W. N. JOHNSON.

ANTIFROSTING WINDOW.

APPLICATION FILED JAN. 15, 1915.

**1,143,402.** Patented June 15, 1915.

Fig. 1.

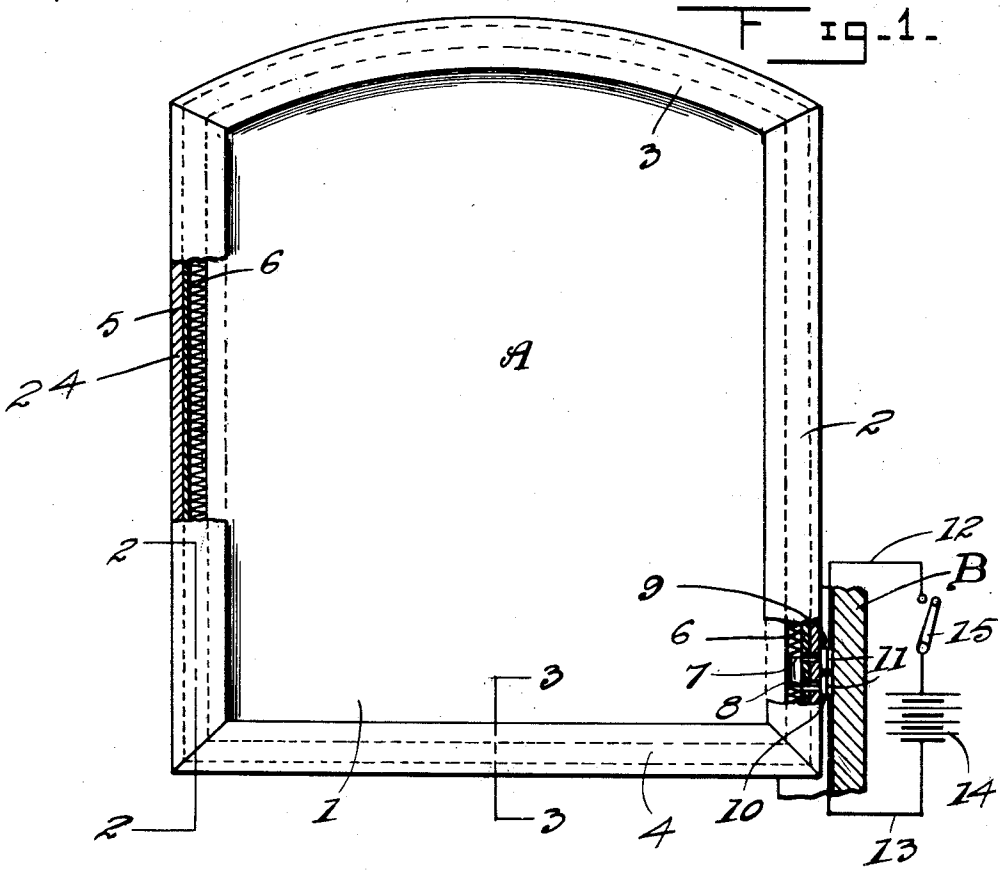



Fig. 2.

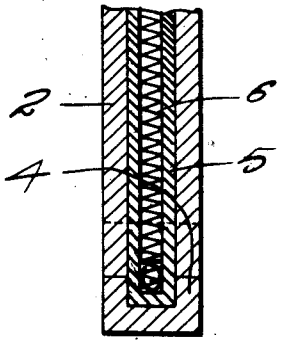
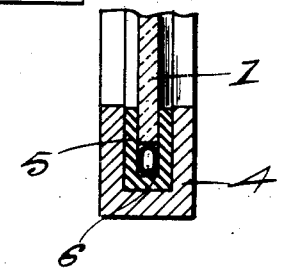



Fig. 3.




Witnesses

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# UNITED STATES PATENT OFFICE.

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## ANTIFROSTING WINDOW.

1,143,402. Specification of Letters Patent. Patented June 15, 1915.

Application filed January 15, 1915. Serial No. 2,393.

*To all whom it may concern:*

Be it known that I, WALTER N. JOHNSON, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Antifrosting Windows; 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.

My invention relates to improvements in means for keeping the windows of vehicles free from moisture, ice or similar deposits.

The primary object of my invention is to provide means to prevent formation of frost or ice on windows, that will operate to dispel very rapidly water, sleet or snow which may be driven against the window, the means comprising a suitable heating element that is arranged to heat the pane of glass and in such manner as to not interfere with the opening or closing of the window.

Another object is to improve anti-frosting means of the character described so as to render it more practical, simple as to construction, capable of being readily attached to windows of various characters and inexpensive to manufacture.

The above and additional objects are accomplished by such means as are illustrated in the accompanying drawings, described in the following specification and then more particularly pointed out in the claims.

With reference to the drawings, wherein I have illustrated the preferred embodiment of my invention as it is reduced to practice, and throughout the several views of which similar reference numerals designate corresponding parts, Figure 1 is a front elevation of a window constructed in accordance with my invention showing it broken away to show the position of the heating element and a portion of the window frame, Fig. 2 is a fragmentary vertical sectional view taken on line 2—2 of Fig. 1, and Fig. 3 is a fragmentary vertical sectional view taken on line 3—3 of Fig. 1.

Referring to the drawings by characters of reference, A designates a window of the type usually found on street cars at the ends thereof, and B the frame therefor. The window A comprises a glass pane 1 which is mounted in the usual side bars 2 and top and bottom bars 3 and 4. The bars, 2, 3, and 4 are channel-shaped to receive the glass pane 1. Mounted within the channel-shaped bars, 2, 3, and 4 are asbestos or other non-heat conducting strips 5 that communicate with one another and are each U-shape in cross section. The strips 5 receive the edges of the glass pane 1 which edges are spaced from the outer edges of the strips.

Mounted within the U-shaped strips 5 and disposed in engagement with the edges of the pane 1 is a coiled electrical heating element 6. Conductors 7 and 8 are connected with the ends of this heating element and with contact plates 9 and 10 carried upon the outer face of one of the side bars 2 of the window. These contact plates 9 and 10 are spaced from one another and arranged for coöperation with similar plates 11. The plates 11 are carried upon the frame B for the window and are so arranged as to engage the plates 9 and 10 when the window A is in up position. Conductors 12 and 13 lead from the plates 11 to a battery 14 or other suitable source of current. A one pole switch 15 is connected in the conductor 12 and may be arranged at any suitable point upon the vehicle carrying the window.

In use, the heating element 6 transmits heat to the glass pane 1 as it engages the edges of the pane and all water, sleet, or snow driven against the pane or that which may have accumulated thereon will be readily dispelled by being melted. The asbestos strips 5 prevent the bars 2, 3, and 4 which may be preferably constructed of wood from becoming injured by the heating element.

With reference to the foregoing description it will be seen that I have provided an anti-frosting window attachment that may be attached to windows of various characters without necessitating any material change in the construction thereof, and which when attached will not be in the way so as to prevent operation of the window in the ordinary manner.

My improved heating device is entirely hidden from view and is arranged so that little or no space is taken up. It will be seen that the window will provide for the closing of the circuit for the heating element, in up position, if the one pole switch 15 is closed. In providing the switch 15, however, the heating element may be put into operation at any desired time.

In practice, I have found that the form of my invention, illustrated in the drawings and referred to in the above description, as

the preferred embodiment, is the most efficient and practical; yet realizing that the conditions concurrent with the adoption of my device will necessarily vary, I desire to emphasize the fact that various minor changes in details of construction, proportion and arrangement of parts may be resorted to, when required, without sacrificing any of the advantages of my invention, as claimed.

What is claimed is:—

1. The combination with a sash frame including side bars, and top and bottom bars of a glass pane mounted within said bars and heating elements mounted within the bars and interposed between the pane and said bars.

2. The combination with a window including a frame consisting of a number of channel shaped bars, of a glass pane mounted within said bars, and a heating element mounted within and extending the length of said bars, said heating element engaging the outer edges of the glass pane.

3. The combination with a window including a frame consisting of a number of channel shaped bars of a glass pane mounted within said bars, a heating element mounted within and extending the length of said bars, said heating element engaging the outer edges of the glass plane, and non-heat conducting elements mounted within said bars and receiving the glass pane and the heating element.

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

WALTER N. JOHNSON.

Witnesses:

MARION REINHART,

THOS. H. HAMMOND.