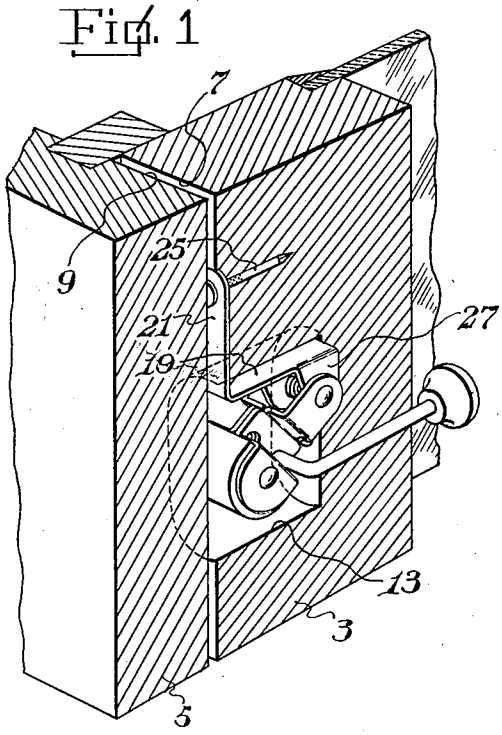
Jan. 26, 1960 R. J. RILEY 2,922,673

WINDOW SASH SNUBBER

Filed Jan. 28, 1958

Fig. 1



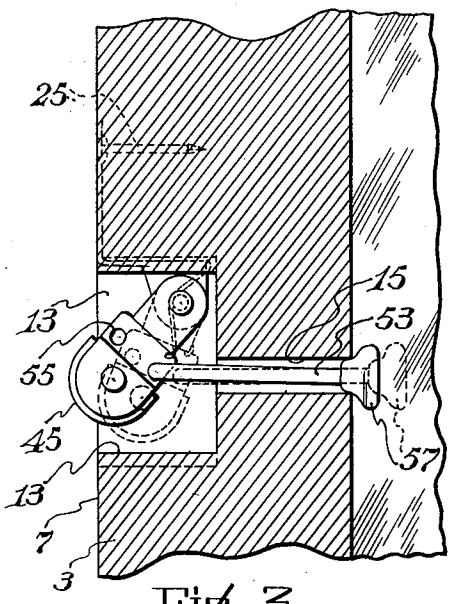


Fig. 3

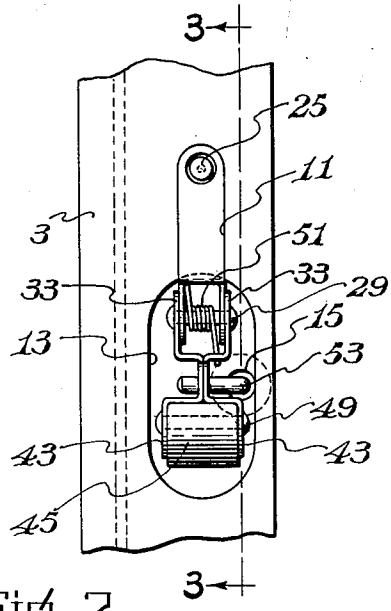


Fig. 2

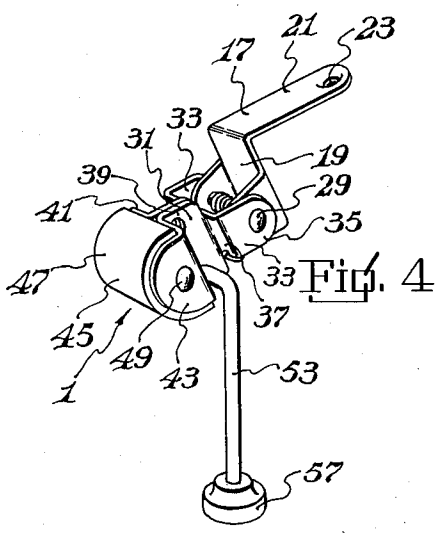


Fig. 4

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WINDOW SASH SNUBBER

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2 Claims. (Cl. 292—242)

The present invention relates to window sash snubbers and more particularly to snubbers designed to coact between a window sash and its associated window frame releasably to maintain the sash in any of a plurality of raised positions.

As is well known, it is common practice to provide window sashes with counterbalancing sash weights or springs or similar devices to overcome the weight of the sash so that when raised and released the sash will remain in any desired raised position. Such arrangements for counterbalancing the weight of the sash have moving parts within the window frame and are relatively complicated in construction. A widely used and much simpler window construction does not counterbalance the sash but instead provides means for locking the sash in raised position after the sash has been raised against its own weight. Such locking devices, for example, include bolts slidable outward of the sash into any of a plurality of vertically spaced holes in the frame. These locking bolts have the disadvantage that it is often difficult to find the holes when the sash is raised and difficult to dislodge the bolts from the holes when it is desired to lower the sash. Moreover, sashes provided with sliding bolts can be raised only to those elevations corresponding to the locations of the bolt holes. Another form of known locking device employs sliding plungers which are disposed with their axes perpendicular to the window frame and are strongly urged against the frame by springs so as to lock the sash in raised position by a friction grip. However, sliding plunger locking devices of this type have the serious disadvantage that the plungers cannot be retracted against their springs to release the sash without the exertion of great effort.

Although the above and many other efforts were made to provide easily usable window sash locking or snubbing devices, none, as far as is known, was entirely successful when practiced on a commercial scale.

Accordingly, it is an object of the present invention to provide a window sash and frame assembly in which the sash may be locked in any desired raised position.

Another object of the present invention is the provision of a window sash and frame assembly in which the sash may be raised without manipulation of the means for locking it in raised position.

A still further object of the invention is the provision of a window sash and frame assembly having means for locking the sash in raised position, in which downward forces on the sash tighten the lock between the sash and the frame.

Still another object of the present invention is the provision of a window sash and frame assembly having means for locking the sash in raised position, in which the force required to release the lock is very much less than the force with which the sash is locked in raised position.

The present invention also contemplates window sash snubbers for achieving the above objects.

Finally, it is an object of the present invention to provide window sash snubbers which will be simple and inexpensive to manufacture, easy to install and operate in connection with conventional sash and frame assemblies, and rugged and durable in use.

Other objects and advantages of the present invention will become apparent from a consideration of the following description, taken in connection with the accompanying drawing, in which:

Figure 1 is a perspective view of an assembly according to the present invention, with parts broken away for clarity;

Figure 2 is an elevational view edgewise of the sash and taken from the cooperating frame side;

Figure 3 is a cross-sectional view taken on line 3—3 of Figure 2; and

Figure 4 is a perspective view of a window sash snubber according to the present invention.

Referring now to the drawing in greater detail, there is shown a window sash snubber indicated generally at 1 mounted on a window sash 3 for coaction with a window frame 5. Sash 3 and frame 5 have confronting, parallel, closely spaced flat side edges 7 and 9, respectively. Edge 7 of sash 3 is provided with an elongated vertical groove 11 which terminates downwardly in a cutout 13, groove 11 and cutout 13 confronting edge 9 of frame 5. A hole 15 extends from the base of cutout 13 all the way through sash 3 and is disposed perpendicular to edges 7 and 9.

Snubber 1 comprises an L-shaped bracket 17 having a pair of generally flat legs 19 and 21 disposed in planes perpendicular to each other. In the illustrated embodiment, the side walls of cutout 13 are arcuate and leg 19 may if desired have a complementary arcuate contour on a broad radius, but such minor departures from uniplanar relationship are comprehended within the term "generally flat." Leg 21 is adapted to lie flat in groove 11 with its outer face flush with edge 7. Leg 21 at its free end has a hole 23 therethrough for the reception of a single nail 25 which extends therethrough and terminates in sash 3 and which is the sole means needed to secure snubber 1 in place.

Leg 19 at its free end has a pair of ears 27 formed from the material of bracket 17 and bent away from leg 19 into parallelism with each other. A pin 29 parallel to legs 19 and 21 extends through ears 27 and forms an axle on which is rotatably mounted one end of a swingable arm 31. Pin 29 thus defines an axis of swinging movement of arm 31, the axis being disposed adjacent the free end of leg 19 parallel to the planes of legs 19 and 21 and disposed on the side of the plane of leg 19 opposite leg 21.

Arm 31 is formed from a pair of identical pieces 33 each of which has portions 35, 37, 39, 41 and 43 interconnected by right angle bends. Portions 35 and 43 are parallel to each other as are also portions 37 and 41. Portions 39 of the two pieces 33 are secured flat to each other as by welding or the like with the two portions 37 of arm 31 coplanar and the two portions 41 coplanar. Portions 35 and 37 are of the same width as each other and portions 39, 41 and 43 are of the same width as each other, the width of the last three portions being substantially greater than the width of the first two portions. Portions 35 and 37 define a yoke at the pivoted end of arm 31 and ears 27 are disposed between and in sliding contact with the legs of the yoke comprising portions 35. Pin 29 passes through portions 35 and has heads at either end which engage against the outer sides of portions 35 to hold the assembly together.

At its outer or free end, arm 31 has another yoke defined by portions 41 and 43 and between the legs of this latter yoke comprising portions 43 is disposed a pad 45 of rubber or other elastic deformable material having a high coefficient of friction. Pad 45 has a face 47 which is exposed and which is arcuate in one dimension radially about a pin 49 which passes through portions 43 and pad 45 and is headed at its ends as is pin 29 to maintain

the assembly together. The other face of pad 45 is flat and contacts portions 41 to prevent turning movement of pad 45 about an axis defined by pin 49.

A torsion spring 51 is wound about pin 29 and one end of the spring contacts the free end of leg 19 while the other end of the spring contacts a side edge of a portion 37. Spring 51 is wound so as to urge arm 31 to pivot about its axis of swinging movement so as to dispose the free end of arm 31 toward the side of the plane of leg 21 which is opposite leg 19. To overcome the effect of spring 51, there is provided a release shaft 53 which has one end disposed at right angles to the major portion of its length and freely received in one of a pair of holes 55 disposed adjacent each side edge of portions 39. Holes 55 are disposed adjacent the edges of portions 39 so that shaft 53 will clear portions 37; and the pairs of holes 55 are so that pieces 33 may all be identical. Thus, by providing extra holes 55, any two pieces 33 may be joined together to form arm 31. Moreover, arm 31 can then be mounted on ears 27 in either orientation without misorienting holes 55. A release knob 57 is detachably connected to the other end of shaft 53 as by screw threads (not shown).

To assemble the device of the present invention on sash 3, the sash is first provided with groove 11, cutout 13 and hole 15. Shaft 53 is then run through hole 15 from the cutout side and knob 57 is attached after the shaft end has protruded from the opposite side of the sash. Snubber 1 is then fitted into cutout 13 and at this point it is convenient to dispose the offset end of shaft 53 in hole 55. Nail 25 is then driven through hole 23 into sash 3 and the assembly is complete. When sash 3 is mounted in frame 5, pad 45 will bear against edge 9 of frame 5 under the influence of spring 51. The distance between the axis of swinging movement of arm 31 and the outer end of that arm such as the line on pad 45 which is in contact with edge 9 will be substantially greater than the least distance between that axis and edge 9. A radial line from that axis to the line of contact of pad 45 with edge 9 will be inclined toward frame 5 in the direction of movement of sash 3 relative to frame 5 when the sash is being lowered.

In operation, the sash is simply raised without any manipulation of the snubber. During raising, the snubber merely tends to move counterclockwise away from the frame thereby to permit easy raising of the sash. When the sash has been raised a desired distance, it is merely released. Nothing need be done to the snubber, as the snubber will thereupon act as a cam and will tend to swing clockwise due to the frictional interengagement of pad 45 and edge 9 of frame 5. The greater the weight of the sash or the greater the downward force otherwise applied to the sash, the greater will be this cam locking tendency. To lower the sash, it is necessary only to pull release knob 57 so as to move release shaft 53 to the right as seen in Figure 3. This releasing movement of shaft 53 is not carried out against the locking force of the snubber but only against the relatively small force of spring 51 so that the release of the sash is quite easy regardless of how strongly the sash may have been locked in raised position. Ordinarily there will be a pair of snubbers 1 disposed one on either side of sash 3 so that the only manipulation of the locking means at any time will be a slight pull on knobs 57 to bring them toward each other to lower the sash.

Although the snubber is shown in the drawing as mounted on the sash, it will be understood that it can also be mounted on the frame, in which case its orientation would be reversed and inverted from that shown in Figure 3; however, the arm would still be inclined toward the sash in the direction of movement of the frame relative to the sash when the sash is being lowered, so that the same essential operative relationships would remain. In view of the fact that such an arrangement would require that the sash be supported with one hand when released, only one snubber would preferably be used when mounted on the frame.

From a consideration of the foregoing description, it will be obvious that all of the initially recited objects of the present invention have been achieved.

Although the present invention has been described and illustrated in connection with preferred embodiments, it is to be understood that modifications and variations may be resorted to without departing from the spirit or scope of the invention, as those skilled in this art will readily understand. Such modifications and variations are considered to be within the purview and scope of the invention as defined by the appended claims.

What is claimed is:

1. A window sash snubber comprising an L-shaped bracket having a pair of generally flat legs lying in a pair of planes disposed at right angles to each other, an arm mounted adjacent one of its ends on one of said legs for swinging movement about an axis parallel to both said planes, said axis being disposed adjacent the free end of said one leg and on the side of the plane of said one leg opposite the other said leg, the distance between the axis and the free end of the arm being substantially greater than the distance between the axis and the plane of said other leg, said arm having a first flat portion adjacent its free end disposed in a plane parallel to said axis, a pair of second flat portions extending from opposite ends of said first flat portion away from and at right angles to said axis and parallel to each other, an elastic deformable pad disposed between said second flat portions, a pin extending through said pad and mounted at its ends on said second flat portions, said pad having a face which is exposed and which is arcuate in one dimension radially about said pin, said pad having another face which is flat and which is disposed flat against said first flat portion to prevent turning movement of said pad about said pin, and means yieldably urging the free end of the arm toward the side of the plane of said other leg opposite said one leg.

2. A window sash snubber comprising an L-shaped bracket having a pair of generally flat legs lying in a pair of planes disposed at right angles to each other, an arm mounted adjacent one of its ends on one of said legs for swinging movement about an axis parallel to both said planes, said axis being disposed adjacent the free end of said one leg and on the side of the plane of said one leg opposite the other said leg, the distance between the axis and the free end of the arm being substantially greater than the distance between the axis and the plane of said other leg, said arm comprising a flat central web, a pair of flat flanges extending in opposite directions from each of a pair of opposed sides of said web, a flat tab extending from the side of each said flange opposite said web, in a direction away from said web, said tabs being parallel to each other, said web, flanges and tabs being parallel to a common line perpendicular to said axis, the tabs on one said pair of flanges carrying between them a pivot pin coaxial with said axis and supported on said one leg, the tabs on the other said pair of flanges carrying between them an elastic deformable pad which extends endwise beyond its associated said tabs, a pull member pivotally connected to said web for pulling the free end of the arm toward the same side of the plane of said other leg as said one leg, and means yieldably urging the free end of the arm toward the side of the plane of said other leg opposite said one leg.

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