge 106, each portion having kerf-engaging flanges 108 and 110 extending perpendicularly therefrom. This construction has the advantage of automatically insuring the coplanar mounting of the edges of the paired panels, and of providing several alternative radii of curvature. To form the stop, and thus the distance x of the gap, a flat cover member **120** releasibly attaches to the portions **100** and **102** by appropriate means. As shown, that means comprises a plurality of ribs **122, 124, 126,** and **128** located on the surfaces of portions **100** and **102,** adjacent to their edges opposite to edge **104,** projecting generally perpendicularly therefrom so as to face each other. The ribs are preferably shaped so as to form curved grooves inbetween them, and member **120** is provided with bulbed edges **129** complementary shaped to releasibly snap into position within the grooves. By altering the groove into which the cover member is positioned, it will be readily apparent that the value of t in Equation No. **7** above will change, while the value of x measured as the width of member **120** plus the thickness of the portions **100, 102,** will remain constant. That is, this in turn will alter the value of R and angle alpha. Thus, if the member **120** is moved inwardly, angle alpha increases and R decreases, by amounts readily calculable from the above equations.

It will be readily apparent that other attachment means (not shown) for cover member **120** can be provided. For example, the blub projections could be mounted on the interior surface of portions **100** and **102,** and the edges of the member **120** could be grooved to snap over the bulbs.

The embodiment of FIG. **6** is limited in that only three different radii of curvature can be provided by the same stud. However, FIG. **7** illustrates a stud wherein the radius of curvature of the wall segment **30***c* is continuously variable. That is, paired panels **32***c* and **34***c* are interengaged by flanges **108***c* and **110***c* at edges **35***c*, these flanges projecting generally perpendicularly from side flanges **100***c* and **102***c* which abut the edges **35***c*, as in the previous embodiment. However, a center web portion **42***c* is reintroduced in this embodiment, and a continuous hinge **140** rotatably mounts the side flanges for continuous angular adjustment with respect to the center web portion and with respect to each other. The hinge is of the type disclosed in U.S. Pat. No. 3,402,422, and comprises gear segments **142** integrally connected to the side flanges, the segments being hingedly or rotatably mounted on pins **146** forming the edges of a Y **148** extending from the web portion. The means for covering the gap between the panels comprises, at the opposite edge of the web portion, a curved cover flange split into three flanges **150, 152,** 154. Flange **150** extends in both directions from the web portion but it does not always extend the full width of the gap to be covered. The difference is provided by the other curved flanges **152** and **154,** which extend towards each other from the edge of the side flanges **100***c* and **102***c* which is opposite to the edge mounting the gear segments. The flanges **152** and **154** overlap flange **150.** It will be readily apparent that the radii of curvature for flanges **152** and **154** must complement the radius for flange **150,** whereby the flanges will open and close smoothly as the angle between the stud side flanges is altered.

Although the flanges **150, 152,** and **154** thus provide the cover for the gap between the panels, by themselves they do not prevent improper or undesired convergence of panels **34***c*, 34*c* towards each other. For this purpose, a stop in the form of means for biasing the side flanges **100***c* and **102***c* apart, has been added. Specifically, one or more coil torsion springs **160** are positioned within appropriately sized openings in the center web portion **42***c*. The legs **162** of the spring bias against the side flanges with a force sufficient to hold the adjacent panels apart, but not sufficient to prevent deliberately applied convergence when a larger radius of curvature is desired for the wall segment.

Thus, in stud **40***c*, the width x of the cover can be continuously altered for a fixed thickness t, continuously altering the radius of curvature R for the wall segment as per Equation No. 7.

Although the invention has been disclosed in connection with several preferred embodiments, it is not limited thereto. Rather, it is intended that it cover all equivalents, alternate arrangements, and embodiments as may be included within the scope of the following claims.

What is claimed is:

1. A generally circular wall segment comprising planar panels non-colinearly positioned to approximate a circle, each panel having a front surface and an edge surface, and a plurality of studs each positioned between two adjacent ones of said panels at their adjacent edges and interengaging the same, each of the studs being characterized by a center web portion, at least one flange extending from two opposite sides of the web portion at a non-orthogonal angle thereto, interengaged with the edge surface of one adjacent panel, and means positioned towards the convex surface of the wall from the flange for covering the gap between adjacent panels and for preventing convergence of the adjacent panels, said means including a flange extending so as to contact the edge surfaces only of two adjacent panels and having a width x defined by the following equation:

$$x = d + t(w \cos \alpha + d)/(R + a)$$

where w = the width of the panels, t = the thickness of the wall measured from the interior point of contact of two adjacent interengaged panels if translated into contiguous positions, to the point of contact with said covering means, R = the radius of curvature measured from the center of curvature of the wall segment to the midpoint of the interior surface of the wall segment, d = the distance, if any, the interior points of contact of said panels are actually spaced apart in the wall as assembled, a = the depth of the chamfer, if any, of the panel surface defining said interior surface, and α = the angle between R and a line extending from the center of curvature through the midpoint of the separation between said adjacent edge surfaces.

2. The wall segment as defined in claim **1,** wherein each of the portions of the wall segment positioned between two of said studs are defined by a pair of said panels of substantially equal width and thickness located back to back, said studs having two of said flanges projecting from each of said sides into interengagement each with one of said pair.

3. The wall segment as defined in claim **2,** wherein said non-orthogonal angle for each of said two flanges is equal to:

$$90° - \alpha$$

4. The wall segment as defined in claim **1,** wherein said non-orthogonal angle equals

$$90° - \alpha$$

5. The wall segment as defined in claim 1, and further including means for angularly adjusting said one flange with respect to said center web portion about the longitudinal axis of said web portion.

6. The wall segment as defined in claim 5, wherein said angularly adjusting means includes means for hinging said one flange with respect to said web portion.

7. A generally circular wall segment comprising planar panels non-colinearly positioned to approximate a circle, each panel having a front surface and an edge surface; and a plurality of studs each positioned between two adjacent ones of said panels at their adjacent edges and interengaging the same; each of the studs being characterized by at least two side flanges each having means for interengaging kerfs in the adjacent panel edge surfaces; stop means for separating said adjacent edge surfaces a distance x defined by the equation:

$x = d + t(w \cos \alpha + d)/(R + a)$ where w = the width of the panels, t = the thickness of the wall measured from the interior point of contact of two adjacent interengaged panels if translated into contigous positions, to the point of measurement of the distance x, R = the radius of curvature measured from the center of curvature of the wall segment to the midpoint of the interior surface of the wall segment, d = the distance, if any, the interior points of contact of said panels are actually spaced apart in the wall as assembled, a = the depth of the chamfer, if any, of the panel surface defining said interior surface, and α = the angle between R and a line extending from the center of curvature through the midpoint of the separation between said adjacent edge surfaces; and covering means adjacent the convex surface of the wall segment for covering the gap between adjacent panels.

8. The wall segment as defined in claim 7, wherein said stop means includes a rib projecting generally perpendicularly from one of said side flanges.

9. The wall segment as defined in claim 7, and further including means for altering the angular positioning of the kerf-interengaging means at one edge surface with respect to the kerf-interengaging means at the adjacent edge surface.

10. The wall segment as defined in claim 9, and further including means for altering the width x.

11. The wall segment as defined in claim 7, and further including means for altering the thickness t.

12. The wall segment as defined in claim 7, wherein said side flanges are hinged together at one of their edges.

13. The wall segment as defined in claim 12, and further including a rib projecting generally perpendicularly from said side flange.

14. The wall segment as defined in claim 13, wherein said stop means and said covering means comprise ribs spaced apart on said side flanges, forming grooves, and a flat cover member releasibly positioned within said grooves, respectively.

15. The wall segment as defined in claim 12, and further including a center web portion mounting said covering means at one edge and hingedly mounting two interengaging gear segments at the other edge, said gear segments being integrally connected to said side flanges, whereby rotation of one gear segment and side flange with respect to the center web portion causes the other gear segment and side flange to rotate an equal amount.

16. The wall segment as defined in claim 15, wherein said stop means includes a coil torsion spring positioned so as to extend from one side flange to the opposite side flange through said web portion.

17. A stud for use in a generally circular wall segment comprising planar panels non-colinearly positioned to approximate a circle with the studs each positioned between two adjacent ones of said panels at their adjacent edges and interengaging the same; the stud comprising at least two side flanges, a center web portion mounting a covering means at one edge, and two interengaging gear segments hingedly mounted for rotation about the other edge of the web portion, said gear segments being integrally connected to said side flanges, whereby rotation of one gear segment and side flange with respect to the center web portion causes the other gear segment and side flange to rotate an equal amount.

18. The stud as defined in claim 17, wherein said covering means include a curved flange extending in both directions from the center web portion, and a curved flange extending from one edge of each side flange towards and overlapping said web portion flange, each of said overlapping flanges having complementary radii of curvature.

19. The stud as defined in claim 17, and further including means for biasing the side flanges apart.

20. A generally curved wall segment comprising pairs of planar panels each having a front surface and an edge surface, and a plurality of studs each positioned between two pairs of adjacent ones of said panels at their adjacent edge surfaces and interengaging the same, leaving their front surfaces exposed, each pair of panels defining one section of the wall, each of the studs being characterized by a center web portion and lateral flanges engaging kerfs provided at the edges of said panels, said lateral flanges having protuberances serving as stop means for locating said edge surfaces of each pair of panels in a common plane inclined at an angle to and spaced-apart from the center web portion.

21. The wall segment as defined in claim 20, wherein said angle on one side of the web portion is substantially equal to said angle on the opposite side.

22. A wall comprising a plurality of planar wall members arranged with their surfaces tangent to an imaginary curvilinear line, each of said wall members comprising a pair of parallel spaced-apart panels each having a kerf provided therein at the vertical edges thereof, and a plurality of studs each intermediate and connecting the panels of adjacent wall members, each stud comprising a transverse web having a pair of oppositely directed flanges disposed at an angle of less than 180° with respect to each other at one portion thereof disposed within the kerfs of one pair of adjacent panels, and a second pair of oppositely directed flanges disposed at an angle of less than 180° with respect to each other spaced-apart from said first pair and disposed within the kerfs of the other pair of adjacent panels.

23. A wall according to claim 22, additionally having cover means mounted on each of said studs covering the space between the edges of adjacent wall members at the outer surface thereof.

24. A wall according to claim 23, wherein said cover means comprises a pair of oppositely directed flanges integral with said stud.

25. A wall according to claim 22, wherein the web of said stud comprises a pair of web members hingedly connected at one end, and having a cover plate disposed at the spaced-apart ends of said web means.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,893,269 Dated July 8, 1975

Inventor(s) Nels Nelsson and Alan C. Wendt

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

In the title CURBED should read CURVED.

Signed and Sealed this

thirtieth Day of *September 1975*

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks