

H. FULLER.

Keeping Locomotive Cab Windows free from Frost.

No. 150,016.

Patented April 21, 1874.

Fig. 1.

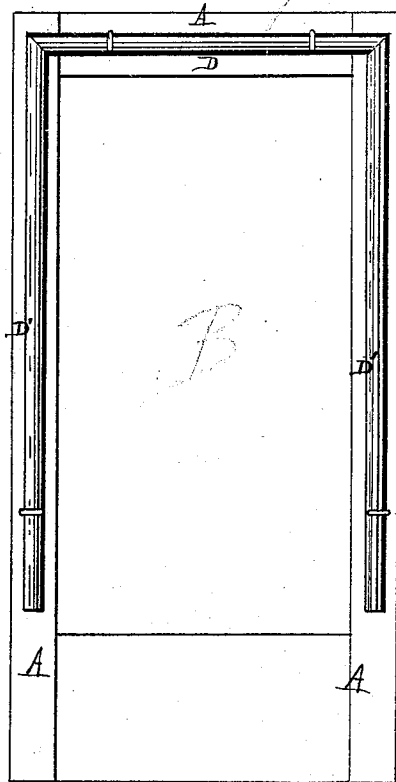


Fig. 2.

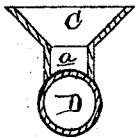


Fig. 3.



ATTEST.
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IMPROVEMENT IN KEEPING LOCOMOTIVE-CAB WINDOWS FREE FROM FROST.

Specification forming part of Letters Patent No. **150,016**, dated April 21, 1874; application filed February 16, 1874.

To all whom it may concern:

Be it known that I, HENRY FULLER, of Detroit, in the county of Wayne and State of Michigan, have invented an Improvement in Means for Keeping Locomotive-Cab Windows Free from Frost, of which the following is a specification:

This invention has for its object to provide the front cab-windows of locomotives with a simple attachment, by means of which the glass will be kept free from frost while the engine is in motion during freezing weather; and it consists in the peculiar means employed in forcing a current of air taken from the exterior of the cab across the inner face of the glass, making it as cold on the inner as on the outer face, so that there will be no condensation and deposit of moisture upon the glass, to be frozen thereon by the low temperature.

Figure 1 is an elevation of the inner side of a cab-window with my attachment. Fig. 2 is a cross-section at *x x*, near the top. Fig. 3 is a cross-section at *y y*.

In the drawing, A represents the frame, and B the glass, of the front window of a locomotive-cab, through which the engineer may look ahead down the track. During the prevalence of frosty weather the air in the cab is more or less charged with moisture, partly from leakage of steam, partly from trying the gage-cocks, and the exhalations of the engineer and fireman, which mixture is condensed and frozen upon the inner surface of the glass, thereby compelling the engineer to lean out of the side window in order to see the road ahead, to the great detriment of his health and comfort. Double front glasses have been tried in order to obviate this difficulty, but without success. I therefore take a bell-mouth funnel, C, and

place it at the top of the window-frame, on the outside, to catch a considerable volume of air by the forward movement of the engine, delivering it into a horizontal pipe, D, running across the top inner side of the frame A through a tube, *a*. The pipe D is connected at each end to a hanging pipe, D', extending down each side of the frame to the bottom of the glass, the lower ends of said pipes being closed. The pipes D' I prefer to make of sheet metal with the outer edge overlapping the inner one, so as to leave a thin open space, *b*, Fig. 3, through which the exterior air-current is forced in a thin sheet, deflected upon the side edges of the glass and flowing toward the center, where they meet. The action of these cold-air currents is first to repel the moist atmosphere of the cab from the inner face of the glass; and, secondly, by making it as cold as the outer surface, there is no tendency to deposit or condense moisture thereon.

In practice it is found that if the glass becomes frosted while the locomotive is standing still, the air-currents will remove the frost shortly after the locomotive is got under way again, thereby keeping the glass clear, so that the engineer is afforded a fair chance to see the track ahead.

What I claim as my invention, and desire to secure by Letters Patent, is—

The funnel C, tube *a*, and pipes D D', in combination with the frame A and glass B of a locomotive-cab window, substantially as and for the purpose set forth.

HENRY FULLER.

Witnesses:

H. S. SPRAGUE,
WM. P. SPALDING.