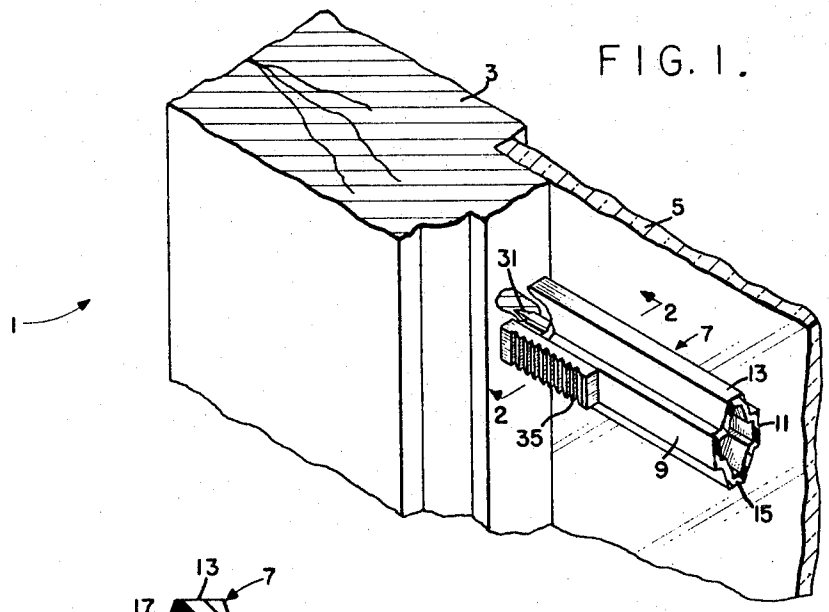
May 7, 1968 A. I. JACOBSON 3,381,431

MULLION DEVICE FOR WINDOW

Filed June 2, 1967

FIG. 1.



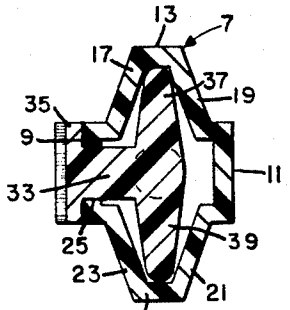


FIG. 2.

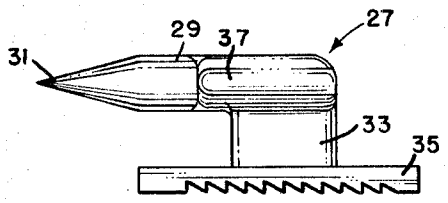


FIG. 3.

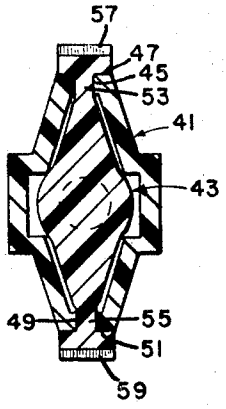


FIG. 4.

INVENTOR.
ALLAN I. JACOBSON
BY Walter J. Wennerberg Jr.
attorney

United States Patent Office

3,381,431

Patented May 7, 1968

3,381,431

MULLION DEVICE FOR WINDOW

Allan I. Jacobson, 36 Fiddlers Lane,
Latham, N.Y. 12110

Filed June 2, 1967, Ser. No. 643,196
2 Claims. (Cl. 52—309)

ABSTRACT OF THE DISCLOSURE

A removable mullion device for use with a window to convert a single pane thereof to multiple pane comprising a hollowed-out tube slidably receiving interiorly the main-body portion of an integral inserting member of one-piece construction which comprises said main-body portion, a piercing point, a neck and a serrated flange. The tube is disposed in abutting relationship with the window pane and sash with sash securement effected by point engagement therewith. A longitudinal slot formed in the tube and portion complementally receives and guides said neck, and tube securement in facilitated by appropriate, manipulative movement of the serrated flange disposed on the exterior surface of said tube.

This invention relates to a removable mullion device for use with a single-pane window to convert same to multiple-pane.

Conventional mullion-type windows have vertically and horizontally disposed mullions which intersect and which are permanently fixed to the sash to mount window panes or lights of rectangular or square configuration. Other mullion-type windows have diagonally disposed mullions which intersect and which are permanently fixed to the sash to mount diamond-shape window panes or lights.

In conventional mullion-type windows the difficulty encountered has been that of the time and effort that must necessarily be devoted to periodic cleaning of the panes with their dirt-catching corners formed by the mullions, in addition to the expense entailed in the manufacture and fabrication of this type of window.

To obviate this difficulty it has been proposed to utilize interconnectable mullion elements that can be removably mounted on a single-pane window to achieve the simulation of the conventional mullion-type window. However, the proposal to utilize such interconnectable mullion elements to overcome the described difficulty and expense of the conventional mullion-type window has engendered problems in and of themselves.

Among these problems are the problem of the necessity that one be a skilled mechanic in order to properly install the mullion elements and their fastening means; the problem of defacement and mutilation of the window's sash by installation of the fastening means of different types to secure the mullion elements or to cooperatively secure the mullion elements; the problem of such fastening means interfering with the function of the window itself; the problem of the multitude and complexity of the fastening means along with the expense entailed thereby; the problem of the removal of the mullion elements and the reinstallation of same such as after cleaning the window pane; and the problem of the durability of the mullion elements themselves along with the loosening and rattling of same after reinstallation.

The objects of this invention are to solve the discussed problems of the art by providing a mullion device comprising a tube or mullion element and cooperative fastening means of an inserting member of simple but durable construction which the average householder can easily and readily install to convert a single-pane window to multiple-pane without defacement or mutilation of the window sash, without interference with the function of the window; and in this connection the fastening means is of integral one-piece construction that is inexpensive to manufacture, and which has a piercing point to permit tight and snug installation of the tube with respect to the sash and window pane to inclusively afford structural rigidity and dampen window-pane vibration, and which piercing point permits removal and reinstallation of the tube in a similar tight and snug manner.

These objects and other objects should be discerned and appreciated from the detailed specification taken in conjunction with the drawings, wherein like reference numerals refer to similar parts throughout the several views, in which:

FIG. 1 is a perspective view, partly in section, showing the mullion device installed in the sash of a window;

FIG. 2 is a sectional view taken along the line 2—2 of FIG. 1;

FIG. 3 is a view of the inserting member;

FIG. 4 is a sectional view of a modification as same would be depicted if similarly taken along the line 2—2 of FIG. 1.

In FIG. 1 of the drawings, reference numeral 1 generally refers to the invention and shows a window sash 3 with a window pane or light 5 mounted therewith. Tube or mullion element 7, preferably, is extruded of medium rigid polyvinyl chloride plastic to maintain inclusively the uniform shape of the tube as shown in cross-section in FIGS. 1 and 2. Tube 7 is of integral, one-piece construction and has relatively flat upper and lower surfaces 9 and 11 symmetrically disposed with respect to each other, and relatively flat top and bottom surfaces 13 and 15 symmetrically disposed with respect to each other. Surfaces 9 and 13, 13 and 11, 11 and 15, and 15 and 9 are joined by webs 17, 19, 21 and 23, respectively. A longitudinal slot 25 is formed in the end portion of upper surface 9 relative to its longitudinal axis.

Shown in FIGS. 1, 2 and 3 of the drawings is the fastening means of the inserting member 27. Inserting member 27 is of the styrene class of plastics and is formed by injection molding. Inserting member is of intergral, one-piece construction and has a main-body portion 29, piercing point 31, neck 33 and serrated flange 35. Instead of such piercing point 31, a suitable nail pin may be imbedded in the main-body portion 29. Main-body 29 has transverse wing portions 37 and 39 outwardly disposed therefrom.

FIG. 1 shows tube 7 horizontally disposed with its left end mounted by means of the cooperating inserting member 27 with the left vertical stile of sash 3. The right end of tube 7 would be similar to its left end with such right end mounted by means of another cooperating inserting member 27 with the right vertical stile.

The structure by means of which horizontally and vertically disposed tubes are interconnectingly secured to one another is deemed conventional and prior art, and hence forms no part of this invention. In this connection,

it should be mentioned that dowel pins carried by one or the other of the tubes to be horizontally or vertically disposed effect such interconnecting securement. Similarly, the description of the cooperating fastening means of the inserting member 27 with a tube 7 that is diagonally disposed would be similar.

To mount a tube 7 with respect to the sash 3 and window pane 5 with sash securement effected by the cooperative fastening means, an inserting member 27 is disposed at each end of tube 7 in opposed relationship to each other and in such manner that the inserting members 27 are slidably received interiorly of tube 7. It should be noted that in this respect the interior dimensions of the hollowed-out tube 7 are such that an interference fit is provided for the main-body portions 29 and wing portions 37 and 39 by the interior surfaces of webs 17, 19, 21 and 23, and top and bottom surfaces 13 and 15, to thereby functionally contribute to the tightness and snugness of the terminal end portions of the tube against the sash and the exterior flat, lower surface 11 against the window pane 5 to impart strength and structural rigidity to the sash and window pane, and to dampen window-pane vibration, and to thereby functionally contribute further to such tightness and snugness in the maintenance of the securement of the fastening means with respect to the sash. The longitudinal slots 25 formed in the upper surface 9 at the tube end portion complementally receive necks 33 but with similar interference fits. Interference fits are similarly provided between the lower surfaces of flanges 35 and the exterior upper surface 9. From the description it should be appreciated that to secure a tube 7 to the sash 3 by two opposed inserting members 27 is simply a manipulative function. The lower surface 11 is pressed against the window pane 5 with the householder's thumbs engaging the serrated flanges 35 and thence the inserting members 27 are moved in opposite directions such that the flanges 35 will be in abutting relationship with the sash 3 to thereby imbed the piercing points in the sash 3. When the tube is thusly mounted, the flanges 35 will cover the openings of the longitudinal slots 25. The reverse of this described mounting procedure allows the removal of the tube 7 from its mounted position with respect to the sash 3.

In the modification shown in FIG. 4 of the drawings, the parts of the tube 41 and inserting member 43 are similar to the tube 7 and inserting member 27 previously described except that in each tube end portion a longitudinal slot 45 is formed in the top surface 47 and a longitudinal slot 49 is formed in the bottom surface 51. Slots 45 and 49 similarly, complementally receive the necks 53 and 55, respectively, of inserting member 43. And similar serrated flanges 57 and 59 are likewise provided. Mounting the tube 41 would be similar to the mounting of tube 7; however, with respect to tube 41 the householder would utilize the index finger and thumb of each hand to engage flanges 57 and 59.

Having thusly described my invention, I claim:

1. A mullion device for use with a window having a sash to simulatively convert a single pane thereof to multiple pane; said mullion device comprising an elongated tubular member and a cooperating fastening means adapted to removably mount said tubular member in secured relationship with said window sash, said tubular member comprising medium rigid polyvinyl chloride plastic, said tubular member being of integral, one-piece construction, said tubular member having flat upper and lower surfaces symmetrically disposed with respect to each other, said tubular member having flat top and bottom surfaces symmetrically disposed with respect to each other, said tubular member having inclined webs, each of said inclined webs joining said flat upper surface to said flat top surface, said flat top surface to said flat lower surface, said flat lower surface to said flat bottom surface, and said flat bottom surface to said flat upper surface, said fastening means comprising an inserting member, said inserting member being of integral, one-piece construction, said inserting member being of the styrene class of plastics, said inserting member having a cylindrical-shaped, main-body portion, transverse wing portions extending oppositely outwardly from said main-body portion, said main-body portion terminating at one end in a conical, piercing point, a neck portion extending outwardly from said main-body portion perpendicular to said transverse wing portions and a flange attached to the end of said neck portion, the interior of said tubular member slidably receiving said main-body portion and centrally disposing said piercing point relative to said tubular member, the interior surfaces of said tubular member being substantially parallel to their respective outer surfaces, the dimensions between the interior surfaces of said top and bottom surfaces being slightly less than the dimensions between the end surfaces of said opposed transverse wing portions to provide interference fit, said tubular member having a terminal end portion, said terminal end portion having a longitudinal slot in said flat upper surface of said terminal end portion relative to the longitudinal axis of said flat upper surface, said slot opening to the end of said tubular member to the interior thereof, said slot receiving and guiding said neck portion, and the end surfaces of said transverse wing portions being in interference fit with said interior surfaces of said top and bottom surfaces, said tubular member receiving said inserting member inwardly from said terminal end portion, said tubular member carrying said flange exteriorly on said flat upper surface, said flange having a length and width greater than the length and width of said slot, the width of said slot being slightly less than the width of the exterior of said neck portion to provide thereby an interference fit, said flange being serrated to facilitate manipulation thereof, the lower surface of said flange and the exterior of said upper surface being in interference fit, said piercing point being adapted to effect removable mounting securement of said tubular member with said window sash by its engagement with said window sash.

2. A mullion device for use with a window having a sash to simulatively convert a single pane thereof to multiple pane; said mullion device comprising an elongated tubular member and a cooperating fastening means adapted to removably mount said tubular member is secured relationship with said window sash, said tubular member comprising medium rigid polyvinyl chloride plastic, said tubular member being of integral, one-piece construction, said tubular member having flat upper and lower surfaces symmetrically disposed with respect to each other, said tubular member having flat top and bottom surfaces symmetrically disposed with respect to each other, said tubular member having inclined webs, each of said inclined webs joining said flat upper surface to said flat top surface, said flat top surface to said flat lower surface, said flat lower surface to said flat bottom surface, and said flat bottom surface to said flat upper surface, said fastening means comprising an inserting member, said inserting member being of integral, one-piece construction, said inserting member being of the styrene class of plastics, said inserting member having a cylindrical-shaped, main-body portion, transverse wing portions extending oppositely outwardly from said main-body portion, said main-body portion terminating at one end in a conical, piercing point, two neck portions, said neck portions further extending outwardly from said transverse wing portions, two flanges, said flanges being attached to the ends of said neck portions, the interior of said tubular member slidably receiving said main-body portion and centrally disposing said piercing point relative to said tubular member, the interior surfaces of said tubular member being substantially parallel to their respective outer surfaces, said tubular member having a terminal end portion, said terminal end portion having a longitudinal slot in said flat top surface of said terminal end portion relative to the longitudinal axis of said flat top

surface, said terminal end portion having a longitudinal slot in said flat bottom surface of said terminal end portion relative to the longitudinal axis of said flat bottom surface, said slots opening to the end of said tubular member and to the interior thereof, each of said slots receiving and guiding said neck portions, said tubular member receiving said inserting member inwardly from said terminal end portion, said tubular member carrying one of said flanges exteriorly on said flat top surface and the other one of said flanges exteriorly on said flat bottom surface, said flanges having length and width greater than the length and width of said slots, the width of said slots being slightly less than the width of the exterior of said neck portions to provide thereby interference fit, said flanges being serrated to facilitate manipulation thereof, the lower surfaces of said flanges and the exterior of said top and bottom surfaces being in interference fit, said piercing point being adapted to effect removable mounting securement of said tubular member with said window sash by its engagement with said window sash.

References Cited

UNITED STATES PATENTS

3,221,462	12/1965	Pomeroy	52—509 X
3,340,661	9/1967	Krieger	52—456
2,132,217	10/1938	Neuendorf	52—455 X
2,408,281	9/1946	Wilkin.	
2,627,632	2/1953	Kelly	52—656
2,681,481	6/1954	Mason.	
3,099,865	8/1963	Burnett.	
3,108,336	10/1963	Tate.	
3,254,465	6/1966	Brengman et al.	52—455
3,293,817	12/1966	MacGregor	52—456

FOREIGN PATENTS

712,378	6/1965	Canada.

FRANK L. ABBOTT, *Primary Examiner.*

ALFRED C. PERHAM, *Examiner.*