Feb. 4, 1964 J. A. BOHNSACK 3,120,031

MOVABLE PARTITION CONSTRUCTION

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Fig. 1

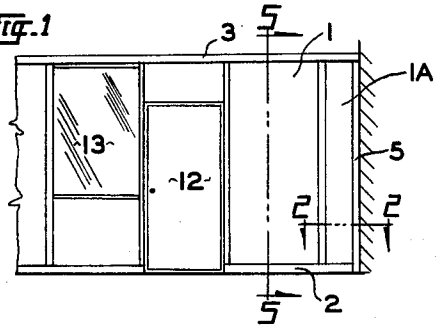


Fig. 3

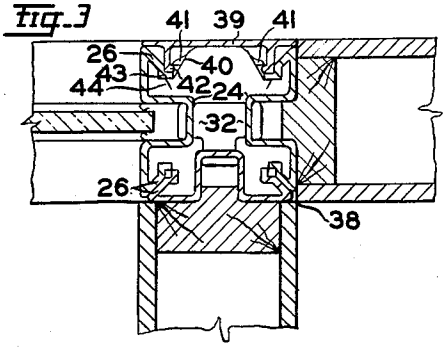


Fig. 2

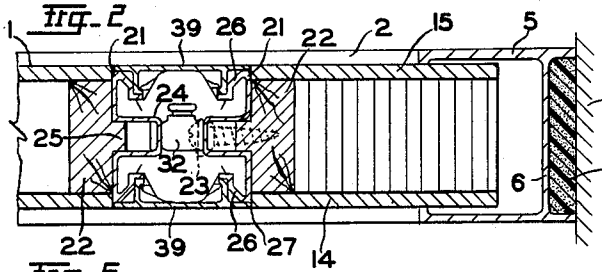


Fig. 4

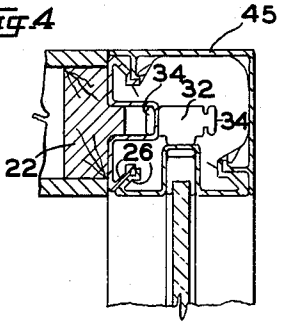


Fig. 5

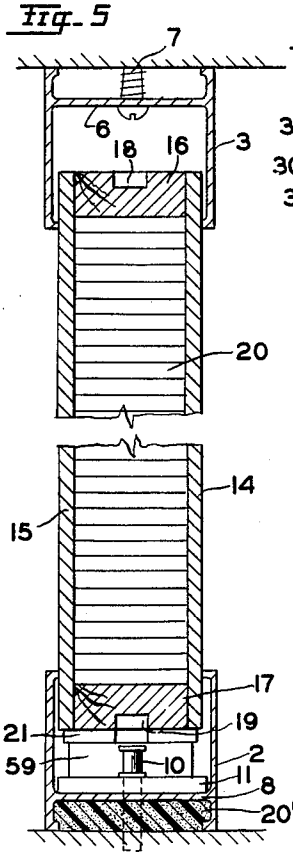


Fig. 6

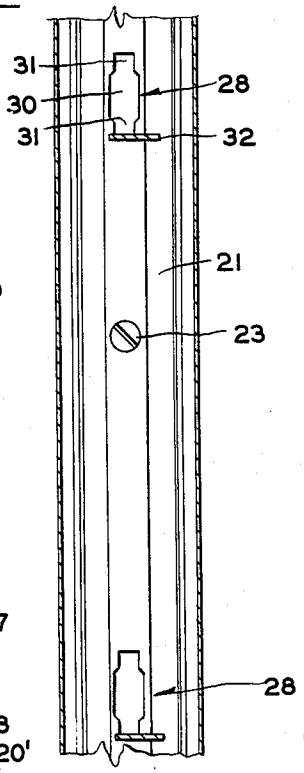
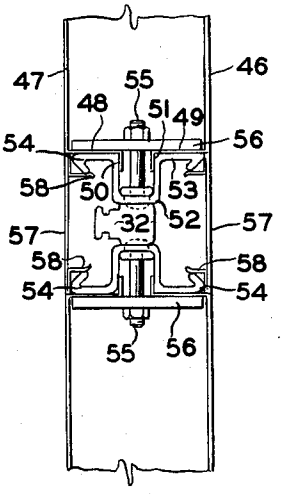


Fig. 7



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Fig. 8

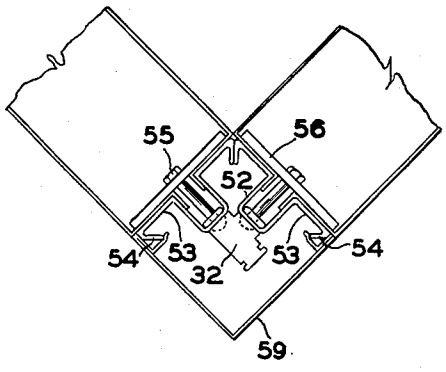


Fig. 10

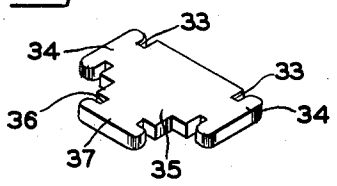
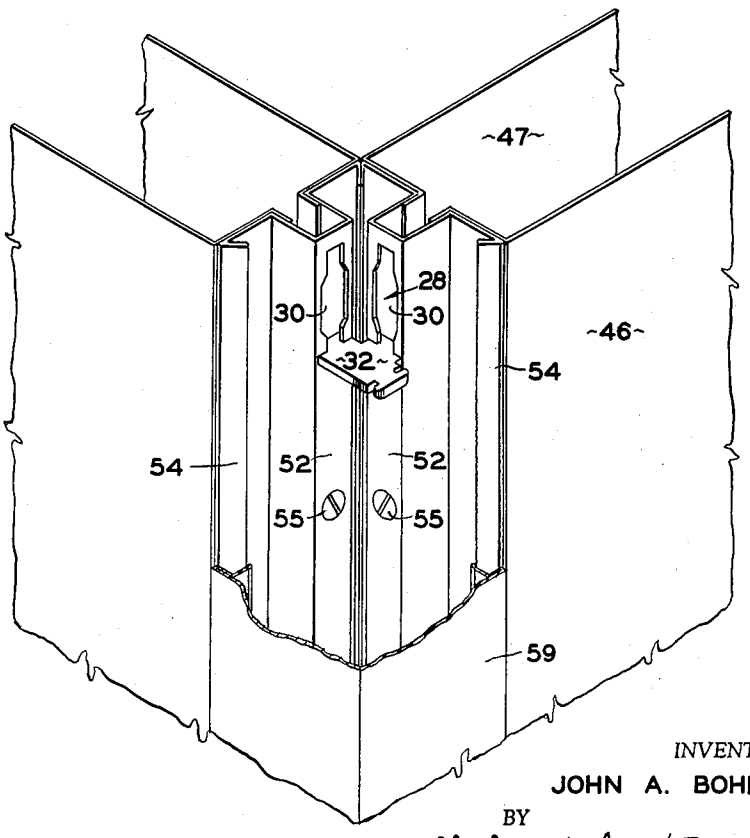


Fig. 9



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3,120,031

MOVABLE PARTITION CONSTRUCTION

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Filed Mar. 10, 1959, Ser. No. 798,491
2 Claims. (Cl. 20—4)

This invention relates, as indicated, to movable partitions and more particularly to a post construction for movable panel sections by means of which such panel section lying in the same plane or planes normal to each other may be interconnected.

In the past it has always been a problem to provide a post assembly for movable partition sections that would be simple of construction employing as few parts as possible and that would be easy to assembly and disassemble. Since the prime consideration of partitions is the ability to provide flexible modular interior constructions, the provision of a panel wall construction in which the parts may be quickly and readily assembled into any variety of partition layouts would be highly desirable. Such flexibility in panel wall construction has only been obtained through the use of interlocking end posts employing many different especially manufactured parts of complex shape and design having overlapping and protruding parts presenting an irregular appearance to the face of the partition wall. An example of such end post construction may be seen in my Patent No. 1,842,308.

It is accordingly a principal object of this invention to provide an end post construction for movable partitions employing the same parts to connect panel sections lying either in the same plane or in planes normal to each other.

It is another principal object to provide a novel partition post assembly wherein the post constructions will appear as mere planar continuations of the faces of the panel sections.

It is a further object to provide a movable partition construction that will require only a few easily manufactured parts.

It is a still further object to provide a panel wall construction that can easily be assembled and disassembled from readily available materials.

It is yet another object to provide a partition post assembly that will have no parts protruding beyond the faces of the panel sections and that will provide a partition having flush corners with no overlapping parts.

Other objects and advantages of the present invention will appear as the description proceeds.

To the accomplishment of the foregoing and related ends, said invention, then, comprises the features hereinafter fully described and particularly pointed out in the claims, the following description and the annexed drawings setting forth in detail certain illustrative embodiments of the invention, these being indicative, however, of but a few of the various ways in which the principle of the invention may be employed.

In said annexed drawings:

FIG. 1 is an elevation of a more or less typical layout employing my movable partition construction;

FIG. 2 is a transverse section on a somewhat enlarged scale taken generally on the line 2—2 of FIG. 1;

FIG. 3 is a transverse section similar to that shown in FIG. 2 illustrating a three-way end post construction in accordance with my invention;

FIG. 4 is a view similar to that shown in FIG. 3 illustrating a two-way post construction;

FIG. 5 is a vertical section on a somewhat enlarged scale of my partition wall construction taken generally on the line 5—5 of FIG. 1;

FIG. 6 is a fragmentary vertical section taken through the center of a post showing the slots in the vertical panel end members;

FIG. 7 is a transverse section similar to that shown in FIG. 2 illustrating a somewhat modified form of my movable partition construction;

FIG. 8 is a view of a two-way construction similar to that shown in FIG. 4 but employing the modified embodiment illustrated in FIG. 7;

FIG. 9 is a fragmentary perspective view of the two-way post construction shown in FIG. 8 broken away better to disclose the inner parts thereof; and

FIG. 10 is a perspective view of the post key employed in my post constructions.

Referring now to the drawings and more particularly to FIG. 1 thereof, I have shown a typical partition wall construction employing panels such as 1 which are recessed within channels 2 and 3 mounted on the floor and ceiling, respectively, these channel members being of any suitable construction and material. I, however, prefer to use extruded aluminum members of the cross-section shown cut to the desired length. The end panel 1A of the partition adjoins a wall 4 and is recessed within a vertical channel 5 which is formed similarly to the channel members 2 and 3. These channel members have web portions 6 through which suitable fastening means 7, as shown in FIG. 5, may be inserted to secure the channel members 3 and 5 to the ceiling and wall, respectively. The channel members 2 have a similar web portion 8 through which the panel is secured to the floor by means of nails 10 or the like. Between the head of the nail and the web portion 8 I place suitable shims or washers 11 to aid in securing the channel to the floor.

The partition construction shown in FIG. 1 is illustrative only and depicts a door 12 and a window 13 adjoining each other and lying in the same plane as the panel 1. This, of course, is merely exemplary of any panel wall construction and any suitable partition sections may be employed.

Referring now more particularly to FIG. 5, the panel 1 comprises panel side plates 14 and 15 secured together at the top and bottom by interposed wooden members 16 and 17 which have therein recesses or grooves 18 and 19, respectively, designed to conform to the heads of the nails 10 or the heads of the fastening means 7 so that the panel may be moved to the extreme bight portions of the channels 2 and 3. Between the panel walls 14 and 15 there may be placed suitable insulating material 20 which may preferably be a honeycomb structure utilizing air as the insulating material; however, rock wool, gypsum or one of the foamed plastics, such as "Styrofoam," are also suitable. I may likewise employ insulating material between the periphery of the panel member 1 and the bight portions of the channels 2, 3 and 5. I may also employ such insulating material between the webs 6 and 8 and the floor or wall as shown at 20'. Such insulating material may be one of the commercially available plastics such as polyurethane effective to provide a more sound-proof construction.

Referring now to FIGS. 2–5, inclusive, secured to the side and margins of my panel are vertical end members 21. These end members 21 are secured by suitable fastening means to wooden end members 22 fixed between the plates 14 and 15. In the construction shown in FIGS. 2 through 5, the members 14, 15 and 22 may be of wood or fiber board, the vertical end member 21 being secured to the member 22 by wood screws 23, for example. The vertical end members 21 comprise elongated, preferably extruded aluminum, metal runners which are secured centrally of the members 22 and have centrally outwardly extending U-shaped bends or channels 24 therein which

mate with slight ridges or protuberances 25 on the wooden end members 22. The vertical end member 21 is of a transverse dimension slightly smaller than the distance between the outer faces of panel plates 14 and 15 and has vertically extending inturned edge flange portions 26, the outer faces of which lie in planes inclined at 45 degrees with respect to the plates 14 and 15, these planes intersecting the extreme vertical outer edges of the plates 14 and 15, respectively, as shown at 27. The central U-shaped channel of the vertical end member 21 has suitably spaced openings therein through which screws 23 extend to secure the member 21 to the end portion 22 of the panel 1. This channel 24 of the vertical end member 21 also has suitably spaced key slots or openings 28 therein, the configuration of which is more clearly shown in FIGS. 6 and 9. These openings 28 have enlarged central portions 30 and more narrow vertically extending upper and lower end portions 31. It will, of course, be understood that the symmetry of these openings makes the member 21 more easily assembled on the panel section since it will make no difference if the member 21 is inverted.

Within each of these slots or openings 30 there is placed a T-shaped post key 32, more specifically illustrated in FIG. 10, which comprises a slightly elongated central portion formed with reduced or necked portions 33 near the ends thereof leaving heads 34 at such respective ends. The central portion has projecting transversely therefrom on one side an extension 35 having a reduced or necked portion 36 near the outer end thereof providing an enlarged head 37 identical in form to the heads 34. It will now be seen that the key may be turned and the heads inserted into the enlarged openings 30 of the slots 28 of the respective adjoining end members 21 and then again turned to a horizontal plane whereupon the heads may be moved downwardly into the lower narrow portions 31 of the slots 28, in this manner locking the keys against movement with respect to the vertical end members 21. The reduced portions of the key form recesses of approximately the same dimension as the wall thickness of the vertical end member 21. In this manner, once the head 34 is secured in the narrow portion of the slot, the key is precluded from movement both toward and away from each vertical end member 21.

It will now be seen that a plurality of vertically spaced keys rigidly interconnecting the panel sections in this manner will lock the panel sections against any possible relative movement. It will, of course, be understood that it is entirely possible to use two vertically spaced keys within the same opening 28 by employing a wedge or spacer to hold the keys in the distal ends of the upper and lower narrow portions 21 of the slot 30 respectively. By employing such keys in conjunction with the vertical end members 21, it will now be seen that it is possible to connect the panel sections optionally in either the same plane or in planes normal to each other.

Referring now to FIGS. 3 and 4, it will be seen that the same key can be employed to connect the panel sections in the three-way end post construction shown in FIG. 3 and the two-way construction shown in FIG. 4. In the three-way construction each of the three enlarged head portions on the key 32 engage within slots on the respective vertical end members. The outer faces of the flanges 26 abut each other forming a perfect miter joint and since they lie in the same plane as the extreme vertical edges of the panel plates 14 and 15 these edges of the plates will abut each other and in this manner will obscure the post construction from view, as shown at 38 in FIG. 3. In the three-way construction there will be one open side to the post and this may be closed by a post cap 39 of suitable configuration formed from extruded aluminum or the like. The post cap is of the same thickness as one-half the difference between the width of the end member 21 and the partition section on which it is centered. In this manner the post cap 39 will fit snugly between two adjoining partition sections and obscure the post construction from view. The resultant appearance of the juncture of the panel sections 1 and the end post cap 39 will be merely a line. The end post cap may be secured to the end members 21 by a suitable spring clip 40 having latching portions 41 engaging flanges 42 on the post cap which abut bent portions 43 on the flanges 26 of the end member 21. The spring 40 has outwardly reentrant bent portions 44 which snap over the bent portions 43 of the flanges 26 and, cooperating with the latching members 41, securely retain the post cap on the opposite flanges 26 of the facing end members 21. The additional spring clips are required when using post caps of extruded aluminum since aluminum is not suffiicently resilient to incorporate a snap on feature.

In the two-way construction shown in FIG. 4, a post, cap is illustrated which is similar to the post cap 39 of FIG. 3, with the exception that this post cap 45 as well as the retaining clip extends around the corner of the post to conceal the two sides of the assembly. It is here noted that the panel sections illustrated in FIGS. 3 and 4 may be insulated panel sections, such as that shown at 1, or door jambs such as those shown at 12 in FIG. 1, or window sections as shown at 13 in FIG. 1, the particular panel used being of no concern to my post construction.

Referring now to FIG. 7, there is shown a slightly modified post construction in which the panel plates comprises sheet metal members 46 and 47, the ends of which are bent into flanges 48 and 49. These flanges 48 and 49 have further outwardly directed flanges 50 and 51 which fit within the enlarged central U-shaped portion 52 of the end member 53. End member 53 is similar to end member 21 with the exception of a slightly different configuration of the edge flanges, the edge flanges 54 of the end member 53 lacking the rebent portions 43 of the end members 21. The end member 53 is secured to the panel plates 46 and 47 by suitable fastening means 55 extending through the central channel 52 and engaging an enlarged washer or adapter plate 56 abutting flanges 48 and 49. A nut and bolt 55 may be employed as the fastening means, but it will be understood that a screw and lock washer may be employed as well as any other suitable fastening means. It will be further understood that suitable insulation will be employed between the panel plates 46 and 47.

In the constructions shown in FIGS. 7 and 8, a slightly modified form of end post cap is employed, the end post cap being a suitable slightly resilient sheet metal member 57 having integrally inwardly projecting therefrom spring arms or members 58 having rebent end portions which snap or lock on the flanges 54 of the vertical end members 53. It will of course be understood that the post caps act as trim strips and may be of any color desirable. In the two-way construction shown in FIG. 8, the post cap 59 has an angled portion, similar to the post cap 45 shown in FIG. 4, to obscure two sides of the end post from view. In the constructions of FIGS. 7 and 8 the same key 32 is employed within the identically shaped slots. It can be seen that the end members 53 together with the post caps 57 provide an extremely simple and yet easily adaptable post construction. It is here noted that a similarly suitable post cap having three sides may readily be employed for free end constructions.

My panel wall construction is assembled within the channel members 2 and 3 by workers using conventional suction cup handles. The panel section 1 after being first inserted into the upper channel member 3 is aligned with the opening in the channel member 2 and lowered until the vertical end members 21 which extend slightly below the panel section rest upon prepositioned shims or spacing blocks as shown at 59. These blocks are so selected and positioned that the panel section 1 will be properly level in its assembled position with the vertical end member 21 preferably plumb despite irregularities of the floor.

The panels are then locked together by twisting the keys within the key slots and the end post caps are snapped into place. The enlarged central portion of the opening or slot 28 permits sufficient tilting of the key about an axis normal to the plane of each panel whereby the key may readily be inserted through the enlarged portions of juxtaposed openings in panels normal to each other. The key is then twisted (i.e. turned) to a horizontal position and dropped or forced downwardly to the position shown more clearly in FIG. 6 with the necked portions of the key closely fitted within the more narrow portion 31 of the slot 28.

It will now be seen that I have provided an extremely simple panel section post construction in which the one-way, two-way and three-way end post constructions, as illustrated in FIGS. 2, 4 and 3, respectively, may be readily assembled utilizing the identical connecting link and employing identical vertical end members. Moreover, the materials employed in my end post construction are easy to manufacture and the wall panels, especially those illustrated in FIG. 5, may be produced from readily available materials. As a result of my post construction, the only manufactured materials for my partition wall need be the channels 2, the channels 2, 3 and 5 being essentially the same, the vertical end members 21, the post keys 32, and the post caps, either 39 or 45. Furthermore, with these few elementary parts it will be seen that a wide variety of partition wall assemblies may be produced which are well within the ordinary needs of any modular construction.

Other modes of applying the principle of the invention may be employed, change being made as regards the details described, provided the features stated in any of the folowing claims or the equivalent of such be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A panel wall construction comprising top and bottom members, panel wall sections interconnected perpendicular to each other extending between said top and bottom members each comprising laterally spaced face plates having inner and outer surfaces, vertical end members on said panel wall sections, and keys interconnecting adjoining vertical end members thus to connect adjoining panel wall sections, said end members being more narrow than said panel wall sections and having miter edge flanges whereby said flanges are recessed from the outer surface of said face plates, the outer faces of said edge flanges lying in planes intersecting the vertical marginal edges of said face plates, said vertical marginal edges of the face plates of adjoining panel wall sections abutting each other to form a single line contact, and said outer faces of adjoining edge flanges abutting each other to form a miter joint.

2. A panel wall construction as set forth in claim 1 wherein said vertical end members include deep central vertically extending channels.

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