Jan. 8, 1935. E. PEREMI ET AL 1,987,516

HINGING DEVICE FOR PROJECTED TYPE SASH

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Fig. 1.

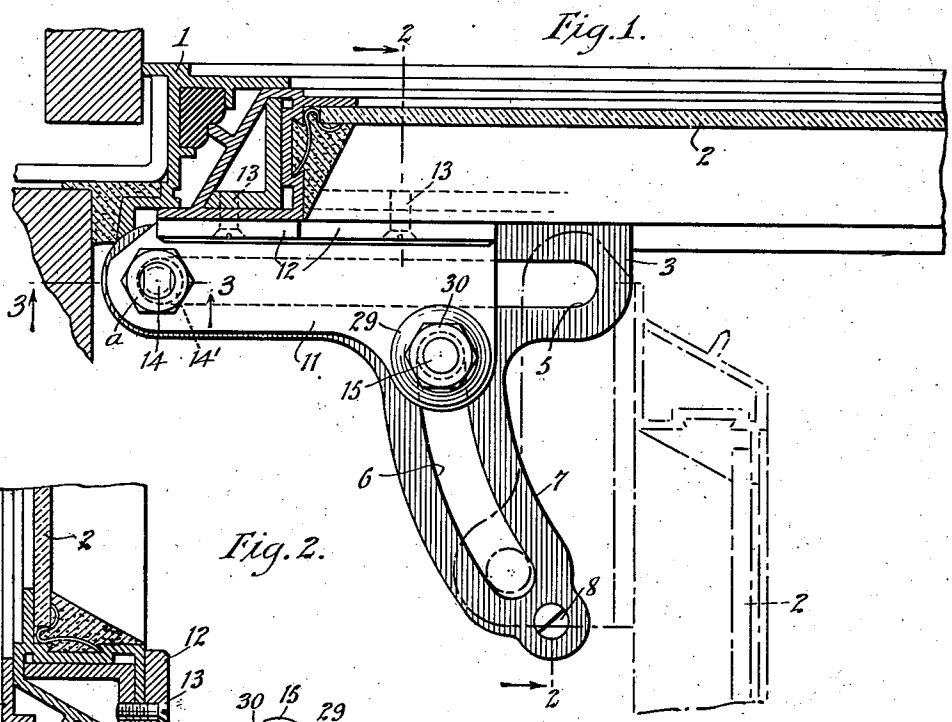


Fig. 2.

Fig. 4.

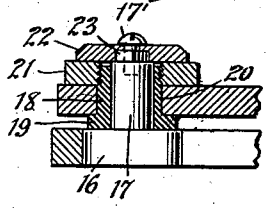


Fig. 3.

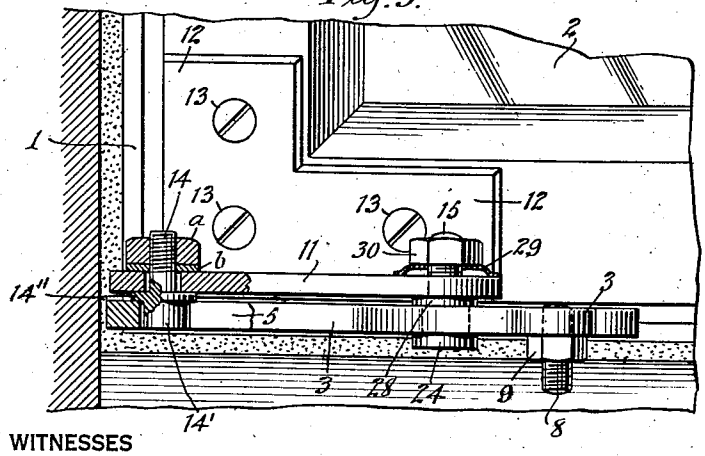
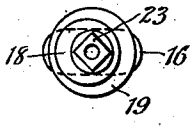


Fig. 5.



WITNESSES

Edw. Thorpe

S. O. Foster

INVENTORS

Edmund Peremi

Louis Toth

BY Munn, Anderson, Stanley, Foster & Liddy.

ATTORNEYS

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Fig. 6.

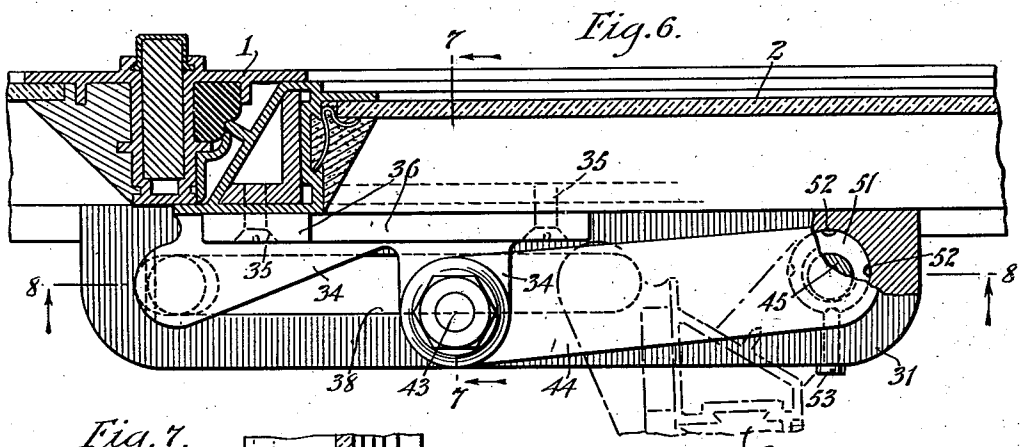


Fig. 7.

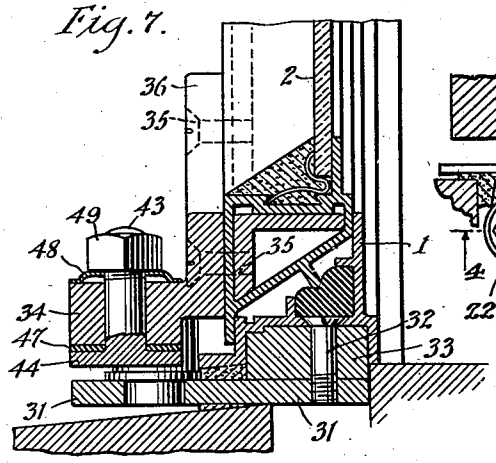


Fig. 10.

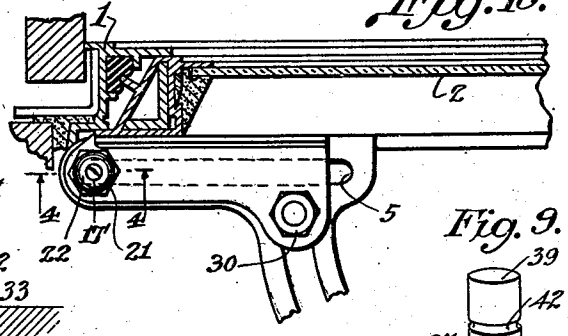


Fig. 9.

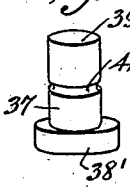
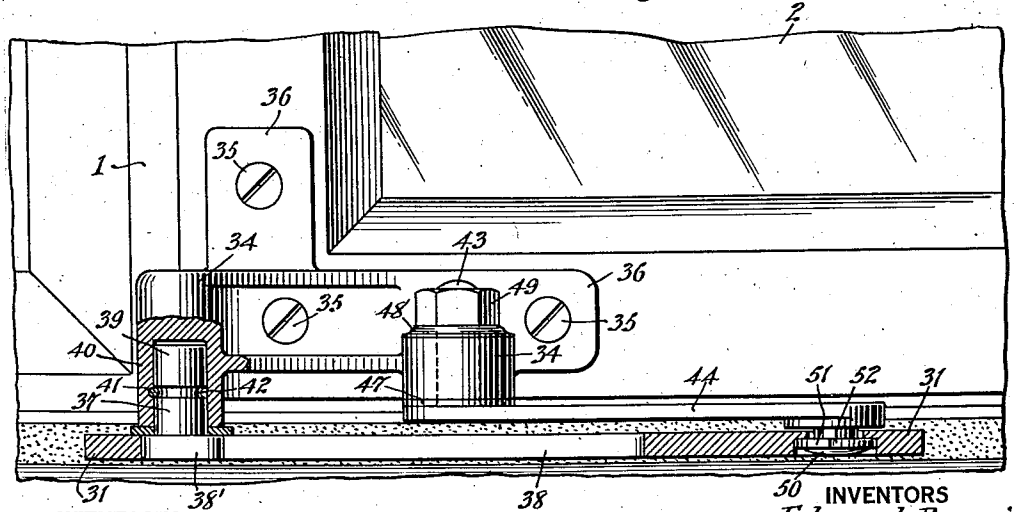


Fig. 8.



WITNESSES

Edw. Thorpe.

A. W. Foster

INVENTORS

Edmund Peremi

Louis Toth

BY

Munn, Anderson, Stanley, Foster & Liddy

ATTORNEYS

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UNITED STATES PATENT OFFICE

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HINGING DEVICE FOR PROJECTED TYPE SASH

Edmund Peremi and Louis Toth, Manhasset, N. Y.

Application October 11, 1933, Serial No. 693,202

5 Claims. (Cl. 16—179)

This invention relates to hinging devices for the projected type of sash, an object of the invention being to provide an improved construction of hinge which provides an extra resting point at friction bolts when the sash is in open position and which eliminates the possibility of sagging of the sash.

A further object is to provide an improved hinging device which creates enough space between the sash and the jamb to permit cleaning of both sides of the window panes from the inside of the room.

A further object is to provide a hinging device of this character having improved arrangement of eccentric pin so that the sash can be brought either closer or further away from the frame to provide clearance.

A further object is to provide a hinging device of this character which embodies many novel features of construction and combinations and arrangements of parts, all of which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings—

Figure 1 is a sectional plan view showing one form of our improved hinging device operatively connected to an outwardly swinging sash;

Figure 2 is a view in section on the staggered line 2—2 of Figure 1;

Figure 3 is a fragmentary view in section on the line 3—3 of Figure 1;

Figure 4 is a fragmentary view in section on the line 4—4 of Figure 10;

Figure 5 is a plan view of the sliding pivot shown in Figure 4;

Figure 6 is a sectional plan view illustrating a modification;

Figure 7 is a view in section on the line 7—7 of Figure 6;

Figure 8 is a sectional elevation, the view being taken on the line 8—8 of Figure 6;

Figure 9 is a perspective view of the sliding pivot shown at the left of Figure 8.

Figure 10 is a sectional plan view similar to Figure 1, illustrating a modified form of pivot shown in Figure 4.

Referring more particularly to Figures 1, 2, 3, 4 and 5 of the drawings, 1 represents a frame or, more specifically, the jamb of the frame, and 2 an outwardly swinging sash. 3 represents the main supporting plate of our improved hinging device. This plate is rigidly secured to the frame 1 and may extend under the frame, as shown most clearly in Fig. 2 of the drawings, to be secured thereto by screws 4. This plate 3 has a straight slot 5 therein extending substantially parallel to the frame, and it also has a curved or arcuate slot 6 in the projecting portion 7 of the plate which is at an angle to the slot 5. The outer end of the extension 7 is provided with an adjustable setscrew 8 which has a lock nut 9 thereon and which is adapted to engage a sill 10 and support the outer end of this arm and permit adjustment thereof to level the same and adjust the position of the sash.

A supporting plate 11 is rigidly secured to the sash and this securement to the sash may be through the medium of a flange 12 on the plate 11 secured by screws or other suitable means 13 with the sash. This plate 11 rests on the supporting plate 3 and is coupled to the plate 3 by means of an adjustable pivot 14 and a sliding friction pivot bolt 15. The pivot 14 has an eccentric head 14' which is mounted to move in the slot 5, and by turning the pivot 14 with respect to the plate 11, the eccentric head 14' will cause the sash to be adjusted inwardly and outwardly within a certain range, so that if the sash is not exactly aligned in the frame it can be adjusted inwardly and outwardly by means of the pivot 14. The pivot 14 has an annular shoulder 14'' located between the plate 11 and the plate 3. The upper end of the pivot 14 is screw-threaded for the reception of a nut *a* which clamps a friction washer *b* against the plate 11. As shown in Figure 4, and in lieu of the pivot 14, a modified form of pivot 17 may be used. This pivot 17 has an elongated head 16 mounted to slide in the slot 5. The pivot 17 is mounted in an eccentric bushing 18, and this bushing 18 has an annular flange 19 at its lower end located between the plate 3 and plate 11, and projects in opening 20 in the plate 11. The upper end of the eccentric bushing 18 is screw-threaded to receive a nut 21 and a covering friction disk 22 is socketed to cover the angular upper end 23 of the pivot 17 and a screw 17' is projected through the disk 22 and screwed into the end of the pivot 17. By reason of this construction of adjustable pivot it will be noted that the bushing 18 can be turned so as to adjust the pivot and adjust the sash in the frame within certain limits to make up for any variation in position necessary for proper alignment. The sliding friction bolt 15 has a head 24 at its lower end below the plate 3, and this bolt 15 is of two different diameters. The larger diametered portion 25 is in the slot 5 of the plate 3, and the smaller diametered portion 26 is in an opening 27 in the plate 11. A spacing washer 28 is disposed on the bolt between the plate 3 and the plate 11.

A spring cup washer 29 is located around the bolt and bears against the plate 11, and a friction adjusting nut 30 is screwed onto the upper end of the bolt 15 to secure the parts together and regulate the frictional contact thereof.

In the modification illustrated in Figures 6, 7, 8 and 9 of the drawings, 31 represents a main supporting plate which is secured to the window frame 1 preferably by means of screws 32 projected through the lower bar of the frame 1, and screwed into the plate 31 with a suitable filler block 33 in the frame. A sash anchor arm 34 is secured to the sash preferably by means of screws 35 projected through webs 36 on the anchor arm 34, and the anchor arm 34 is connected to the supporting plate by a sliding pivot 37 which is movable in a straight slot 38 in the plate 31. This pivot or pin 37 has an elongated head 38' which slides in the slot 38, and its stud portion 39 projects into a socket 40 in one end of the arm 34, and the arm and pin are held in coupled relation by means of a cross pin 41 projected through the socket 40 and positioned in an angular groove 42 in the pin.

A pivot bolt 43 operatively connects one end of the arm 34 with a guiding lever 44, and the other end of said guiding lever is connected to the plate 31 by an adjustable pivot pin 45. The pivot bolt 43 is integral with the lever 44, and a friction washer 47 surrounds the bolt 43 between said lever and the face of the arm 34. A spring cup washer 48 is located on the pivot bolt and bears against the arm 34, and a nut 49 is screwed into the end of the bolt and bears against the spring washer 48 to give the desired frictional contact.

The adjustable lever 44 comprises a pin having a head 50 at its lower end, and above said head a pin 45 is mounted in an eccentric bushing 51 which has notches 52 in its edges for the reception of a securing screw 53 projected through the plate and engaging in any of said notches to secure the bushing in any desired adjustment so as to adjust the sash in the frame. The pivot pin 45 is fixed in the guiding lever 44 so that when the lever 44 turns the pin turns in its eccentric bearing.

In connection with both forms of hinges above described, it is, of course, to be understood that these hinges are arranged in pairs in natural use, and while we have illustrated only the hinge at the lower portion of the sash it is obvious that a similar hinge device is at the upper portion of the sash and that the operation of the parts of both hinges will be in unison so that as the sash is swung outwardly the hinged end thereof will move away from the frame to allow both sides of the sash to be cleaned from the inside of the room, and when the sash is closed it will be moved not only inwardly but outwardly as well so as to engage the jamb and fit snugly and weather-tight in the frame.

While we have illustrated what we believe to be the preferred embodiments of our invention, it is to be distinctly understood that various slight changes may be made with regard to the form and arrangement of parts without departing from our invention, and hence we do not limit ourselves to the precise details set forth but consider ourselves at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claims.

What we claim is:

1. A hinging device for a projected type sash including a supporting plate adapted to be secured to the window frame, an anchor arm adapted to be secured to the sash, an extension on the plate, said plate having a straight slot therein and said extension having a curved slot therein, pivots connecting the anchor arm and plate and movable respectively in the straight and curved slots, the pivot extending in the straight slot being adjustable with respect to the anchor arm by means adjustable in an opening in the anchor arm, and an elongated head on said last mentioned pivot engaging the side walls of the straight slot to prevent the pivot from turning with respect to said plate.

2. A hinging device for the projected type sash, including a supporting plate adapted to be secured to the window frame, an anchor arm adapted to be secured to the sash, an extension on the plate, said plate having a straight slot therein and said extension having a curved slot therein, a pivot connecting the anchor arm with the slotted portion of the extension and movable in the curved slot, a second pivot connecting the anchor arm with the slotted portion of the plate and movable in the straight slot, and an eccentric head on the second pivot adapted when the latter is turned to adjust the sash toward and away from the frame.

3. A hinging device for a projected type sash, including a supporting plate adapted to be secured to the window frame, an anchor arm adapted to be secured to the sash, an extension on the plate, said plate having a straight slot therein and said extension having a curved slot therein, a pivot connecting the anchor arm with the slotted portion of the extension, a second pivot connecting the anchor arm with the straight slotted portion of the plate, an eccentric head on the second pivot adapted when the pivot is turned to adjust the sash toward and away from the frame, a clamping nut screwed on the end of the second pivot, and an integral flange on second pivot located between the anchor arm and the plate.

4. In a hinging device for a window sash, fixed members on the sash and window frame respectively, a pivot carried by the fixed member on the sash, an adjustable eccentric bushing positioned on the fixed member on the sash and spaced from said pivot, a second pivot loosely fitting in said bushing, and means to maintain the adjustment of the bushing, the pivots being movable in different paths in guiding slots respectively in the fixed member on said frame, the sash being adjustable with respect to said frame by adjusting said bushing.

5. A hinging device for a projected type sash, including a supporting plate adapted to be secured to the window frame, an anchor arm adapted to be secured to the sash, an extension on the plate, said plate having a straight slot therein and said extension having a curved slot therein, a pivot connecting the anchor arm with the slotted portion of the extension and movable in the curved slot, a second pivot connecting the anchor arm with the slotted portion of the plate, said second pivot having adjustable eccentric means adapted when turned to adjust the sash toward and from the frame.

EDMUND PEREMI.
LOUIS TOTH.