One of the objects of this invention is to provide a building material with grooved edges whereby the material may be assembled without visible exterior securing means.

A further object of this invention is to assemble the material so that the customary flat surface is formed into a series of offset sections, thereby providing an interesting pattern or somewhat rustec effect and also eliminating the possibility of cracks appearing between the various sections due to the shrinkage of certain of the materials used.

A further object of this invention is to interlock adjacent sections and their contiguous corners for wall, ceiling, and even floor construction hence forming a tenon fitting in the groove of the adjacent element.

An additional object of the invention is to eliminate the fragile tongue construction such as used in flooring and provide a sturdy side edge construction, even for very thin panels, which will not be damaged in transit or in storage.

Another object of the invention is to provide a flexible corner, either with or without grooved supports, which can be snapped into place between adjacent side walls and automatically compensate for the shrinkage and expansion of the side walls.

A further object of this invention is to form grooves in certain of the interlocked sections and so assemble the various sections that cladding is simplified.

With the foregoing and other objects in view as will appear from a reading of the following specifications and claim, the invention resides in the novel arrangement and combination of parts and in the details of construction and process of manufacturing hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention. It will be further understood that my invention is susceptible of embodiment in many and various forms, some of which are illustrated in the accompanying drawing, and that the structural details or particular steps of the method herein set forth may be varied to suit particular purposes and still remain within my invention concept.

In using a material made in sectional form, there is always present the line between the various sections even when the sections are newly installed. Generally, this line of demarcation between the various panels becomes progressively more as certain of the materials which are used become dry and consequently shrink. This shrinkage occurs not only in wood, plywood, synthetic lumber, gypsum board, etc., but also in plastics, resins and other materials.

It will be seen that my invention provides a novel way of eliminating the criticism against plywood and other panels that a monotonous, plain and uninteresting surface is provided. The line or space between the panels is difficult to hide, so my invention acknowledges this defect and overcomes the disadvantage by accentuating and beautifying the apparent defect by providing an interesting structural change. Furthermore, my construction allows for limited expansion between adjacent panels by means of the overlapping of these panels and provides for excessive compensation to be made between adjacent walls by means of the flexible corner or themovable square corner.

Fig. 1 represents a plan view of the inside wall of a house showing a square corner at one side and a snap-in or flexible corner at the other side.

Fig. 2 is a front view of a portion of Fig. 1.

Fig. 3 is a plan view of a modified form of the invention showing legs of different lengths having preformed apertures for receiving nails.

Fig. 4 is a modified form of construction wherein no furring strips are necessary.

Fig. 5 illustrates a modified form of wall construction.

Fig. 6 is a further modified form of constructing and securing the offset panel.

Fig. 7 is a still further modified form of construction wherein no side attaching members are used.

Fig. 8 illustrates a series of grooves provided in the side edges of the panels whereby the relative offset feature may be adjusted to any desired depth.

Fig. 9 is an enlarged detail view of the snap-in corner illustrated in Fig. 1, but showing ungrooved end supports for flush construction with the side walls.

Fig. 10 is a side view of a modified construction in which the sections are grooved on all sides.

Fig. 11 is a cross-sectional view taken on line 11—11 of Fig. 10.

Fig. 12 is an enlarged detail view of one of the sections forming Fig. 10.

Fig. 13 illustrates my invention as adapted for the side of a house simulating cladding construction.

Fig. 14 is a modified form of siding applied to a house.

Fig. 15 illustrates the grooved construction used with a spline to form a flush construction.

Referring in detail to Fig. 1, I illustrates a panel having a groove 2 and legs 3. This panel may be formed of any material, such as, natural wood or synthetic wood, such as, "Masonite," "Celotex," "Insulite," or may be formed of laminations of various materials, such as, metal and wood, wood and plastic, wood and leather, etc. However, my invention is particularly concerned with the use of the above idea in connection with plywood panels where unusual results have been obtained. Wherever the expressions "plywood" or "panels" are used, sections or pieces of any material are also included.

In assembling panels 1, one of the legs 3 formed by the groove 2 in one panel is interlocked in the groove 2 of the adjacent panel. The panels are secured to the lumber or plywood sheathing or plaster wall 4 by gluing or nailing or by a combination of gluing and nailing. The nailing can be concealed by reason of the fact that it is proposed to toenail the panel to the wall, or to the single or double furring strip 32, through the groove and adjacent leg, prior to the insertion of the panels and the adjacent panel in the groove. The corner panels must be securely fastened to the walls. The intermediate panels may be secured solely by interfitting with the adjacent panel if so desired. This is particularly true where alternate panels are adjacent to and are secured to the wall. However, some nailing or gluing will tend to make the intermediate panels more secure.

A variety of interesting step arrangements can be made. Along one wall, the panels may be arranged in three planes, as shown in Fig. 1, in two planes, as shown in Fig. 3, or in four or more planes. The direction from which the shadow line between two planes may be taken, taking the panels individually or the wall as a whole, is also within the scope of this invention.

If square interlocking corners are desired, one side of the end panel 5 will have one of the legs removed and an additional groove 6 formed in the face of the panel whereby the panel on the side wall will interfit within said groove 6.

If a curved corner is desired, a snap-in corner 7 may be used. Corner 7 is provided with end legs 8 interfitting with the panels 1 as illustrated in Fig. 1, or may be fitted with flat type supports as illustrated by element 9 in the detailed view of Fig. 10. The corner will continue the shadow line decor of the panels, while supports 9 provide a flash continuous surface extending from one wall to the adjacent wall. These supports are secured to a backing sheet of thin, flexible metal 10, such as, aluminum, sheet steel, etc., by means of a thermofix.
A piece of thin veneer 12 of wood, plastic, or any flexible decorative material, also is secured to the backing sheet 10 by means of a similar plastic or thermosetting adhesive 11. In the present embodiment, the face veneer 12 will match the face veneer of plywood panels 1. However, an interesting mismatch paneling job may be done. Two or more sets of corners with different veneers may be provided for each room, or one or more corners from one room could be shifted to other rooms so that the room would not become monotonous or uninteresting. The corner will be more or less of a continuous nature due to the expansion and contraction of the entire wall being shifted to the floating corner of the room.

Fig. 2 is a front elevation of a portion of Fig. 1 showing the side or vertical groove 2. The panels may be of any size, such as 4 ft. by 8 ft., 4 ft. by 9 ft., 3 ft. by 6 ft. or any other larger or smaller sizes. An interesting effect is produced by panels 12 ranging up to 18 inches wide by 8 ft. high. From a structural standpoint, the width of the panel will depend to a certain extent upon the thickness or strength of the panel. For example, if an inch panel is used, the maximum width could be of the order of 12-24 inches, but for 3/4 inch plywood, the maximum width safely could be the normal maximum width of plywood panels, i.e., 48 inches. However, I do not desire to limit myself to any particular width.

Fig. 3 is similar to Fig. 1, but illustrates a three-panel 13 interfaced with a five-panel 14. A groove 15 forming a short leg 16 and a long leg 17 is provided in panels 13 and 14 with a preformed aperture to receive a nail.

Fig. 4 is a modified form wherein no furring strips are necessary and the panels are placed in a consecutive diagonal fashion directly against the plaster or sheathing. The panels will appear to be flush or continuous when viewed from one side, but when viewed from the other side will display the shadow line caused by the offset edge. No furting is necessary because of the air space which practically eliminates expansion and contraction due to lack of moisture condensation on the panel. Distortion and other deterioration of the panels are likewise eliminated.

Fig. 5 shows a panel 19 having diagonal cut grooves 20 at each end. This panel is interfitted with a narrower panel 21, having a similar groove 22 along the side edge. The panel 19 may be provided with a groove 22 to carry out the shadow line formed by the panel 19 and 21, if so desired. However, a plain panel, such as illustrated by panel 23, may be used.

Fig. 6 illustrates a further modification wherein the offset panel 24 is of thinner construction than the base panels 25. If desired, these panels may be provided with apertures 26 for reception of nails. A glue bond may also be used between the contacting areas of the panels.

Fig. 7 shows a further modified form wherein no interlocking between adjacent panels 26 occurs. These panels are held only by the molding, wainscoting, or dado at the base and by the molding at the top. If desired, of course, adhesive or nails or both may be used between the contacting edges of the panels.

Fig. 8 illustrates panels 27 having a series of grooves 28 along the side edge whereby the relative offset portion of the adjacent panel may be adjusted to a greater or lesser degree. Panels 27 are illustrated as having four grooves therein, but more or less grooves may be used, if desired. In order to hide the grooves and present a flush appearance, wooden plugs may be inserted into the exposed grooves. These inserts may be secured therein by friction fit, glue, or any other appropriate means.

Fig. 10 is a front elevation of a series of interlocked blocks which have grooves 43 on all sides. These blocks or squares can be interlocked so that alternate blocks 30 will be raised while adjacent blocks 31 will be positioned against the wall of the room. Fig. 11 is a side elevation of Fig. 10 taken on line 11-11. Fig. 12 is an enlarged plan view of one of the blocks showing the groove 43 around the entire outside area.

Fig. 13 illustrates a further modification of my invention used as a siding for a house 33 to simulate clapboard. The panels or sections may be of relatively short width, as illustrated by panel 34, or may be of wider width, as illustrated by 35 and 36. Also, these wider panels may be provided with one or more grooves 37 so that a shadow line will be produced intermediate the width of the panel. For the wider panels, a bevel 41 may be desirable if a snug fit is to be obtained. Furring strips, such as 38, may be used to hold the panels and the sheathing or external side of the wall of the house.

Fig. 14 illustrates a further simulation of clapboard.

A single panel 38 comprises a plurality of narrow sections 39 secured together by adhesive 40. A panel 38 comprising a series of individual sections 39 can be assembled at the factory and shipped as a complete packaged unit. Thus, time can be saved on the job. The only limitation to the number of sections or the size of the panel is the weight and awkwardness of handling.

Fig. 15 illustrates the panels assembled to form a flush appearance by inserting a spline 44 into grooves 2. It would be a great convenience to be able to construct a room with certain walls being of clapboard and certain other walls being offset sections while using the same type panels. The spline is not necessary, but is desirable.

Some of the advantages offered by the foregoing construction are the following:

1. Sound and heat insulation provided by reason of the dead air space.

2. Any problem of contraction and expansion is eliminated because of the loose fit of the legs within the grooves of the adjacent panels providing a floating action.

3. Furring strips may be omitted because of air space which practically eliminates expansion and contraction due to lack of moisture condensation on the panel. Rotting and deterioration also eliminated.

4. Because of diagonal constructions, furring need not be done even if the walls are slightly out of line.

5. Concealed nailing.

6. No tongue to be broken during manufacture, transit, storage or assembling.

7. Each of the long edges offers a continuous, sturdy, bearing surface.

8. Narrow widths of veneers can be used in making panels. Panels need not be 4 ft. by 8 ft., but can be 1 ft. or less by any length.

9. The narrow plank width eliminates waste of material.

10. The panel lends itself to being prefinished because there is blind or hidden nailing. Since nailing on the outside surface is necessary, a final finishing or staining after installing is superfluous. The panel may be manufactured in narrow width with the result that the panel is lightweight, is not awkward to store or install, and can be handled without marring.

11. Interesting mismatched paneling job can be done.

12. Particularly adaptable to use of plywood, with or without decorative wood grain faces, because of its inherent strength and lack of tendency to warp when compared with ordinary lumber.

13. The snap-in corner provides an attractive and also a sanitary corner because dirt can be more easily removed from a round corner than from a square corner. Also, if desired, the corner may be completely removed. In addition, this corner compensates for the swelling or shrinkage in the adjacent panels.

14. The offset panels and simulated clapboards provide a variety of interesting applications. These features allow for speed of erection.

15. Grooved panels can also be used for flush walls, preferably with a spline.

It is understood that novel features shown in one figure may be applied equally well to the construction illustrated in a different figure. For example, the V or beveled connecting groove of Fig. 5 can be used in place of the square cut groove 43 of Fig. 2. Similarly, the shadow groove 22 of Fig. 5 and shadow groove 37 of Fig. 13 can also be applied to the other modifications; the panels in Fig. 1 may be arranged in a continuous stepped-out arrangement whereby the rear of the panel at one corner will abut the wall, while the panel at the other corner may be the maximum distance from the same...
common wall; the prebored hole and unequal legs, as illustrated in Fig. 3, may be applied to all the constructions; the flexible corner panel can be used as a straight panel, and the outdoor siding, as illustrated in Figs. 13 and 14, could be used indoors either in the same position or by having the shadow lines run vertically. It is also understood that no air space will be present between adjacent panels as shown for purposes of illustration in Figs. 5, 6, 7, and 15, but that the edges of the various panels will contact each other or will be as close as possible. It is thus seen that I have invented a novel construction which because of the elimination of (1) face nailing and (2) use of filler after countersinking may be prefinished at the mill. Even though the panels are glued to the furring, an appreciable number of nails or brads should be used to apply pressure until the glue sets. In addition, fastening tongues are unnecessary, and the narrow width panels permit easy handling for shipping, storing and installing, and face marring is reduced to a minimum. Therefore, prefinishing at the mill during the manufacturing of the panel will assure a better finish due to the use of better equipment and material with better informed and more capable personnel. Hence, the ruining of a mahogany faced panel, for example, by use of the wrong filler or wrong stain by an uninformed carpenter is eliminated.

What I claim is:

A building construction for use in the interior of buildings comprising panels having longitudinally grooved vertically disposed side edge portions forming legs, said panels being thin and formed of plywood to minimize warping of the panels and to present an outer decorative wood grain surface, said surface being pre-finished to enhance the decorative wood grain effect thereof, a corner assembly panel comprising a flexible backing sheet, a flexible veneer mounted on one surface of said backing sheet and presenting an outer decorative wood grain surface, a pair of vertically disposed end supporting members each attached to the other surface of said backing sheet in the side edge regions thereof, said end supporting members having longitudinally grooved vertically disposed side edge portions positioned in edge to edge relationship with adjacent panels.