C. S. ANTHONY & J. MANHEIM.

DEVICE FOR PREVENTING THE ACCUMULATION OF FROST AND STEAM UPON STORE WINDOWS.

No. 190,533. Patented May 8, 1877.

Fig 1

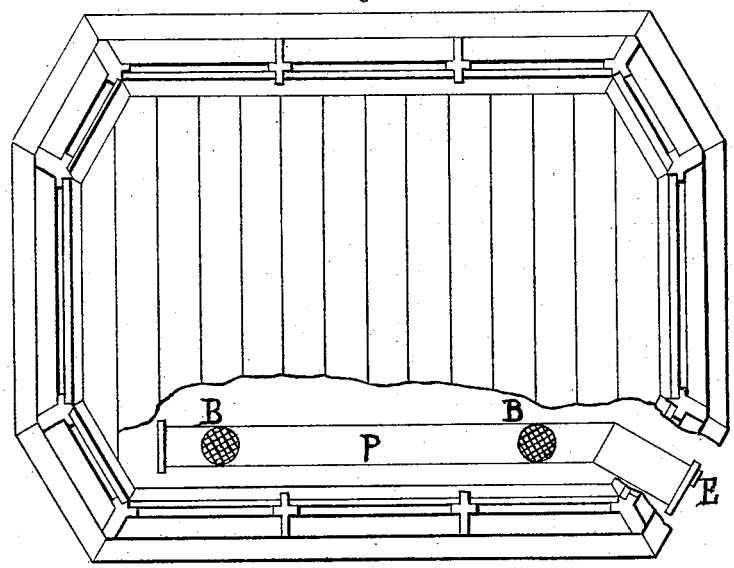
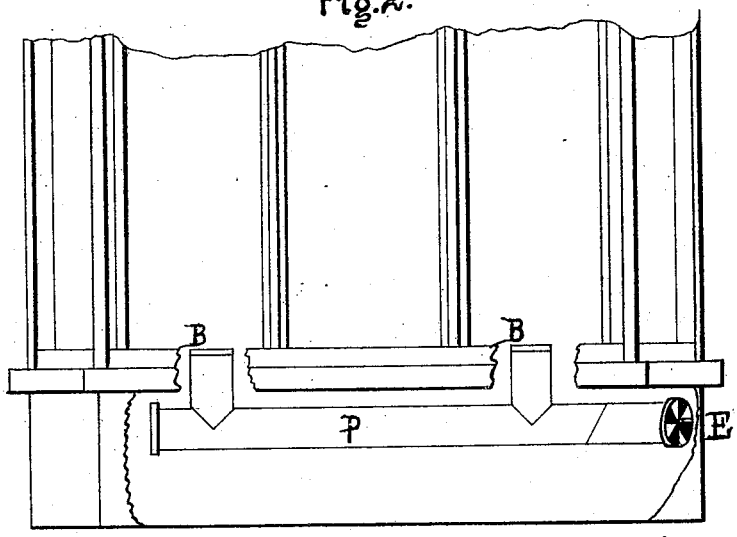


Fig 2.



Attest
William R. Billings
James J. Galligan

Inventors.
Charles S. Anthony
Jacob Manheim

UNITED STATES PATENT OFFICE.

CHARLES S. ANTHONY AND JACOB MANHEIM, OF TAUNTON, MASS.

IMPROVEMENT IN DEVICES FOR PREVENTING THE ACCUMULATION OF FROST AND STEAM UPON STORE-WINDOWS.

Specification forming part of Letters Patent No. **190,533**, dated May 8, 1877; application filed February 16, 1877.

To all whom it may concern:

Be it known that we, CHAS. S. ANTHONY and JACOB MANHEIM, of the city of Taunton, in the county of Bristol and State of Massachusetts, have invented a new and useful Device for the Purpose of Preventing the Accumulation of Frost and Steam upon Store-Windows—such windows we mean as are cased up and used as show-windows for the display of goods—of which the following is a specification:

We give the name of "anti-frost pipe" to our invention; and the said device is fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a plan of a store-window with our anti-frost pipe attached, a portion of the flooring and frame-work of the window being shown as broken away the better to show the position of our device. Fig. 2 is a partial front elevation of the same window, showing the position of our anti-frost pipe in the vertical plane.

The object of our invention is to remove the source of the serious inconvenience and loss to which so many merchants are now subjected during the winter, owing to the gathering of frost and steam upon their show-windows. This accumulation of frozen vapor destroys their transparency and makes his show-windows practically useless to the merchant, for they are valuable only as they afford him the means to display his wares in an attractive form to the public.

In the drawing, P is a pipe of sheet metal, suitably fastened to the frame-work beneath the flooring of the window. One end of the pipe passes through the frame-work of the window, and connects with the out-of-doors air at the point E. At the point E cold air is admitted, and, passing through the pipe P, it is thrown up into the window close to the glass through the branches B B. The admission of air at the point E is regulated by a slide, and the tops of the branches B B are covered with netting, to exclude dirt and to prevent the falling into them of small articles.

The operation of our device proceeds from the working of well-known atmospheric laws.

By keeping the air inside of the window at as low a temperature as the air without, we prevent the formation of steam and frost.

In nearly all shop-windows, under ordinary circumstances, watery vapor does form, condense, and freeze upon the cold glass of the window.

Many attempts have been made to overcome the evil by placing stoves or steam-pipes in the windows; but neither of these methods has been successful.

In store-windows as commonly constructed, the temperature of the air within their inclosure is likely to be raised considerably above that of the atmosphere without. When this happens a certain proportion of the water held, in combination with the air within the window, is precipitated in the form of vapor. This is in accordance with the law of nature that air cannot hold in suspension as much water at a higher temperature as it can at a lower. Let this watery vapor strike the glass of the window, cold from direct contact with the air out-of-doors, and at once the glass, until now transparent, becomes opaque, covered thick with frost.

By our device all the loss and inconvenience which this natural action occasions so many merchants are removed thoroughly, simply, and cheaply.

We are aware that it is not new, broadly, to prevent the accumulation of frost and steam upon store-windows by the admission of cold air, this being shown, for instance, in the patent to Mason, January 24, 1860. This, therefore, we do not claim; but our invention possesses the advantages of having the regulating-slide E, also the inlet branch pipes B, which, in order to prevent small articles from being lost, are covered with wire-netting, as shown; therefore—

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The combination, with a store-window, of the air-supply pipe P, having branches B, covered with wire-netting, and supply-regulating slide E, substantially as and for the purpose shown and specified.

CHARLES S. ANTHONY.
JACOB MANHEIM.

Witnesses:
JAMES J. GALLIGAN,
WM. R. BILLINGS.