

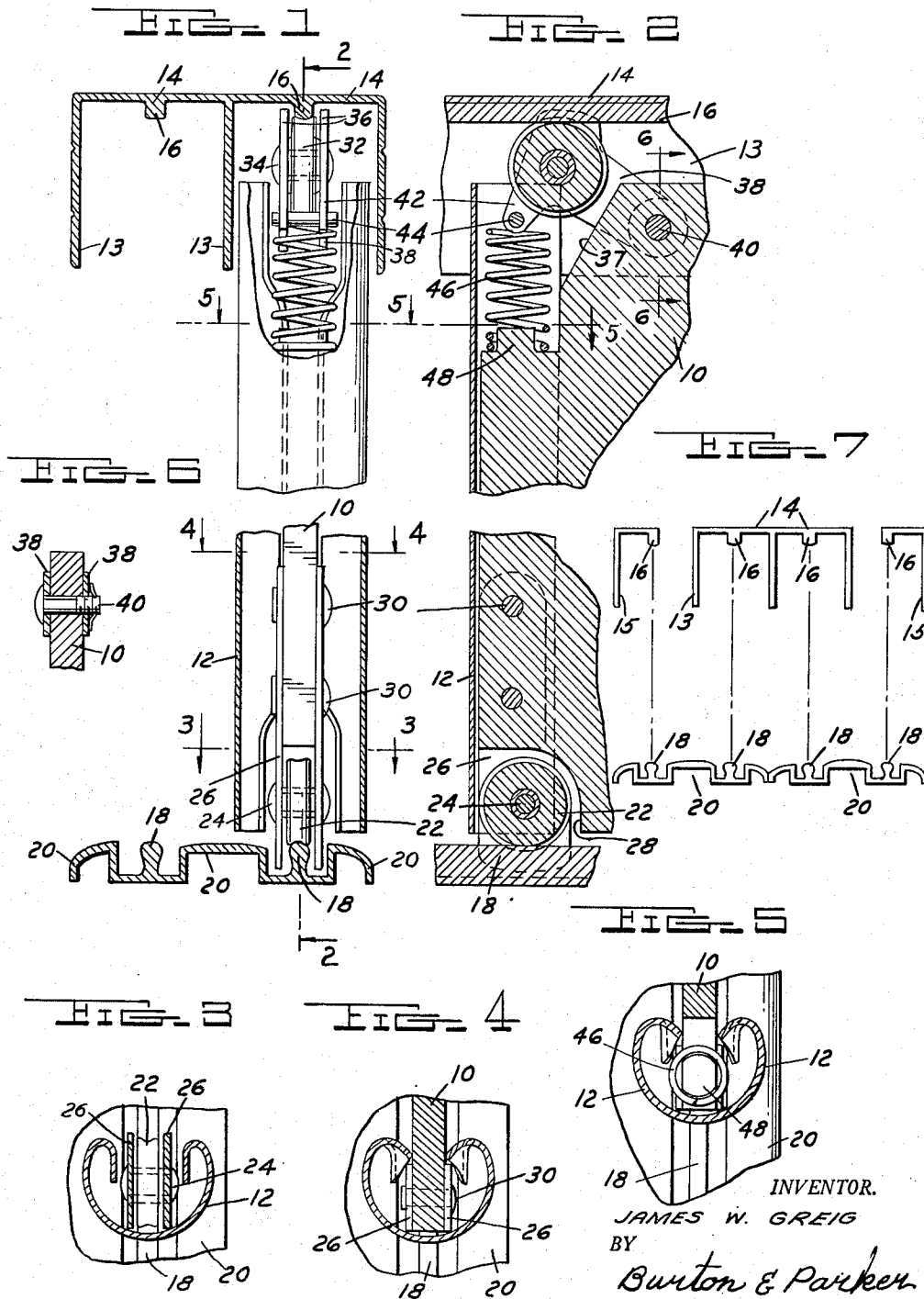
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SLIDING PANEL AND MOUNTING

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## UNITED STATES PATENT OFFICE

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## SLIDING PANEL AND MOUNTING

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2 Claims. (Cl. 20—19)

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This invention relates to improvements in sliding panels or more particularly to an improved mounting for sliding panels, doors and the like.

An object of the invention is to provide an improved mounting for a sliding panel which mounting will support the panel for free, easy, and quiet slidable movement while at the same time it will hold the panel securely against rattle, undesirable play, or displacement.

Another object of the invention is to provide such a mounting for a sliding panel which mounting will accommodate the panel assembly to openings that differ in size within certain limits; and will support the panel for satisfactory sliding movement within any of said openings of different size, all within the permitted range of variation.

A further object is to provide such a mounting which is simple, relatively inexpensive, capable of being quickly and easily attached to a panel and when applied to a panel is inconspicuous and is of such a character that it may be applied to panels of different size and weight and such panels will function satisfactorily with the mounting.

Another object is to provide a mounting including trackway members capable of being multiplied to support a plurality of panels of any desired number for sliding movement.

A meritorious feature is that the mounting is so constructed that it functions during sliding movement of the panel to keep the trackway clear and prevent the accumulation of obstructing material therein.

The mounting is not only adapted to hold the panel yieldingly securely upon the trackway against displacement while permitting free, sliding movement thereof, but is also adapted to hold the panel positively against displacement if the yielding force is overcome.

Other objects, advantages and meritorious features will more fully appear from the following description, claims and accompanying drawing, wherein:

Fig. 1 is a vertical sectional view partly broken away through a sliding door assembly embodying this invention;

Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 1;

Fig. 5 is a horizontal sectional view taken on the line 5—5 of Fig. 2;

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Fig. 6 is a vertical sectional view taken on the line 6—6 of Fig. 2; and

Fig. 7 is a schematic view showing upper and lower trackway members adapted to accommodate a nest of four sliding panels.

This improved mounting is shown associated with sliding panels of the general character illustrated in co-pending application, Serial No. 64,371, now abandoned, filed December 9, 1948, which application belongs to the assignee of this application, but the mounting is adapted to be used upon any suitable sliding panel or door structure. In the panel assembly of the application above identified, the panel comprises a sheet of panel forming material provided with upright edges reinforced by tubular frame elements extending therealong and secured thereto. Panel sheets are described as formed of masonite or other suitable material. The reinforcing tubular frame elements are described as split steel tubes extending along and grippingly engaged with the marginal portions of the sheets.

In this application the numeral 10 indicates a sheet of panel forming material broken away for purposes of illustration and having secured to an upright edge portion a split metal tube 12. The tube 12 is so formed and so fastened to the panel sheet 10 as described in said application supra, that the entire assembly possesses substantial strength and stability for the purpose intended. The instant application relates to the mounting or support for such panel and not to the panel itself.

Upper and lower trackways are provided for the slidable travel of a panel or such number of panels as may be desired. Fig. 1 shows two upper trackways or parallel channel portions 14, each having a rail 16 extending along the bottom of the channel between the side walls 13 thereof. In Fig. 7, four such trackways are shown. The number of tracks may be multiplied, as shown in Fig. 7, to provide any desired number.

The lower trackway of Fig. 1 comprises a pair of similar parallel spaced apart rails 18, each forming parts of a threshold member 20 and extending lengthwise along and within channel portions of said threshold member. In Fig. 7, four such similar parallel rails 18 are illustrated, the threshold elements 20 being multiplied as shown.

The panel mounting comprises upper and lower guide assemblies here shown in the form of rollers adapted to travel over the trackways.

The lower roller assembly comprises a roller 22 journaled upon an axle 24 between a pair of

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frame plate 26. The corner of the panel is cut away as at 28 to provide a recess to receive the roller. The frame plates 26 extend upwardly over opposite sides of the panel, as shown in Figs. 1 and 2, and are secured thereto by rivets 30 or the like. The roller 22 is grooved circumferentially to seat snugly over a rail 18, as shown particularly in Figs. 1 and 3. The upper roller assembly comprises a roller 32 journaled upon an axle 34 between a pair of frame plates 36, as shown particularly in Figs. 1 and 2. The corner of the panel is cut away as at 37 to provide a recess to receive the upper roller assembly. These upper roller frame plates 36 are of similar angular shape. Each plate exhibits a lateral leg portion 38. The two legs 38 carry the axle 34 upon which the roller 32 is mounted. These legs 38 are journaled upon a pivot pin 40 which extends through and is mounted upon the panel 10 as shown particularly in Fig. 2. Each plate also exhibits a depending leg portion 42. The two legs 42 depend below the roller 32 and are connected by a pin 44. The pin 44 is adapted to rest upon the upper end of a coil spring 46. The lower end of this spring bears against the bottom of the recess 37 in the panel and is positioned by a lug 48 which projects upwardly from the bottom of the recess.

The spring 46 exerts yielding upward force tending to hold the roller 32 securely upon the rail 16 as shown in Figs. 1 and 2. At the same time this spring pressure serves to urge the panel downwardly and hold the lower roller 22 upon its rail 18. The yielding force of the spring is sufficient to hold the panel against ordinary accidental displacement while permitting free and easy slidable movement of the panel over and between the rails 16 and 18.

Due to the angular shape of the upper roller frame plates 38 and the manner in which they are assembled and mounted, they will swing a limited distance to accommodate the panel assembly to openings which vary within certain limits in height while continuing to function to maintain the panel against rattle and permit slidable movement thereof.

The frame plates 36 project upwardly above the roller 32 as shown in Figs. 1 and 2, so as to overlap the rail 16. The lower frame plates 26 project downwardly below the roller 22, as shown in Figs. 1 and 2, so as to overlap the rail 18. Such overlap provides positive stops to prevent the rollers from jumping the rails even if the holding pressure of the spring 42 was overcome. Such overlap of the frame plates extending into the passageway alongside of the rails 16 and 18 serves to remove foul material which might collect therein and interfere with the free travel of the panel.

It is, of course, understood that these upper and lower roller assemblies might be provided in such number as desired for each sliding panel. Presumably, an assembly would be provided for each corner of the panel. The roller assemblies come substantially within the thickness of the panel upon which they are mounted so that the panels occupy a minimum thickness and they may function individually in a multiple nest of panels.

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It has been found that by providing nylon rollers, smooth, quiet operation is assured beyond that achieved by bronze or other metal rollers.

In Fig. 7 the threshold members 20 are duplicated in the assembly. The upper trackway members 14 are added to by providing supplemental trackway members 15, each equipped with a rail 16 as shown.

What I claim is:

1. A sliding door comprising, in combination, a substantially rectangular upright panel having one upper corner notched out, a split tube extending along that upright margin of the panel terminating in the notch and with the margin of the panel disposed within the tube and the tube secured to the panel and extending upwardly across the notch, a roller assembly comprising a pair of complementary frame plates having two legs, a roller journaled between said plates, one leg of the frame plates pivoted at the end remote from the other leg to the panel adjacent to the top margin thereof and spaced inwardly of said notch, said frame plates extending horizontally across the notch and through the split in the tube and with said other leg disposed within the upper end of the tube, and a coil spring housed within the upper end portion of the tube seated at one end against a part of the notched out portion of the panel and bearing at the other end against said other leg of the frame plates urging the roller upwardly with respect to the panel and the tube.

2. A sliding door comprising, in combination, a substantially rectangular upright panel having one upper corner notched out, a split tube extending along that upright margin of the panel terminating in the notch and with the margin of the panel disposed within the tube and the tube secured to the panel and extending upwardly across the notch, a roller assembly comprising a pair of complementary frame plates having two legs, a roller journaled between said plates at the meeting point of the two legs, one leg of the frame plates pivoted at the end remote from the other leg to the panel adjacent to the top margin thereof with the two complementary frame plates disposed on opposite sides of the panel, said frame plates extending across the notch and through the split in the tube and with the other leg disposed within the tube, and spring means housed within the tube between said other leg and a portion of the notched out part of the panel to urge the roller upwardly with respect to the tube and the panel.

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#### References Cited in the file of this patent

#### UNITED STATES PATENTS

| Number       | Name              | Date          |
|--------------|-------------------|---------------|
| 60 87,329    | Deering           | Mar. 2, 1869  |
| 90,193       | Prud'homme et al. | May 18, 1869  |
| 162,930      | Knapp             | May 4, 1875   |
| 554,932      | Jaeger            | Feb. 18, 1896 |
| 952,120      | Kilner            | Mar. 15, 1910 |
| 65 1,780,755 | Kurtzon           | Nov. 4, 1930  |
| 2,434,805    | Lange             | Jan. 20, 1948 |
| 2,507,497    | Bowers            | May 16, 1950  |