

March 3, 1959

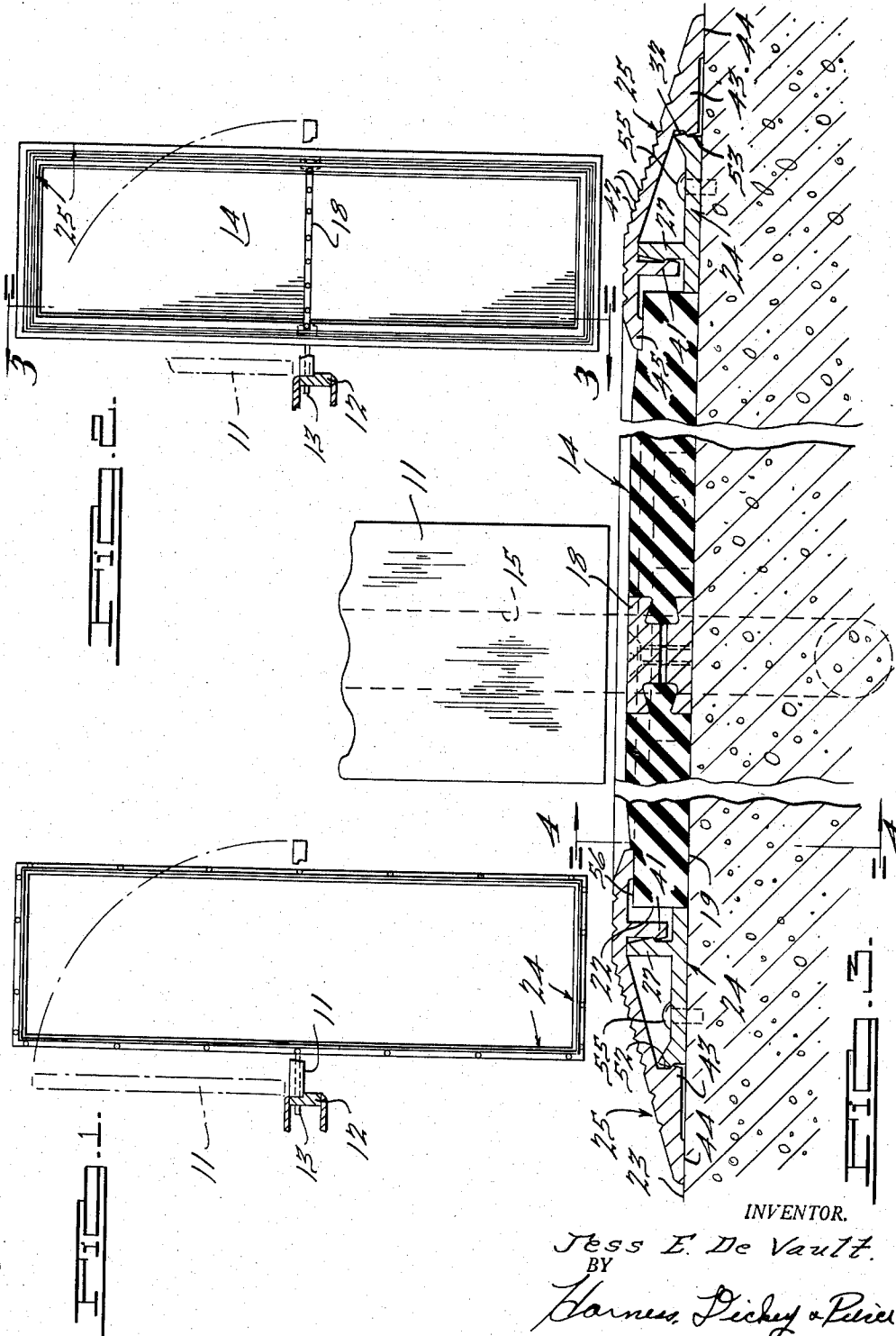
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2,875,467

MOLDING

Filed Sept. 29, 1955

2 Sheets-Sheet 1



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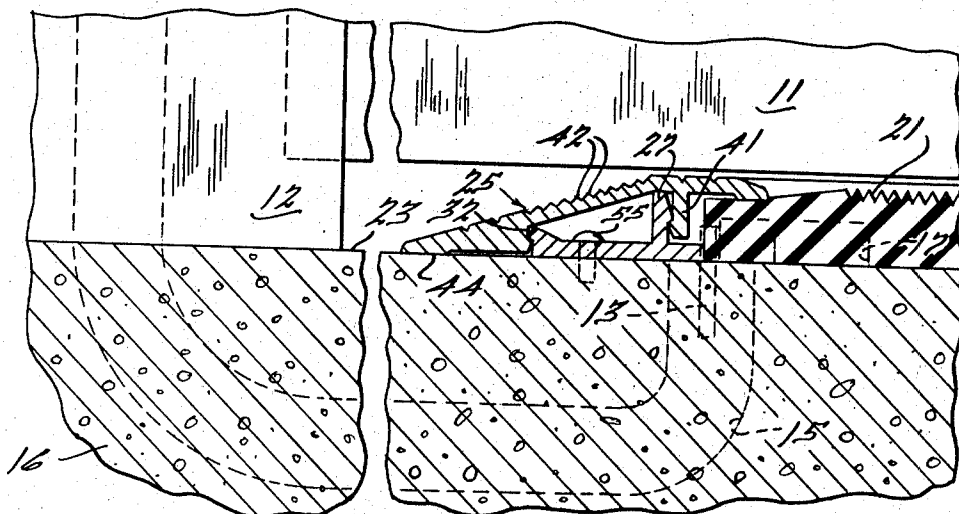
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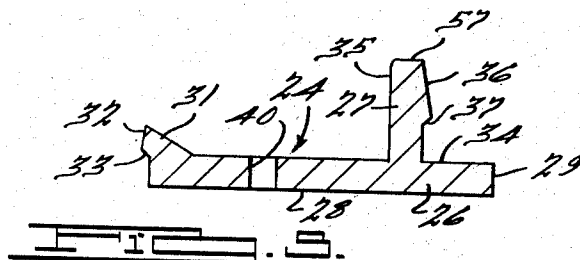
MOLDING

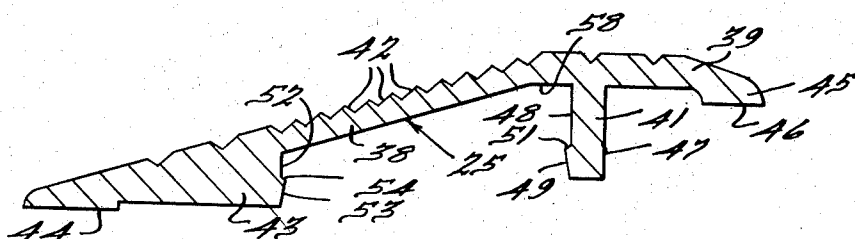
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2,875,467

MOLDING

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Application September 29, 1955, Serial No. 537,535

6 Claims. (Cl. 16-7)

This invention relates to moldings, and more particularly to devices for securing the edges of carpets or mats such as may be used for power-operated door opening and closing mechanisms. This application is related to application Serial No. 442,594 filed July 12, 1954 by the present applicant and now Pat. No. 2,807,826, issued Oct. 1, 1957.

The use of power operated door opening and closing devices has become quite prevalent in business establishments such as supermarkets and the like. Some of the most widely used types of power door operators utilize a carpet or mat adjacent the door which actuates the power mechanism when the customer steps on the mat by means of pneumatic or electrical pressure-sensitive elements embedded in the carpet. Although the mats used for this purpose are sometimes recessed within the floor so as to be flush with the surface thereof, this type of installation may be inconvenient and expensive in already existing establishments. In such cases, the provision of a flush or recessed carpet involves the removal of a substantial portion of the flooring, which may of course be made of concrete, composition, wood or other material.

It is an object of the present invention to provide a novel and improved securing device for carpets or mats which eliminates the necessity of removing flooring material in order to install the mat, and which permits the mat to be quickly and easily secured to the floor surfaces of existing establishments, whether the floors be made of concrete, composition, wood or any other material.

It is another object to provide an improved molding construction of the above nature which is adapted for use with standard types of mats including those originally intended for installation in a flush or recessed manner.

It is a further object to provide an improved molding of the above nature which permits easy removal of the mat for replacement or repair, without the necessity of detaching any portion of the molding from the floor itself.

Other objects, features, and advantages of the present invention will become apparent from the subsequent description, taken in conjunction with the accompanying drawings.

In the drawings:

Figure 1 is a plan view of a door installation showing the anchor portion of the improved molding in position;

Figure 2 is a plan view similar to Figure 1 showing the mat in position with the snap-on portion of the molding mounted on the anchor portion;

Figure 3 is a cross-sectional view taken along the line 3-3 of Figure 2 and showing the cooperation between the anchor and snap-on portions of the device;

Figure 4 is a fragmentary cross-sectional view taken along the line 4-4 of Figure 3 and showing the manner in which the wiring duct is connected to the mat;

Figure 5 is a detailed cross-sectional view of the anchor portion of the device; and

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Figure 6 is a detailed cross-sectional view of the retaining portion of the device.

The invention is especially adapted for use with carpets or mats of the type used with power door operators, although it will be understood that the molding could also be used with other types of floor coverings within the principles of the invention. Figure 1 shows a portion of a door 11 hinged to a frame 12 and movable between a closed position shown in solid lines and an open position shown in dot-dash lines. Wiring 13 is enclosed in frame 12 and is connected to a door mat or carpet generally indicated at 14 through a duct 15. This duct, which forms no part of the present invention, leads through a flooring 16 as best seen in Figure 4, and into a terminal box 17 embedded in the carpet. Flooring 16 is illustrated as being of concrete construction although the invention may be used with composition, wood or other types of floorings. Mat 14, which may be a rubber-like material having embedded contacts or pneumatic elements, is shown as consisting of two sections joined at their adjacent edges by a conventional clamp 18. It will be understood of course that the molding of this invention would be equally useful with mats comprising a single piece or built-up of several sections.

The cross-sectional configuration of mat 14 is shown in the illustrated embodiment as comprising a flat lower surface 19, an upper surface 21 provided with a non-skid tread, and side edges 22 which are at right angles to the bottom surface 19. This type of mat is similar to that used for recessed or flush type installations, although the present invention enables it to be used in overlying relation with the floor. Accordingly, mat 14 is shown with its bottom surface 19 resting on the surface 23 of floor 16, extending on both sides of door 11.

The novel and improved molding of this invention comprises an anchor portion generally indicated at 24 and a retaining or snap-on portion generally indicated at 25. Anchor portion 24 is adapted to be secure permanently to surface 23 of floor 16 bordering edges 22 of mat 14. Snap-on portion 25 is adapted to be removably attached to anchor portion 24, and serves both to hold down the edges of mat 14 and to provide an inclined tread whereby the surfaces of the mat and the adjacent floor are joined.

Anchor portion 24 is shown in detail in Figure 5 and comprises a base 26 of generally flat shape and an upstanding flange 27. Base 26 has a flat bottom surface 28 and an inner edge 29 at right angles thereto. The outer edge of base 26 has a flange 31 inclined upwardly and outwardly therefrom, and having a relieved edge 32 and a detent edge 33 therebelow. The upper surface 34 of base 26 is generally flat with flange 27 disposed approximately one-third of the distance from edge 29 to flange 31. The outwardly facing surface 35 of flange 27 is at right angles to surface 34, whereas the inwardly facing surface has a relieved portion 36 and a detent portion 37 therebelow. A plurality of apertures 40 are provided in base 26 between flanges 27 and 31 for fastening purposes.

Snap-on portion 25 of the molding is shown in detail in Figure 6 and comprises an inclined tread section 38, a gripping section 39, and a retaining flange 41 extending downwardly between sections 38 and 39. Tread section 38 is provided with a plurality of grooves 42 on its upper surface for non-skid purposes, and carries at its outer end a thickened portion 43 having a lower floor engaging surface 44. The inner and upper end of tread section 38 is connected with gripping section 39 which extends horizontally and has a downwardly depending portion 45 with a mat engaging surface 46. Surfaces 44 and 46 are in substantially parallel relation so that when surface 44 is horizontal and rests on floor surface 23,

surface 46 will engage the upper surface of the mat, and the height of surface 46 above surface 44 is preferably slightly less than the unstressed thickness of mat 14. Retaining flange 41 extends downwardly, being perpendicular to surfaces 44 and 46. The inwardly facing surface 47 of flange 41 may be flat, while the outwardly facing surface 48 is provided with a relieved portion 49 at its lower end and a detent portion 51 immediately thereabove. The inwardly facing surface 52 of thickened portion 43 is likewise provided with a relieved portion 53 and a detent portion 54. The spacing between surfaces 48 and 52 is such that the retaining means thereon may cooperate with retaining means on flanges 27 and 31 respectively carried by anchor portion 24 of the molding.

In the use of the molding of this invention, anchor portion 24 is first secured to floor 16 so as to border the area intended for mat 14. Any method of securing anchor portion 24 to the flat surface 23 of floor 16 may be used. For example, with the concrete floor shown holes may be drilled in alignment with apertures 40 for conventional receptacles into which screws are threaded, or known methods of firing fasteners into the concrete by means of cartridges may be utilized. The fasteners 55 serve to secure anchor portion 24 rigidly to the floor with inner edge 29 thereof adjacent the intended position of mat edges 22. Mat 14 is then placed within the frame formed by anchor portion 24, the bottom surface 19 of the mat resting on floor surface 23.

Snap-on portion 25 of the molding is then placed in position by first placing foot 44 thereof on floor surface 23 and then swinging the snap-on portion downwardly until detent surfaces 54 and 51 thereof engage detent surfaces 33 and 37 respectively of anchor portion 24, as shown in Figures 3 and 4. During this operation, relieved surfaces 53 and 49 of the snap-on portion will slide along relieved surfaces 32 and 36 respectively of the anchor portion until the detent surfaces snap into position. Flanges 27 and 41 of the anchor and snap-on portions respectively are preferably of such dimensions as to be yieldable during this movement. When in its final position, gripping surface 46 of snap-on portion 25 will engage edge 56 of mat 14, compressing the mat sufficiently to provide a firm grip thereon.

The height of flange 27 of anchor portion 24 is preferably such as to cause the top 57 thereof to be in supporting relation with the undersurface 58 of snap-on portion 25 immediately outwardly of flange 41. Because of this supporting relationship, weight applied to the top of snap-on portion 25 will be firmly resisted, preventing any downward movement of the snap-on portion which might cause release of the detent means.

With the parts in assembled position, as shown in Figure 2, it will be seen that mat 14 lies completely flat and is securely held to the floor continuously around its periphery, without piercing or otherwise damaging the mat. The mat will not be subject to loosening by lateral forces since the gripping surface 46, in cooperation with edge 29 of the anchor portion, will prevent movement in any direction. The molding will make an attractive appearance, concealing the fastening means to the floor and providing a smooth transitional surface between the levels of the floor and mat with very little projection above the mat surface. Should it be necessary to remove mat 14 for any reason, this can be done by merely inserting a screw driver between gripping surface 46 and edge 56 of the mat and prying snap-on portion 25 upwardly so as to release the detent means. During this removal operation, anchor portion 24 will not be disturbed in any way, so that the effectiveness of its attachment to floor 16 will not be lessened.

While it will be apparent that the preferred embodiment of the invention disclosed is well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible to modification, variation and

change without departing from the proper scope or fair meaning of the subjoined claims.

What is claimed is:

1. In a molding for securing the edges of a floor covering, an anchor portion having a flat base and an upstanding flange, said base having an inside edge adapted to abut the edge of said floor covering and an outside edge provided with a detent surface, a second detent surface on said upstanding flange, a snap-on portion having an inclined tread section located above said base and a gripping section extending inwardly from said tread section past a vertical plane located at the inside edge of said base, a foot on the outer edge of said tread section adapted to engage the floor surface, the inner edge of said gripping section having a surface at a substantially higher level than said foot adapted to engage the edge of said floor covering from above, and detent means on the underside of said snap-on portion engageable with the detent surfaces on said anchor portion so as to releasably frictionally connect said anchor and snap-on portions whereby the edges of said floor covering will be firmly gripped.

2. In a device for securing the edges of a floor covering to a flat floor surface, an anchor portion having a flat base and an upstanding flange thereon, an outwardly facing detent surface on the outer edge of said anchor portion, an inwardly facing detent surface on said upstanding flange, apertured portions in said base between said flange and said outer edge for securing said anchor portion to the floor surface, a snap-on portion having a foot along its outer edge adapted to engage the floor surface, an upwardly inclined tread section extending inwardly from said foot, a gripping section extending inwardly from said tread section above the level of said foot, a downwardly extending flange on said snap-on portion spaced from said gripping section, an inwardly facing detent surface adjacent said foot and engageable with the outwardly facing detent surface on said anchor portion, and an outwardly facing detent surface on said downwardly depending flange engageable with the inwardly facing detent surface on the upstanding flange of said anchor portion.

3. The combination according to claim 2, said upstanding flange being of such height as to be in supporting relation with the underside of said snap-on portion when said detent surfaces are engaged.

4. In a molding for securing a floor covering of predetermined thickness to a flat floor surface, an anchor portion having a flat base and an upstanding flange thereon, said base having an inner edge adapted to abut the edge of said floor covering, a detent surface at the outer edge of said base, a second detent surface on said upstanding flange, a snap-on portion having a foot along its outer edge adapted to engage the floor surface, an upwardly inclined tread section extending inwardly from said foot and located above said base to one side of the vertical plane of said inner edge of the base, a gripping section extending inwardly from the inner end of said tread section above the level of said foot, a downwardly facing surface at the inner end of said gripping section located on the opposite side of said plane, and a pair of detent surfaces on the underside of said snap-on portion releasably engageable with the detent surfaces on said anchor portion so as to frictionally connect said anchor and snap-on portions, the distance of said gripping surface from the floor surface when said detents are in engaged position being such that the edge of said floor covering is firmly gripped, the height of the upstanding flange on said anchor portion being such that said flange is in supporting relation with the underside of said snap-on portion when said detent surfaces are engaged.

5. In a molding for securing a floor covering of predetermined thickness to a flat floor surface, an anchor portion having a flat base and an upstanding flange thereon, said base having an inner edge adapted to abut the edge

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of said floor covering, a detent surface at the outer edge of said base, a second detent surface on said upstanding flange, a snap-on portion having a foot along its outer edge adapted to engage the floor surface, an upwardly inclined tread section extending inwardly from said foot, a gripping section extending inwardly from the inner end of said tread section, a downwardly facing surface at the inner end of said gripping section, and a pair of detent surfaces on the underside of said snap-on portion releasably engageable with the detent surfaces on said anchor portion, the distance of said gripping surface from the floor surface when said detents are in engaged position being such that the edge of said floor covering is firmly gripped, the height of the upstanding flange on said anchor portion being such that said flange is in supporting relation with the underside of said snap-on portion when said detent surfaces are engaged, said snap-on

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portion being further provided with a downwardly depending flange, one of said pair of detent surfaces being formed on said flange and engageable with the detent surface on the upstanding flange of said anchor portion.

5 6. The combination according to claim 5, said snap-on portion being further provided with a thickened section on the underside of said tread section adjacent said foot, the other of said pair of detent surfaces being formed on said thickened section and engageable with the detent
10 surface at the outer edge of said base.

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