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**LAMINATED PARTITION**

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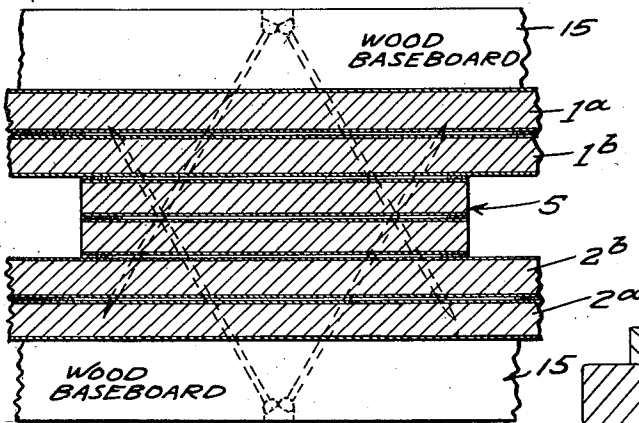


Fig. 5.

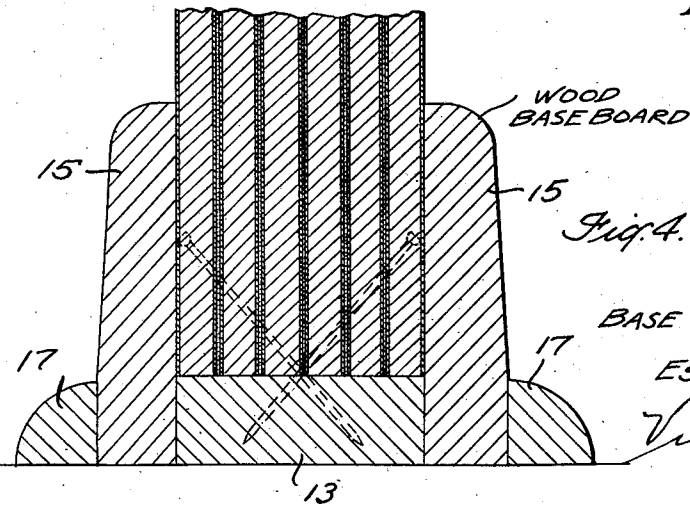
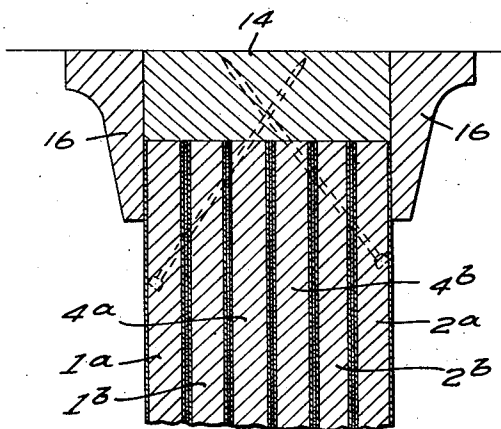


Fig. 4.

BASE SHOE

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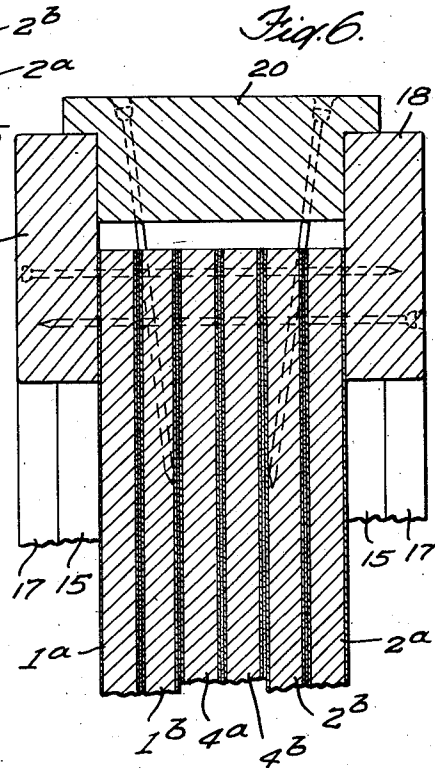


Fig. 6.

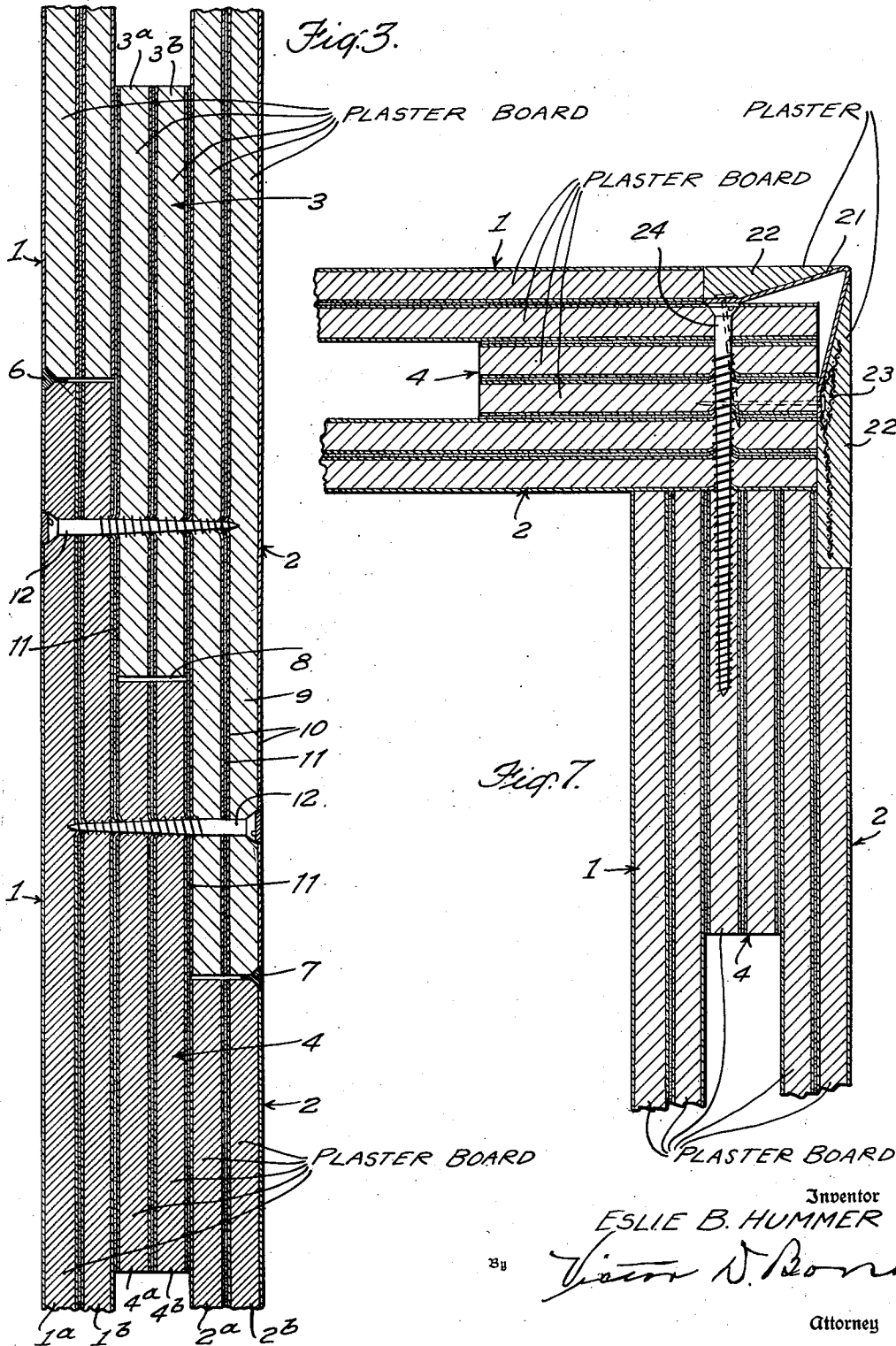
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## LAMINATED PARTITION

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2 Claims. (Cl. 72-16)

This invention has especial application to what are known in building construction as non-bearing partitions, that is, partitions which have no supporting function. More particularly the invention relates to partitions of a more or less permanent nature, such as plaster partitions.

Customarily such partition has a studding foundation on which lath and plaster are applied. Frequently, in place of lath and wet plaster, so-called plaster boards are used which are nailed on the studs. A well known form of plaster board is gypsum board, which is gypsum in sheet form with a sheathing of paper on both sides. Such boards have all the properties of plaster and obviates the need for lath and for drying time.

In my prior Patent No. 2,123,677 of July 12, 1938, I teach the advantage of laminating such board for constructing stud foundation walls and partitions. By means of the present invention, I dispense with the wooden studding in the construction of non-bearing partitions.

A partition according to this invention is made up of sections each of which is unitary and is composed altogether of plaster board, the sections for a continuous partition being fashioned to have stepped edges that are complementary and will form lap joints which are smooth and may be secured together by fastening means such as adhesion between the overlapping faces and screws that enter from opposite sides of the partition.

Gypsum board is made in continuous lengths that are limited only by shipping convenience, and in various widths. A partition section embodying this invention may be made from the full width of gypsum board and of any required length and will preferably extend vertically. The face boards for the opposite faces of the partition will be laminated, being made each of two or more layers of gypsum board adhesively secured together, as by glue. Laminated spacing strips of gypsum board, the laminations of which are adhesively secured together, are disposed at intervals between the face board, ordinarily there being one at each edge and one midway between the edges, the ones at the edges cooperating with the edges of the face boards to form the steps where the stepped construction is employed. The spacing strips are adhesively secured to the face boards, thus making a unitary structure.

The invention also includes other features of construction and has other objects and advantages, as will appear from the following description of the embodiment of the invention illustrated in the accompanying drawings, in which

Fig. 1 is an isometric detail of a portion of a section of a partition made in accordance with the invention;

Fig. 2 is a plan showing in section a portion of a partition embodying the invention;

Fig. 3 is an enlarged sectional detail of a portion of the partition including a lap joint;

Fig. 4 is a broken sectional elevation of the partition and the associated elements at top and bottom, on the scale of Fig. 3 and on the plane of line 4-4 of Fig. 2;

Fig. 5 is an enlarged sectional plan of the portion of the partition of Fig. 2 including the central spacer;

Fig. 6 is a view similar to Fig. 2 but on enlarged scale of the extreme right hand end portion of the partition shown in Fig. 2 and showing the adaptation of the invention to a door jamb;

Fig. 7 is a sectional plan on a similar enlarged scale showing a corner construction embodying the invention.

The construction of partition section shown in Figs. 1,

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2 and 3, for example, has the two face boards offset laterally and the interposed spacer strips extending out midway between the offset edges, thus making the opposite edges of the section reversely double stepped and complementary in shape, so that the successive sections will fit together with a lap joint, as shown in Figs. 2 and 3.

The two face boards 1 and 2 are laminated of gypsum board, there being two layers 1a and 1b, and 2a and 2b, respectively, in the construction shown, although the laminations may be increased, if desired. These laminations are of the same width and are adhesively secured together. The two face boards are of the same width and are laterally offset so that their edges are in stepped relation, and the two boards are spaced by interposed spacing blocks or strips, shown as three in number, two at the respective edges and one at the center. The two edge strips 3 and 4 are of the same width and are laminated of gypsum board, being shown as of two adhesively joined layers 3a, 3b and 4a and 4b, respectively, although the laminations may be increased as desired. The center strip 5 may be somewhat narrower than the edge strips 3 and 4 and is similarly composed of adhesively joined laminations 5a and 5b of gypsum board. The spaces between the edge strips and the center strip provide for insulation and also accommodate pipes and wiring. These spacing strips are adhesively secured to the face boards and the edge strips are so disposed as to project out substantially midway between the offset edges of the face boards, thereby making a two-step edge construction for the section, the two edges being reversed so that the adjoining edges of adjacent sections are complementary and fit together in a lap joint.

The lap joint construction is well illustrated in Fig. 3. The face boards 1 of the two adjacent sections meet at joint 6 on one side of the partition and the face boards 2 meet at joint 7 offset from joint 6 on the opposite side of the partition. Between these face boards the two spacer strips substantially meet at joint 8 intermediate and in stepped relation to the joints 6 and 7. Adhesive means, such as glue, and fastening means, such as screws, are used to secure the lap joint. As shown the joint 8 is midway between joints 6 and 7. In other words the two steps on each section at the joint are of equal length. Also the steps are built up of laminated plaster boards of equal thickness so that the steps are of equal height. The ratio of the length to the height of each step is at least three to one and in practice is substantially four to one as is shown in the drawings. This construction makes a solid and strong joint, the ratio of the glued overlapping faces to the thickness together with the clamping means employed cooperating to make a joint which tests have proved to be stronger than are the partition sections between the joints.

As stated, a gypsum board comprises a sheet of gypsum and, on each face, a sheathing or covering of paper 10. Between the paper sheathings of contiguous faces of the laminated board elements of a section is a layer 11 of glue or the like, and in making the lap joints glue or other adhesive is applied to the interior stepped faces, particularly to the projecting portions of the spacers 3 and 4. The two complementary edges are then fitted together and finally on each side a vertical series of screws 12 are introduced which, from the one side, enter through the overlapping end of face board 1 and pass through the projecting portion of strip 3 and into the outside lamination of face board 2; while, from the other side, the screws 12 enter through the overlapping end of face board 2 and pass through the projecting portion of strip 4 and into the outside lamination of face board 1.

These screws, as will be seen from Fig. 3, pass through the several layers of paper and adhesive and consequently get a good purchase. They act as a permanent clamp

for the adhesively bound lap joint. As will be seen in Fig. 3, the important thing is the purchase which the screws get on the paper and adhesive on the intermediate faces of the spacers between their two layers and on the paper and adhesive between each spacer and its face board. The sections are prefabricated with the result that the paper and adhesive on the inner layers are dried and hardened before the sections are put together and hence have the strength to hold the screws. As shown, the screws pass freely through the overlapping portion of the face board on each side of the partition as they obviously must do to effect a clamping action and in practice a hole is first formed in the said overlapping portion to receive each screw of proper size to allow the screw to pass freely through but to form a bearing for the head in the clamping action. A suitable filler is applied in the joints 6 and 7 and also in the depressions where the screw heads sink into the outer faces, thus making a continuous smooth surface for finishing.

Suitable fastening means for the top and bottom of the sections are shown particularly in Fig. 4. A wood strip 13 of the width of the partition is fastened to the floor along the line of the partition, and a similar strip 14 is fastened to the ceiling directly above and in line with the strip 13. The sections are made of the proper length to fit between strips 13 and 14 and the sections are secured to these strips in any suitable way, as by obliquely driven nails in the manner illustrated. Finishing pieces, such as base boards 15 at the bottom and cove molding 16 at the top, cover the joints between the partition and the wood strips. Finally, quarter round molding 17 may be applied to the floor line outside the base boards, if desired. The height of the base boards may be such that they well overlap the bottom of the plaster board sections and, as shown in Figs. 2 and 5, the base boards and the partition may be attached by nails driven obliquely through the spacer strips 5 of the successive sections.

In Fig. 6 is illustrated the adaptation of the partition to a door jamb. When the door opening comes near the side limit of a section, as shown in this figure, the cut across the partition includes the edge spacer, in this case spacer strip 4. Trim members 18 and 19 are attached vertically at the squared-off end of the section, for example, by through nails as shown. These trim members extend beyond the end of the partition, and the door jamb 20 is shaped to fit within the space between the trim members and partially to overlies the trim members beyond their outer edges. The disposition of the jamb relative to the partition is thus determined and normally clearance enough will be provided to allow for unevenness in the edge of the partition. This is indicated by the space between the edge of the partition and the inner face of the jamb in Fig. 6. The jamb may be secured in place in any suitable way, as by nails driven through the jamb more or less obliquely into the partition edge, as shown.

The way in which this improved partition may be used to make a salient angle corner is illustrated in Fig. 7. Both partitions are cut off with a square edge and the sections are so arranged that the terminal cut comes through one of the spacer strips, in this case through the strip 4 in each section. One section abuts with its edge against the face board of the other section. In other words, one is an edge abutting and the other a side abutting section, the two meeting at a right angle.

The edge abutting section is disposed with its outer face beyond the outer edge of the other section by the thickness of one lamination, and that outer lamination is cut back somewhat short of the joint. Likewise the outer lamination of the side abutting section is cut back somewhat short of the edge of that section. The actual corner thus formed is set in from the outer faces of the sections by the thickness of one lamination, and a metal corner bead 21 is attached to the sides of the salient angle

and extends with its corner line at the virtual intersection of the outer faces of the sections. The spaces between that line and the ends of the shortened outer laminations of both sections are filled with a suitable filler 22 which completes and continues the outer surfaces flush to the corner. If desired, wire lath 23, as shown, may be used to reinforce the filler. The joint may be secured in any suitable way, preferably by a series of comparatively long screws 24, as shown, which enter the reduced portion of the side abutting section so that their heads are covered by the filler, and pass through that section and are threaded a substantial distance into the edge abutting section.

It is known that laminated board may be and to some extent is made by flowing gypsum on both sides of a strip of paper and between two outside paper sheathings. Such a board would manifestly be the equivalent of two separate and complete boards adhesively secured together, there being lacking only one intermediate layer of paper and the intervening layer of adhesive. It is my intention that the definition of laminated board herein shall comprehend such board. It is further obvious that the particular fastening means shown and described herein constitute no essential part of the invention, and that various changes in those and other details will readily occur to those skilled in the art which come within the scope of the invention as defined in the appended claims.

I claim:

1. A hollow sectional plaster board partition each section composed of two spaced paper sheathed face plaster boards of equal width and laterally offset, and a spacer at each lateral edge comprising a relatively narrow filler strip of paper sheathed plaster board between and adhesively secured to each face board and having its outer edge disposed midway between the offset edges of the face boards, the thickness of the filler strip and of the face boards being substantially the same and the exposed face of the filler strip being at least three times its thickness, whereby the edges of the section have two steps of equal length and height, two adjacent sections being joined in the same plane with their two-step complementary edges fitting together in face to face contact across the full width of the steps with the overlapping faces adhesively joined and the edges of the face boards and spacers of the two sections abutting and making a solid joint, and a vertical series of screws entered through the overlapping step portion of each face board and passing freely through said overlapping portion and extending through the spacer and into the inner layer of the face board of the opposing section, whereby the screw threads obtain a purchase on the paper sheathings and adhesive between the overlapping faces of the joints and serve thereby as clamping means to hold the faces of said joints firmly together in contact while the adhesive on said faces is hardening in the erection of the partition.

2. A hollow sectional plaster board partition as described in claim 1, wherein each of the face plaster boards and of the filler strips is of laminated construction, each lamination comprising a plaster sheet entirely sheathed on its opposite faces with paper.

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