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SPRING WIPING DEVICE FOR WINDOWS

Filed Dec. 10, 1962

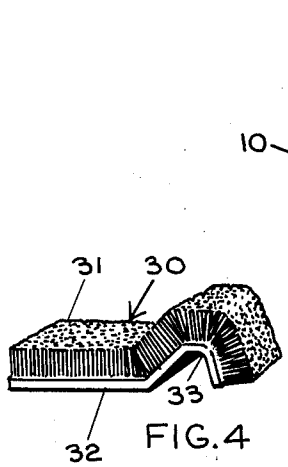

FIG. 4

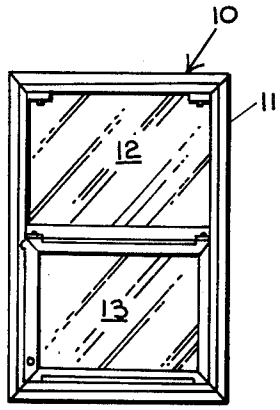

FIG. 1

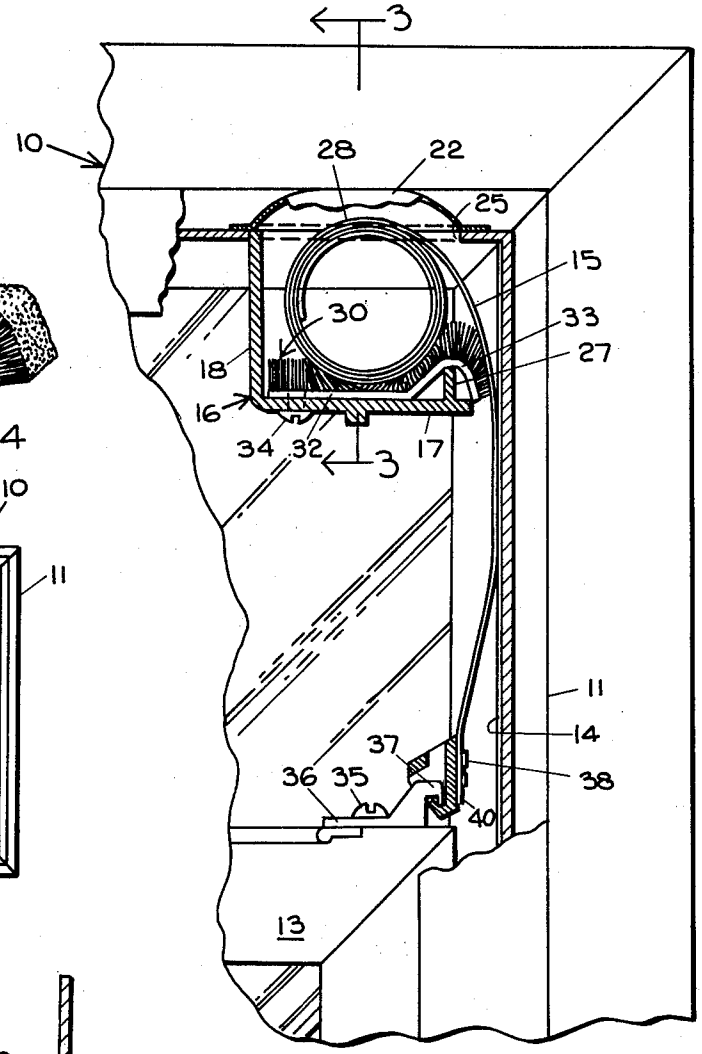

FIG. 2

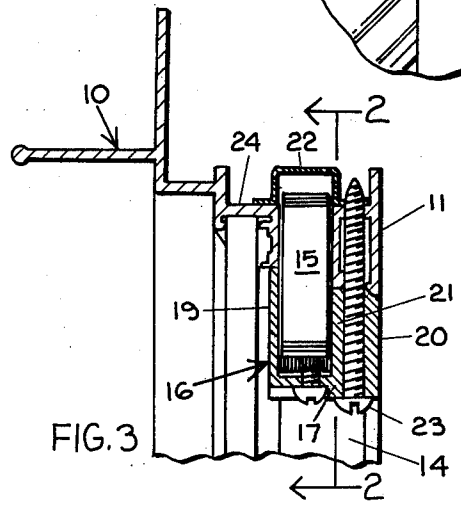

FIG. 3

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SPRING WIPING DEVICE FOR WINDOWS

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This invention relates to window structures and is more particularly directed to a spring wiping device for vertical sliding sash windows.

A principal object of the present invention is to provide a vertically sliding sash window with spring wiping devices for maintaining the flat spiral coil counter-balancing springs in a clean and expurgated condition.

Another object of the present invention is to provide the flat spiral coil counter-balancing springs of a vertically sliding sash window with wiping devices which clean both sides of the spring simultaneously upon sliding movement of the sashes.

A further object of the present invention is to prevent the mal-functioning of the flat spiral coil counter-balancing springs of a vertically sliding sash window by maintaining the springs free of dirt, moisture and other foreign matter.

A still further object of the present invention is to provide the flat spiral coil counter-balancing springs of a vertically sliding sash window with an elongated cleaning device having fabric pile thereon which supports the rotatably positioned springs and wipes the dirt on both sides of the spring as the sash is slid to its open or closed position.

With these and other objects in view, the invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming a part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claim.

In the drawing:

FIGURE 1 is an inside or rear elevational view of a single hung window.

FIGURE 2 is a fragmentary view of the window at the position of the spring wiping device shown partially in section taken along the line 2—2 of FIGURE 3.

FIGURE 3 is a cross sectional view taken along the line 3—3 of FIGURE 2.

FIGURE 4 is a perspective view of my spring wiping device.

Referring to the drawing wherein like numerals are used to designate similar parts throughout the several views, the numeral **10** refers to a vertical sliding sash window, a single hung window, which is shown by way of illustration only consisting of a conventional window frame **11** in which a fixed sash **12** is positioned at the upper half and a sash or vent **13** is slidably positioned in a slot **14** of the frame **11**. The slidable sash **13** is normally positioned in the lower half of the frame **11** when in a closed position and when slid upwardly to overlap the upper vent **12**, the vent **13** is in its open position.

Means are provided to counter-balance the weight of the slidable vent **13** in order to require a minimum of effort to open and close the sash **13** comprising a flat spiral spring **15** wound in a coil **28** and positioned in a receptacle **16** at both of the upper corners of the frame **11**. The receptacle **16** consists of a bottom wall **17**, end wall **18**, side walls **19** and **20** and intermediate wall **21**. The top portion of the receptacle **16** is open being removably covered by a cap **22** as shown by FIGURES 2 and 3 and the edge portion opposite the wall **18** is likewise open. The receptacle is fastened to the frame **11** by a bolt **23** which extends through a bore in the lower wall **17** between the walls **20** and **21** and is threaded into a window frame wall **24** of the slot **14**. An opening **25** is formed in the wall **24** adjacent the upper inside corners of the frame **11** to permit access to the elongated flat coil spring **15** which reposes in the chamber **26** formed by the side walls **19**, **21**, bottom wall **17** and end wall **18**. The bottom wall **17** is provided with an upwardly extending lug portion **27** which in combination with the bottom wall **17** supports a wiping member **30**.

The wiping member **30** consists of a fabric pile material **31** glued or otherwise secured to a support member **32**. The support member **32** is preferably a flat strip of metal having a hump or elevated portion **33** for rotatably supporting the coil of flat spring **15**. A screw bolt **34** extending through the bottom wall **17** of the receptacle **16** secures the wiper member **30** within the receptacle **16**.

Secured by a screw **35** to the top edge of the vent **13** at each side thereof in proximity of the slotted portion **14** of the frame **11** is a bracket **36** provided with a hook member **37**.

The free end of the spring **15** which extends downwardly along the slotted portion **14** of the frame **11** is fastened by a screw **38** to a catch member **40** which releasably engages the hook member **37**. The flat spiral coil spring **15** exerts a force in an upward direction to cause the coil portion **28** of the spring **15** to rotate and wind upon itself the downwardly extending spring **15**. This force of the two coil springs **15** which yieldingly urges the vent **13** in an upward direction is slightly less than the force necessary to slide the vent **13** in an upward or downward direction.

As the vent **13** slides upwardly and downwardly both of the coils **28** of the spring **15** will rotate on the wiping members **30** whereby the outer surface of the spring **15** becomes clean by being wiped by the pile **31**. At the same time the pile **31** at the free end of each of the support members **32** beyond the elevated portion **33** wipes the inner surface of the spring **15** as the latter slides along the slotted portion **14** in either upward or downward direction. Any dust, grime or other foreign matter which may settle on the springs **15** will be wiped off, thereby maintaining the coils **28** and springs **15** clean of all foreign matter at all times. If dust, grime or other foreign matter is permitted to adhere to the springs **15** and become wedged between the various layers of coils **28** of the springs **15**, the return forces of the springs **15** will become diminished and also unbalanced on each side of the vent **13**. Eventually sufficient grime and dust positioned between the coils **28** of the springs **15** will reduce the return or upward force of the springs **15** to zero and will instead of counter-balancing the vent **13** be an added resistance that must be overcome in the opening and closing of the vent **13**. During movement of the vent **13**, the wiping members **30** wipe off any dust or other foreign deposits on both sides of the springs **15** so that the force exerted by the springs **15** will be the same and equal at all times. Also without the wiping action of my wiping device **30** if one of the coil springs **15** should become fouled with dirt and grime while the other does not, then the upward forces exerted at each edge of the vent **13** will become unbalanced to render it difficult to slide the vent **13** properly.

As indicated hereinabove, the single hung window **10** is shown by way of illustrating my spring wiping device **30**. My spring wiping device **30** may be used in connection with any vertical sliding sash windows utilizing

flat spiral coil springs 15 for counterbalancing the vertically slidable sash or vent 13.

Having described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

A vertical sliding sash window comprising a frame, a sash slidably mounted in said frame, a receptacle mounted on said frame above said sash, said receptacle having an opening, a flat coil spring positioned in said receptacle, said flat coil spring having an end portion extending through said opening in said receptacle and downwardly along said frame to said sash, releasable means securing said end portion of said flat coil spring to said sash, a cleaning member mounted in said receptacle and supporting said flat coil spring, said cleaning member having a substantially flat portion beneath said flat coil spring and an elevated portion extending outwardly of said opening in said receptacle, said cleaning member having pile means engaging said flat coil spring positioned in said receptacle and said end portion whereby sliding movement of said sash causes said spring to move along said cleaning member to be cleaned on both sides.

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