E. F. CUNNINGHAM.

STREET CAR WINDOW CLEANER.

APPLICATION FILED FEB. 8, 1912

1,043,073.

Patented Nov. 5, 1912.

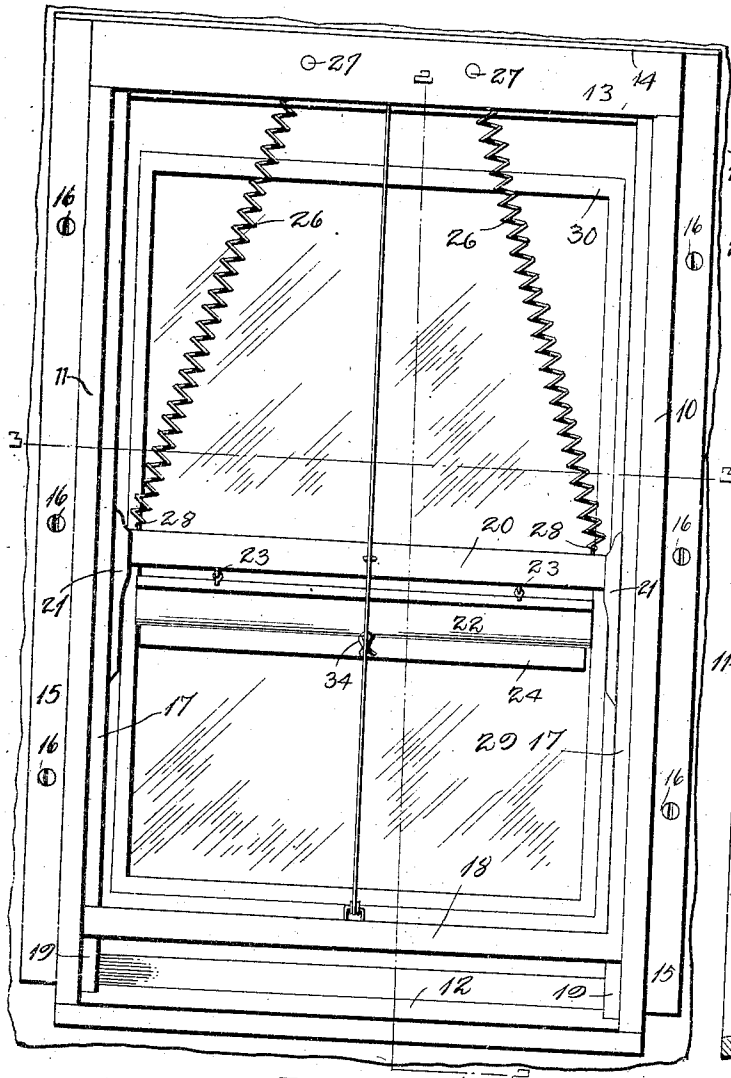

FIG. 1

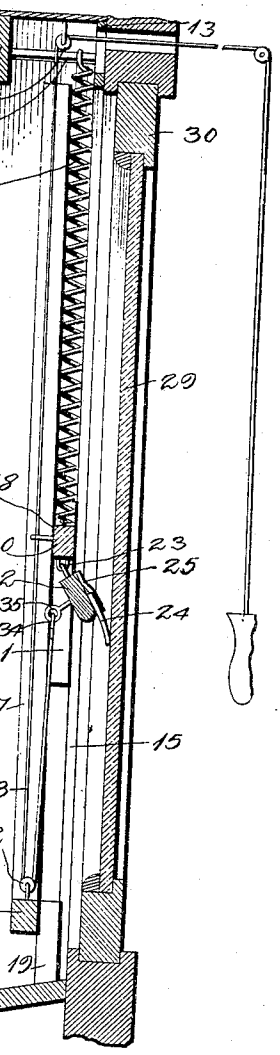

FIG. 2

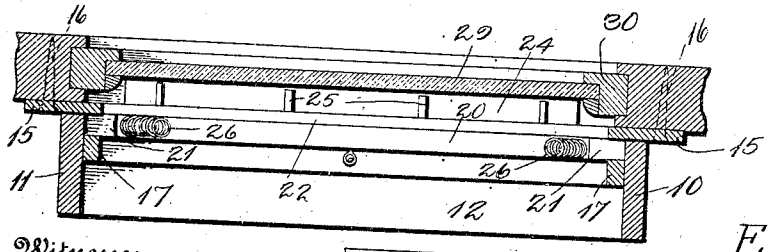

FIG. 3

Witnesses

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UNITED STATES PATENT OFFICE.

ELKANA F. CUNNINGHAM, OF CLARKSBURG, WEST VIRGINIA.

STREET-CAR-WINDOW CLEANER.

1,043,073. Specification of Letters Patent. Patented Nov. 5, 1912.

Application filed February 8, 1912. Serial No. 676,215.

To all whom it may concern:

Be it known that I, ELKANA F. CUNNINGHAM, a citizen of the United States, residing at Clarksburg, in the county of Harrison, State of West Virginia, have invented certain new and useful Improvements in Street-Car-Window Cleaners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to window cleaners and has for an object to provide a novel sash containing a sliding wiper, the sash being easily and quickly applied to the motorman's window in street cars and the like without alteration to the window.

A second object of the invention is to provide a draw cord for operating the wiper from within the car vestibule, a single pull upon the cord serving to move the wiper downward and free the window of steam or the like, there being novel springs concealed within the sash which return the wiper to released position upon release of the cord.

With the above objects in view the invention consists of certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claim.

In the accompanying drawings forming part of this specification:—Figure 1 is a front elevation of the device. Fig. 2 is a longitudinal sectional view taken on the line 2—2 Fig. 1. Fig. 3 is a cross sectional view taken on the line 3—3 Fig. 1 with the wiper in operative position.

Referring now to the drawing in which like characters of reference designate similar parts, the sash is shown to comprise side stiles 10 and 11 connected at their lower ends by a sill 12, and connected at their upper ends by a hollow sash head comprising spaced members 13 terminally secured to the edges of the stiles and embedded in countersinks therein, and a member 14 connecting the members 13 and terminally secured to the tops of the stiles. To the rear longitudinal edges of the stiles are secured flat strips 15 which project with their outer longitudinal edges beyond the outer faces of the stiles and form securing strips through which screws 16 or the like are inserted to secure the sash to the front of the vestibule outside of the borders of the motorman's window as shown. The inner longitudinal edge portions of the strips project inwardly beyond the inner edges of the stiles and form guide strips for the reception of the wiper bearings, there being a second guide strip 17 arranged on the inner face of each stile near the first named guide strips, and coöperating with the same in forming therebetween guide-ways which direct the sliding movements of and prevent escape of the wiper bearings.

The guide strips 17 terminate short of the sill 12, and a cross strip 18 connects the lower ends of these guide strips. Stops 19 are arranged in the guide ways and limit the downward sliding movement of the wiper. The wiper consists of a slide bar 20 the opposite ends of which are equipped with bearing strips 21 which work in the guide ways of the stiles, the lower ends of these bearing strips contacting with the stops and limiting downward sliding movement of the slide bar. A swinging bar 22 is connected to the lower edge of the slide bar through the instrumentality of spaced interlocking eye connections 23, and to the inner face of the swinging bar is fixedly secured a rubber or similar wiping strip 24, the lower edge of this strip projecting beyond the lower edge of the swinging bar and being held yieldingly in this position through the instrumentality of spaced leaf springs 25, these springs reinforcing the wiping strip against distortion during wiping operation.

The wiper is yieldingly held normally partly concealed within the sash head through the instrumentality of spaced divergent helical springs 26 which are secured at their upper ends to pins 27 carried within the head, and at their lower ends to eyes 28 carried by the slide bar. For moving the wiper downward over the pane of glass 29 in the motorman's window 30, I mount a sheave 31 within the sash head, and a second sheave 32 upon the cross strip 18. A cord 33 is trained through the sheave, one end of the cord being directed back into the vestibule so as to hang within convenient reach of the motorman, and the opposite end of the cord being connected through the instrumentality of a snap hook and eye connection, the snap hook 34 being connected to the end of the cable and the eye 35 being connected to the outer face of the swinging bar 22 near the lower edge thereof. Upon

the cord being pulled by the motorman, the swinging bar will be rocked on its hinges so as to move the wiping strip into contact with the window, while at the same time the wiper will be moved downwardly against the tension of the helical spring so that the wiping strip will remove accumulations of rain, snow or other foreign matter from the window pane. Upon release of the cord the springs will immediately return the wiper to normal position.

It will be noted that as the springs 26 are gradually expanded during the progress downward of the wiper, they exert an increasing upward pull so that it requires greater manual effort during the final stages of actuating the wiper than during the initial stages, and consequently the wiper will be held with greater friction against the pane at the final stages than during the initial stages of its travel. It is obvious that ice or sleet accumulating in advance of the wiper during its descent will offer greater resistance with a resultant tendency to force the wiper away from the pane during the final stages of its travel, and this tendency is resisted by the greater effort required to pull down the wiper, this greater effort as above stated serving to rock the wiper on its pivots and hold the same with gradually increasing frictional engagement against the pane during the downward progress of the wiper.

What is claimed, is:—

A window cleaning device including a frame, a slide bar extending horizontally of and mounted for vertical movement in said frame, a swinging bar depending from said slide bar, and having a hinge connection at the upper edge with the lower edge of said slide bar, a downwardly inclined wiping strip on the rear face of said swinging bar, vertically disposed helical springs connected to the head of said frame and to said slide bar and serving to normally hold the latter against said head, and means serving to rock said swinging bar on its hinges and hold the bar with gradually increasing frictional engagement against a window pane during the final stages of progress of said slide bar away from said head including a pull cord trained over sheaves in said head, and having one end directed downwardly upon the outer side of said frame and trained under a sheave carried by the sill of said frame, thence directed upwardly and detachably engaged terminally with the outer face of said swinging bar near the lower edge thereof.

In testimony whereof, I affix my signature, in presence of two witnesses.

ELKANA F. CUNNINGHAM.

Witnesses:
CHARLES LONG,
JAMES H. MOORE.