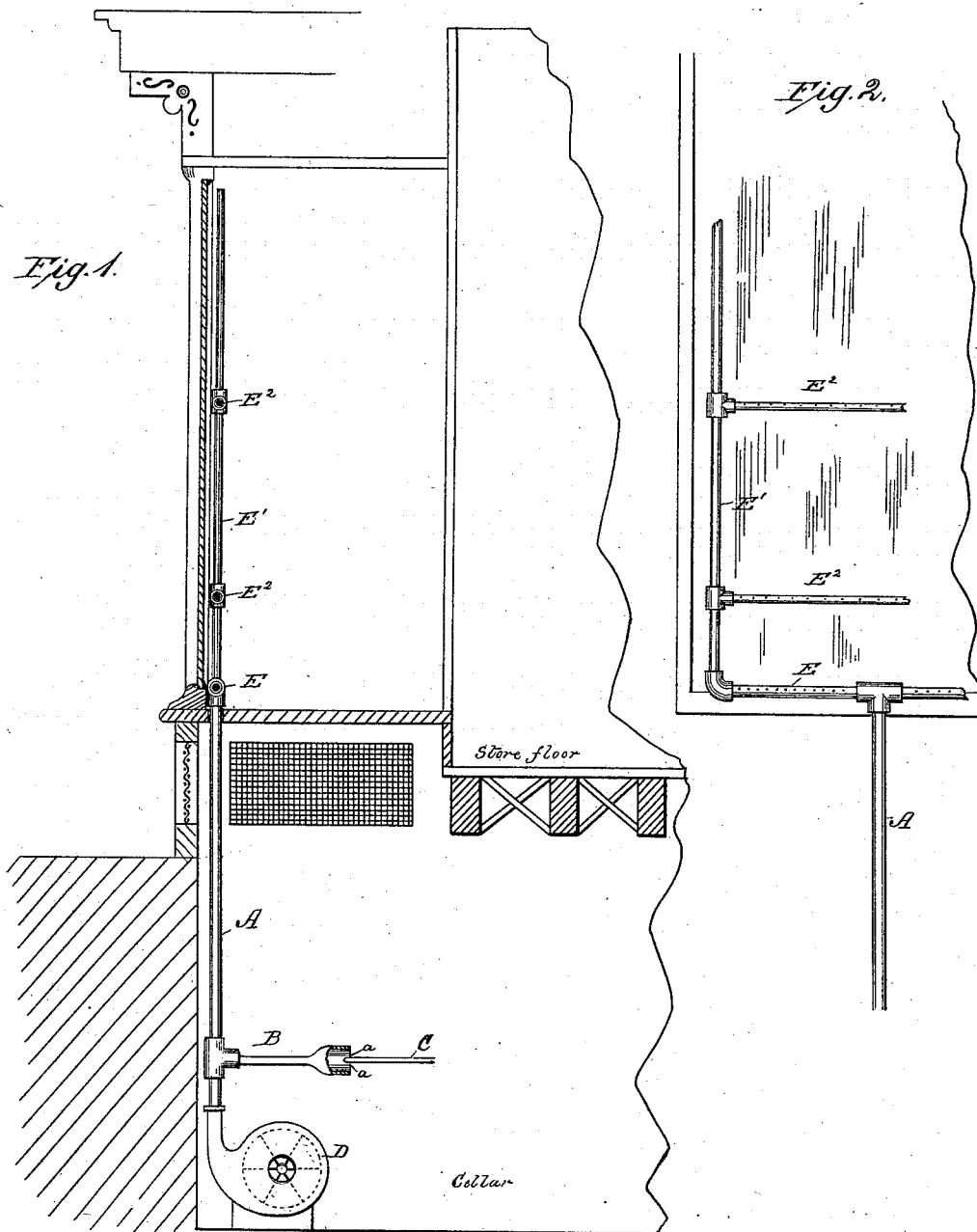


(No Model.)

D. C. CAWLEY & C. P. WALL.  
WINDOW VENTILATOR.

No. 347,158.

Patented Aug. 10, 1886.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

DANIEL C. CAWLEY AND CHARLES P. WALL, OF PITTSBURG, PA.

## WINDOW-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 347,158, dated August 10, 1886.

Application filed January 9, 1886. Serial No. 188,151. (No model.)

### *To all whom it may concern:*

Be it known that we, DANIEL C. CAWLEY and CHARLES P. WALL, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Means for Keeping Show-Windows Free from Condensation, of which the following is a description.

Figure 1 is a vertical section through the show-window and cellar of a store with our invention applied. Fig. 2 is an inside view of the window, showing the arrangement of pipes in the same.

The object of our invention is to provide a means for preventing the condensation of vapor upon show-windows and its congelation there in the form of frost. In cold weather or high latitudes this difficulty exists to such an extent as to defeat the primary object of show-windows by rendering it impossible to see through the same.

Heretofore a series of gas-jets has been arranged on the inside of and near the bottom of show-windows for this purpose; but the objection to it is that it involves a great risk of fire to the hanging draperies and inflammable contents of the window. An air-pipe has also been arranged under the floor and made to carry air around a steam-radiator up into the window; but this is only applicable to steam-heated buildings, and involves a great expense also.

Our invention consists in combining with a series of perforated pipes disposed at the bottom and sides of the window a pendent draft-pipe extending down into the cellar and a gas-burner at the lower end of said pipe, which, by a proper mixture of air and gas, secures a perfect combustion in the draft-pipe, which latter, by its length, secures a proper draft to the gas-burner and delivers the hot air and gases through the perforated pipes above into close proximity with the window-glass, which prevents the vapors from condensing and freezing thereon.

In the drawings, A represents the pendent draft-pipe, which extends from the bottom of the window down into the cellar. B is an air and gas mixing and burning tube, which receives its gas through tube C and its air through openings a around said gas-tube.

The gas mixer and burner B connects with and discharges its hot air and gases into the lower end of draft-pipe A, the upper end of which communicates with the perforated horizontal pipe E at the bottom of the window, near the glass. From this horizontal pipe E perforated side pipes, E', arise, and from these latter one or more perforated cross-pipes, E'', extend in horizontal direction at suitable intervals. These horizontal pipes E'' may be in the nature of swinging arms, which, when not in use, may turn in a horizontal plane and be utilized in warm weather as supports or bracket-arms for displaying the goods in the window.

In securing a proper draft and admixture of air for perfect combustion within the tube, we sometimes employ a fan-blower, D, discharging air into the lower end of tube A, and when said fan-blower is not used we find that the lower end of tube A should be left open to secure a perfect combustion free from smoke and deposits of lamp-black. The burner B, moreover, need not occupy a horizontal position, but may be arranged vertically, as a Bunsen burner. This means of keeping the window-glass clear and transparent does not involve the risk from fire on the one hand nor the great expense of steam-radiators on the other, and yet it is perfectly effective and universally applicable whenever gas is employed. Its cost is also trifling, as it only involves the use of a few lengths of gas-pipe and a few hours' work, which any plumber can supply.

In some cases we may dispense with the burner, and by means of the blower D simply force a blast of cold air up over the window, which in some cases is sufficient to keep it free from condensation.

What we claim as new is—

1. The combination, with one or more perforated pipes arranged near the glass of a show-window, of a pendent draft-pipe, A, leading down into the cellar, and an air-mixing burner arranged at the lower end of the draft-pipe, substantially as shown and described.

2. The combination, with one or more perforated pipes arranged near the glass of a show-window, of a pendent draft-pipe, A, leading down into the cellar, an air-mixing burner arranged at the lower end of the draft-pipe, and

an air-blower, also communicating with the lower end of draft-pipe, substantially as shown and described.

3. The combination, with vertical hot-air  
5 pipes arranged in a window, of horizontally-  
swinging arms having perforations for distributing hot air over the surface of the win-

dow, and also serving as display arms or brackets, substantially as shown and described.

DANIEL C. CAWLEY.

CHAS. P. WALL.

Witnesses:

GEO. HADFIELD,

ABRAHAM WESTERVELT.