No. 762,889. PATENTED JUNE 21, 1904.

R. A. DOUGLASS.

LOCOMOTIVE CAB WINDOW CLEANER.

APPLICATION FILED MAR. 12, 1903.

NO MODEL.

Fig. 1.

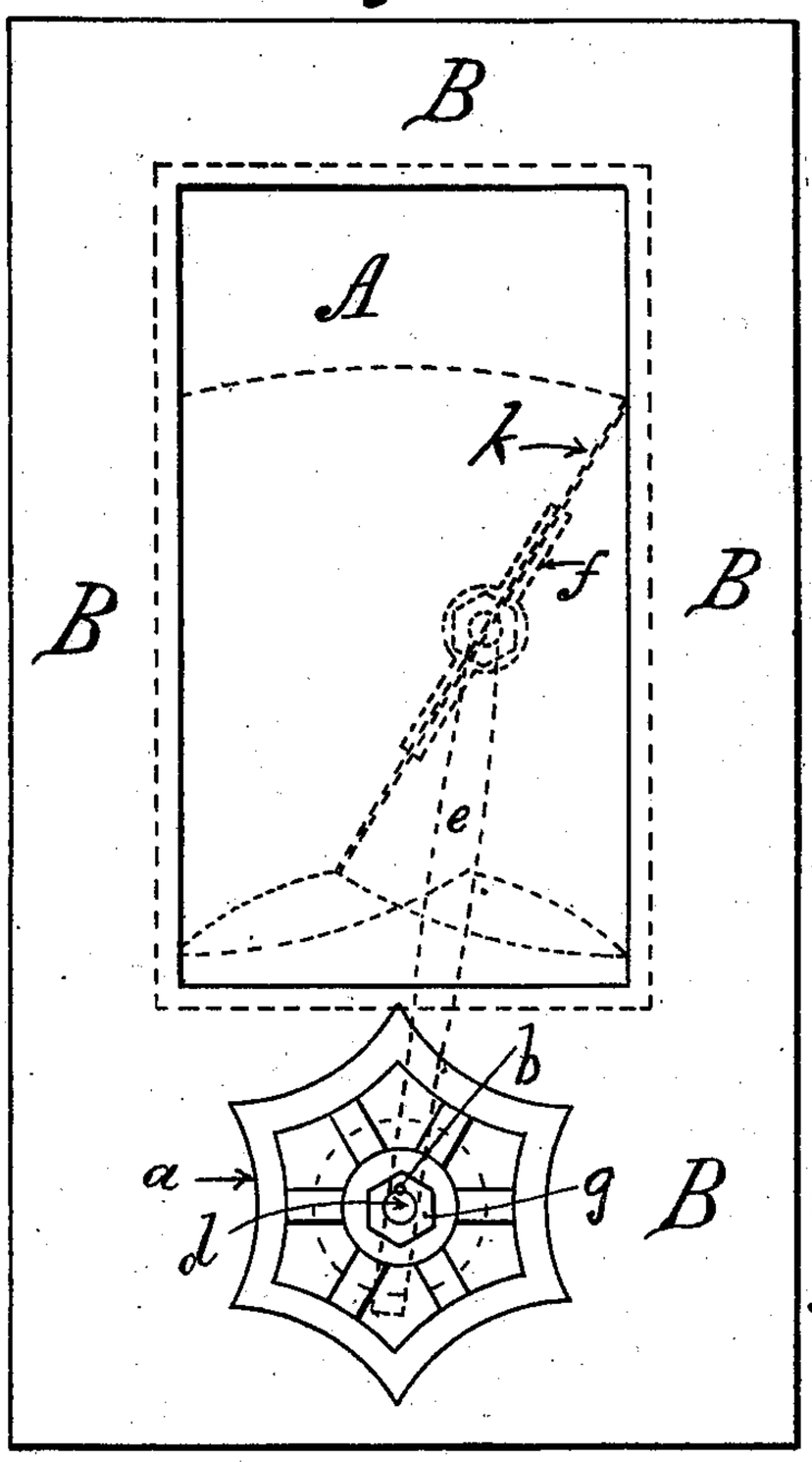


Fig. 2.

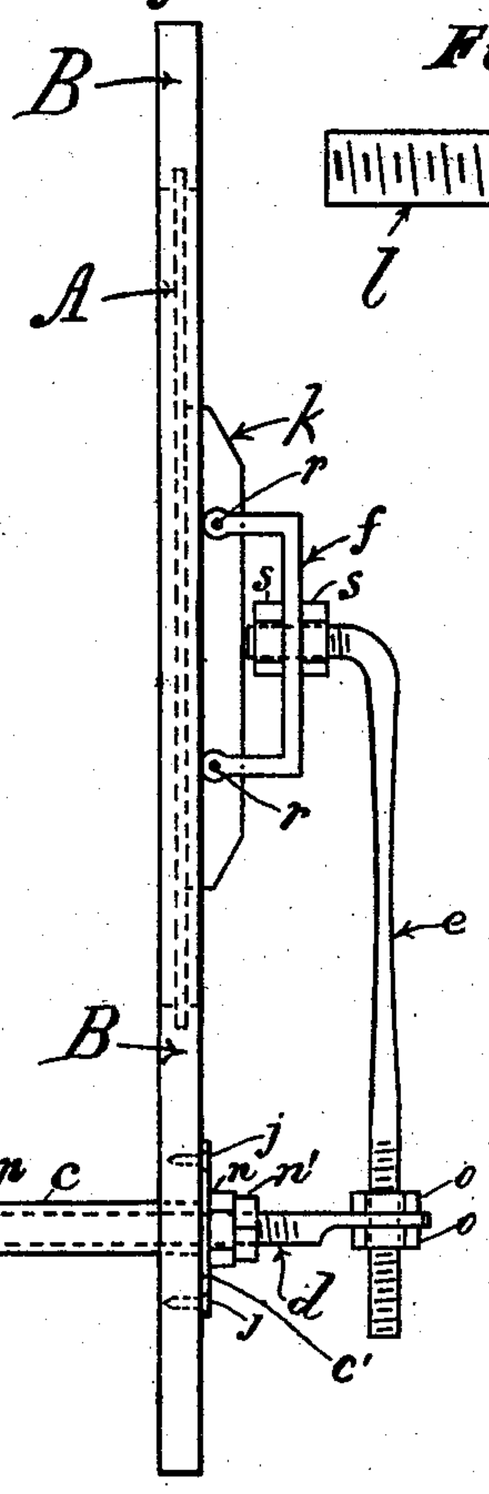


Fig. 3.

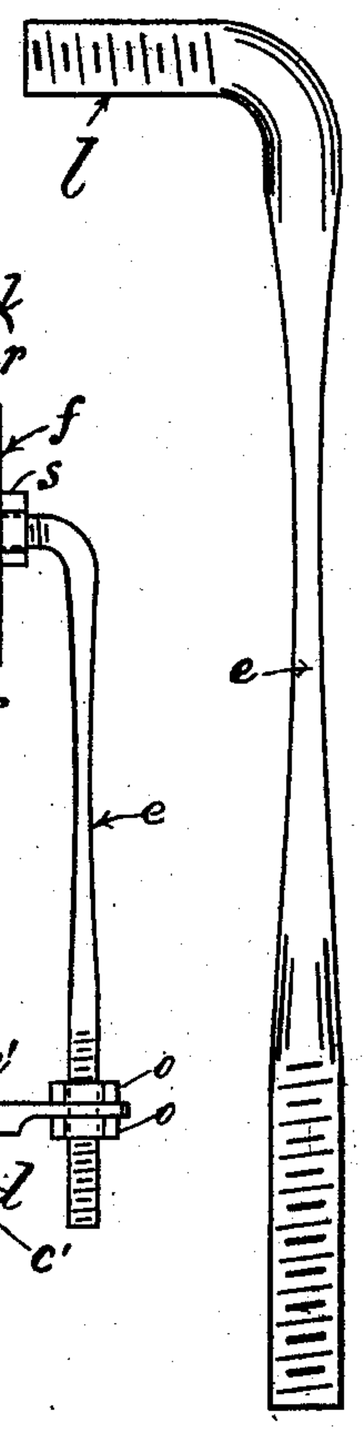


Fig. 5.

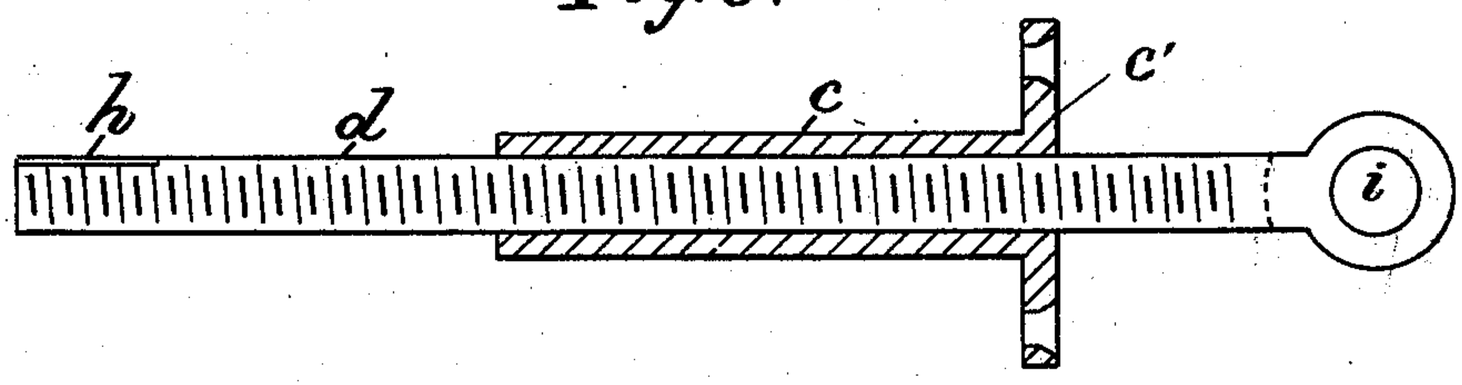
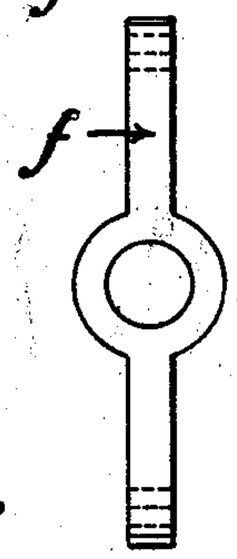


Fig. 4.



Witnesses.

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No. 762,889. Patented June 21, 1904.

UNITED STATES PATENT OFFICE.

ROBERT A. DOUGLASS, OF TRURO, CANADA, ASSIGNOR TO DANIEL M. GRIFFIN, OF TRURO, CANADA.

LOCOMOTIVE-CAB-WINDOW CLEANER.

SPECIFICATION forming part of Letters Patent No. 762,889, dated June 21, 1904.

Application filed March 12, 1903. Serial No. 147,475. (No model.)

To all whom it may concern:

Be it known that I, ROBERT A. DOUGLASS, a British subject, residing at Truro, in the county of Colchester, in the Province of Nova Scotia and Dominion of Canada, have invented new and useful Improvements in Locomotive-Cab-Window Cleaners, of which the following is a specification.

This invention relates to window-cleaners for removing frost, condensed moisture, or dirt from the windows of locomotive-cabs, street-cars, or other windows; and the object is to provide an improved device of this character which is simple in construction, durable, and efficient in operation.

A further object is to furnish means for adjusting the wiper vertically in order that different portions of the window may be cleaned and to provide means for regulating the pressure of the wiper on the window-pane.

With these and other objects in view the invention consists in the novel construction, combination, and operative aggroupment of the parts, all as will be more fully described hereinafter, illustrated in the accompanying drawings, and finally pointed out in the appended claims.

In the drawings, Figure 1 is a front elevation of a portion of a locomotive-cab window with my invention applied thereto and indicating in dotted lines the wiper and that part of the window-pane which is traversed thereby. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is an elevation of the resilient connecting member for the wiper shown on an enlarged scale. Fig. 4 is a front elevation of the yoke which is carried by the connecting element, and Fig. 5 is a longitudinal section through the sleeve with a rotating spindle mounted therein.

Referring to the drawings, wherein like reference notations indicate corresponding parts appearing in the several illustrations, A designates the pane of the window, which is mounted in a sash or frame B. In the frame B beneath the pane is an opening in which is fitted a sleeve *c*, having a flanged end *c'*, which is secured to the outside of the window by screws or other suitable fastenings *j*, and the inner end thereof extends through to the inside of the window. Loosely mounted within this sleeve and extending beyond each end thereof is a rotatable spindle *d*, which is screw-threaded and fitted with nuts *m n*, which screw into engagement with opposite ends of the sleeve *c* to prevent endwise movement of the spindle. By means of these nuts the spindle may be adjusted longitudinally in the sleeve to any position and held in such position by the locking-nuts *m'* and *n'*, this adjustment being necessary to regulate the pressure of the wiper on the pane, as will be more fully described hereinafter.

In the extended end of the spindle on the outside of the window is fitted a yielding connecting member E, the upper end *l* of which is screw-threaded and bent inwardly at right angles to connect with a yoke *f*, which is secured at each end to the wiper *k*. Nuts *s s* are fitted on the screw end *l* on each side of the yoke to provide a swivel connection for the yoke and the wiper, whereby when the wiper is moved across the pane it will be permitted to rotate on the connecting member E. This connecting member is formed intermediate its ends with a flattened yielding portion *e*, which permits it to be held in engagement with the window with a yielding pressure, and its lower end is screw-threaded and fitted with nuts *o o*, which engage each side of the aperture *i* in the end of the spindle and by means of which the wiper may be adjusted vertically.

On the inner end of the spindle is fitted a hand-wheel *a*, which may be locked thereto by a key *b* or by nuts *g g*, so that when the wheel is turned the spindle will be moved therewith.

It will be observed from the description thus far given that when the spindle is rotated in the sleeve by means of the hand-wheel *a* the connecting member E will be oscillated and move the wiper across the pane and that the wiper being swiveled through the yoke *f* on the connecting member E is permitted to have a free rotary movement with respect to said member, so that when the upper end of the wiper engages the edge of the window-frame, as shown in Fig. 1, and the oscillation of the arm E is continued the lower end of the wiper

will be moved over against the edge of the frame on one side of the glass and will describe an arc of a circle. This arc is indicated in dotted lines at the bottom of the window-pane in Fig. 1. Thus the entire width of the window is operated upon by the wiper.

It may be stated that the reduced intermediate portion of the connecting member is broadened in a plane parallel with the window, so that it is not permitted to yield in its oscillatory movements, but only with respect to its engagement with the pane. This yieldableness is regulated by adjusting the spindle longitudinally in the sleeve, as above explained.

If it be desired to clean the window at a higher or lower place, the connecting member E is adjusted vertically by means of the nuts *o*.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a window-cleaner, the combination, of a rotatable spindle mounted in the frame of the window, a yielding arm secured to the spindle, a wiper swiveled on said arm, and means for regulating the pressure of the wiper on the glass.

2. In a window-cleaner, the combination, of a rotatable, endwise-adjustable spindle mounted in the frame of the window, a resilient arm connected to the spindle on the outside of the window, and a wiper swiveled to the arm.

3. In a window-cleaner, the combination, of a sleeve fitted in the frame of the window and projecting on the inside thereof, a spindle rotatable within the sleeve, a rod connected at one end to the spindle and having at its other end a wiper, and means to adjust the spindle longitudinally in the sleeve to regulate the pressure of the wiper on the window.

4. The combination with the window-frame, of a bearing-sleeve fitted therein, a spindle mounted in the sleeve, a resilient arm adjustably mounted on the spindle, a wiper swiveled on the free end of the arm, and means for adjusting the spindle longitudinally to increase or decrease the yieldableness of the arm.

5. In a device of the class described, the combination with the window-frame, of a sleeve secured therein, a spindle longitudinally adjustable within the sleeve, an arm vertically adjustable in the outer end of the spindle and having an intermediate reduced portion to permit it to yield, a yoke swiveled upon the opposite end of the arm, a wiper secured to the yoke, and a hand-wheel secured to the inner end of the spindle for operating the arm and the wiper, substantially as specified.

6. A window-cleaner, comprising a rotatable spindle mounted in the frame of the window, an arm having an adjustable connection with one end of the spindle in a direction at right angles thereto, and a wiper carried by the arm, whereby the zone of movement of the wiper may be varied.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ROBERT A. DOUGLASS.

Witnesses:

W. A. CREELMAN,

ELI ARCHIBALD.