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J. MCINERNEY

2,013,693

YIELDING WALL JOINT

Filed March 29, 1933

Fig. 1

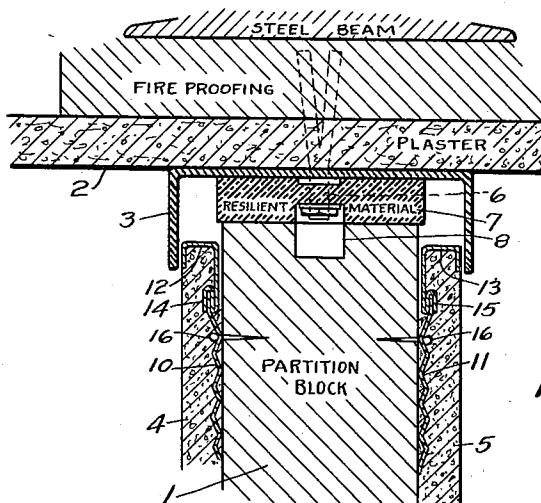


Fig. 2

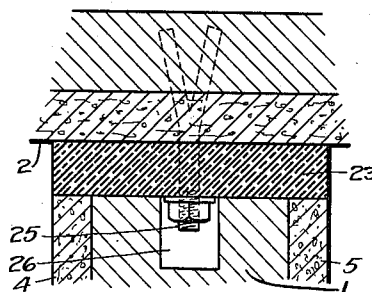


Fig. 3

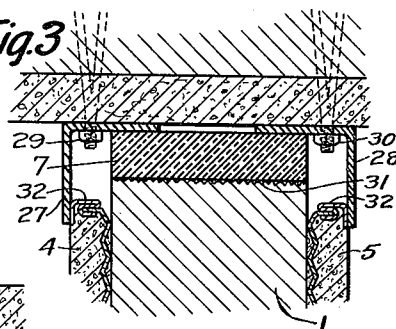


Fig. 4

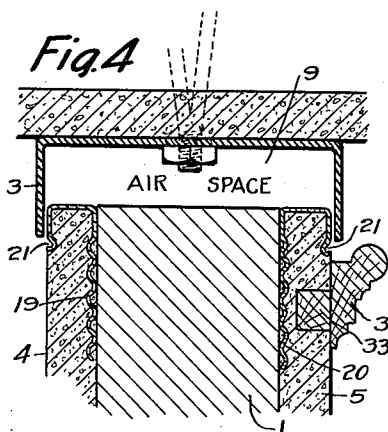


Fig. 5

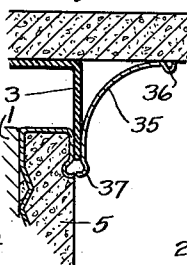


Fig. 6

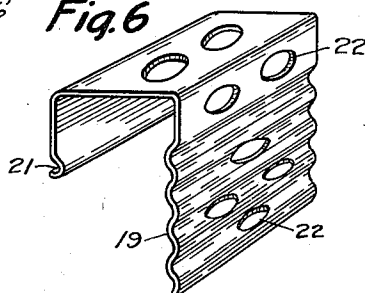


Fig. 7

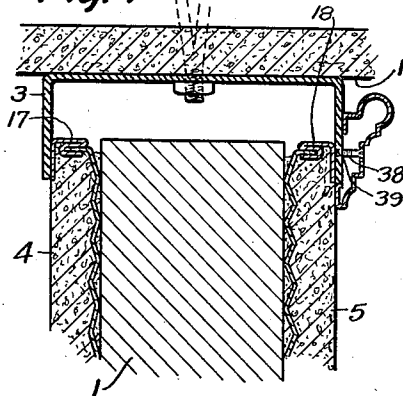


Fig. 8

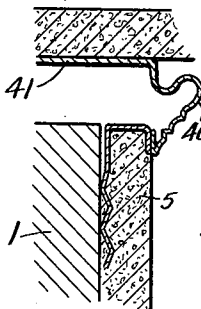


Fig. 9

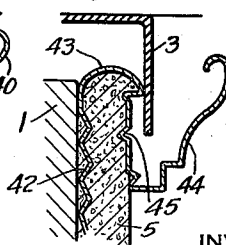
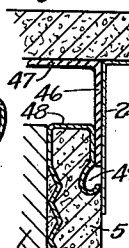


Fig. 10



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YIELDING WALL JOINT

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Application March 29, 1933, Serial No. 663,353

4 Claims. (Cl. 72-46)

The invention is a yielding connection between interior sub-dividing walls to compensate for changing dimensions in buildings caused by settling, vibrations and wind sway.

5 The connection is formed by inserting yielding material at the edges of the walls or by providing sliding or telescoping connections at said edges.

10 The object of the invention is to provide means in wall joints to compensate for changing dimensions in buildings.

Another object of the invention is to provide a method of forming a yielding wall joint which will permanently locate and hold the wall.

15 Another object is to provide a yielding wall joint which may readily be installed as the wall is built.

Another object is to provide a yielding wall joint which does not present an objectionable appearance.

20 Another object is to provide a yielding wall joint which provides freedom of motion in all directions.

25 Another object is to provide a yielding wall joint in which there is no direct connection between the plaster of the walls.

A further object is to provide a yielding wall joint which will permit lateral and longitudinal movement.

30 And a still further object is to provide a yielding wall joint which is of a simple and economical construction.

35 With these ends in view the invention embodies a channel shaped member attached to the surface of the permanent wall by anchor bolts, a resilient member in said channel shaped member and between the end of the tile of the wall and channel, and expansion casings at the edges of the plaster to protect the plaster from the edges of the channel shaped members.

40 Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:—

45 Figure 1 is a view showing a typical cross section of the edge of a sub-dividing wall in combination with part of a permanent wall or ceiling.

Figure 2 is a similar section showing an alternate design in which the channel shaped member is eliminated.

50 Figure 3 is a similar section showing an alternate design in which two angles are used instead of the channel shaped member to provide a method of using the connection against walls of uneven surfaces.

55 Figure 4 is a similar section showing an alternate construction in which finishing grooves are

provided in the walls at the edges of the channels and a picture molding is provided at one side.

Figure 5 is a similar section showing one side of the wall in which a finishing strip of material is added to round the corners.

Figure 6 is a detail showing a section of metal lath or thin material used at the ends of the plaster in the design shown in Figure 4.

Figure 7 is a section showing expansion joints in the metal lath located at the ends and also showing a picture molding attached to one end of the channel.

Figure 8 is a similar section showing one side of a wall with a picture molding formed at one end of the channel.

Figure 9 is a section showing the end of the metal lath or expansion casing bent to provide spring providing means for taking up lateral movement in the joint.

Figure 10 is a detail showing a method of constructing joints in which the entire joint is covered.

In the drawing the device is shown as it may be made wherein numeral 1 indicates a sub-dividing wall or partition, numeral 2 a permanent wall and numeral 3 a channel, which may be of steel or any material.

The wall 1 is preferably made with a tile central portion and the sides covered with plaster slabs 4 and 5. It will be understood, however, that this wall may be made of any material and the parts may be arranged in any manner and it may be of any thickness. The channel 3 may be steel or of any material, and this may be attached to the wall 2 by expansion bolts 6, as shown in Figure 1 or 4, or by any means. In the design shown in Figure 1 it is noted that the expansion bolts 6 extend into the permanent wall 2 and pass thru the plaster into the fireproofing material or into the permanent part of the wall. It will be understood, however, that these bolts may be of any size or length and may only extend into the plaster or into any part or parts of the wall as may be desired. It will be understood that the channels 3 may be held to the permanent walls by any other means or by any other manner. In the design shown in Figure 1 a resilient piece of material 7 is placed between the end of the central, or tile part of the wall, and the channel or permanent wall, as shown, and this is held in place by the expansion bolt 6, which is countersunk therein, as shown. A recess 8 is also provided in the tile to clear the head of the bolt. This material 7 may be rubber, packing, felt, whole cork, or any other elastic or yielding ma-

terial permitting give between the sub-dividing wall or partition and the permanent wall. It will be understood however that this material may be omitted, as shown in Figure 4, so that an air space 9 may be provided between the walls. This space may be of any size or may be filled with any yielding material and may be only partly filled or completely filled or completely empty, as may be desired.

10 The channel 3 may also be a rolled steel shape, or formed in any manner or of any material and is preferably arranged as shown in Figure 1 with the edges of the flanges overlapping the edges of the plaster sections 4 and 5. The plaster sections 4 and 5 may be provided with thin metallic casings, or metal lath, or any material, to protect the edges of the outer surface from the edges of the channel. In the design shown in Figure 1 the wall is provided with metal lath sections 10 and 11 and these are attached to casings 12 and 13 at the edges of the plaster by expansion joints 14 and 15. These will engage the edges of the channel and provide a sliding metallic contact between the walls and channel. The sections 10 and 11 may be attached to the central tile section by nails 16, as shown, or by any means. It will be understood that the expansion joints 14 and 15 may be arranged, as shown in Figure 1, or may also be arranged in the ends of the wall sections, as shown in Figure 7, and indicated by the numerals 17 and 18. These expansion joints may also be located at any other point or points and formed in any manner. The metal lath may also be formed as shown in Figure 1 or as shown in Figures 4 and 6 in which the corrugations are round instead of triangular and the expansion joint is omitted. In this design these sections are indicated by the numerals 19 and 20 and grooves 21 are formed at the outer edges which coincide with the edges of the channel 3 and form stops for the plaster. The plaster may be worked up to these points and if they are filled with plaster it may be removed and they may remain open or they may be filled with putty or paint or any material. The metal lath is provided with openings 22, as shown in Figure 6, so that the plaster may pass thru the lath and completely fill the spaces on both sides thereof to form a positive bind. These openings may be of any other shape and arranged in any manner and any type of lath, mesh, wire, or thin metal casings may be used.

In the design shown in Figure 2 all of the steel or metal parts are omitted except the expansion bolts and a yielding block 23 is provided the full width of the wall with the plaster stopping at the edges thereof. In this design a surfacing of the plaster, or of paint, may be continued over the ends of the block 23 so that the corners of the wall may be formed with a smooth neat appearance. It will be understood that any other means may be used in combination with the rubber such as a thin strip of material 24, as shown in Figure 10, which may be gummed to the surface of the partition and wall to provide means for holding the paint. This strip of material is comparatively thin, about the thickness of a sheet of paper, so that it will not be visible thru the paint. It will be understood that any other means may be used for covering the yielding block 23 and for finishing the corners of the wall. The yielding block 23 is held by an expansion bolt 25 and a recess 26 is provided in the tile 1 for clearance. It will be understood that this recess may be omitted as the tile is formed

with openings thruout which will clear the head of the bolt. It will also be understood that the bolt may be omitted and the block 23 cemented to the surface of the wall and also to the partition. The end of the partition may also be roughened, as shown in Figure 3, to insure a bind between the tile and resilient material and it will also be understood that any other means may be used in place of the rough surface at the end of the tile for holding the resilient or yielding block to the partition.

In the design shown in Figure 3 the channel 3 is replaced by angles 27 and 28 which will make it possible to use the joint on walls with uneven surfaces. In this design the yielding block 7 is not held by an expansion bolt and it will be understood that an expansion bolt may be placed thru this block in a manner similar to that shown in Figure 1, or to that shown in Figure 2, or as may be desired. The angles 27 and 28 are independently held by expansion bolts 29 and 30, however, it will be understood that they may be held by any other means. It will also be understood that the rough surface 31 at the end of the partition, block or tile may be used with any of the other designs shown and may also be omitted in this design. It will also be understood that the expansion joints 32 may be provided as shown or may be formed as shown in Figure 1 or in any other manner.

In the design shown in Figure 4 the block of resilient material is omitted providing an air space 9, as hereinbefore described, and grooves 21 are provided adjacent the edges of the channel 3. In this design a nailing strip 33 is provided in one side of the wall and the molding 34 may be attached to this, as shown. It will be understood that the nailing strip may be provided in both sides and may be used in any of the other designs and also that the molding may be mounted as shown or in any other manner or by any other means.

In the design shown in Figure 5 a finishing curved corner 35 is provided with beads 36 and 37 at the edges and it will be understood that strips of material of any shape or material may be provided to provide corners at the ends of the channel 3 or at the intersections of the walls. These may be in the form of molding, as shown in Figure 8, or plain curved surfaces, as shown in Figure 5, or of any other design.

In the design shown in Figure 7, the molding is formed of metal and is attached to the side of the channel 3 by screws 38, which are tapped into the channel at the points 39, as shown. It will be understood that molding of any other type or design may be used and also that it may be held to the channel or wall in any other manner. In the design shown in Figure 8 the molding 40 is shaped in the end of the channel member 1, which is indicated by the numeral 41, and it will also be understood that this molding may be shaped, as shown in Figure 5, or may be of any other shape or design as may be desired. It will also be understood that the ends of the channel shaped members 3 may be of any other form to provide a sliding joint between the wall surface and the edges thereof so that there will not be an abrupt break as between the edges of the channel and the surface of the wall, as shown in Figure 1.

In the design shown in Figure 9 a casing 42 is provided, the upper end of which is formed of a curved surface 43 and it will be understood that where as the thickness of this material is exaggerated in the drawing, it is of a comparatively

thin spring material so that as the wall section 1 moves toward the leg of the channel 3 the part 43 of the casing will bend, contracting the plaster therein, and provide lateral movement of the wall. It will be understood that this material may be formed in any other manner and any other means may be used for forming a laterally movable joint between the walls and channels or between the walls direct. In this design the member 42 is provided with an outwardly extending end 44 forming a molding and it will be understood that this may be of any shape or design. The casing is also provided with ridges 45 to insure a positive bind between the casing and plaster of the wall.

In the design shown in Figure 10 the leg 46 of the channel shaped member, which is indicated by the numeral 47, is set within the surface of the wall so that the outer surface of the channel is flush with the outer surface of the wall, and the casing 42 at the end of the plaster section is provided with a recess 49 to permit movement between the end of the leg 46 and the edge of the plaster of the wall. The strip of material 24, which may be gummed to the surfaces of the walls and channels, will completely cover the opening 49 and also the end of the channel 46 and as this is very thin, as hereinbefore described, it may be covered with paint without being visible. It will be understood that the legs of the channels and also the angles shown in any of the other designs may also be set within the limits of the walls to provide flush joints and any other means may be used to compensate for the travel or movement between the partitions and legs of the channels.

It will be understood that other changes may be made without departing from the spirit of the invention. One of which changes may be in the use of the joint for a wall, partition or sub-dividing wall of any other type or description, another may be in the use of other means for forming a binding at the edges of the plaster, another may be in the use of steel or metal shapes of any other type or description in combination with the wall to form the telescoping or yielding joint, another may be in the use of any other means for securing the parts together, and still another may be in the use of any other material or materials for the walls or any of the parts of the joints.

The construction will be readily understood from the foregoing description. In use the device may be built into the joint by placing the channel against the side of the wall or upon the ceiling, securing it in place, placing the resilient member therein, building the tile partition against the resilient member, tacking the metal lath and casings to the tile, and plastering up to the said casings with the plaster filling the same. The entire wall and structure may then be coated or painted or covered by any means. The sides of the channel may be painted the same color as the wall or may be used as a trim, or may be incorporated in the wall by making them flush therewith, and completely covered and painted, or arranged in any other manner. As hereinbefore stated, the wall, partition or sub-dividing wall may be formed of tile, covered with plaster, however, it will be understood that the wall may be made of any material and may be covered in any manner or by any means, or any composition wall, or a wall formed of structural shapes or special patented processes, or of artificial stone, or the like, may be used. The surfacing material may also be attached in any manner or

formed directly thereon or made integral with the central part of the wall, as may be desired. It will be understood that with the wall shown in Figure 1 the projecting flanges of the channel form the telescoping sides into which the wall or partition is yieldingly held and it will be understood that similar projections may be formed on a wall in any manner or by any means and of any material.

With a joint formed in this manner the wall or partition may expand or contract lengthwise without cracking and the permanent wall against which the wall or partition is built may also move toward or away from the wall or partition without cracking or breaking the partition, and it will also be noted that with the casings formed, as shown in Figure 9, the sub-dividing wall or partition may move laterally, or the main wall may move laterally in relation to the partition. The expansion bolts may also be placed in slotted holes in the channel, so that the channels may move laterally in relation to the permanent wall to compensate for distortion caused by settling or wind sway in the main wall or building structure.

It will also be understood that, as hereinbefore stated, any type of corners or moldings may be used in combination with any of the designs and these may be made integral with the parts of the joint or attached thereto, or attached to nailing strips, or held or formed in any manner or means. It will also be understood that any other means may be used for obscuring the joint between the wall or partition and main wall.

The joint is described as particularly adaptable for building new walls, partitions, or sub-dividing walls, however, it may also be used for repairing walls, and the design shown in Figure 3 is particularly adaptable for this purpose, however, any of the other designs may be used.

Having thus fully described the invention what I claim as new and desire to secure by Letters Patent, is:

1. A yielding wall joint comprising a channel adapted to be positioned with the back against a wall surface a block of resilient material in said channel, a plaster wall at right angles to said wall surface telescoping in said channel with the central portion engaging said block of resilient material, and with the ends of the plaster extending into said channel and stopping short of the wall surface, providing freedom of movement between all parts of the wall at right angles to the wall surface and the wall surface.

2. The combination with a flat surface, of a sub-dividing wall abutting said flat surface in which space is provided between all parts of said wall and said flat surface, and a channel shaped member is positioned against said flat surface with the flanges thereof extending outward and overlapping the surfaces of said wall providing freedom of movement of said wall in relation to said flat surface, said subdividing wall formed with a central supporting section having both sides surfaced with plaster in which the central portion and plaster terminate a short distance from said flat surface, and having metallic strips attached to the central portion holding the edges of the plaster, forming a binding therefor, and engaging with the inner surfaces of the flanges extending from the member on said flat surface.

3. The combination with a flat surface, of a sub-dividing wall abutting said flat surface in which space is provided between all parts of said wall and said flat surface, and a channel shaped

member is positioned against said flat surface with the flanges thereof extending outward and overlapping the surfaces of said wall providing freedom of movement of said wall in relation to
5 said flat surface, said sub-dividing wall formed with a central supporting section having both sides surfaced with plaster in which the central portion and plaster terminate a short distance from said flat surface, and metallic strips at-
10 tached to the central portion of said wall holding the edges of the plaster, forming a binding therefor and engaging with the inner surfaces of the flanges extending from the member on said flat surface, and said strips recessed in the
15 outer surface of said plaster.

4. A yielding wall joint of the type used between the edge of a partition or sub-dividing wall and the surface of a main wall or ceiling comprising two substantially thin strips of material

extending outward from the surface of the main wall, telescoping the sides of the partition and overlapping the ends thereof, and means covering the exposed surfaces thereof and adapted to form a flat surface when covered with paint, said
5 partition formed of material of substantial thickness with the entire component parts thereof terminating short of the surface of the main wall and spaced therefrom, and with the sides thereof extending between and engaging with the inner
10 surfaces of said strips of material extending from said main wall, said partition, or sub-dividing wall, adapted to move toward or away from the surface of said main wall telescoping within the
said strips of material, said construction forming
15 an expansion joint substantially within the confines of the partition and also substantially obscured.

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