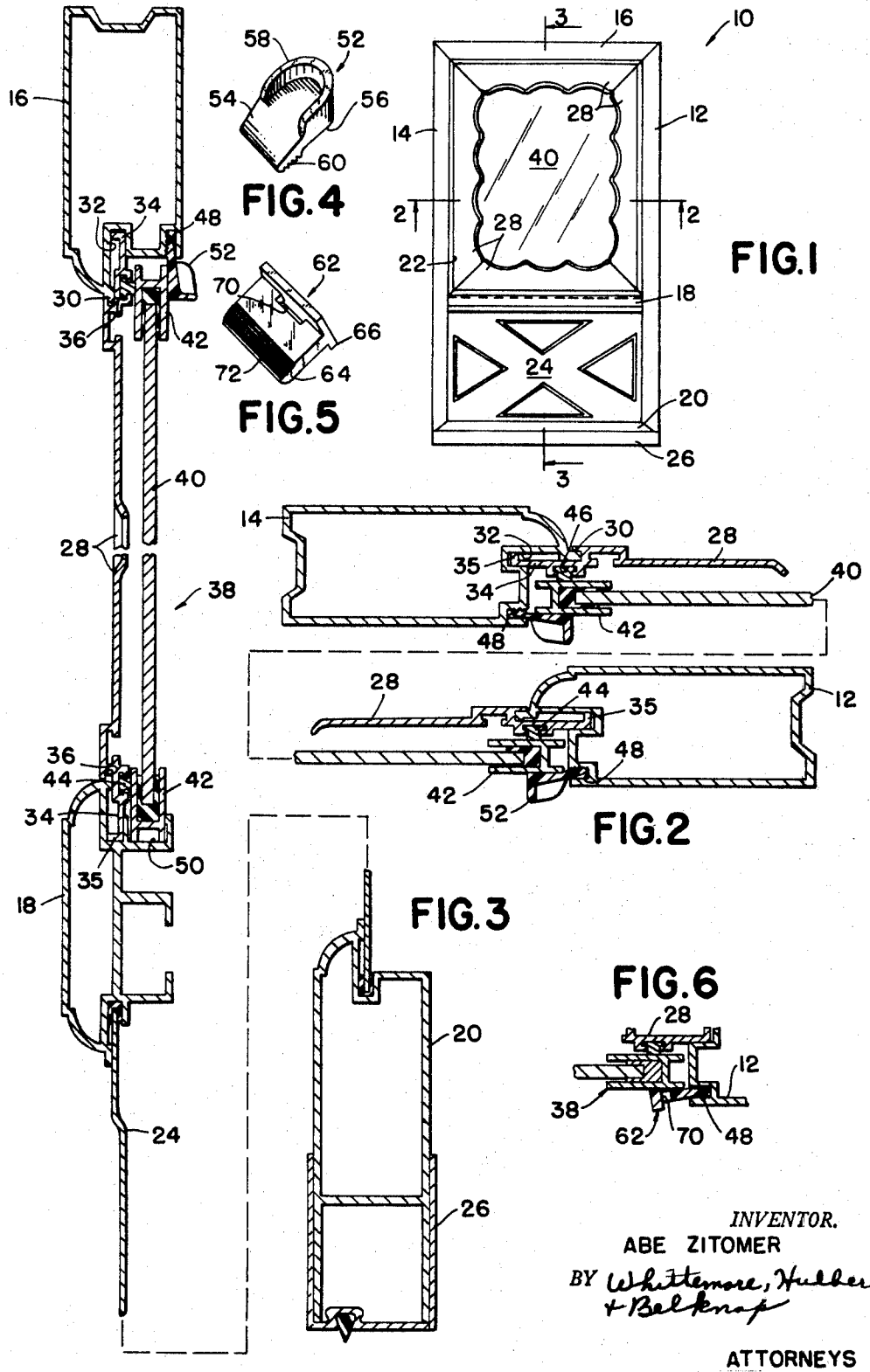
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FRAME CONSTRUCTION FOR STORM AND SCREEN DOORS

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3,389,505 FRAME CONSTRUCTION FOR STORM AND SCREEN DOORS

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ABSTRACT OF THE DISCLOSURE

A door having a storm window or screen insert, trim panels secured to the door frame around the opening for the insert and carrying a seal engaged by the insert, and means for removably securing the insert to the door in engagement with the seal.

The invention relates to a storm or screen door having a storm window or screen insert removably mounted in an opening in the door and trim panels secured to the door frame around the opening therein to provide a desired decorative appearance to the door. The trim panels shield the edge of the storm or screen insert and also the joint between the insert and the door from view so that only the glass or screen material is exposed from the outer side of the door. The trim panels carry a seal which is engaged by the storm or screen insert, and retaining clips are inserted between the door frame and the insert to hold the latter against the seal. The trim panels are separate from the door frame and are frictionally secured to the door frame members when the doors is being assembled so that trim panels of a desired ornamental appearance may be used by the door manufacturer. After assembly of the door the trim panels become a permanent part of the assembly.

A primary object of the invention is to provide a new and improved frame construction for storm and screen doors.

Another object of the invention is to provide an improved decorative trim panel construction for storm and screen type doors.

A further object of the invention is to provide a storm or screen door having separate trim panels which may be easily attached to the storm door thereby permitting any of a variety of panel designs to be used.

A still further object of the invention is to provide a storm door construction having a novel trim panel which carries a seal and forms an integral part of the joint between the insert and the door frame.

The foregoing as well as other objects will become more apparent as this description proceeds, especially when considered in connection with the accompanying drawing illustrating the invention, wherein:

FIGURE 1 illustrates the outer side of a storm and screen door according to the invention;

FIGURE 2 is a sectional view taken along line 2—2 of FIGURE 1;

FIGURE 3 is a sectional view taken along line 3—3 of FIGURE 1;

FIGURE 4 is a perspective view of a mounting clip as shown in FIGURES 2 and 3;

FIGURE 5 is a perspective view of a modified mounting clip; and

FIGURE 6 is a partial sectional view showing the use of the mounting clip shown in FIGURE 5.

A door **10** according to the invention includes side stiles or frame members **12** and **14** which are connected together by cross frame members **16, 18** and **20** to form a rigid door frame. As indicated in the drawing, the frame members are preferably formed from hollow aluminum extrusions. Frame members **12, 14, 16** and **18** define an opening **22** for the reception of a storm window or screen insert **38**. A metal kick panel **24** is provided in the opening defined by frame members **12, 14, 18** and **20** and located below the insert opening **22**. A channel shaped member **26** may be telescopically fitted over the frame member **20**.

Trim panel members **28** are secured to the door frame at the edge of the opening **22** and project into the opening as shown in FIGURE 1 to form a decorative trim panel surrounding the opening. The trim panel design is intended to complement the design of the kick panel **24** so that by the use of suitable trim panels and kick panels design the door **10** may be given an overall appearance compatible with a given style of architecture.

The frame members **12, 14, 16** and **18** are each provided with an inwardly extending tongue **30** which define the opening **22** and an inwardly facing groove **32** located outwardly of the tongue **30**. Each panel member **28** is provided along its outer edge with a tongue **34** having a laterally turned end **35** and an outwardly facing groove **36**. The panel members **28** are frictionally secured to the door frame member by inserting the tongue **34** into groove **32** as tongue **30** is received within groove **36**. The double tongue and groove joints just described provide a tight frictional mounting of the panel members on the door frame members. After the frame members are secured together to complete the door, the trim panels become a permanent part of the door.

Door insert **38** is fitted within opening **22** and includes a glass or screen pane **40** with a mounting frame **42** secured to the edges thereof. A suitable sealing gasket **44** is mounted in grooves **46** on the inner surfaces of the trim panels **28** and extends completely around the opening **22**. Frame members **12, 16** and **14** are provided with grooves **48** throughout their lengths. A ledge **50** is provided on frame member **18** so that the door insert **38** may be secured to the door frame by placing the bottom edge of the insert frame **42** on ledge **50** and then pivoting the insert toward the door so that the frame thereof is brought into engagement against the sealing gasket **44**. The insert is secured in the door frame by means of a number of plastic clips **52** of the kind shown in FIGURE 4. The clips **52** include a tapered wedge portion **54**, a flat portion **56**, and an outwardly projecting rib **58**. A suitable number of the clips **52** are spaced around the opening **22** and are applied by forcing the tapered portions **54** into the grooves **48** so that the portions **56** are seated against the frame **42** and hold the insert in tight engagement against the sealing gasket **44**. The portions **54** of clips **52** may be provided with transverse serrations so that upon insertion of the portions **54** into grooves **48** the serrations **60** engage similar serrations formed on the inside of the grooves **48** thereby positively securing the clips to the door frame. The rib **58** facilitates manual insertion and removal of the clip. It will be apparent that the clips **52** are easily removed from the door frame so that a storm window insert **38** is easily removed from the door to permit the installation of a screen insert as desired.

The mounting of the door insert **38** in the door frame by means of clips **52** as described results in the insert **38** being forced against the gasket **44** which in turn holds the trim panels **28** against their respective frame members.

FIGURES 5 and 6 disclose a modified retaining clip **62** having a T-shaped cross section provided with a serrated wedge portion **64** and a head **66** which is longer on one side of the portion **64** than on the other side of portion **64**. The clip **62** is also provided with an elongate slot **70** adjacent the head **66** whereby it is possible to

insert a tool, conventionally a screw driver, into the slot **70** to facilitate insertion and removal of the clip from the door.

FIGURE 6 is a sectional view showing the clip **62** when attached to the door. The wedge portion **64** is serrated on both sides so that the clip may be inserted with either the longer or shorter head portion in engagement with the insert **38** whereby the clip **62** may be used with storm or screen inserts of different thicknesses.

Since the trim members provided by this invention are separate from the frame members of the door but are easily secured to their respective frame members by merely forcing the trim member toward the frame member in the plane of the door, it is possible for the door manufacturer to carry a variety of trim members of different ornamental appearance to supply his customers with doors of any selected ornamental design without any change in the basic door structure. Due to the mitered construction of the corners of the trim members they become a permanent part of the door when the door is assembled and cannot be disengaged from their frame members.

What I claim as my invention is:

1. In a door construction including a plurality of door frame members secured together to define a door having an opening therein for the reception of a storm window or screen insert, the improvement comprising a plurality of trim members each secured to one of said frame members and extending inwardly therefrom into said opening to form a trim panel overlying the peripheral edges of said insert on one side thereof, said trim members and said frame members having mating tongue and groove means thereon for frictionally securing each of said trim members to its frame member, continuous sealing means carried by said trim members for engagement with one side of said insert to form a seal between the frame members and said insert, and removable retaining means engageable between the other side of said insert and said frame members to hold said insert in said opening and against said sealing means.

2. A door construction as in claim **1** wherein said tongue and groove means comprises an inwardly facing tongue and groove on each frame member and an outwardly facing groove and tongue on each trim member, whereby said trim members are secured to their frame members by relative movement toward each other in the plane of the door.

3. A door construction as in claim **2** wherein said sealing means is positioned on said trim members between the tongue and groove thereon.

4. A door construction as in claim **2** wherein said retaining means includes a plurality of wedge-shaped clips removably insertable between said insert and said frame members at spaced intervals around said opening.

5. A door construction as in claim **4** including a groove formed in certain of said frame members outwardly of the opening in the door, said clips being frictionally engaged within such grooves.

6. A door construction as in claim **5** wherein an elongate tool receiving hole is provided through the body of each clip to permit an insertion of a tool therein to facilitate removal of the clip from its groove.

7. Door construction as in claim **6** wherein said clips are T-shaped in cross section with the sides of the head of the T of different lengths to accommodate inserts of different thicknesses.

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