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ALIGNING MEANS FOR FOLDING PARTITIONS

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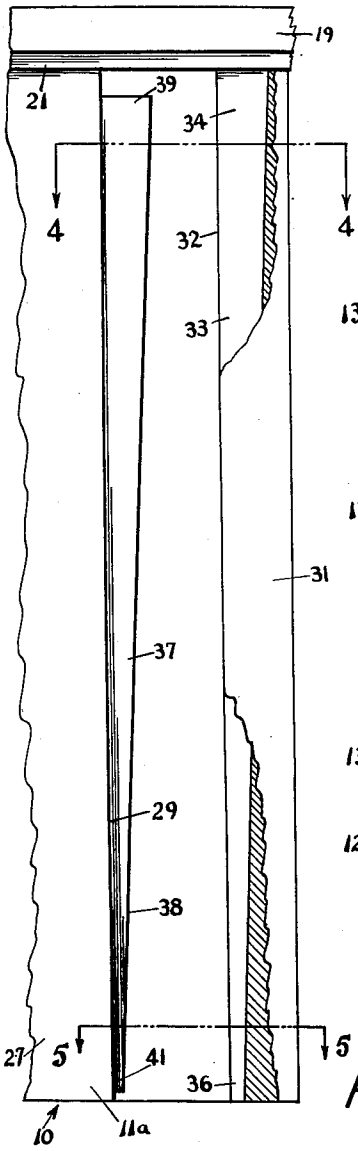


Fig. 3

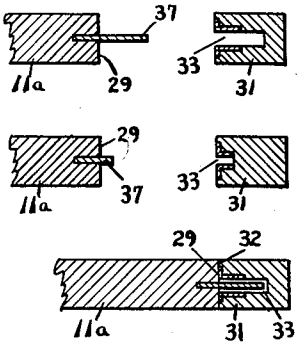


Fig. 4

Fig. 5

Fig. 6

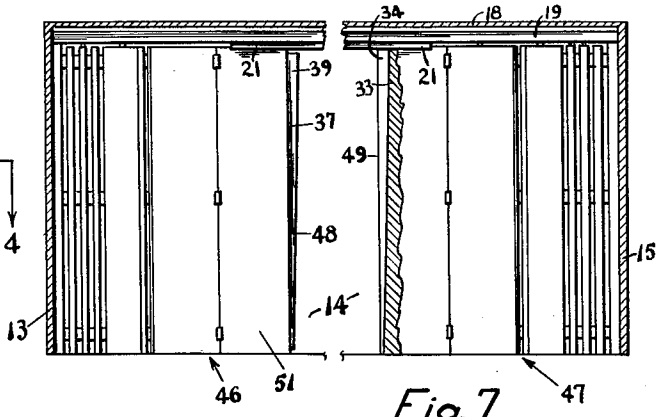


Fig. 7

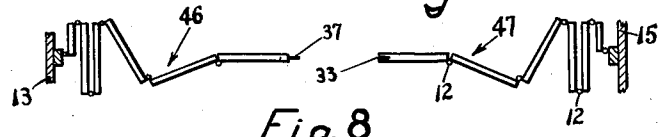


Fig. 8

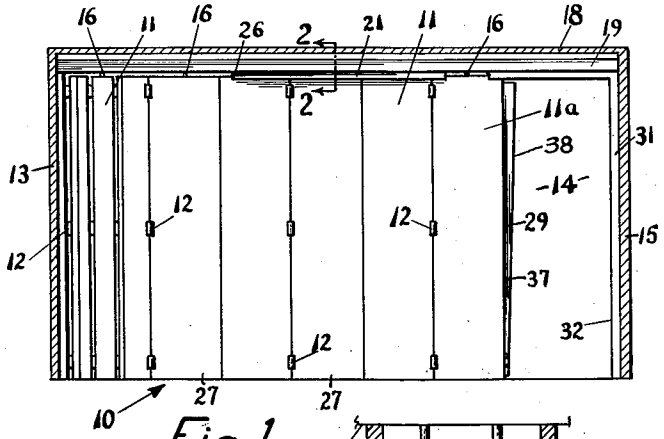


Fig. 1

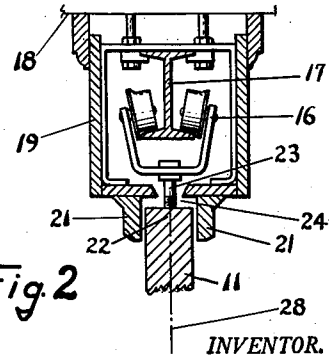


Fig. 2

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ALIGNING MEANS FOR FOLDING PARTITIONS

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4 Claims. (Cl. 160—206)

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This invention relates generally to folding partitions and in particular to a folded partition comprised of a series of hinged-together partition sections which are extendible across a room to separate or divide a part of the room from the remainder of the room.

An object of this invention is to provide an improved foldable partition.

A further object of this invention is to provide a foldable partition in which the leading end of the partition, when the partition is in an unfolded position, is centered relative to a stop abutment therefor.

Still another object of this invention is to provide a foldable partition in which the leading end thereof is of a construction relative to an abutment member therefor, when the partition is in an unfolded position, such that the leading end is moved into a centered relation with the abutment member concurrently with the engagement therefor with the abutment member.

Yet a further object of this invention is to provide a center aligning means for a folding partition which is of a simple and compact design, efficient in operation, and capable of being installed on the partition without detracting from the appearance of the partition.

A feature of this invention is found in the provision of center aligning means for a folding partition in which the leading edge of the partition is provided with a flat upright alignment member projected forwardly from the leading edge of the partition, with the upper end of the alignment member being arranged to lead the lower end thereof. An upright abutment or jamb, engageable with the leading edge of the partition, when the partition is unfolded or in a closing position therefor, is formed with an upright guide groove for receiving the alignment member on the leading edge of the partition. The groove is of a tapered construction so that its upper end is both wider and deeper than its lower end, whereby on unfolding of the partition the upper end of the alignment member is initially received within the upper end of the groove, and as the partition is unfolded the alignment member, from its upper end to its lower end, is progressively moved within the groove to center or align the partition relative to the groove in the abutment.

Further objects, features and advantages of this invention will become apparent from the following description when taken in connection with the accompanying drawings, in which:

Fig. 1 is a side elevational view showing a single folding partition and an associated closing abutment or jamb therefor, embodying the center aligning means of this invention, wherein the partition is movable from one side of the room into engagement with the abutment to partition the room;

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Fig. 2 is an enlarged sectional detail view, as seen on line 2—2 in Fig. 1, showing a trolley device for supporting certain of the sections in the folding partition from the ceiling of a room;

Fig. 3 is an enlarged side elevational view showing the leading end or edge of the folding partition in Fig. 1, and the abutment therefor, with certain parts of the abutment being broken away to more clearly show its construction;

Figs. 4 and 5 are sectional detail views taken along the lines 4—4 and 5—5 in Fig. 3;

Fig. 6 is a sectional detail view illustrated similarly to Fig. 4 showing the partition and abutment therefor in engaged positions;

Fig. 7 is a side elevational view showing a pair of associated partitions, embodying the center aligning means of this invention, and in which the partitions are movable toward each other from a pair of opposite side walls of a room to divide or partition the room, with certain parts being broken for the purpose of clarity; and

Fig. 8 is a top plan diagrammatic view of the pair of folding partitions shown in Fig. 7.

With reference to the drawings, the center aligning means of this invention is illustrated in Figs. 1 and 3 in assembly relation with a folding partition, indicated generally at 10, and comprised of a series of partition sections 11. The folding partition or door 10 is of a commercially available type wherein the sections 11 are hinged together at 12 for folding or opening movement flat against each other adjacent to one side wall 13 of a room, designated at 14, which is to be divided or partitioned, and for unfolding or closing movement across the room to a position adjacent its opposite side wall 15.

The partition sections 11 are supported for folding and unfolding movement on trolleys 16 which travel on a track 17 suspended from the room ceiling 18 (Fig. 2). As shown generally in Fig. 1 a trolley 16 is connected with the first or lead section 11a of the partition 10 and then with every other section in the partition from the lead section. The trolleys 16 and track 17 are enclosed within a ceiling casement 19, the lower end of which terminates in a guide molding 21. As best appears in Fig. 2, the guide molding 21 constitutes a guideway for the upper ends 22 of the partition sections 11.

Each trolley 16 includes a swivel bolt 23, which

is connected with certain of the partition sections 11, as previously described. The swivel bolts 23 extend through a longitudinal slot or opening 24 in the casement 19 for connection with the upper ends 22 of the partition sections 11 at a position within the guide molding 21. To permit a folding movement of the partition sections 11, as shown at the left hand side of Fig. 1, the guide mold 21 (Fig. 1) terminates short of the room side wall 13, as indicated at 26. Movement of the partition 10 to its folded and unfolded positions may be accomplished in a usual manner by an electrically operated cable system (not shown) which is operatively associated with the trolleys 16. It is to be understood, however, that other actuating systems, such as those of the chain and screw type, may also be used.

In the use of a folding partition of this type, the lower ends 27 of the partition sections 11, when the partition 10 is in its unfolded position, tend to be located outwardly or laterally out of vertical alignment with their upper ends 22. In other words, the partition sections 11 are inclined to one side or the other of a vertical plane through the track 17 and section 11, which plane is indicated at 28 in Fig. 2. This lateral tipping of the partition is overcome by the center aligning means of this invention.

The unfolded position of the partition 10 is limited by the engagement of the leading end or edge 29 (Figs. 1 and 3) of the lead or first partition section 11*a* with an upright abutment or jamb 31 carried on the room side wall 15. The jamb 31 is formed in its outer side 32, which is engageable with the lead edge 29, with a vertical guide groove 33. This 33 is of what might be termed a double tapered construction in that the upper end 34 is of both a greater depth and width than its lower end 36, with the tapered construction of the depth of the groove appearing best in Fig. 3 and the tapered construction of the width of the groove being apparent from a consideration of Figs. 4 and 5.

Projected laterally outwardly from the lead edge 29 of the first section 11*a* of the folding partition 10 is a flat upright alignment member 37 (Figs. 1 and 3), the outer edge or side 38 of which is tapered so that the upper end 39 of the alignment member 37 overhangs the lower end 41 thereof. As shown in Fig. 5 the alignment member 37 is of a thickness slightly less than the width of the lower end 36 of the groove 33.

As the partition 10 is unfolded across the room 14 toward the jamb or upright abutment 31, the upper ends 22 of the partition sections 11 are guided and maintained by the mold guides 21 in a substantially centered relation with the upright guide groove 33. As a result, when the lead edge 29 of the first partition section 11*a* approaches the jamb 31, the upper end 39 of the alignment member 37 is positioned for entrance within the upper end 34 of the groove 33. This entry of the alignment member 37 is facilitated by virtue of the upper end 34 of the groove 33 being wider than its lower end 36 and greater than the thickness of the alignment member 37. In one embodiment of this invention, the alignment member is about one quarter of an inch thick, with the upper end 34 of the groove 33 having a width of about one half inch, and its lower end 36 a width of about five sixteenths of an inch.

As the unfolding movement of the partition 10 continues, after the initial entrance of the upper end 39 of the alignment member 37 within the groove 33, the alignment member 37 is progressively received within the guide groove until the leading edge 29 of the partition section 11*a* engages the side 32 of the jamb 31, as shown in Fig. 6. By virtue of this progressive entrance of the alignment member 37 within the groove 33, the partition 10, concurrently with the unfolding movement thereof to a room partitioning position, is arranged in vertical alignment with the groove 33 and in turn into a centered or vertically aligned relation with the plane 28. It will be further appreciated that the reception of the alignment member 37 within the groove 33 functions also to hold the partition 10 against swinging movement out of its centered position.

The center aligning means of this invention is also applicable to that type of folding partition installation wherein a pair of folding partitions, designated generally as 46 and 47 in Figs. 7 and 8, move inwardly toward each other from the opposite side walls 13 and 15 of the room 14. Since the folding partitions 46 and 47, in Figs. 7 and 8, are similar in construction and operation to the folding partition 10 described in connection with Figs. 1 and 3, like numerals will be used to designate like parts.

Referring to Figs. 7 and 8, each folding partition 46 and 47, in its unfolded position, extends substantially one-half the way across the room 14, with the partition or division of the room being accomplished on engagement of the lead edge 48 of the partition 46 with the lead edge 49 of the partition 47. The lead edge on one partition thus constitutes an abutment or stop for the lead edge of the other partition.

An alignment member 37 is assembled with the lead section 51 of the folding partition 46 in all respects similar to the assembly of the alignment member 37 with the partition section 11*a* of the partition 10 in Figs. 1 and 3. For receiving the alignment member 37 on the partition 46 the lead edge 49 of the partition 47 is formed with an upright guide groove 33 similar in all respects to the groove 33 in the jamb 31.

Thus, on unfolding or closing movement of the partitions 46 and 47 across the room 14 toward each other, the upper end 39 of the alignment member 37 is guided within the upper end 34 of the groove 33 as a result of the guided support of the upper ends of the partitions 46 and 47 within the mold guide 21. As the leading edges 48 and 49 are moved against each other, the alignment member 37 is progressively received within the groove 33.

The partitions 46 and 47 are thus guided into relative alignment whereby to eliminate any unfolded or closed positions of the partitions in reversed inclined directions relative to the vertical plane 28 and to assure an over-all engagement between the leading edges 48 and 49. Stated otherwise, the alignment means positively prevents the partitions 46 and 47 being in what might be termed a triangular relation with only the upper ends of the leading edges 48 and 49 in abutting engagement.

From a consideration of the above description, it is seen that the invention provides a center aligning means for folding partitions which is of a simple design and readily adapted to folding partitions now in use. The action of the aligning means is entirely automatic, takes place concurrently with the unfolding of a partition to a room dividing position, and serves to maintain

the partition against movement out of a center or aligned position.

Although the invention has been described with respect to a preferred embodiment thereof, it is to be understood that it is not to be so limited since changes and modifications can be made therein which are within the full intended scope of this invention, as defined by the appended claims.

I claim:

1. In a folding partition wherein a series of upright partition sections are hinged together for unfolding movement outwardly from a side wall of a room to a room partitioning position and for folding movement against each other to a room opening position adjacent to said side wall of the room, a track means supported from the ceiling of the room, means movable longitudinally of said track means and connected with the upper ends of certain of said sections to support said partition for folding and unfolding movement, an upright abutment member for engaging the leading edge of an end section of said series of sections, when said partition is in a room partitioning position, having a longitudinal groove formed in the side thereof which engages said end section, said groove being of a tapered construction so that its upper end is wider than its lower end, and an alignment member extended longitudinally of the leading edge of said end section receivable within said groove, with the upper end of said alignment member being arranged so as to lead the lower end thereof, and with the thickness of the alignment member being substantially equal to the width of said groove at the lower end thereof.

2. In a folding partition for dividing a room wherein a series of upright hinged together sections are movably supported at their upper ends on a ceiling track for unfolding movement across the room to a room dividing position, and for folding movement adjacent a side wall of the room to a room position, the means for vertically aligning said partition in a room dividing position therefor including a flat upright abutment member, with the leading edge of an end section of said partition sections being movable into engagement with said abutment member when said partition is in a room dividing position, said abutment member being formed with an upright groove of a tapered construction such that the upper end of the groove is of a greater depth and width than the lower end thereof, and a flat upright aligning member on the leading edge of said end section receivable within said groove, said aligning member being of a thickness slightly less than the width of the groove at the lower end thereof and with the aligning member having the upper end thereof projected outwardly from said leading edge a greater distance than the lower end thereof, whereby said upper end enters the groove prior to said lower end when said sections are unfolded to a room dividing position therefor.

3. In a folding partition for dividing a room

wherein a series of upright hinged together partition sections are movably supported at their upper ends from the room ceiling for unfolding movement to a room dividing position extended across the room and for folding movement against each other adjacent a side wall of the room to a room opening position, an upright abutment member engageable with the leading edge of an end section of said series of sections when the partition is in a room dividing position, said abutment member being formed with a vertically extended groove in the side thereof opposite said leading edge, a flat upright aligning member projected outwardly from said leading edge and receivable within said groove when the partition is in a room dividing position, with the upper end of the aligning member being in a leading relation relative to its lower end and the upper end of the groove being wider than the lower end thereof, whereby said upper end of the aligning member is initially received within said groove to guide the remainder of the aligning member into the groove as the partition sections approach a room dividing position.

4. In a folding partition for dividing a room wherein a series of upright hinged together partition sections are movably supported at their upper ends from the room ceiling for unfolding movement to a position to partition the room and for folding movement to a position adjacent a wall of the room to open the room, an upright abutment member having a side thereof engageable with the leading side of an end section of said series of partition sections, when the partition is in a room partitioning position, with one of said sides being formed with an upright guide groove, said groove being tapered downwardly so that the upper end thereof is wider than the lower end thereof, and an upright flat aligning member projected outwardly from the other of said sides, said aligning member having the outer side thereof vertically inclined such that the upper end thereof projects outwardly from said other side a greater distance than the lower end thereof, with said aligning member being progressively receivable within said groove from the upper ends thereof, as the partition approaches a room partitioning position therefor, whereby to guide the partition into a vertically centered relation with said groove.

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