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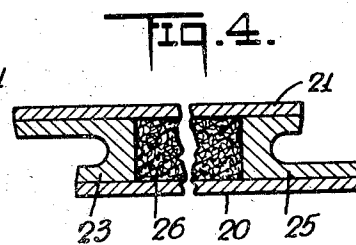
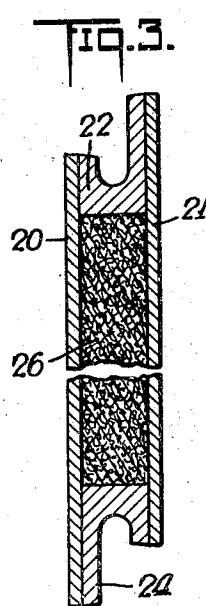
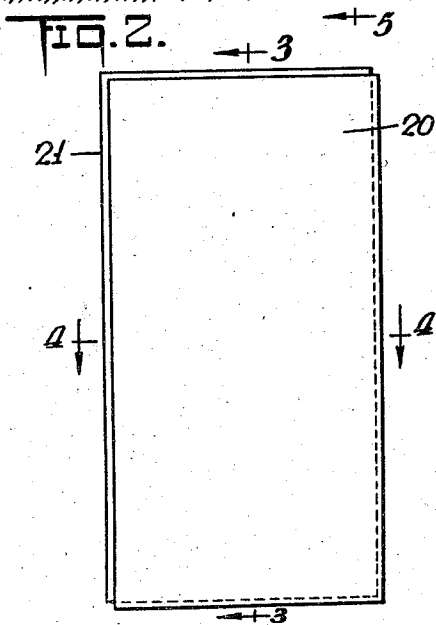
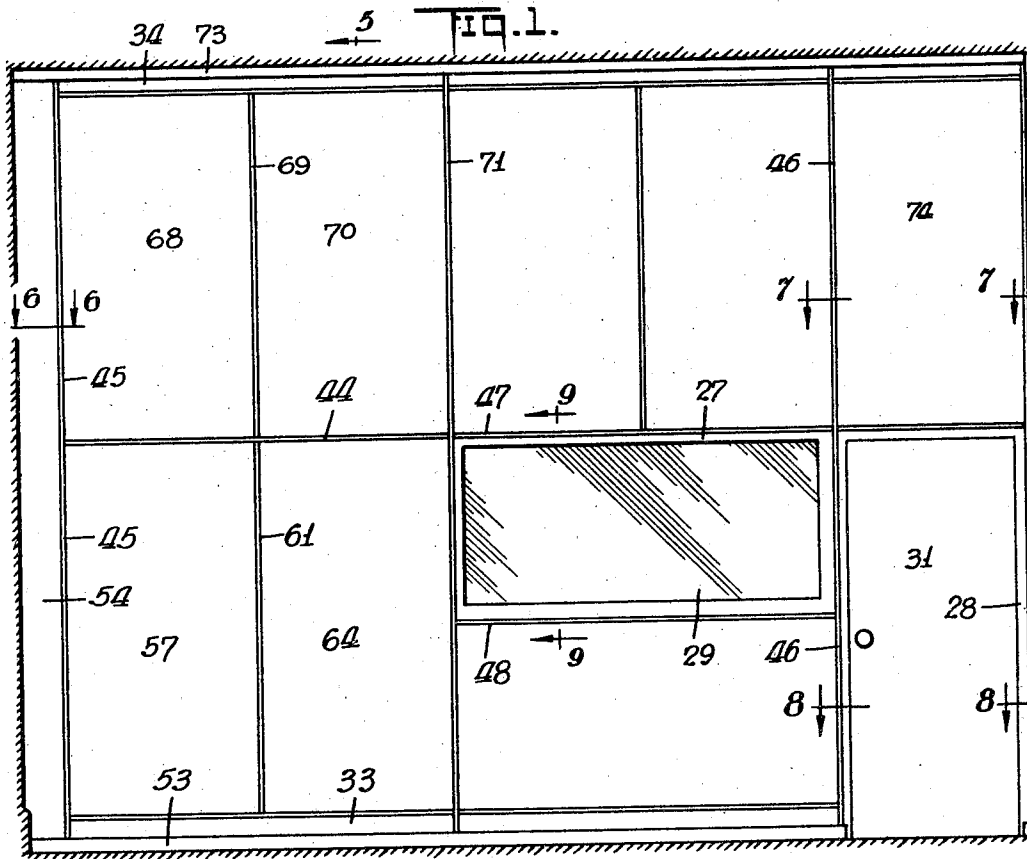
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2,426,802

SECTIONAL WALL STRUCTURE SYSTEM

Filed Dec. 29, 1943

4 Sheets-Sheet 1



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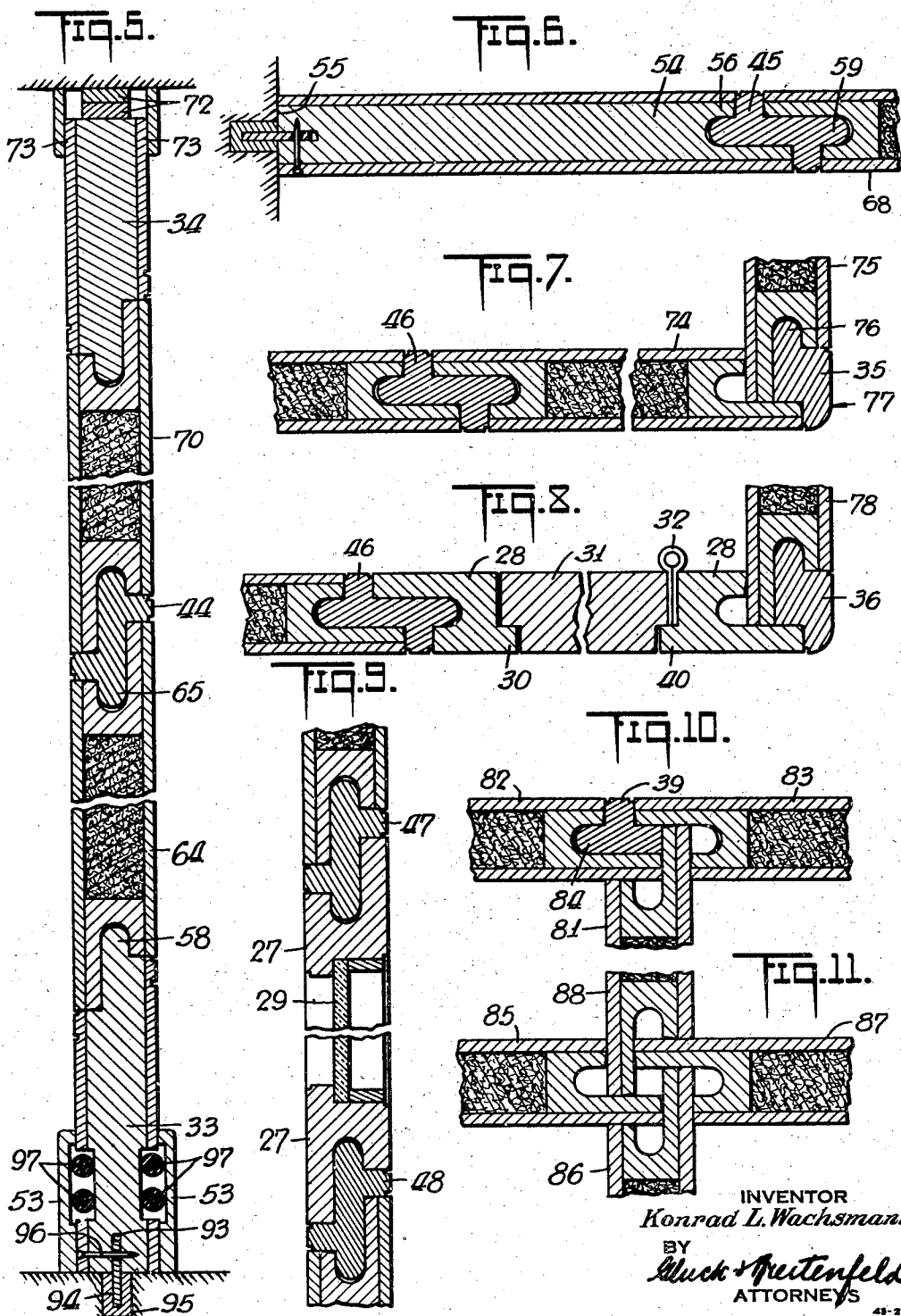
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SECTIONAL WALL STRUCTURE SYSTEM

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4 Sheets-Sheet 2



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FIG. 12.

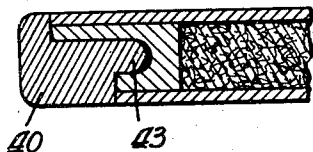


FIG. 13.

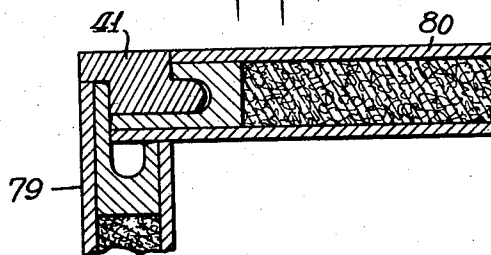


FIG. 14.

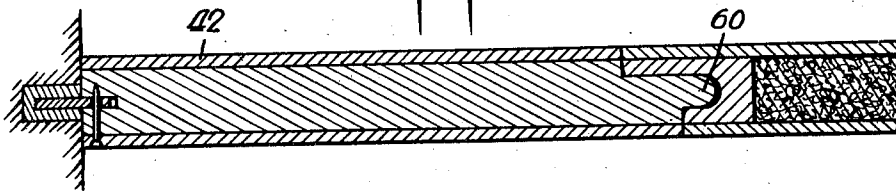


FIG. 15.

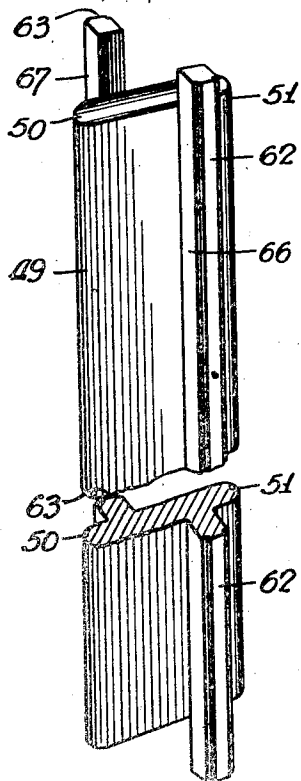


FIG. 16.

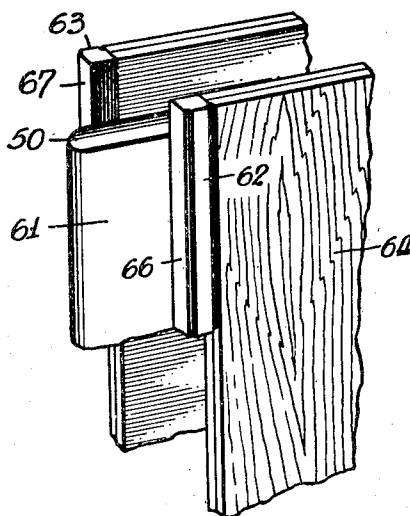
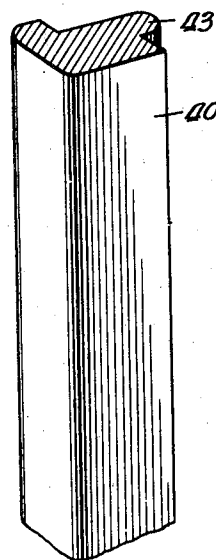


FIG. 17.



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Fig. 18.

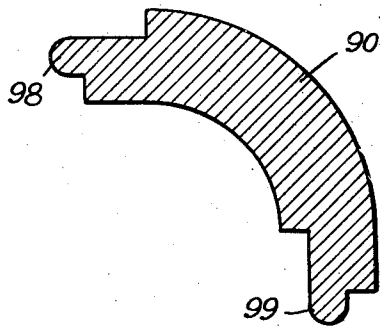


Fig. 19.

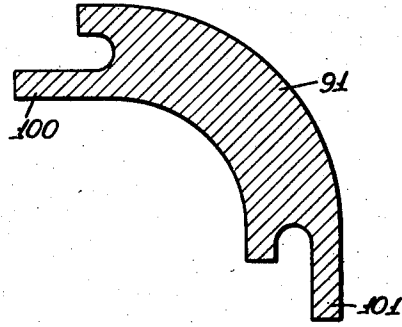


Fig. 20.

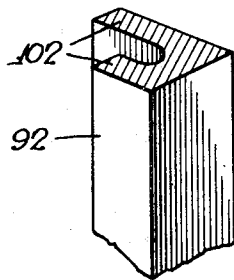


Fig. 21.

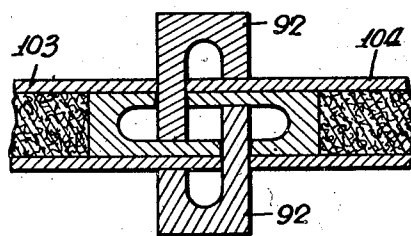


Fig. 23.

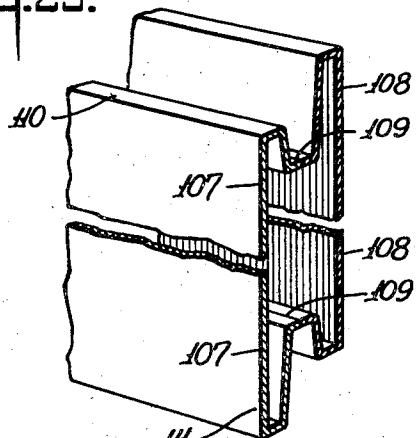
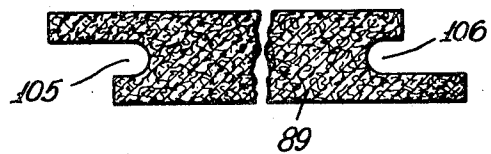


Fig. 22.



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SECTIONAL WALL STRUCTURE SYSTEM

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Application December 29, 1943, Serial No. 516,050

4 Claims. (Cl. 20—15)

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My present invention relates generally to building structures and has particular reference to a sectional wall structure composed of prefabricated members.

It is a general object of my invention to provide a sectional wall structure system, made up of a set of prefabricated separate members of mutually complementary character, whereby these members may be variously interconnected to form numerous selected types of partition structures. The invention is primarily intended for use in connection with interior walls and structures, but it will be understood that numerous phases of the invention may find wider applicability in the building art.

By the terms "wall," "partition," and the like, as used herein and in the appended claims, I intend to refer not only to structural elements of the vertical type, but also to horizontal elements exemplified by floors and ceilings. Similarly, the term "partition structure" is intended to refer generically to any structure or assembly which divides a given space into compartments, whether or not the elements of the structure extend vertically from floor to ceiling, or part-way between floor and ceiling, or horizontally at any level. As will more fully appear hereinafter, my invention is of such a character that any one of a large number of different "partition structures" may be readily assembled to define completely enclosed spaces such as rooms or offices, or partial enclosures such as alcoves, recesses, shelves, and the like; and the invention is not limited in its nature or applicability to any specific type of "partition structure".

The present system includes as a basic type of member a rectangular panel whose edges have a J-shaped cross-sectional configuration, the J facing in one direction along two adjacent edges of the panel and in the opposite direction along the other two edges, the versatility of this type of structural member being more fully explained hereinafter.

The present system includes, as an auxiliary type of member, an edge-engaging element which has at least one tongue adapted to fit into the basic J-shaped panel edge. Certain of these auxiliary elements serve as interconnectors between adjacent panels arranged in edge-to-edge relationship, others serve merely as terminal strips or elements. In each case, however, the auxiliary element has a cross-sectional configuration such that its outer surface forms part of the desired partition structure.

The present system may also include, as a sec-

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ond auxiliary type of member, an element having an edge with the same basic J-shaped cross-sectional configuration as said panel. These auxiliary elements may be used to cooperate with and complement the basic panels and the tongued auxiliary elements to complete or rigidify desired partition structures.

So far as the basic nature of the invention is concerned, the members of the present set may be composed of any desired or suitable material, such as wood, synthetic or composition materials, sheet metal, or the like. The rectangular panels are preferably designed so that the lengths of the sides are multiples of a selected base length. The edge configurations of the panels are identical throughout all members of the system, and regardless of how the J-shaped edge configuration is achieved, the stem lengths of the J are always proportioned in a predetermined manner with respect to the over-all width of the J. Each of the first-named set of auxiliary elements, regardless of its specific purpose or cross-sectional configuration, has at least one tongue whose dimensions are correspondingly proportioned so as to permit snug engagement of the tongue within the hooked portion of the basic J.

The features and advantages of the present system are exemplified in the accompanying drawings, in which:

Figure 1 is an elevational view of an illustrative wall of a room or office formed of structural members of the present improved character;

Figure 2 is an elevational view of an illustrative panel member of the basic type, shown by itself;

Figure 3 is an enlarged cross-sectional view taken substantially along the line 3—3 of Figure 2;

Figure 4 is an enlarged cross-sectional view taken substantially along the line 4—4 of Figure 2;

Figure 5 is an enlarged cross-sectional view taken substantially along the line 5—5 of Figure 1;

Figure 6 is an enlarged fragmentary cross-sectional view taken substantially along the line 6—6 of Figure 1;

Figure 7 is an enlarged fragmentary cross-sectional view taken substantially along the line 7—7 of Figure 1;

Figure 8 is an enlarged fragmentary cross-sectional view taken substantially along the line 8—8 of Figure 1;

Figure 9 is an enlarged fragmentary cross-sectional view taken substantially along the line 9—9 of Figure 1;

Figure 10 is a fragmentary cross-sectional view through another illustrative partition structure, illustrating some of the inherent capabilities of the basic types of members;

Figure 11 is a view similar to Figure 10 showing another illustrative structure;

Figure 12 is a cross-sectional view illustrating a further type of partition structure;

Figure 13 is a cross-sectional view illustrating the applicability of the invention to the formation of a ceiling or floor;

Figure 14 is a view similar to Figure 6 illustrating a slight modification;

Figure 15 is a perspective view of an illustrative tongued auxiliary element, shown by itself;

Figure 16 is a fragmentary perspective view showing the manner in which an auxiliary element of this type is used;

Figure 17 is a fragmentary perspective view of another illustrative tongued auxiliary element;

Figure 18 is a cross-sectional view of a further illustrative tongued auxiliary element;

Figure 19 is a cross-sectional view of an auxiliary element of the type having a J-shaped edge configuration;

Figure 20 is a fragmentary perspective view of another illustrative auxiliary element having a J-shaped edge configuration;

Figure 21 is a cross-sectional view of a portion of a partition structure showing how the auxiliary element of Figure 20 may be employed;

Figure 22 is a cross-sectional view of a basic panel composed entirely of one kind of material; and

Figure 23 is a fragmentary perspective view of a basic panel composed of sheet metal.

One embodiment of the basic type of panel member is shown most clearly in Figures 2, 3 and 4. I have chosen to illustrate a panel composed of two spaced parallel plies 20 and 21. These plies may be composed of any suitable material such as wood, plywood, or fibrous or synthetic material, and it will be observed that the plies are identical in external dimensions. It will also be noted that the plies are mutually offset along a 45° direction so that two adjacent edges of the ply 21 (the top and left edges as viewed in Figure 2) extend beyond the corresponding edges of the ply 20, while the two other edges of the ply 20 extend in a similar manner beyond the corresponding edges of the ply 21. Arranged between the plies, along their edges, are strips or pieces 22, 23, 24 and 25 each of substantially J-shaped cross-section. These pieces may be composed of any desired material and may be held in position in any convenient manner, as by adhesive means or otherwise. They serve not only to rigidify the entire two-ply panel but also to retain the two plies in proper parallel spaced relationship. Other spacing or reinforcing elements may also be employed, wherever desired, to lie between the plies in selected regions of the panels. The balance of the space between the plies is preferably occupied by a filler material, generally designated by the reference numeral 26, and this material may be of any selected character to render the panel adequately fireproof, soundproof, or otherwise insulated.

By virtue of the fact that the two plies 20 and 21 are offset along a 45° direction, it will be observed that the J along two adjacent edges of the panel is so positioned as to face in one direction, while the J faces in the opposite direction along the other two edges. Thus, the J at the top and left hand side of the panel (as viewed in

Figure 2) faces toward the observer, i. e., its long stem is parallel to and adjacent the remote surface of the panel, while the J along the bottom and right hand panel edges faces away from the observer, i. e., its long stem is parallel to and adjacent the near surface of the panel. In each of the ten illustrative panels shown in Figure 1, this same condition exists, i. e., along the top and left hand edge of each panel, as viewed in Figure 1, the edge is grooved throughout its extent and has a transverse cross-sectional configuration defining a J which faces the observer, while the other two edges, in each case, are also grooved throughout their extent and have a J-shaped transverse cross-sectional configuration in which the J faces away from the observer.

The J-shaped edge configuration is not necessarily achieved by using two parallel spaced plies and an intermediate piece, as shown in Figures 3 and 4, but may if desired be achieved by cutting a single thickness of material to the desired configuration, as shown for example by the grooved edges of the panel 27 (see Figure 9) or the grooved edges of the panel 28 (see Figure 8) or the grooved edges of the panel 89 (see Figure 22). The J-shaped configuration may also be achieved as shown in Figure 23. In each case, however, the lengths of the longer and shorter stems of the J have a definite predetermined relation to the over-all width of the J. The proportions employed are such that three or four J's may be nested together in volute fashion, as shown most clearly in Figures 10, 11, and 21, with the outer surface of the long stem of each J lying against the end of the short stem of the adjacent J. Stated otherwise, the J stems differ in length by an amount which is equal to the transverse distance from the outer surface of the short stem to the inner surface of the long stem.

It will also be observed that the lengths of the sides of the rectangle defined by each panel are multiples of a selected base length. For example, in the embodiment herein illustrated, this base length is the shorter side of the panel shown in Figure 2, and each of the panels has a longer side which is exactly twice this base length. It will be understood, however, that the panels may have four sides of equal lengths, or one side three or even four times the adjacent side, as may be desired.

The body portion of each panel may be of any desired specialized character, and the general nature and operability of the invention remains unaffected thereby. For example, the panel 27 has illustratively been shown with a transparent or translucent pane 29 set therein, whereby this panel defines a windowed area. Similarly, the panel 28 has been shown with a door jamb 30 formed therein, and a door 31 hinged in position as indicated at 22. Other specialized modifications may be resorted to wherever necessary or desirable.

The auxiliary elements of the present set are of various configurations, but essentially of two generic types. In one type, each element has at least one tongue which snugly fits into the common basic J-shaped edge, and has an exterior surface which forms part of the ultimate partition structure. One such auxiliary element is the base rail 33 shown most clearly in Figure 5, and a similar auxiliary element is the ceiling rail 34 also shown in Figure 5. Other auxiliary elements of like character are shown at 35 in Figure 7, at 36 in Figure 8, at 39 in Figure 10, at 40 in Figure 12, at 41 in Fig. 13, and at 42 in Figure 14. These elements serve as terminal pieces and have only

a single tongue. The element 40 of Figure 12 is shown by itself in Figure 17, and the tongue referred to is designated by the reference numeral 43.

Other auxiliary elements of the same type are shown at 44 in Figure 5, at 45 in Figure 6, at 46 in Figures 7 and 8, at 47 and 48 in Figure 9, and at 90 in Figure 18. These elements constitute connector pieces which are adapted to lie between two adjacent base panels. This general type of auxiliary connector strip is shown by itself in Figure 15 and designated by the reference numeral 49. It is characterized by the provision of two opposed tongues 50 and 51 adapted to fit, respectively, into the opposed J's presented by adjacent panels. The element shown in Figure 15 is also provided with offset longitudinal ribs 66 and 67. Both ribs are slightly extended at their opposite ends, and the rib 67 extends further than the rib 66 at the top of the element (as viewed in Figure 15) while the rib 66 extends downwardly for a further extent than the rib 67 at the bottom of the element (as viewed in Figure 15). The reason for this, and the reason for the offsetting of the ribs 66 and 67, will be presently explained.

The other generic type of auxiliary element is exemplified at 54 in Figure 6, at 91 in Figure 19, and at 92 in Figures 20 and 21. Each of these elements has at least one edge portion whose cross-sectional configuration conforms to the basic J shape.

Assuming that the partition structure of Figure 1 is to be assembled, the first step is to lay the rail 33 along the floor. Preferably this rail is provided with a groove 93 in its bottom face, to receive one or more pins or anchoring elements 94 mounted in the floor at suitable intervals. I have shown the possibility of mounting the pin 94 in an insert 95 set into the floor, the pin 94 having an opening or eye near its upper end to receive a nail or fastener 96 driven transversely into the rail 33. The structure is "finished off" by the laying of base boards 53. If desired, recesses may be provided between the rail 33 and the base boards 53 to receive electric wiring 97 or the like.

The auxiliary element 54 is then similarly fitted in a vertical direction, being cut or trimmed along the edge 55 to conform to the irregularities of the wall against which it is fitted. Anchoring elements similar to that shown at 94 may be employed if deemed necessary or desirable.

The auxiliary element 54 is of the type which has a J-shaped edge. This edge is shown at 56 in Figure 6 and is adapted to receive the tongued auxiliary element 45. If desired, a tongued element such as that shown in Figure 14 could be used, the element 42 being equivalent, in the finished structure, to the elements 54 and 45 of Figure 6, considered together.

The next step then consists in pressing the panel 57 into position. The J-shaped groove along the bottom edge fits snugly over the tongue 58 formed along the upper edge of the auxiliary piece 33, and the J-shaped groove along the left hand edge of the panel 57 (as viewed in Figure 1) fits similarly over the tongue 59 of the element 45 (see Figure 6) or over the tongue 60 of the element 42 (see Figure 14).

The next step lies in the application to the right hand edge of the panel 57 of the auxiliary strip 61. This is a strip of the character shown in Figure 15. When it is in position, the narrow surface corresponding to that which is designated 62 in Figure 15 fits snugly between the aligned

front surfaces of the panels 57 and 64, while the corresponding narrow outer surface 63 fits in a similar manner between the two rear aligned surfaces of the panels 57 and 64.

The next step in the procedure is to mount the panel 64 into position. The groove along the bottom edge fits over the tongue 58 (see Figure 5), and the groove at its left hand edge (as viewed in Figure 1) fits over the tongue presented by the connector strip 61.

When the panels 57 and 64 are in position, they are in edge-to-edge relationship in a single plane, and along the adjacent edges the long stem of each J is aligned with the short stem of the other. It is for this reason that the rib 66 is offset from the rib 67 (Figure 15).

The next piece to be applied to the structure is the connector strip 44. The lower tongue 65 (see Figure 5) fits into the J-shaped grooves along the top edges of the panels 57 and 64, and it is for the purpose of accommodating the connector strip 44 that the ribs 66 and 67 (Figure 15) project at their ends as shown. The relationship between the strip 61 and the panel 64, after the parts have been assembled as described, is indicated most clearly in Figure 16.

In similar fashion the assembly of the partition structure proceeds by the successive application of the panel 68, the vertical connector strip 69, and the panel 70. The relatively long vertical auxiliary strip 71 is then applied.

In a similar successive manner, the other panels and auxiliary elements are brought into position and assembled with one another. One of the final steps is to apply the ceiling strip or strips 34. To fit each such strip accurately to the ceiling, and to wedge the entire partition structure into position, wedges 72 may be employed wherever advisable, and covering boards 73 are used to finish off the top edge.

An illustrative corner construction is shown both in Figure 7 and in Figure 8. In Figure 7, the panel 74 is shown in end-to-end relation to the panel 75 but in this case these panels are at right angles to each other. The joint is made by nesting the J-shaped edge of the panel 75 with the corresponding edge of the panel 74 so that the outer surface of the long stem of the J lies against the end of the short stem of the other J. This leaves one of the J-shaped edges completely exposed, which in Figure 7 is the edge of the panel 75. To complete the structure, the auxiliary element 35 is employed, the tongue 76 fitting into the J of the panel 75, and the cross-sectional configuration being such that the outer surface 77 forms part of the outer surface of the angular wall portion defined by the panels 74 and 75. If desired, a fastening means may be applied to the element 35 to strengthen the structure at this region.

Similarly, in Figure 8, the J-shaped edge of the panel 26 is nested with the J-shaped edge of the panel 78, and the auxiliary element 36 completes the assembly.

Exactly the same type of corner construction is employed when the invention is to be used in forming a ceiling. This is illustrated most clearly in Figure 13 in which I have shown panels 79 and 80 with their adjacent J-shaped edges in nested relationship, the auxiliary element 41 completing the structure.

Where a T-shaped joint is to be created, the panels may be assembled in the manner indicated in Figure 10. In this figure, I have shown three panels 81, 82 and 83 arranged in radiating rela-

tionship. It will be observed that the J's are nested in volute fashion. So far as the panels 82 and 83 are concerned, the long stem of each J is in alignment with the short stem of the other. As between the panels 81 and 82, it will be observed that the outer surface of the longer stem of one J is nested against the end of the short stem of the adjacent J; and the same relationship of parts exists between the panels 81 and 83. The auxiliary element 39 completes the structure by virtue of the tongue 84 which fits into the fully exposed J, which, in the illustrated embodiment of Figure 10, is the J-shaped edge of the panel 82.

Where four panels are to be brought together in radiating relationship so as to form a cross-shaped wall portion, no auxiliary elements of any kind are required. This is indicated in Figure 11 where I have shown the panel 88 interengaged with three other panels 85, 86 and 87. In each case, the outer surface of each J lies against the end of the short stem of the adjacent J. This interengagement of parts is made possible by the special predetermined proportions of the stems and over-all width of the basic J.

The construction of Figure 12 would be employed where the partition or wall has an open end, the auxiliary element 40 serving merely as a finishing piece. The outer surface of this element forms part of the outer surface of the partition structure.

In Figure 18 I have shown an auxiliary element 90 which is curved through a 90° arc. This is illustrative of the variations which are possible without departing from the basic concept. The piece of Figure 18 might be used, for example, as a connector between panels arranged at right angles to each other, thereby forming a curved wall portion. The tongues 98 and 99 are adapted to engage, respectively, with the J-shaped slots in the adjacent edges of the panels which are to be interconnected.

Figure 19 illustrates an auxiliary element 91 similar to the element 90 except that it is of the non-tongued variety, having opposite edges 100 and 101 of J-shaped configuration. Each J conforms accurately to the basic shape common to the other members of the set, whereby the desired cooperation among the several elements may be achieved as hereinbefore described.

A similar auxiliary element 92 is shown in Figure 20. This element is substantially rectangular in cross-section and has one edge 102 conforming to the basic J-shape. Essentially, this auxiliary element is generically similar to the element 54 of Figure 6. It may be used for stiffening purposes as indicated in Figure 21. In the latter figure I have shown two aligned panels 103 and 104, with the long stem of each J aligned with the short stem of the other. Instead of connecting these panels by a tongued element, as shown for example at 46 in Figures 7 and 8, I have shown how two auxiliary elements 92 can be employed to form a volute interconnection. This results in forming a wall structure having a stiffening rib, such a rigidifying effect being often desirable. A bolt or other fastening means may prove to be desirable to help to hold the parts together, but such a means has not been shown in Figure 21 since it is not absolutely essential under all circumstances. Of course it makes no difference whether this wall portion is vertical or horizontal. And it will also be understood that only one element 92 might be employed, with

the exposed J engaging a tongued auxiliary element as indicated in Figure 10.

An auxiliary element such as that shown in Figure 20 may also be employed for other purposes; for example, to brace or finish or otherwise complement a partition structure in any suitable or desired manner.

Sometimes the basic panel may be composed of a single element of material, substantially homogeneous throughout. Such a panel is indicated at 89 in Figure 22. It is contemplated that pressed fibre or similar composition material might be employed. The standard J-shaped edge configurations, indicated at 105 and 106, may be formed in any suitable manner, such as by molding or cutting.

In Figure 23 I have indicated another way of forming the basic panel. In this case, two substantially rectangular blanks 107 and 108 of sheet metal are shaped as shown and then welded or otherwise integrated along the medial seam 109, thereby forming the J-shaped edge hereinbefore alluded to. The pieces 107 and 108 are identical and can be fabricated in quantity by suitable stamping or forming apparatus, the desired edge configurations resulting from the fact that two adjacent inturned edges (such as the edge 110 of the piece 107) are shallower than the other two edges (such as the edge 111 of the piece 107). The interior of the panel may be occupied by insulation or the like, if desired.

It will be understood that the several structures and assemblies shown herein are merely illustrative, and that the various panels and auxiliary elements may be interconnected in a large variety of different ways to produce partition structures of different kinds.

One of the outstanding advantages of the invention lies in the fact that extraneous fastening elements may be almost entirely dispensed with. Except for a screw or nail judiciously applied here or there at corner regions or wherever else their use may be to advantage, nothing more than the frictional interlocking of the elements of the system is required to hold the structure in rigidly assembled condition. This has the obvious advantage that the assembly can be set up, and can also be dismantled, expeditiously and in a minimum amount of time. However, the association of the various parts in permanent interlocking engagement, with or without the aid of adhesive or other fastening means, is not meant to be excluded from the range of possibilities. It is true that certain edge pieces, such as the floor and ceiling pieces, may have to be specially fitted in order to compensate for irregularities and odd dimensions, but beyond this the assembly of any desired partition structure is a matter of extreme simplicity requiring only a proper selection of panels and auxiliary elements and an assembly of these parts in proper succession.

In general, it will be understood that the details herein illustrated and described by way of example may be modified by those skilled in the art without departing from the spirit and scope of the invention as expressed in the appended claims.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is:

1. An element of a sectional wall structure, comprising a rectangular panel having edges grooved throughout their extent and each of which is J-shaped in transverse cross-section, the

groove defining the inner surface of the J, the groove along each of two adjacent panel edges having the long stem of the J parallel to and adjacent one surface of the panel, the groove along each of the other two panel edges having the long stem of the J parallel to and adjacent the opposite surface of the panel, all said edges being dimensionally the same in transverse cross-section, the J stems differing in length by an amount which is equal to the transverse distance between the outer surface of the short stem and the inner surface of the long stem.

2. In a sectional wall structure, a rectangular panel provided with edges grooved throughout their extent and each of which is J-shaped in transverse cross-section, the groove defining the inner surface of the J, the groove along each of two adjacent panel edges having the long stem of the J parallel to and adjacent one surface of the panel, the groove along each of the other two panel edges having the long stem of the J parallel to and adjacent the opposite surface of the panel, all said edges being dimensionally the same in transverse cross-section, the J stems differing in length by an amount which is equal to the transverse distance between the outer surface of the short stem and the inner surface of the long stem, a second panel identical in edge configurations with said first-named panel, said panels being arranged at right angles to each other and in edge-to-edge relationship, the long stem of one of the contacting J's having its outer surface lying against the end of the short stem of the other, and an auxiliary element engaging the adjacent edges and provided with a tongue fitting snugly into the fully-exposed groove.

3. In a sectional wall structure, a rectangular panel provided with edges grooved throughout their extent and each of which is J-shaped in transverse cross-section, the groove defining the inner surface of the J, the groove along each of two adjacent panel edges having the long stem of the J parallel to and adjacent one surface of the panel, the groove along each of the other two panel edges having the long stem of the J parallel to and adjacent the opposite surface of the panel, all said edges being dimensionally the same in transverse cross-section, the J stems differing in length by an amount which is equal to the transverse distance between the outer surface of the short stem and the inner surface of the long stem, two additional panels identical in edge configurations with said first-named panel, said three panels being arranged in radiating relationship to define a T-shaped wall portion, two of said panels being arranged in a single plane and in edge-to-edge adjacency with the long J stem of each of said adjacent edges in alignment with the short J stem of the other, the third panel

extending at right angles to said plane with the long J stem of one of its edges interposed between said aligned panels so that the three contacting J's are nested in volute formation, and an auxiliary element engaging said nested J's and provided with a tongue fitting snugly into the fully exposed groove.

4. In a sectional wall structure, a rectangular panel provided with edges grooved throughout their extent and each of which is J-shaped in transverse cross-section, the groove defining the inner surface of the J, the groove along each of two adjacent panel edges having the long stem of the J parallel to and adjacent one surface of the panel, the groove along each of the other two panel edges having the long stem of the J parallel to and adjacent the opposite surface of the panel, all said edges being dimensionally the same in transverse cross-section, the J stems differing in length by an amount which is equal to the transverse distance between the outer surface of the short stem and the inner surface of the long stem, three additional panels identical in edge configurations with said first-named panel, said four panels being arranged in radiating relationship to define a right-angled cross-shaped wall portion, two of said panels being arranged in a single plane and in edge-to-edge adjacency with the long J stem of each of said adjacent edges in alignment with the short J stem of the other, the other two panels being similarly arranged in a single plane at right angles to the first, the four contacting J's being nested in volute formation with the outer surface of the long stem of each J abutting against the end of the short stem of the adjacent J.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
593,876	DeLong et al.	Nov. 16, 1897
248,667	Ring	Oct. 25, 1881
269,816	Hamilton	Dec. 26, 1882
274,354	McCarthy et al.	Mar. 20, 1883
1,018,987	Philpot et al.	Feb. 27, 1912
1,154,622	Fangel	Sept. 28, 1915
1,430,672	Mount	Oct. 3, 1922
1,691,803	Gray	Nov. 13, 1928
1,986,739	Mitte	Jan. 1, 1935
2,341,645	Muench	Feb. 15, 1944
2,199,938	Kloote	May 7, 1940
2,280,687	Connolly	Apr. 21, 1942
426,231	Bosworth	Apr. 22, 1890
2,407,004	Guignon, Jr.	Sept. 3, 1946