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PARTITION STRUCTURE

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2 Sheets-Sheet 2

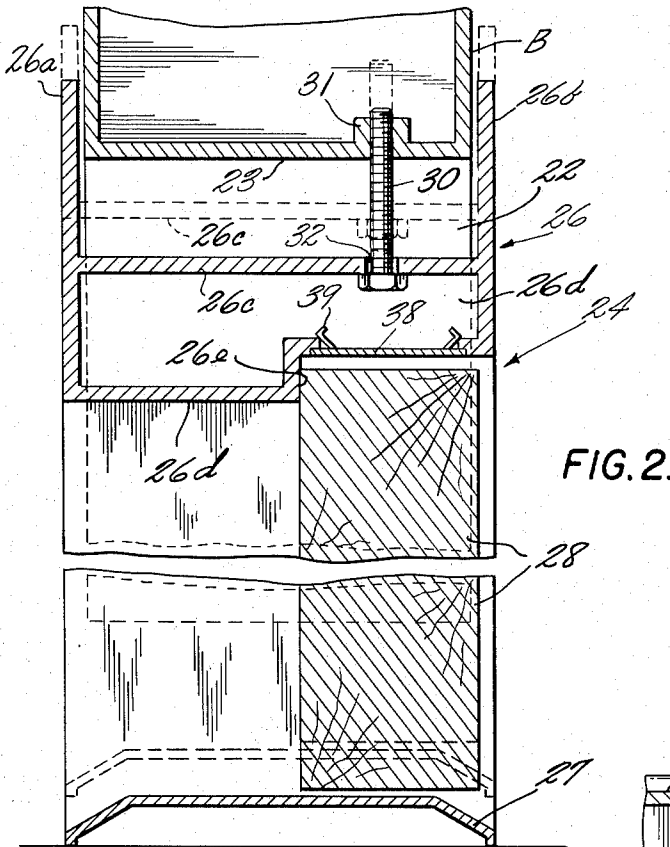


FIG. 2.

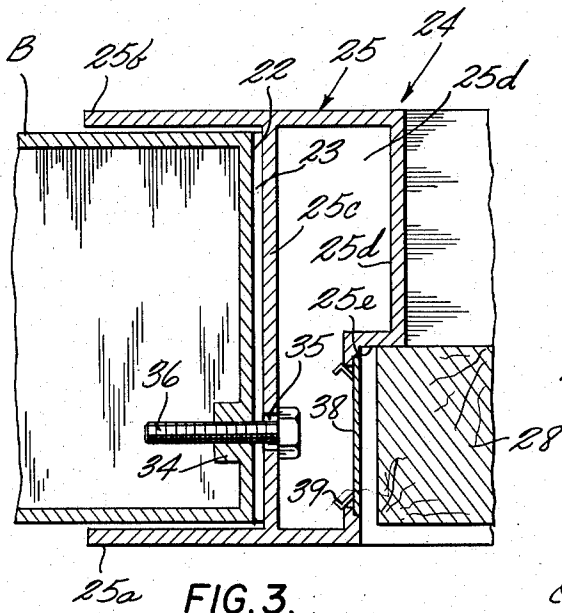


FIG. 3.

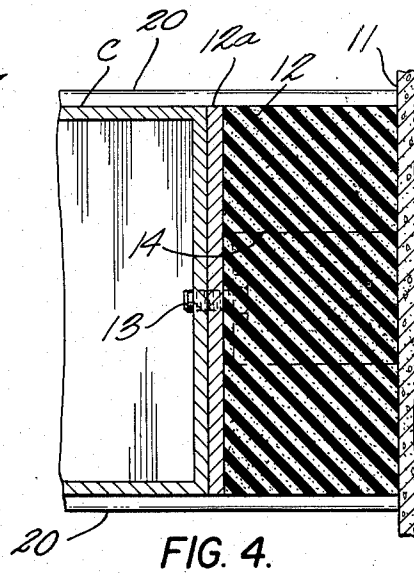


FIG. 4.

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PARTITION STRUCTURE

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4 Claims. (Cl. 189—34)

This invention relates to partition structures, and more particularly, to a partition structure wherein one of the panels is provided with a door assembly which, when the panel is not in use, may be locked in a raised, inoperative position to facilitate handling, but when the panel is installed as part of the partition structure, will be ready for use merely by lowering the door assembly into contact with the floor.

The present invention is particularly applicable to the partition structure described in our copending application, Serial No. 405,168, filed January 20, 1954, wherein the individual panels are provided with casters to permit the panel to be easily transported across a floor, and with retracted lifting jacks which, when lowered, will raise the upper edge of the panel into abutting contact with the ceiling. Panels of this general organization may be quickly set up and connected one to another to form partition structures. Moreover, they may be easily taken apart without damage to the building, and then reassembled in a different arrangement in the event that it is desired to change the floor plan. Partitions formed of these panels are, however, both attractive and sturdy so that they may be employed for the erection of walls that are intended to be of a permanent nature.

The panel of the present invention is provided with a unitary door assembly which includes upright jambs, a head extending between the upper ends of the jambs, a sill extending between the lower ends of the jambs, and a door hinged to one of the upright jambs. This entire unitary assembly is guided for sliding movement in a door-like opening formed in the panel. Before the panel is installed, the door assembly is locked in a raised position in the opening, and the panel may be rolled across a floor on the casters. When it is desired to install the panel, the panel may be connected between adjacent panels and jacked into contact with the ceiling. The door assembly may be readily set up for use merely by lowering the door assembly from its raised position until the sill engages the floor.

The present invention will be more fully understood by reference to the detailed description which follows and to the accompanying drawings in which:

Fig. 1 is an elevation of a partition wall embodying the features of the present invention;

Figs. 2 and 3 are cross-section views taken along the lines 2—2 and 3—3, respectively, of Fig. 1, looking in the direction of the arrows; and

Fig. 4 is a view taken on the line 4—4 of Fig. 1, looking in the direction of the arrows.

Referring to the drawings and particularly to Fig. 1, the partition structure of the present invention may be made up of individual panels A, B and C. The panels A and B and the panels B and C are each joined together by connector posts 10. The panel C is adapted to abut a masonry wall 11, and accordingly the panel carries a foam rubber strip 12 anchored thereto along one edge to prevent any damage to the wall 11. As best shown in

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Fig. 4, the foam rubber strip 12 may be applied to a plate 12a, and the rubber strip and the plate may be attached to the edge of the panel by bolts 13 inserted through cut-away portions 14 of the rubber. The resiliency of the foam rubber strip permits the panel to accommodate itself to any irregularities in the surface of the wall 11, and furthermore, the foam rubber strip will supply adequate frictional engagement with the wall to eliminate the necessity for any fastening device which would damage the surface of the wall.

The lower edge of each of the panels is provided with a pair of wheels or casters 15 and a pair of lifting jacks 16. The lifting jacks comprise threaded shanks 16a and bases 16b pivotally carried by the lower ends of the shanks. The shanks are threadably received in the lower edges of the panels, and the shanks are movable axially with respect to the panel when the shank is rotated with a wrench. Before the panel is installed, the jacks may be maintained in an inoperative raised position above the casters to permit the panel to be rolled along the floor on the casters when desired. When the panel is installed in a partition structure, however, the jacks are lowered, thereby raising the casters off the floor and the upper edge of the panel into contact with the ceiling or other overhead structure. The upper edges of the individual panels may be provided with spikes 18 which embed themselves in the ceiling, or to prevent damage to the ceiling, a foam rubber strip, similar to the strip 12 of the panel C, may be provided along the upper edge of the panel.

When the panels are installed to form a partition structure, baseboards 20 may be applied to the lower ends of the connector posts 10 to conceal the jacks and casters. The baseboards may be adjusted so that their lower edges will be flush with the floor. With the baseboards 20 in place, the partition structure will present a generally attractive appearance.

The panel B is provided with a rectangular opening extending from the lower edge of the panel and defined by vertical edges 22 and an upper horizontal edge 23. This opening accommodates a door assembly, designated generally by the reference numeral 24, and this door assembly is guided within this opening for vertical movement from an uppermost inoperative position to a lowermost operative position. The door assembly 24 comprises generally a pair of upright channel-like jambs 25, and uppermost channel-like head 26 connecting the upper ends of the upright jambs 25, a sill 27 connecting the lowermost ends of the jambs 25 and a door 28 mounted by hinges 29 to one of the upright jambs.

The jambs 25, the head 26 and the sill 27 define a rectangular-like structure which, due to the channel-like engagement of the jambs 25 with the edges 22 of the door opening in the panel and the channel-like engagement of the head 26 with the uppermost edge 23 of the opening in the panel, is guided for sliding movement upwardly and downwardly within the opening in the panel. The uppermost position of the door assembly is determined by the engagement with a portion of the head 26 with the upper end 23 of the opening in the panel, and provision is made for locking the door assembly in a raised position in the panel, so that the level of the sill will be maintained in a raised position above the floor when the panel is supported by the casters 15. When, however, the panel is installed as part of a wall partition with the panel supported by the jacks 16, the door assembly may be readily lowered to bring the sill into contact with the floor. Since the door is already hinged to one of the jambs 25, it is necessary only to lower the sill 27 to the floor, and the door will be ready for immediate use.

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Referring to Figs. 2 and 3, the channel-like portions of the jambs 25 which engage the edges 22 of the opening in the panel and which guide the jambs 25 for sliding movement in the opening in the panel are formed (see Fig. 3) by the parallel walls 25a, 25b disposed on opposite sides of the panel and the connecting member 25c which extends between the walls 25a and 25b. The member 25c is disposed parallel to, but spacially separated from, the edge 22 of the opening in the panel. Also (see Fig. 3), the channel-like portion of the head 26 which engages the upper edge 23 of the opening in the panel is formed by the parallel walls 26a and 26b, the upper ends of which extend above the upper edge 23 of the opening on opposite sides of the panel, and the connecting member 26c which extends between them. The engagement of the member 26c with the surface 23 of the panel forming the upper edge of the opening determines the highest position to which the door assembly 24 may be raised within the opening. The parts shown in solid in Fig. 2 represent the door assembly in its operative position, with the sill 27 in contact with the floor, and the dotted lines in that figure represent the positions of the parts when the door assembly is in a raised position, not necessarily the uppermost position.

The member 26d of the head 26 and the members 25d of the upright jambs 25 form the upper and side edges, respectively, of the door opening. The member 26d and the members 25d are provided with shoulders 26e and 25e, respectively, which serve as door stops against which the door closes.

In order to permit the door assembly to be locked in raised, inoperative position, the upper edge 23 of the opening in the panel is provided with a plurality of vertically disposed threaded holes 31, and the member 26c is provided with aligned holes 32, so that bolts 30 can be inserted through the holes 32 and threaded into the holes 31 to support the door assembly in raised position. Also, if desired, horizontally disposed threaded holes 34 may be formed in the edges 22 forming the side edges of the opening in the panel, and the member 25c provided with aligned holes 35 for the insertion of threaded bolts 36 with the holes 34 for the additional support of the door assembly in the raised position.

Access may be provided to the bolts 30 and 36 by means of suitable openings formed in the members 25d of the jambs and 26d of the head. In order that the door unit may present an attractive appearance, removable snap-on covers or plates 38 held by spring clips 39 may be placed over these openings.

From the foregoing description, therefore, it is evident that with the door structure locked in the raised, inoperative position, the panel may be conveniently handled and transported by rolling the panel on its casters 15. The panel may be installed as part of a partition by connecting it to other panels by the connector posts 10, and the panels may be raised into operative contact with a ceiling by lowering the jacks 16 into contact with the floor and raising the upper edges of the panels into contact with the ceiling. With the door open to expose the cover plates 38, the cover plates 38 may be removed to provide access to the bolts 30 and 36. The bolts 36 are then removed and the bolts 30 removed or considerably loosened, permitting the entire door unit to be lowered until the sill 27 rests upon the floor. The channel-like formation of the jambs 25 and the head 26 will guide the door assembly as it is thus lowered, and the channel formed by the walls 26a, 26b of the head which encompass the upper edge 23 of the opening in the panel are high enough so that when the door assembly is lowered the upper edges thereof will not drop below the edge 23 to expose an unsightly gap therebetween. Once the door assembly has been lowered, the covers 38 may be replaced with the sill 27 resting on the floor. Since the door 23 is carried at all times hinged to one of the jambs,

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the door will be ready for immediate use without any further assembly.

The invention has been shown and described in a single preferred form and by way of example only, and obviously many modifications and variations may be made therein without departing from the spirit of the invention. The invention, therefore, is not to be limited to any specific form or embodiment except in so far as such limitations are set forth in the claims.

We claim:

1. In a partition structure, the combination of a panel, casters mounted on the lower edge of the panel for permitting the panel to be easily transported across a floor, a lifting jack mounted on the lower edge of the panel for raising the upper end of the panel in flush contact with an overhead surface, an opening in the panel, and a door assembly slidably mounted in the door opening, said door assembly comprising vertical jambs, an upper horizontal head, a lower sill and a door hinged to one of the vertical jambs, and means for locking the door assembly in a raised inoperative position, in which position the sill is out of contact with the floor when the panel is supported on the casters whereby the door assembly may be maintained in a raised inoperative position within the door opening before the installation of the panel in a partition structure, in which position the base of the sill is higher than the ground when the panel is supported on the casters, and lowered to an operative position when the panel is installed and the casters raised above the ground.

2. In a partition structure, the combination of a plurality of panels connected together to form a wall, casters depending from the lower edges of at least certain of the panels to increase their mobility before installation in the partition structure, lifting jacks depending from the lower edges of at least certain of the panels to permit the panels to be raised off their casters and into engagement with an overhead surface, a rectangular opening in at least one of the panels, a door frame slidably vertically as an assembly, in said rectangular opening, a door hinged to said door frame, said door frame being movable relative to said panel from a raised position, the position it occupies during handling of the panel before it is installed in the partition structure, in which raised position the lower edge of the door is substantially higher than the casters, to a substantially lower position, the position it occupies after it is installed in the partition structure, and means for locking said door frame in the raised position and for releasing the door frame to permit it to be dropped to the lower position.

3. A panel for installation in a partition structure comprising casters depending from the lower edge of the panel to increase its mobility before installation in the partition structure, lifting jacks depending from the lower edge of the panel to permit the panel to be raised off its casters and into engagement with an overhead surface, a rectangular aperture in the panel open at its lower end, said aperture being defined by a pair of spacially separated, substantially vertical edges extending at their lower ends to the lower edge of the panel and a substantially horizontal edge between the upper ends of the vertical edges, a rectangular door assembly guided by the vertical edges of the open ended aperture for sliding movement within the aperture from a raised inoperative position to a lower operative position, the door assembly comprising a pair of jambs in channel-like engagement with the vertical edges of the slot, a header member extending across the upper ends of the vertical jambs and in channel-like telescoping engagement with the upper edge of the aperture, a sill extending across the lower ends of the vertical jambs and a door hinged to one of the jambs, aligned holes in the header member of the door assembly and in the upper edge of the aperture, at least the latter being threaded, a threaded member adapted to be threadably coupled to the hole in the upper edge of the aper-

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ture, said threaded member serving to lock the entire door assembly, including the lower sill, in raised position with the base of the sill above the casters, and therefore out of contact with the ground, while the panel is being handled prior to installation in the partition structure, and said threaded member being unscrewed to permit the door assembly to drop to operative position with the sill in contact with the ground and below the casters when the panel is installed with the casters raised above the ground.

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4. A panel as set forth in claim 3 including a cover detachably secured to the header member for providing access to the threaded member for the adjustment thereof.

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