United States Patent [19]

Dau

[11] **3,861,082**

[45] **Jan. 21, 1975**

[54] **PIVOTED REMOVABLE SASH TYPE WINDOW**

[75] Inventor: **Matthew L. Dau,** Long Island, N.Y.

[73] Assignee: **Perfect Seal Window Inc.,** Ozone Park, N.Y.

[22] Filed: **Mar. 20, 1973**

[21] Appl. No.: **342,943**

[52] **U.S. Cl.** **49/181,** 49/453

[51] **Int. Cl.** **E05d 15/22**

[58] **Field of Search** 49/196, 174, 172, 181, 49/176, 453

[56] **References Cited**

UNITED STATES PATENTS

1,428,068	9/1922	Walker	49/176 X
1,688,836	10/1928	Stein	49/176
3,055,062	9/1962	Peters et al.	49/174
3,126,588	3/1964	Osten	49/174
3,222,733	12/1965	Wahlfeld et al.	49/181
3,434,236	3/1969	Weidner et al.	49/181 X

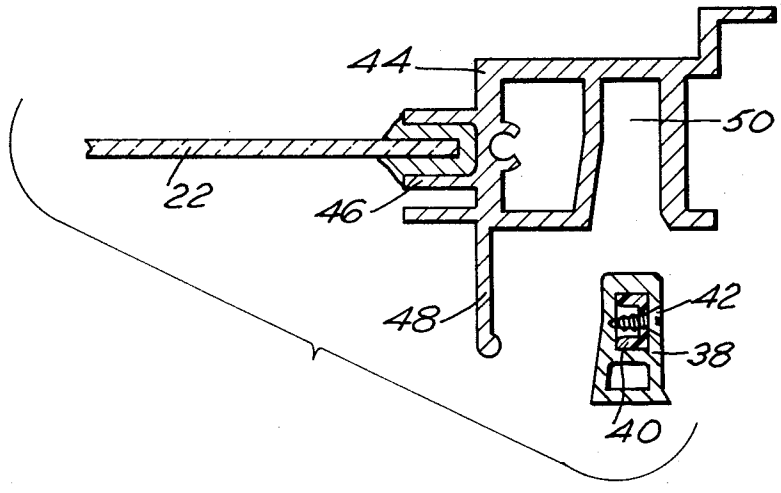
Primary Examiner—Dennis L. Taylor

Attorney, Agent, or Firm—Salter & Michaelson

[57] **ABSTRACT**

Tilt type sash windows usually comprise a pivot assembly slidable in the jamb liner on each side of the sash. The bottom of each sash is pivotally mounted in this assembly. The top of each sash is provided with a slide lock for unlocking and allowing the window to pivot inwardly. If it is desirable to remove the window from the mechanism, a tool is required to unbolt or open a slot. The present device provides the bottom rail of each sash with a wedge-shaped opening. A wedge-shaped pivot bar extends across the window opening and is provided with suitable extensions at each end for engaging the pivot assembly. The wedge-shaped pivot bar is positioned in the wedge-shaped opening of the bottom rail so that the sash, wedge-shaped pivot bar, and the pivot assembly slide vertically together. To remove the sash, the slide lock is pulled in and the upper end of each sash is pivoted inwardly in the conventional manner. Now, the bottom end of the sash is raised so that the wedge-shaped opening slides off the wedge-shaped pivot bar. The window is now free from the mechanism.

2 Claims, 5 Drawing Figures



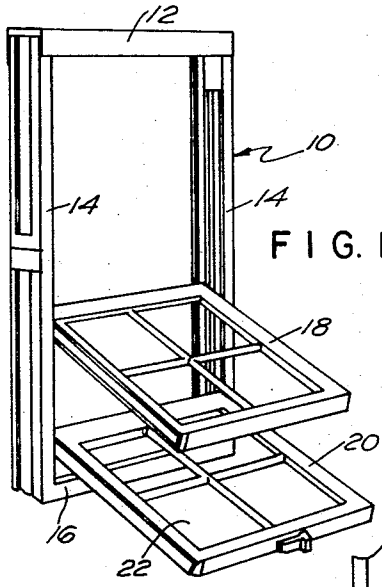


FIG. 1

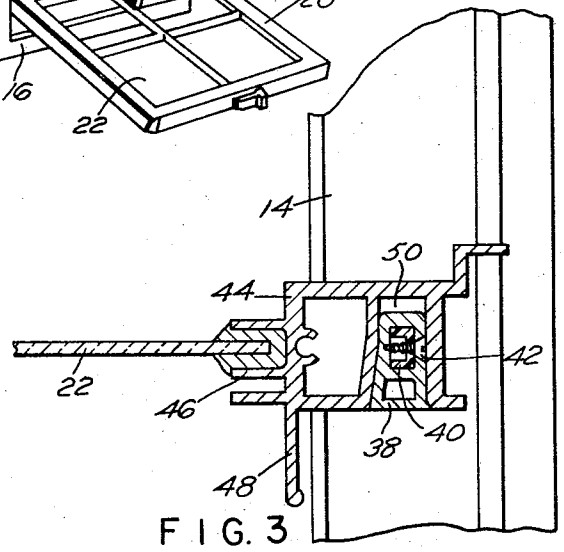


FIG. 3

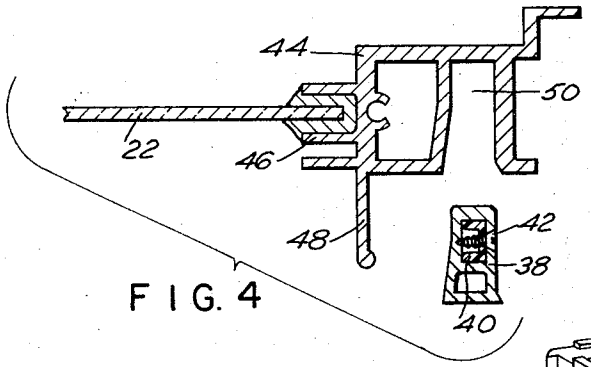


FIG. 4

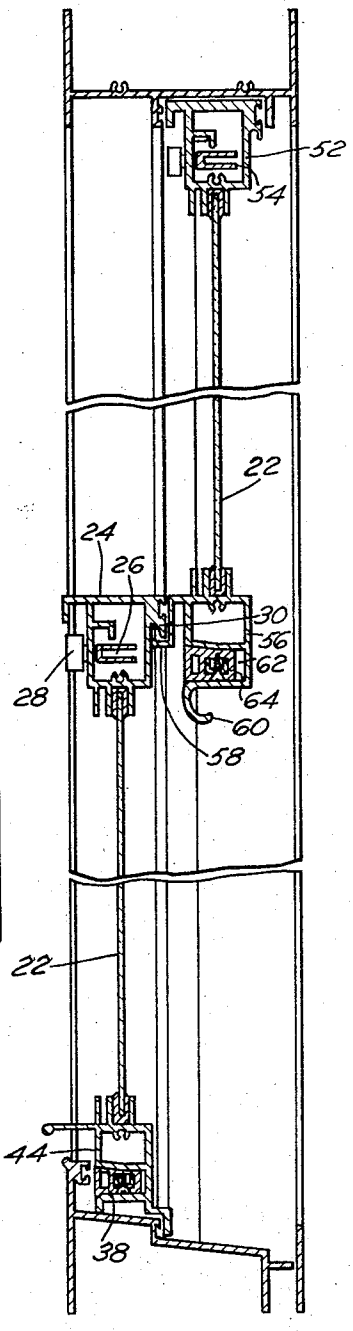


FIG. 2

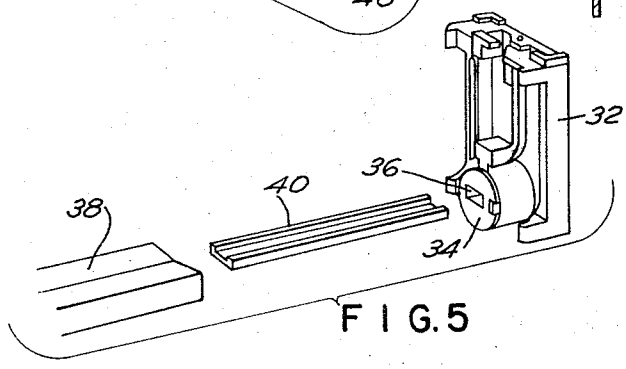


FIG. 5

PIVOTED REMOVABLE SASH TYPE WINDOW

BACKGROUND OF THE INVENTION

Extruded aluminum window constructions of the double hung type have become popular because of their easy handling and installation. To allow access to both sides of the sash for cleaning, such windows are usually constructed so that each sash can be tilted 90° into the room. To this end, a tilt or pivot device is provided which pivotally carries the bottom end of the sash and slides vertically in the jamb. While effective in allowing the sash to pivot, the pivot mechanism does not permit ready removal of the sash from the frame. To accomplish such removal, a screwdriver or other tool must normally be used to release the parts, and in those assemblies where no tool is required to effect removal of the sash, the danger of the sash becoming accidentally removed is a serious problem.

SUMMARY OF THE INVENTION

The present invention provides a pivoted sash type window with a pivot construction which permits the sash to be lifted and removed from the pivot mechanism without the use of tools, and in such a way that the danger of accidental removal of the sash is negligible. Conventionally a carrying frame is slidable in each jamb, the frame carrying a pivot device which receives a pivot bar normally mounted on the bottom of each sash as shown, for example, in U.S. Pat. No. 3,055,062 issued Sept. 25, 1962 to Peters et al, and entitled Pivoted Sash Type Window. In accordance with the present invention, the bottom rail of each sash is provided with a wedge-shaped opening extending inwardly from the inside or front of the window (when the sash is in vertical position). A wedge-shaped picot bar extends across the window opening and is provided with extensions at each end for engaging the pivot device. The wedge-shaped pivot bar is frictionally engaged in the wedge-shaped opening so that the sash rides vertically with the pivot bar and pivot assembly. When the sash is pivoted inwardly 90°, the bottom end can be lifted up so that the bottom rail and its wedge-shaped opening can be removed from the wedge-shaped pivot bar, freeing the sash without the use of tools. To replace, the bottom rail is placed over the pivot bar, the bar and opening nesting together again. The sash is now tilted to its vertical position and the window is back in place.

Other objects, features and advantages of the invention shall become apparent as the description thereof proceeds when considered in connection with the accompanying illustrative drawings.

DESCRIPTION OF THE DRAWINGS

In the drawings which illustrate the best mode presently contemplated for carrying out the present invention:

FIG. **1** is a perspective view showing a window with both sashes pivoted inwardly;

FIG. **2** is a vertical section of the window with both sashes in vertical closed position;

FIG. **3** is an enlarged fragmentary section showing the lower rail of a sash in tilted position;

FIG. **4** is a view similar to FIG. **3** with the sash removed from the pivot bar; and

FIG. **5** is an exploded perspective view of the pivot bar mounting in the pivot assembly.

DESCRIPTION OF THE INVENTION

Referring more in detail to the drawings, the window of the present invention comprises a frame **10** having a head **12,** side jambs **14,** and a sill **16.** Slidable in the frame **10** are the upper sash **18** and lower sash **20.** The lower sash **20** comprises glass panes **22** mounted in extruded frames, all of which are conventional. In a pivoted sash, the top extrusion **24** conventionally carries a pair of slide latches **26,** each having a front finger-engagable operating button **28.** This assembly appears at each side edge for releasing the top of the sash from the frame for pivoting. More specifically, when it is desired to tilt or pivot the sash, the buttons **28** are each slid inwardly to release the latches **26** from the frame whereby the desired pivoting or tilting of the sash may be effected. The back of the extrusion **24** is provided with a hooked portion **30** which interengages with portion **58** on the upper sash **18** for weatherstripping purposes.

The lower sash **20** rides in a conventional pivot member **32,** see FIG. **5.** The member **32** is provided with a nylon tilt mechanism **34** having a flat central slot **36.** An extruded wedge-shaped pivot bar **38** extends across the window opening. At each end, a 3 inch length of U-shaped rectangular bar **40** is inserted and locked in place by a set screw **42** with a small portion extending outwardly, which portion fits into the slot **36** of the nylon pivot member **34,** FIG. **5.**

The bottom rail **44** of the lower sash **20** comprises an extruded strip having a portion **46** for holding the glass **22,** an extended portion **48** for manual engagement to lift the sash, and a wedge-shaped opening **50** for receiving the wedge-shaped pivot bar **38,** FIG. **3.** The lower sash **20** is thus mounted on the bar **38** by wedging the bar into the opening **50.**

The upper sash **18** is similarly mounted. The upper raial **52** is provided with slide latches **54.** The bottom rail **56** is provided with the hooked portion **58** for interengaging with the portion **30** on the bottom sash for weatherstripping, a curved portion **60** for manual engagement to draw the window down, and a wedge-shaped opening **62** similar to the opening **50** in the lower sash. The opening **62** receives a wedge-shaped bar **64** similar to the bar **38** and riding in a pivot member (not shown) identical to the member **32.**

It should be noted that the window may be provided with conventional braking and balancing systems for ease of movement and for holding the window in position. Such a construction is illustrated in aforesaid U.S. Pat. No. 3,055,062.

With the parts assembled as hereinabove described, the bottom rails **44** and **56** are mounted on their respective wedge-shaped bars **38** and **64.** The windows are in vertical position and held there by the latches **26** and **54.** To tilt the windows into the position shown in FIGS. **1** and **3,** the latch buttons are manually operated to release the windows and the windows are pulled inwardly, the bar **38** and extension **40** causing the member **34** to turn 90°. Removal of the window is simple. As shown in FIG. **4,** the rail **44** is lifted vertically so that the wedge-shaped opening **50** lifts off the wedge-shaped pivot bar **38.** The window is now completely free of the frame. The upper sash **18** is removable in the same manner. To return the window, it is held horizontally and the wedge-shaped opening **50** is pushed onto the wedge-shaped pivot bar **38** into the position shown

in FIG. 3. The window can now be tilted upwardly to vertical position, FIG. 2, and the latches 26 moved outwardly to latch the window in this position.

The construction is thus simple and easy with very little departure from the conventional window constructions. However, the construction provides an extremely simple and quick method of completely removing a sash from the frame. No tools are required to release or install the window. Furthermore, the operation is so simple that any housewife can release the window without following complicated instructions. With the sash in its vertical operating position it is impossible for it to become detached from the pivot bar because the sash rides against the outer leg of the side jamb. Removal can only be effected with the window in its 90° tilted position, and when in this position, the window can be safely cleaned without danger of accidental removal because the pressure applied during the cleaning operation will tend to force the sash downwardly on to the pivot bar. Also, when the window has been removed and it is desired to replace same, the wedge-shaped opening 50 can be easily aligned with the pivot bar and forced downwardly thereagainst.

While there is shown and described herein certain specific structure embodying the invention, it will be manifest to those skilled in the art that various modifications and rearrangements of the parts may be made without departing from the spirit and scope of the underlying inventive concept and that the same is not limited to the particular forms herein shown and described except insofar as indicated by the scope of the appended claims.

What is claimed is:

1. A pivoted removable sash window comprising a frame including side jambs, a pair of pivot members slidably mounted in each of said side jambs, a pivot bar attached to each of said pivot members and extending across said frame, said pivot bar and pivot members being slidable as a unit up and down along said side jambs and said pivot members permitting rotation of said pivot bar about its own axis, said window comprising a bottom sash having a recessed portion therein extending completely thereacross, said recess portion being configured so as to frictionally receive said pivot bar therein, whereby said window is removably attached to said pivot bar, and means for releasably latching the upper rail of the window into vertical sliding position in said frame, said recessed portion being of generally U-shaped configuration, said U-shaped configuration being disposed on its side when the window is in vertical position and being inverted when the window is swung to horizontal position, whereby said window may be lifted upwardly off said pivot bar when said window is horizontally disposed.

2. In the window of claim 1, said pivot bar having a wedge-shaped cross section.

* * * * *