

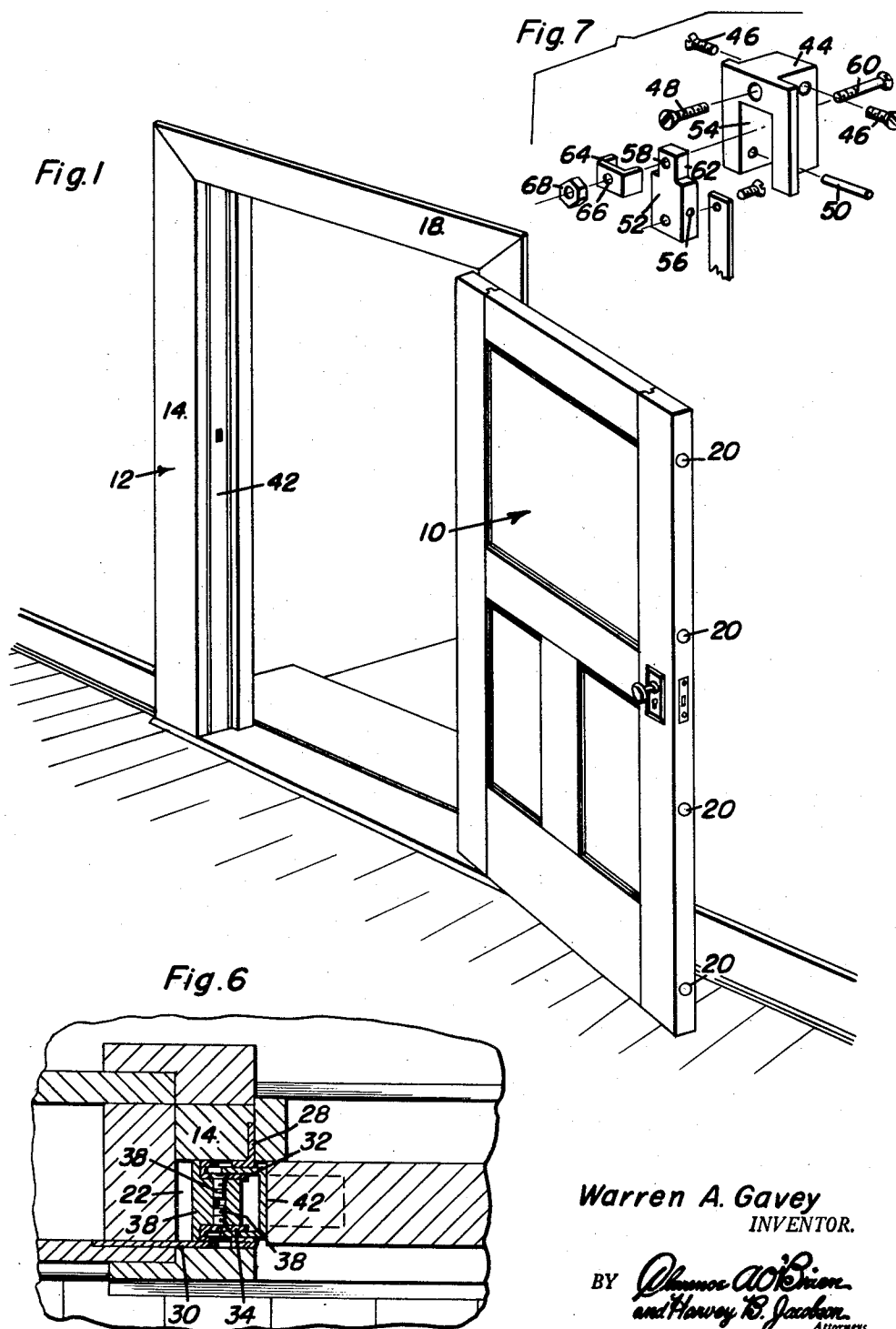
Nov. 20, 1956

W. A. GAVEY
VARIABLE DOOR FRAME

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

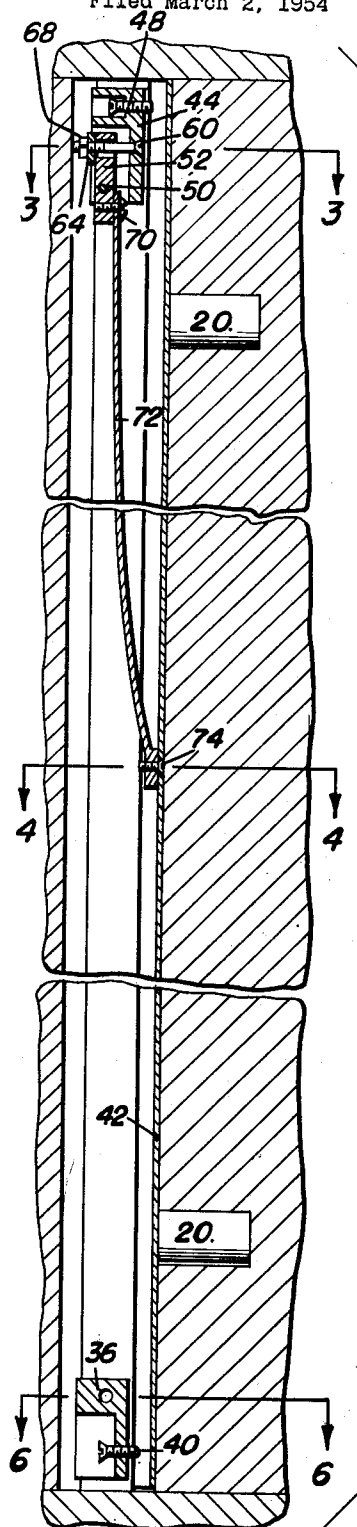


Fig. 2

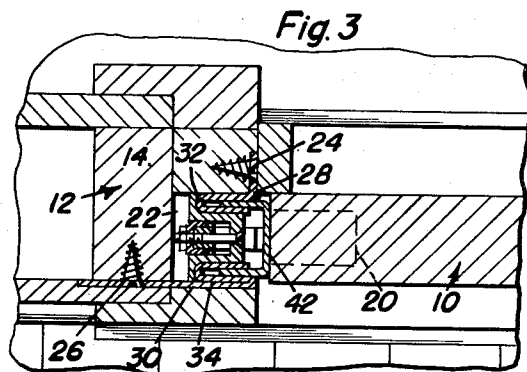


Fig. 3

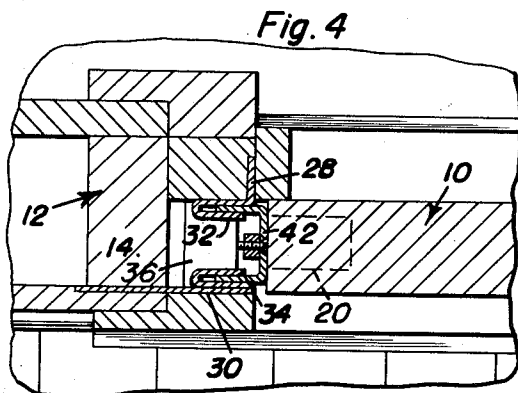


Fig. 4

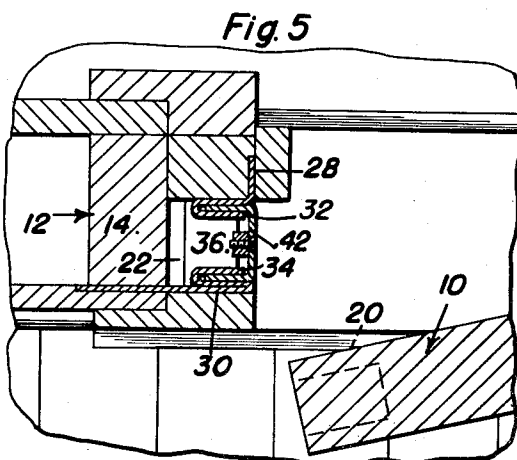


Fig. 5

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1

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VARIABLE DOOR FRAME

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6 Claims. (Cl. 20—11)

This invention relates to a variable door frame which has as its particular object the provision of means for effecting a satisfactory seal.

The construction of this invention features a vertical member which is adapted to be attracted into engagement with the free edge of a door so as to form a comparatively tight seal with the door even though the door or frame structure were to be warped or otherwise misaligned. This permits a highly attractive closure to be attained while assuring a satisfactory closure for doors and like closures used in extreme climates.

A further object of the invention resides in the provision of resilient means for urging the vertical member inwardly of a slot formed in the door frame so that the vertical member is unobtrusive in appearance and safely positioned in the door frame when the door is in an open position.

Still further objects and features of this invention reside in the provision of a variable door frame which includes means for automatically limiting the innermost position that the vertical member can attain, for adjusting the stresses on the leaf spring utilized to hold the vertical member within the door frame, which construction is comparatively simple to install and inexpensive to manufacture thereby permitting wide distribution.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds are attained by this variable door frame, a preferred embodiment of which has been illustrated in the accompanying drawings by way of example only, wherein:

Figure 1 is a perspective view of the door and door frame comprising the present invention;

Figure 2 is a vertical sectional view illustrating the door in association with the door frame with the door in a closed position and magnetically attracting the vertical member;

Figure 3 is a horizontal sectional view as taken along the plane of line 3—3 in Figure 4 and illustrating the construction of the various elements of the upper guide block and means for mounting the leaf spring;

Figure 4 is a horizontal sectional view as taken along the plane of line 4—4 in Figure 2 illustrating the manner in which the leaf spring is attached to the vertical member;

Figure 5 is a vertical sectional view similar to that of Figure 4 but illustrating the door in an open position;

Figure 6 is a horizontal sectional view as taken along the plane of line 6—6 in Figure 2, illustrating the construction of the lower guide block; and

Figure 7 is an exploded perspective view of the upper guide block and elements associated therewith.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates a door which is hingedly mounted to one vertical member of a door frame generally indicated by reference numeral 12. Door frame 12 includes the

2

vertical members 14, and 16, and an upper transverse member 18.

The door 10 is provided with a plurality of magnets 20 embedded in the free edge of the door. The magnets 20 may be of any suitable size and shape.

The vertical member 14 of the door frame 12 is so constructed as to form a vertically extending slot 22 therein. By means of screws 24 and 26 an opposed pair of vertically extending guides 28 and 30 are secured to the vertical member 14 of the door frame 12. The guides 28 and 30 have substantially U-shaped portions 32 and 34, respectively, which extend inwardly into the slot 22.

As can be best seen in Figures 2 and 6, a lower guide block 36 is secured by screws as at 38 to the U-shaped portions 32 and 34 of the guides 28 and 30. Threadedly secured in the lower guide block 36 is a setscrew 40, the setscrew 40 being adjustable to provide a limit stop for the vertical member 42 which is substantially U-shaped in cross section.

An upper guide block 44 is secured to the U-shaped portions 32 and 34 of the guides 28 and 30 as by screws 46. A setscrew 48 for providing a limit stop for the U-shaped member 42 is threadedly secured in the upper guide block 44.

By means of a pin 50, a pivot member 52 is pivotally mounted within the recess 54 in the guide block 44, the pin extending through an aperture 56 in the pivot member 54. The pivot member 52 has another aperture 58 there-through and a threaded fastener 60 extends through the guide block 44 and through the aperture 58.

The upper portion of the pivot member 52 as at 62 is of reduced cross sectional area and a substantially U-shaped collar 64 is adapted to embrace the portion 62 of the pivot member 52. An aperture 66 for reception of the fastener 60 is formed in the collar 64 and a nut 68 is adapted to be threadedly secured on the fastener 60 for adjustably positioning the nut 68 on the fastener 60, the nut 68 forming a limit stop for the collar 64 and hence for the pivot member 52. By means of a screw 70 one end of a leaf spring 72 is secured to the pivot member 52. The other end of the leaf spring 72 is secured by means of a countersunk screw 74 to the vertical member 42.

In operation, with the door in the open position, the spring 72 will cause the vertical member 42 to be retained within the slot 22. However, when the door is closed, the magnets 20 will attract the vertical member 42 into engagement with the free edge of the door 10. This vertical member will then form a satisfactory seal with the door 10.

As soon as the door 10 is opened, the spring 72 will again retract the vertical member 42. It is to be noted that the position of the pivot member 52, while the spring 72 is under stress, can be adjusted by adjusting the position of the nut 68 thereby adjusting the stress on the spring 72. The screws 40 and 48 limit the innermost position of the vertical member 40 so that a highly attractive and substantially flush surface for the vertical member 14 of the door frame 12 can be attained.

Since from the foregoing the construction and advantages of this variable door frame are readily apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art, after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the precise embodiment shown and described, but all suitable modifications and equivalents may be readily resorted to which fall within the scope of the appended claims.

What is claimed as new is as follows:

1. A variable door frame for use in combination with a door having magnets embedded in one edge thereof, said frame having a vertical frame member with a verti-

3

cally extending slot therein, a vertical member of substantially U-shape in cross section resiliently mounted in said slot, resilient means urging said vertical member into said slot, said magnets attracting said vertical member into engagement with said edge of said door when said door is closed.

2. A variable door frame for use in combination with a door having magnets embedded in one edge thereof, said frame having a vertical frame member with a vertically extending slot therein, a vertical member of substantially U-shape in cross section resiliently mounted in said slot, resilient means urging said vertical member into said slot, said magnets attracting said vertical member into engagement with said edge of said door when said door is closed, an opposed pair of guides for receiving said vertical member extending into said slot, an upper guide block and a lower guide block secured to said guides and limit members adjustably secured in said upper and lower guide blocks for limiting the inward movement of said vertical member.

3. A variable door frame for use in combination with a door having magnets embedded in one edge thereof, said frame having a vertical frame member with a vertically extending slot therein, a vertical member of substantially U-shape in cross section resiliently mounted in said slot, resilient means urging said vertical member into said slot, said magnets attracting said vertical member into engagement with said edge of said door when said door is closed, an opposed pair of guides for receiving said vertical member extending into said slot, an upper guide block and a lower guide block secured to said guides and limit members adjustably secured to said upper and lower guide blocks for limiting the inward movement of said vertical member, said resilient means including a leaf spring terminally secured to said vertical member and said upper guide block.

4. A variable door frame for use in combination with a door having magnets embedded in one edge thereof, said frame having a vertical frame member with a vertically extending slot therein, a vertical member of substantially U-shape in cross section resiliently mounted in said slot, resilient means urging said vertical member into said slot, said magnets attracting said vertical member into engagement with said edge of said door when said door is closed, an opposed pair of guides for receiving said vertical member extending into said slot, an upper guide block and a lower guide block secured to said guides and limit members adjustably secured to said upper and lower guide blocks for limiting the inward movement of said

4

vertical member, said resilient means including a leaf spring terminally secured to said vertical member and said upper guide block, and means associated with said upper guide block for adjusting the stress on said spring.

5. A variable door frame for use in combination with a door having magnets embedded in one edge thereof, said frame having a vertical frame member with a vertically extending slot therein, a vertical member of substantially U-shape in cross section resiliently mounted in said slot, resilient means urging said vertical member into said slot, said magnets attracting said vertical member into engagement with said edge of said door when said door is closed, an opposed pair of guides for receiving said vertical members secured to said frame and having portions extending into said slot, an upper guide block and a lower guide block secured to said guides, and limit members threadably adjustably secured in said upper and lower guide blocks for limiting the inward movement of said vertical member.

6. A variable door frame for use in combination with a door having magnets embedded in one edge thereof, said frame having a vertical frame member with a vertically extending slot therein, a vertical member of substantially U-shape in cross section resiliently mounted in said slot, resilient means urging said vertical member into said slot, said magnets attracting said vertical member into engagement with said edge of said door when said door is closed, an opposed pair of guides for receiving said vertical members secured to said frame and having portions extending into said slot, an upper guide block and a lower guide block secured to said guides, and limit members threadably adjustably secured in said upper and lower guide blocks for limiting the inward movement of said vertical member, said upper guide block having a recess in the lower portion thereof, a pivot member pivotally mounted in said recess, said resilient means including a leaf spring terminally secured to said vertical member and said upper block, a threaded fastener extending through said upper guide block and said pivot member, and means carried by said threaded fastener engaging said pivot member for adjusting the stress on said leaf spring.

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