

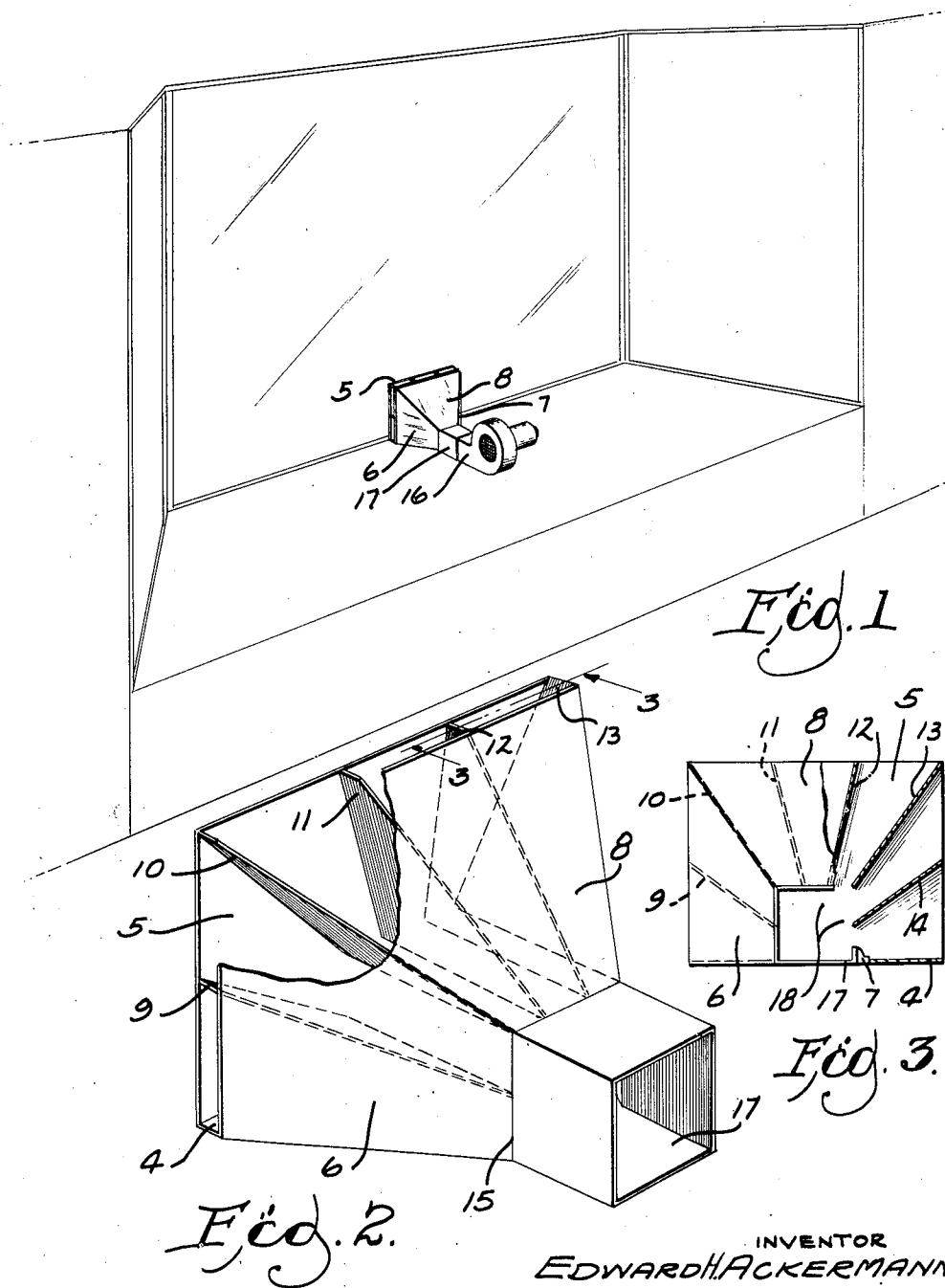
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2,606,074

AIR DISTRIBUTING NOZZLE

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AIR DISTRIBUTING NOZZLE

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2 Claims. (Cl. 299-154)

1

2

This invention relates to a window defrosting apparatus, and it is particularly concerned with a structure which is arranged to receive air under pressure and to distribute the same evenly over a large surface area, as that of a glass show window.

Windows lose their function when clouded by the condensation or freezing of moisture thereon. To remedy this condition, resort is normally had to a fan or other conventional wind instrument to clear the glass. The blast of air so provided, however, does not effectively clear all areas of the window.

It is an object of this invention to provide apparatus which is adapted to remove frost or condensation from a large show window by distributing a current of air evenly thereover. Still another object is to provide apparatus of this character which is readily portable and is relatively inconspicuous when in an operative position against the base of a show window.

Other objects of this invention will be apparent from a consideration of the following description, taken in conjunction with the accompanying drawing, wherein:

Fig. 1 is a view in perspective of an air distributing apparatus embodying the features of the present invention, the apparatus being connected to an air blower and mounted at the base of a show window.

Fig. 2 is another view in perspective of the apparatus, to a greatly enlarged scale, with a portion of a side plate and the top plate being broken away.

Fig. 3 is a front elevation of the apparatus, again on a reduced scale, with a portion of the apparatus being shown in a section taken along the line 3-3 in Fig. 2.

Referring more in detail to the drawing, wherein like parts bear like reference numerals:

The apparatus of my invention comprises a bottom member 4, a back plate 5, side plates 6 and 7, top plate 8, and interior partition members 9, 10, 11, 12, 13 and 14. The respective side and top plates 6, 7 and 8, as well as bottom member 4, converge adjacent the forward, or air inlet, portion of the apparatus to form a throat 15. For convenience in attaching a blower 16, or other source of air supply, an open-ended chamber of the type indicated at 17 may be provided adjacent the throat 15.

The bottom 4 is a horizontal member arranged to be set on the floor, and it flares outwardly from the throat 15 to its position of union along the full width of the bottom margin of back

plate 5. This back plate is a rectangular member normally disposed in a vertical plane for emplacement against a show window. Side plates 6 and 7 and top plate 8 also flare somewhat outwardly from the throat 15, and they extend to a position of uniform spacing from the side and top margins of back plate 5.

Partitions 9, 10, 11, 12, 13 and 14 in general have the shape of right triangles from which the tip of one leg has been removed to form a short, fourth side which parallels the other leg. These partitions are perpendicularly disposed with respect to back plate 5, and their shortened legs extend along the inner surface of this plate while their other legs run generally parallel to, but are spaced somewhat above, bottom member 4. Adjacent partitions converge somewhat towards their bottom, and partitions 9 and 14 likewise are inwardly convergent with respect to the bottom member 4.

Side plates 6 and 7 and top plate 8 are supported along the hypotenuse portions of the triangular partitions 9, 10, 11, 12, 13 and 14, side plates 6 and 7 thereby being outwardly convergent with the side margins of back plate 5, while top plate 8 is outwardly convergent with respect to the top margin of the back plate. The surfaces formed on the partitions by cutting off a leg portion thereof extend from the rear edge of the side and top plates to the adjacent margins of the back plate, the side and top members being thereby uniformly spaced from the back plate.

By positioning the partitions somewhat above the bottom 4, there is provided adjacent the bottom a plenum chamber 18 which receives the air provided to the apparatus by the blower 16. From this plenum chamber, air is distributed out of the apparatus through ducts defined by adjacent partitions, the back plate, and a side or top plate. Due to the divergence of adjacent partitions, air is discharged from those ducts along the surface of the window in a series of adjacent segments, each of which becomes uniformly wider as it leaves the distributing structure. Convergence of the side and top plates with the rear plate not only directs the air toward the plane of the rear plate (and hence toward the window), but tends to equalize the flow by decreasing the front-to-rear dimension of each duct as its lateral dimension increases. By virtue of this fact, and since the air is discharged close to, and toward, the window, efficient clearing of moisture or frost from all portions of the window is obtained.

The device can be constructed of a light metal,

3

or of wood, for example, and as seen in Fig. 1, need not be large. The apparatus is therefore readily portable and may be set up adjacent any desired window.

I claim:

1. An air distributing structure comprising in combination a bottom, an end wall connected with the bottom at one end of the structure, means cooperative with the bottom at the other end of the structure to provide an inlet throat, side walls connected with the throat means and divergent from each other toward the end wall, a top connected with the side walls and diverging from the bottom toward the end wall, the respective ends of said sides and top remote from the throat being spaced substantially uniformly from the end wall, and spaced therefrom to provide an outlet, and a series of spaced partitions enclosed by said bottom, top, side and end to define air flow channels between said inlet and outlet and being outwardly divergent from each other.

2. An air distributing structure comprising in combination a bottom member, an end wall member mounted substantially perpendicularly on said bottom member at one end of the structure, means cooperative with the bottom member at the other end of the structure to provide an inlet throat, side wall members mounted on the bottom member and outwardly divergent from each other from the throat toward the end wall, a top member connected with the side wall members

4

and diverging upwardly from the bottom member from the throat toward the end wall, said bottom member, end wall member, side wall members, partitions, and top member providing a set of air passages of progressively increasing cross section flaring outwardly from said throat toward said end wall member and for which said side and top members provide outlet slots adjacent said end wall member and a series of partitions mounted above said bottom member and extending between said end wall and the side wall and top members, said partitions being perpendicularly disposed with respect to the end wall and being angularly divergent from each other.

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