Oct. 5, 1965 P. O. BERG 3,209,504

WALL STRUCTURE

Filed Feb. 21, 1962 2 Sheets-Sheet 1

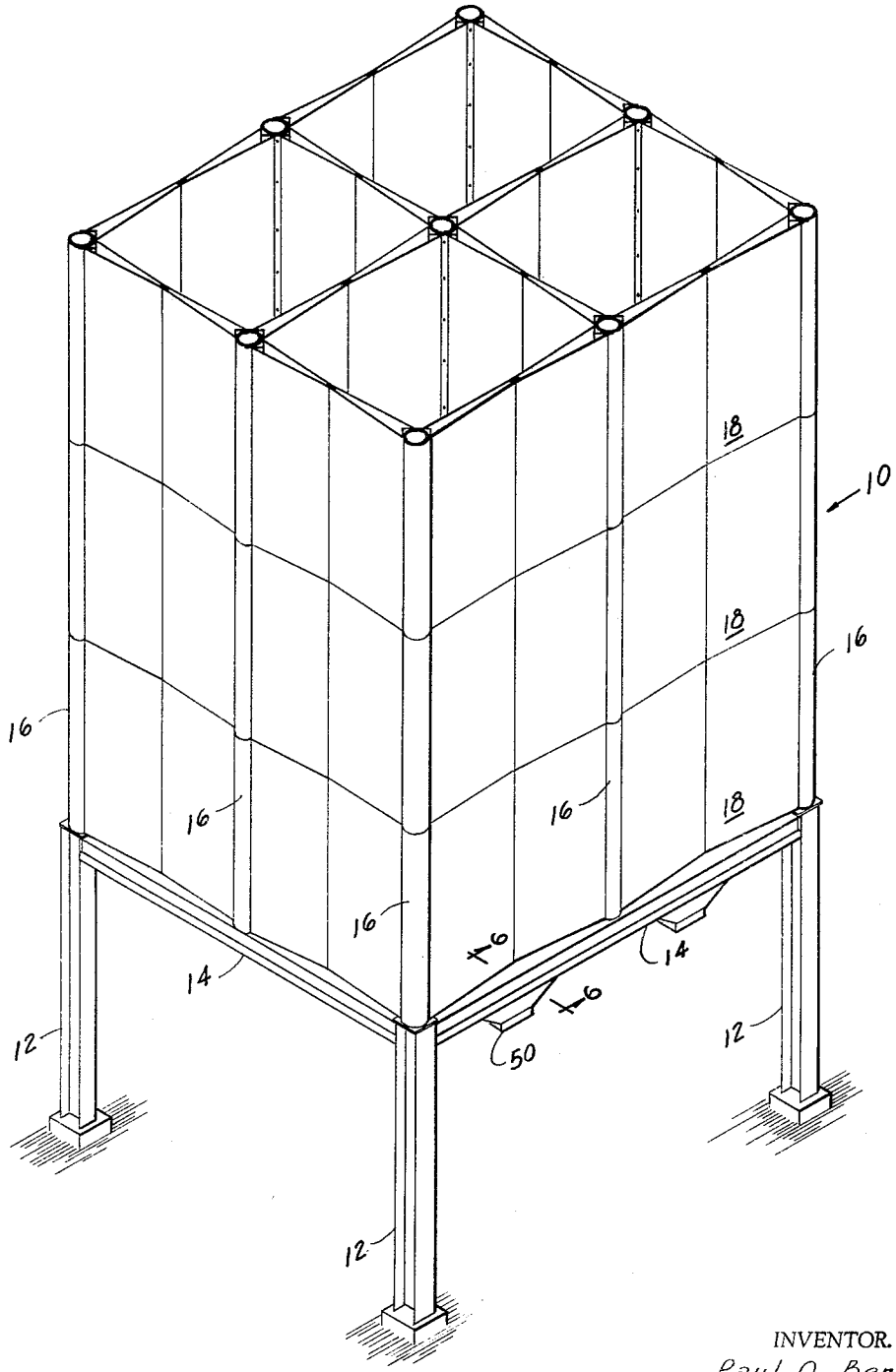

FIG. 1

INVENTOR.
Paul O. Berg
BY Hood, Gust & Irish
Attorneys

Oct. 5, 1965 P. O. BERG 3,209,504

WALL STRUCTURE

Filed Feb. 21, 1962 2 Sheets-Sheet 2

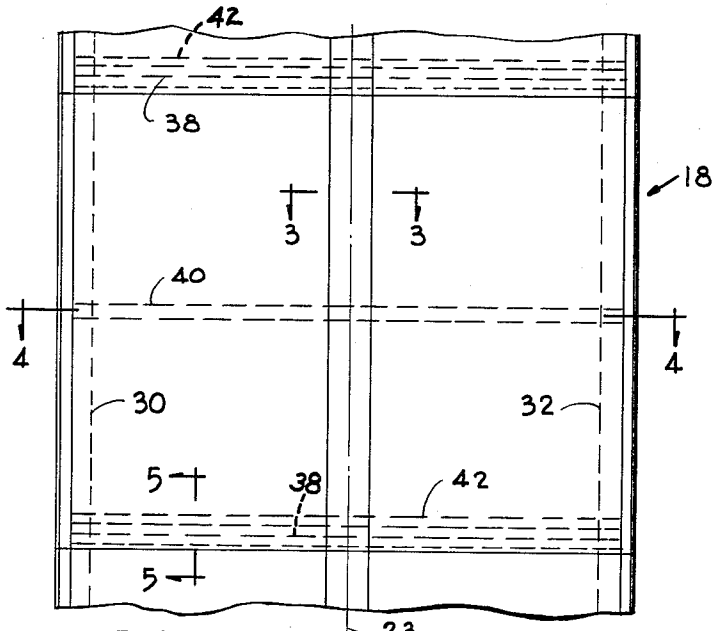

FIG. 2

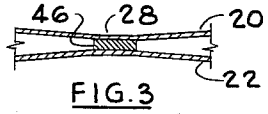

FIG. 3

FIG. 4

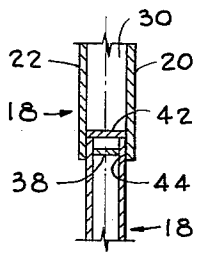

FIG. 5

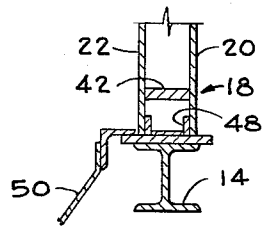

FIG. 6

INVENTOR.
Paul O. Berg
BY Hood, Gust & Irish
Attorneys

United States Patent Office 3,209,504 Patented Oct. 5, 1965

3,209,504

WALL STRUCTURE

Paul O. Berg, 2217 Indian Village, Fort Wayne, Ind.

Filed Feb. 21, 1962, Ser. No. 174,817
12 Claims. (Cl. 52—479)

The present invention relates to a wall structure and more particularly to a prefabricated wall structure which is suitable for use in forming the sides of grain storage buildings or bins.

Grain storage buildings or bins come in various assorted sizes and shapes, but one feature which is generally common to all such structures is the fact that they are relatively tall in comparison with the cross-sectional dimension. The material which is stored in such structures conventionally is flowable, being in the form of grain and the like. When a quantity of such grain is stored in a building which is relatively tall, substantial distending forces are exerted against the sides of the building which tend to bend and rupture them, whereupon it is necessary that the sides be fabricated of suitably strong material.

Grain storage buildings normally require skilled labor in the construction thereof which constitutes a rather expensive cost item in addition to the cost of the materials which are used therein. It therefore becomes desirable to provide structural components which in themselves are not only sufficiently strong but are relatively inexpensive and do not require the services of skilled labor in the erection thereof.

It is therefore an object of this invention to provide a wall structure for storage bins or buildings which is economical in the materials and construction thereof, is suitably strong, and is relatively simple in the erection thereof.

It is another object of this invention to provide a prefabricated wall panel assembly which may be easily erected in place with a minimum of labor and time.

It is still another object of this invention to provide a uniquely designed wall panel assembly and method of attaching a plurality of these assemblies to supporting columns used in the erection of grain storage bins or buildings.

It is yet another object to provide a wall structure composed of a plurality of identically constructed wall panel assemblies which interfit in such a manner as to provide a tight seal against leakage either of the weather or material contained by the wall structure.

It is still a further object to provide a wall panel assembly composed of a minimum of parts and of such size as may be handled and erected by a minimum of personnel.

Other objects will become apparent as the description proceeds.

The above-mentioned and other features and objects of this invention and the manner of attaining them will become more apparent and the invention itself will be best understood by reference to the following description of an embodiment of the invention taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a perspective illustration of a typical grain storage building which is divided into four separate bins or compartments;

FIG. 2 is a side elevation of a wall panel assembly which is fitted at the upper and lower edges thereof with two other panel assemblies;

FIG. 3 is a fragmentary sectional illustration taken substantially along section line 3—3 of FIG. 2;

FIG. 4 is a sectional illustration taken substantially along section line 4—4 of FIG. 2 but showing in addition, in cross-section, structure for supporting the wall panels of FIG. 2 on supporting columns;

FIG. 5 is a fragmentary sectional illustration taken substantially along section line 5—5 of FIG. 2; and

FIG. 6 is a sectional illustration taken substantially along section line 6—6 of FIG. 1.

Referring to the drawings, and more particularly to FIG. 1 thereof, a building indicated generally by the reference numeral **10** is shown as being divided into four separate bins or compartments and as being supported on four columns or legs **12**. Also as a part of the supporting structure, four horizontally extending I-beams **14** are secured between the upper ends of the legs **12** for the purpose of carrying the weight of the superstructure which will be described hereinafter in detail.

A number of supporting columns **16** are spaced apart and mounted in an upright position on the supporting structure **12**, **14** and may be either articulated or solid for the entire length thereof depending upon design desiderata.

Suitably fastened to these supporting columns **16**, which in one embodiment of this invention are circular in cross-section, are a plurality of wall panel assemblies indicated generally by the reference numeral **18**.

Reference may now be made to FIGS. 2, 3 and 4 in connection with the following description of the individual wall panel assemblies **18**. Each assembly **18** comprises a pair of rectangular sheet metal panels or sheets **20** and **22** which are inwardly curved as shown in FIGS. 3 and 4 toward each other about a median line **23** which extends vertically midway between the opposite lateral edges **24** and **26**, respectively, of the sheets. Thus, the midportions **28** of the two sheets **20** and **22** are closer together than are the opposite pairs of lateral edges **24, 26**.

Two elongated mounting members or angle irons **30** and **32** are inserted between the opposite pairs of lateral edges **24, 26** as shown with the external corners thereof being directed inwardly between the sheets **20** and **22** toward each other. The lateral edges of both sheets are joined to the angle irons in identical fashion such that a description of the joinder of one lateral edge will suffice as a description for all. In FIG. 4, the lateral edge **24** first engages one flange of the angle iron **30** midway between the opposite edges or ends (as viewed in cross-section) thereof, thereby providing a mounting or flange extension **34** which angularly extends beyond the respective sheet **20**, a like mounting or flange extension being indicated for the sheet **22** by the numeral **36**. In the embodiment shown in FIG. 4, the portions of the panels or sheets beyond the edges **24** and **26** are bent or angled outwardly at the same angles as the angle iron flanges so as to lie flat thereagainst, such that the mounting or flange extensions **34** and **36**, respectively, include both the sheet portion and the respective flange portion. The marginal edge portion **24** is rigidly secured to the angle iron **30** in this position by any suitable means such as welding.

With the angle irons **30** and **32** being so welded in place, and the midportions **28** of the two sheets **20** and **22** being secured together also by welding or the like, it is thus seen that the two sheets **20** and **22** have a permanent inset corresponding to a curvature which serves a purpose which will be explained more fully later on.

Three transverse stiffening members, which may be metal bars, indicated generally by the numerals **38, 40** and **42** are secured between the sheets **20** and **22** and extend between the opposite pairs of lateral edges **24, 26**, respectively. These stiffening members are shaped such that they conform to the curvatures of the two sheets **20** and **22** with the longitudinal edges of these members intimately engaging throughout the length thereof the two sheets and being welded or otherwise suitably secured thereto throughout such length. The upper stiffening

member as seen in FIG. 2 is not as wide as the lower member **42** such that the sheets **20** and **22** adjacent the upper edges thereof are spaced more closely together than they are at the bottom edges. As shown more clearly in FIG. 5, the stiffening member **38** is positioned adjacent the upper sheet edges while the lower stiffening member **42** is spaced upwardly a short distance from the bottom sheet edges to provide a longitudinal socket as indicated by the numeral **44**.

A third stiffening member **40** may be used, this one being located midway between the upper and lower members **38** and **42**.

It is desirable to use an upright stiffening bar **46** between the midportions **28** of the two sheets **20** and **22** to which the sheets may be suitably welded, this bar **46** serving not only to stiffen the assembly but also to space the midportions apart a desired distance.

In assembling the building of FIG. 1, a series of panel assemblies **18** are set on the horizontal I-beams **14** in the manner shown in FIGS. 1 and 6. An elongated channel member or beam **48** is first mounted on the top side of the respective I-beam **14** and the panel assembly **18** is telescoped thereover. By this means, the panel assembly is held against transverse movement on the I-beam **14**. A suitable bottom, such as a discharge spout **50** for the various bins or compartments in the building **10**, is secured to the beam **14** as shown in FIG. 6.

Each panel assembly **18** is also held in position by the respective columns **16**, the particular structure being more clearly shown in FIG. 4. The angle irons **30** and **32** of one particular panel assembly **18** are abutted against two adjacent circular columns **16** in straddling relation. The panel assembly is thus located securely in position. In the right-hand portion of FIG. 4 is shown a series of other panel assemblies **18** which are also affixed to the respective column **16** for locating adjacent partitions for defining the various compartments in the building **10**, and, as shown, there are four such panel assemblies **18** positioned at right angles to each other with the angle irons thereof engaging the column **16**. Adjacent angle irons are spaced apart as shown for a purpose to be described.

Elongated steel bars **52** and **54** are abutted against the mounting extensions **34** and **36** as shown and a plurality of bolts **58** and **60** spaced vertically are passed through both the column **16** and the respective bars **52** and **54** as shown. These bolts receive nuts which are tightened against the bars **52** and **54** for the purpose of securely clamping the angle irons **30** and **32** against the column **16**. By this means, the panel assemblies are securely locked in position with the various bolts passing between adjacent angle irons such that there are no critical dimension requirements which need to be held.

The panel assemblies are erected one on top of the other with the narrower upper assembly end fitting into the socket **44** of the adjoining assembly. Since the panel assemblies are prefabricated, a building of any desired height may be erected by using these same assemblies repeatedly, throughout the building, in tiers which are erected from the bottom upwardly.

Superposed panels should fit tightly enough together so as to provide a weather seal as well as prevent material contained in the various compartments from leaking out. The interior surfaces of the panel walls should be as smooth as possible in order to foster flow of material from the various compartments. While a four-compartment building is shown in FIG. 1, buildings of only a single compartment or additional compartments may be constructed.

An important feature of the present invention resides in the fact that the sheet metal sheets **20** and **22** are provided with a curvature as already described. The significance of this curvature is best realized by first considering a wall which is composed of a single, flat sheet which extends from column to column. If the four walls of any given compartment of the building of FIG. 1 are formed of such flat sheets, the distending forces exerted by the stored material will tend to bow the sides outwardly, thereby placing them under substantial stress. In order to prevent failure or rupturing, it is necessary to make the sheets sufficiently thick to insure adequate strength.

In contrast with this flat sheet construction, it is well settled that if the compartment is circular in cross-section and the various panels making up the circle are correspondingly curved, less metal would be required in order to withstand the distending forces of the contained material. Thus, comparison of the curved and flat walls reveals that the metal of the curved wall may be thinner than the flat wall for containing the same distending forces. Referring to the present invention, the panel assemblies **18** are precurved whereupon the thickness of the various metal sheets **20** and **22** may be less than would be required in the event the sheets were flat and straight across between columns.

In addition to the greater strength realized from curving the individual metal sheets **20** and **22**, close examination of the assembly **18** construction will reveal that for any given compartment, both sheets **20** and **22** conjointly serve in resisting any outward or distending forces. Inasmuch as the two sheets **20** and **22** are securely tied together at their midportions **28** and also by means of the stiffening members **38**, **40** and **42**, any distending force exerted against the sheet **22** will place this sheet in tension and the sheet **20** in compression. By this is meant, any force acting on one of the sheets **20** and **22** which places the same in tension serves to place the opposite sheet in compression. Thus, the panel assembly provides both tension and compressive strength which resists the forces exerted by any flowable material contained in the compartment.

Another feature realized by the particular construction of the panel assembly **18** is the fact that each stiffening member **38**, **40** and **42** forms in combination with the two sheets **20** and **22** an I-beam construction which, in the particular vicinity of the stiffening member, provides for maximum strength with the least amount of material.

All of the factors explained in the foregoing cooperate to provide a panel assembly which is extremely strong and rigid but which requires the simplest of erection techniques in the construction of a building. As already explained, tolerance requirements with respect to the dimensions with which the various parts must be held need only be minimal inasmuch as the parts can all fit together between the various columns and still be clamped in position even though some of the dimensions may be off by a respectable amount. For example, the holes in the columns **16** for the bolts **58** and **60** need not be precisely located inasmuch as the width of the bars **52** and **54** is sufficient to accommodate some considerable variation in the positioning of the bolts and still clamp the angle-irons **30**, **32** in place. Also, the spacing of the angle-irons on a given column is not critical and can vary so long as the bars **52** and **54** can clamp them in place.

If the need arises, a minimum amount of sealing compound may be used between panel assemblies and joints for preventing the leakage of either the weather or of the contents of a compartment formed by the panel assemblies.

Because of the manner of erecting the panel assemblies, if it becomes necessary to relocate the building, it is a simple matter to disassemble the structure and reassemble it at another location.

While the columns **16** have been shown as being circular, they may, of course, be of different shapes, such as square, without departing from the spirit and scope of this invention.

While I have described above the principles of my invention in connection with specific apparatus, it is to be clearly understood that this description is made only by way of example and not as a limitation to the scope of my invention.

What is claimed is:

1. A wall panel assembly comprising a pair of juxtaposed sheet metal panels having opposite lateral edges and upper and lower edges, respectively, said panels being orthogonally shaped, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to the lateral edges such that the lateral edges of said panels, respectively, are spaced apart a greater distance than the midportions of said panels, said panels being secured together along the midportions thereof, the upper edge portions of said panels, respectively, being spaced closer together than the bottom edge portions thereof, a first elongated stiffening member disposed between said panels adjacent and parallel to said upper edges, said stiffening member being secured along its entire length to said pair of panels, respectively, a second elongated stiffening member disposed between said panels adjacent and parallel to said lower edges, said second stiffening member being spaced upwardly a predetermined distance from said lower edges and also being secured throughout its length to said pair of panels respectively, and a pair of elongated angle-irons inserted between said panels adjacent and parallel to the opposite lateral edges thereof respectively, the exterior corners of said angle-irons being directed inwardly toward each other, the lateral edges of said panels being secured to the respective angle irons intermediate the edges of the angle-iron flanges thereby providing flange extensions of said flanges which project beyond said lateral edges, respectively.

2. The wall panel assembly of claim 1 in combination with a second wall panel assembly of identical construction, a circular upright supporting column, one angle-iron each of the two panel assemblies being longitudinally engaged with said column in adjacent but spaced-apart relation, an elongated bar clamped against the adjacent flange extensions of the last-mentioned angle-irons, and a plurality of bolts passing through said column, said bar and between the last-mentioned flange extensions for securing said two panel assemblies to said column, said bolts being longitudinally spaced apart on said column.

3. The wall panel assembly of claim 1 in combination with a second wall panel assembly of identical construction, a supporting column, one angle-iron each of the two panel assemblies being longitudinally engaged with said column in adjacent but spaced apart relation, an elongated bar clamped against the adjacent flange extensions of the last-mentioned angle-irons, and a plurality of bolts passing through said column, said bar and between the last-mentioned flange extensions for securing said two panel assemblies to said column, said bolts being longitudinally spaced apart on said column.

4. A wall panel assembly comprising a pair of juxtaposed sheet metal panels having opposite lateral edges and upper and lower edges, respectively, said panels being orthogonally shaped, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to the lateral edges such that the lateral edges of said panels, respectively, are spaced apart a greater distance than the mid-portions of said panels, said panels being secured together along the midportions thereof, a first elongated stiffening member disposed between said panels adjacent and parallel to said upper edges, said stiffening member being secured along its entire length to said pair of panels, respectively, a second elongated stiffening member disposed between said panels adjacent and parallel to said lower edges, said second stiffening member being spaced upwardly a predetermined distance from said lower edges and also being secured throughout its length to said pair of panels respectively thereby providing an elongated socket between said panels and said second stiffening member, and a pair of elongated angle-irons inserted between said panels adjacent and parallel to the opposite lateral edges thereof respectively, the exterior corners of said angle-irons being directed inwardly toward each other, the lateral edges of said panels being secured to the respective angle-irons intermediate the edges of the angle-iron flanges thereby providing flange extensions on said flanges which project beyond said lateral edges, respectively.

5. A wall panel assembly comprising a pair of juxtaposed sheet metal panels having opposite lateral edges and upper and lower edges, respectively, said panels being orthogonally shaped, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to the lateral edges such that the lateral edges of said panels, respectively, are spaced apart a greater distance than the midportions thereof, said panels being secured together along the midportions thereof, a plurality of transverse stiffening members disposed between said panels and extending between said opposite lateral edges, respectively, said stiffening members being secured to said panels throughout the lengths thereof, said stiffening members being spaced apart, and a pair of elongated angle-irons inserted between said panels adjacent and parallel to the opposite lateral edges thereof respectively, the exterior corners of said angle-irons being directed inwardly toward each other, the lateral edges of said panels being secured to the respective angle irons intermediate the edges of the angle-iron flanges thereby providing flange extensions on said flanges which project beyond said lateral edges, respectively.

6. A wall panel assembly comprising a pair of juxtaposed sheet metal panels having opposite lateral edges and upper and lower edges, respectively, said panels being orthogonally shaped, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to the lateral edges such that the lateral edges of said panels, respectively, are spaced apart a greater distance than the midportions thereof, said panels being secured together along the midportions thereof, and a pair of elongated angle-irons inserted between said panels adjacent and parallel to the opposite lateral edges thereof respectively, the exterior corners of said angle-irons being directed inwardly toward each other, the lateral edges of said panels being secured to the respective angle-irons intermediate the edges of the angle-iron flanges thereby providing flange extensions on said flanges which project beyond said lateral edges, respectively.

7. A wall structure comprising a first pair of juxtaposed sheet metal panels having opposite pairs of lateral edges, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to said lateral edges such that the edges of each pair of lateral edges, respectively, are spaced apart a greater distance than the midportions thereof, said panels being secured together along the midportions thereof, first and second elongated mounting members each having two laterally spaced mounting flanges, respectively, said first mounting member being secured to one pair of lateral edges in parallelism therewith, said second mounting member being secured to the other pair of lateral edges in parallelism therewith, all said mounting flanges extending beyond the respective lateral edges.

8. A wall structure comprising a first pair of juxtaposed sheet metal panels having opposite pairs of lateral edges and opposite pairs of upper and lower edges respectively, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to said lateral edges such that the edges of each pair of lateral edges, respectively, are spaced apart a greater distance than the midportions thereof, said panels being secured together along the midportions thereof, the spacing between said upper edges being less than the spacing between said lower edges by an amount whereby the lower portions of said panels adjacent to said lower edges constitute a socket and the upper portions of said panels adjacent to said upper edges constitute a projec-

tion, said socket being of such dimensions that it is capable of receiving a projection of the dimensions of said first-mentioned projection, first and second elongated mounting members each having two laterally spaced mounting flanges, respectively, which join in an angle, said first mounting member being inserted between one pair of lateral edges which are joined to respective ones of said flanges along the lengths and intermediate the ends thereof, the angle of said first mounting member being directed inwardly of said panels, and said second mounting member being inserted between the other pair of lateral edges which are joined to respective ones of said flanges along the lengths and intermediate the ends thereof, the angle of said second mounting member being directed inwardly of said panels.

9. A wall structure comprising a first pair of juxtaposed sheet metal panels having opposite pairs of lateral edges, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to said lateral edges such that the edges of each pair of lateral edges, respectively, are spaced apart a greater distance than the midportions thereof, first and second elongated mounting members each having two laterally spaced mounting flanges, respectively, which join in an angle, said first member being inserted between one pair of lateral edges which are joined to respective ones of said flanges along the lengths thereof, the angle of said first mounting member being directed inwardly of said panels, and said second mounting member being inserted between the other pair of lateral edges which are joined to respective ones of said flanges along the lengths thereof, the angle of said second mounting member being directed inwardly of said panels.

10. A wall structure comprising a first pair of juxtaposed sheet metal panels having opposite pairs of lateral edges and opposite pairs of upper and lower edges, respectively, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to said lateral edges such that the edges of each pair of lateral edges, respectively, are spaced apart a greater distance than the midportion of said panels, said panels being secured together along the midportions thereof, first and second elongated mounting members each having two laterally spaced mounting flanges, respectively, said first mounting member being secured to one pair of lateral edges in parallelism therewith, said second mounting member being secured to the other pair of lateral edges in parallelism therewith, a pair of first mounting extensions extending outwardly from each pair of lateral edges, respectively; a second pair of juxtaposed sheet metal panels having opposite pairs of lateral edges, and opposite pairs of upper and lower edges, respectively, said second panels being inwardly curved toward each other about a median line midway between and substantially parallel to the lateral edges thereof such that the edges of each pair of lateral edges, respectively, are spaced apart a greater distance than the midportions of said second panels, said second panels being secured together along said midportions thereof, third and fourth mounting members each having two laterally spaced mounting flanges, respectively, said third mounting member being secured to one pair of second panel lateral edges in parallelism therewith, said fourth mounting member being secured to the other pair of second panel lateral edges in parallelism therewith, a pair of second mounting extensions extending outwardly from each pair of second panel lateral edges, respectively; the upper edges of said first panel pair being spaced apart a distance less than the spacing between the lower edges of said second panel pair whereby the lower edge portions of said second panel pair constitute a socket which receives the upper edge portions of said first panel pair, said upper edge portions being inserted into said socket; one pair of the first mounting extensions engaging and being secured to said column, one pair of the second mounting extensions engaging and being secured to said column, said first panel pair and said second panel pair being upright and in vertical alignment with each other thereby conjointly constituting a wall section.

11. A wall structure comprising a first pair of juxtaposed sheet metal panels having opposite pairs of lateral edges and opposite pairs of upper and lower edges, respectively, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to said lateral edges such that the edges of each pair of lateral edges, respectively, are spaced apart a greater distance than the midportions of said panels, said panels being secured together along the midportions thereof, a second pair of juxtaposed sheet metal panels having opposite pairs of lateral edges and opposite pairs of upper and lower edges, respectively, said second panels being inwardly curved toward each other about a median line midway between and substantially parallel to the lateral edges thereof such that the edges of each pair of lateral edges, respectively, are spaced apart a greater distance than the midportions of said second panels, said second panels being secured together along the midportions thereof, the upper edges of said first panel pair being spaced apart a distance less than the spacing between the lower edges of said second panel pair whereby the lower edge portions of said second panel pair constitute a socket which receives the upper edge portions of said first panel pair, said upper edge portions being inserted into said socket; said first panel pair and said second panel pair being upright and vertically aligned thereby conjointly constituting a wall section, an upright supporting column; one pair of lateral edges of each of said first and second panel pair partially straddling said supporting column, and means for securing the last-mentioned lateral edges to said upright column for assembling said first and second panel pair thereto.

12. A wall structure comprising a first pair of juxtaposed sheet metal panels having opposite pairs of lateral edges, said panels being inwardly curved toward each other about a median line midway between and substantially parallel to said lateral edges such that the edges of each pair of lateral edges, respectively, are spaced apart a greater distance than the midportions of said panels, said panels being secured together along the midportions thereof, first and second elongated mounting members each having two laterally spaced mounting flanges, respectively, said first mounting member being secured to one pair of lateral edges in parallelism therewith, said second mounting member being secured to the other pair of lateral edges in parallelism therewith, a pair of mounting extensions extending outwardly from each pair of lateral edges, respectively; a second pair of juxtaposed sheet metal panels having opposite pairs of lateral edges, said second panels being inwardly curved toward each other about a median line midway between the substantially parallel to the lateral edges thereof such that the edges of each pair of lateral edges, respectively, are spaced apart a greater distance than the midportions of said second panels, said second panels being secured together along said midportions thereof, third and fourth mounting members each having two laterally spaced mounting flanges, respectively, said third mounting member being secured to one pair of said second panel lateral edges in parallelism therewith, said fourth mounting member being secured to the other pair of second panel lateral edges in parallelism therewith, a pair of mounting extensions extending outwardly from each pair of second panel lateral edges, respectively; an upright column, the flanges of said first mounting member having straddling engagement with said column, the flanges of said third mounting member having straddling engagement with said column, means securing said first and third mounting members to said column for positioning one mounting extension of one of said first panel pair adjacent to one mounting extension of one of said second panel pair and for

assembling said first and second pairs of panels thereto, a bar engaging adjacent ones of said mounting extensions, and a plurality of spaced-apart bolts passed through said column and said bar to clamp operatively said mounting eextensions against said column.

References Cited by the Examiner

UNITED STATES PATENTS

876,299	1/08	Conley	189—78
2,091,415	8/37	Mauser	189—34

2,234,559	3/41	Jacobs	189—34
2,249,203	7/41	Guignon	189—34
2,479,819	8/49	Ragon	189—34

FOREIGN PATENTS

830,617	8/38	France.
660,454	5/38	Germany.

RICHARD W. COOKE, JR., *Primary Examiner.*

JACOB L. NACKENOFF, *Examiner.*