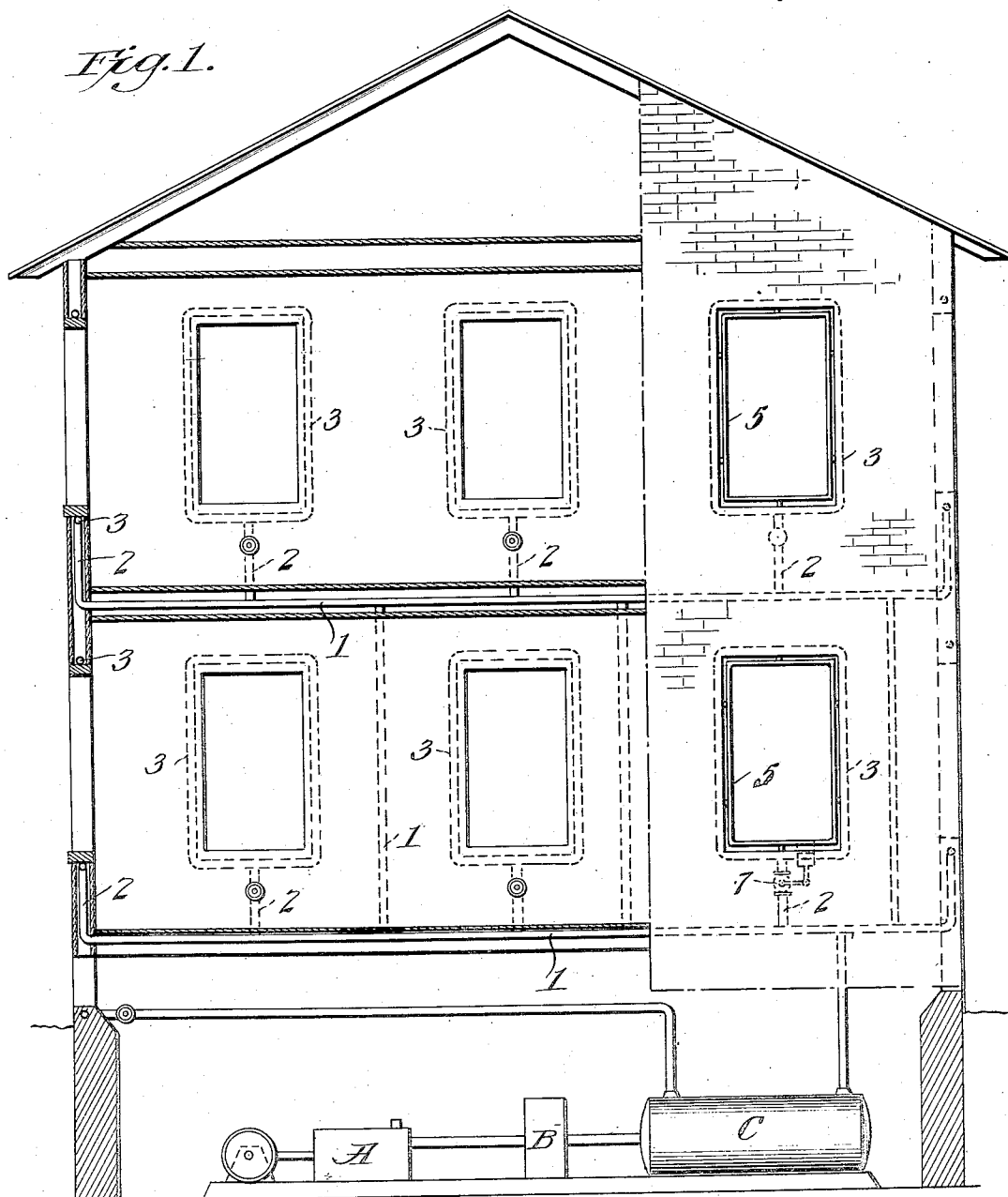


D. W. ANDERSON.
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 APPLICATION FILED NOV. 17, 1913.

1,113,179.

Patented Oct. 13, 1914.
 3 SHEETS—SHEET 1.

Fig. 1.



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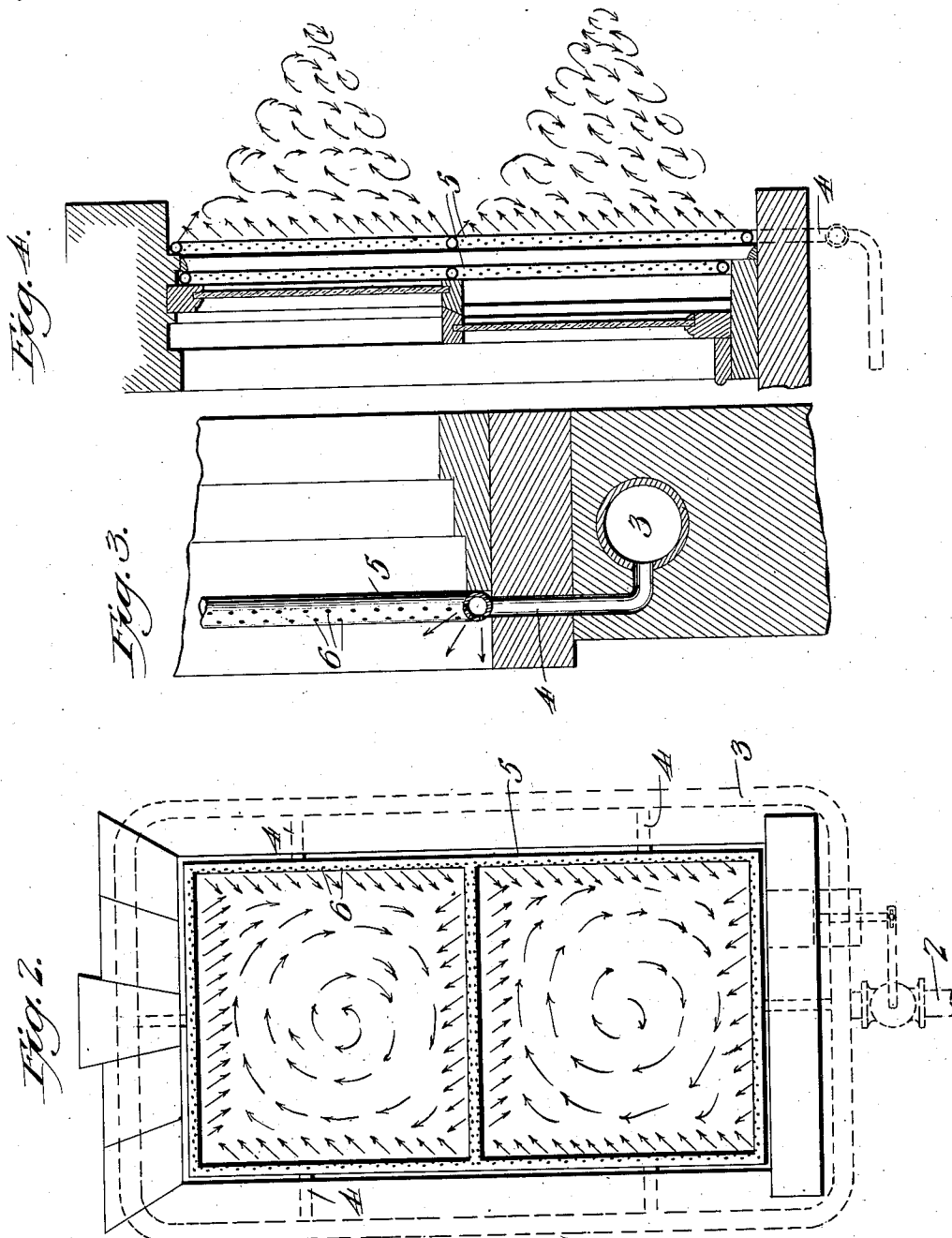
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 3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 5.

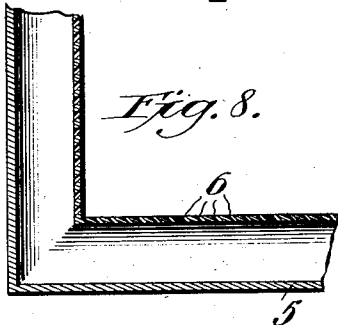
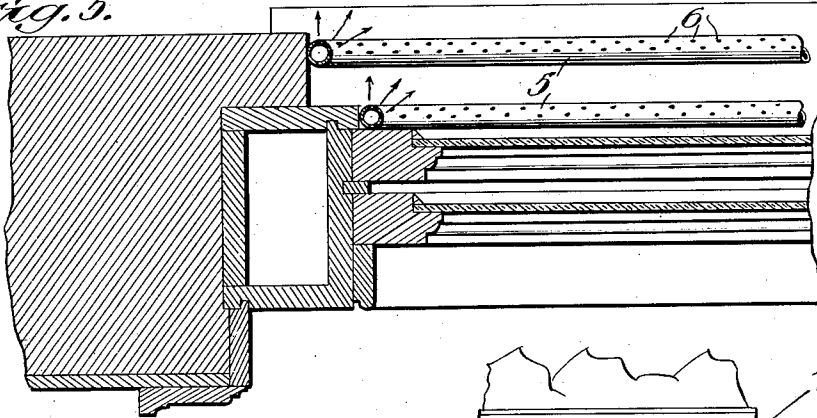


Fig. 8.

Fig. 7.

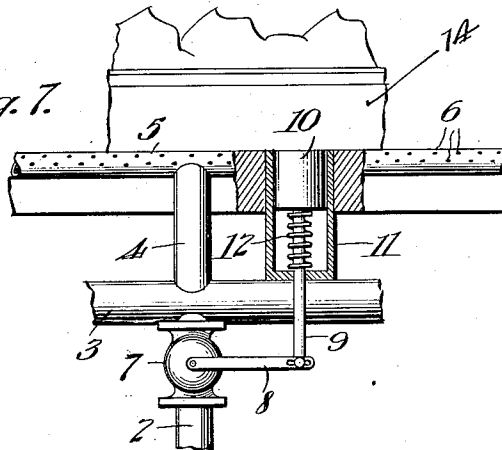


Fig. 6.

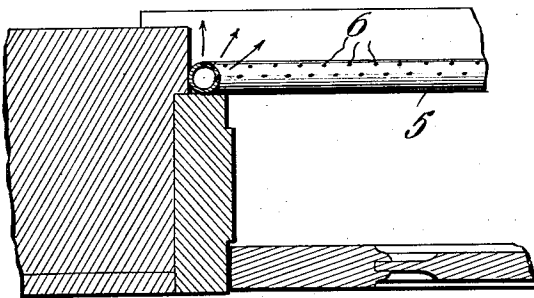
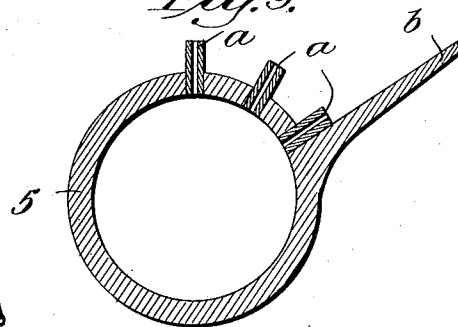


Fig. 9.



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UNITED STATES PATENT OFFICE.

DAVID WILEY ANDERSON, OF RICHMOND, VIRGINIA.

COMBINED INVISIBLE WINDOW-SCREEN AND VENTILATOR FOR BUILDINGS.

1,113,179.

Specification of Letters Patent.

Patented Oct. 13, 1914.

Application filed November 17, 1913. Serial No. 301,431.

To all whom it may concern:

Be it known that I, DAVID WILEY ANDERSON, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Combined Invisible Window-Screens and Ventilators for Buildings, of which the following is a specification.

My invention relates to a combined invisible window screen and ventilator for buildings.

The prime object of my invention is to provide means located on the outside of the openings into buildings which will prevent the ingress of flies and other insects, also keep out the dust, and at the same time keep out to a material extent outward sounds and noise of various kinds.

A further object is to provide means so constructed and arranged that air is caused to be discharged under considerable pressure across the outer face of a window or other opening so as to form a whirlpool sheet of air or whirlwind which will force away by atmospheric gyratory currents of air all insects, smoke and dust, and, because of this unusual spiral volume of air in front of the opening, sound waves are disturbed and broken in such a manner as to produce silence within the building so far as outward sound is concerned.

Another object of the invention is to provide means outside of an opening into a building which serves as a ventilator, thus drawing out of the rooms all foul and vitiated air by the outward draft produced.

Another object of the invention is to provide an air volume chamber within the building, connected with means surrounding the outside of an opening into the building, whereby the opening and closing of a window or door will automatically turn on or off a volume of air.

A still further object is to provide means whereby the volume of air ejected is medicated or disinfected which will serve to stun or poison the insects seeking entrance to the building, and at the same time act as a disinfectant to the premises.

The foregoing and such other objects as may occur from the ensuing description are attained by the combination, arrangement and location of the parts hereinafter more fully described, illustrated by the accompanying drawings forming a part of this

specification, and particularly pointed out in the claims appended hereto.

Reference now being had to the drawings:—Figure 1, is a view showing a building structure partly in sectional and partly in front elevation illustrating the improvements embodying my invention. Fig. 2, is an outside elevation of a window provided with my improved means for producing a whirlwind sheet of air across the face of the window, showing in dotted lines a volume pipe or chamber and means for opening and closing the air supplying means. Fig. 3, is a horizontal section through a portion of the wall of a building and a portion of a window frame showing the air volume chamber connected to the air distributing tube or frame. Fig. 4, is a vertical section through a window frame showing two frames of air distributing tubes surrounding the outside of the window, showing by arrows the whirlpool film of air formed by ejecting the air from the distributing tubes or frames. Fig. 5, is a horizontal section through a portion of the wall of a building and a portion of a window frame and two distributing tubes. Fig. 6, is a horizontal section through a portion of the wall of a building and a portion of a door frame, showing a portion of the air distributing tube arranged around the outside of the door. Fig. 7, is a view partly in section and partly in front elevation showing the means for automatically turning on and shutting off of the air in connection with a window. Fig. 8, is a detail sectional view of the air distributing tubing which surrounds the outside of an opening to the building showing the perforations at an angle with respect to the sides of the tubing, and Fig. 9, is a cross sectional view showing a slight modification of the air distributing tube or frame.

Similar numerals and letters of reference are used to indicate like parts throughout the several views.

In carrying out my invention, it is designed to provide in the basement or cellar of a building, or otherwise suitably located, an air pump A, an atomizer or vaporizer B, and an air pressure storage tank or reservoir C, the said air pump being operated by an ordinary or suitable electric motor (not shown), and the air is distributed from said tank or reservoir throughout the building by means of air tight tubing or pipes 1, connected by pipes 2 with the volume pipes or

chambers 3, and from said chambers by pipes 4 to the air distributing frame or tubes 5 on the outside of the various openings to the building, as clearly shown in Fig. 1 of the drawings.

The air distributing tubes or screen 5, is provided with a series of perforations or openings 6, arranged at an incline or angle with respect to the sides of the tubes so that the air when discharged from the distributing frame is forced therefrom to form a whirlwind or whirlpool film of air across the opening leading into the building, as shown by the arrows in Figs. 2 and 4, thereby preventing the entrance of insects and dust, and at the same time acts as a ventilator by causing an outward draft which serves to draw out all of the foul and vitiated air within the rooms of the building which adds greatly to the comfort of its occupants, and also causes the sound waves emanating from the outside of the building to be so completely broken or disturbed as to eliminate the sound and prevent its entrance within the building.

By reference to Figs. 3 and 7 and by dotted lines Figs. 1 and 2, it will be seen that I employ an air volume chamber or pipes 3 located below the opening as shown in Fig. 3, or entirely surrounding the opening as shown in Figs. 1 and 2, having connecting pipes 4 leading therefrom to the screen tubing or air distributing frame 5 located outside of the opening.

The air under pressure is permitted to be distributed or forced from the screen tubing or frame 5 by a valve which may be automatically operated, as shown in Fig. 7, which shows the valve 7 in closed position, and leading from said valve and connected thereto is an arm 8, to the outer end of which is connected a vertically extended rod 9, terminating at its upper end with an enlarged portion 10 resting within a casing 11, located within the frame surrounding an opening in the building, and surrounding the upper portion of said rod 9, between the enlarged portion 10 and the bottom of the casing 11 is a coiled spring 12, which when the window sash frame 14 is raised from contact with the enlarged portion 10, will cause the rod 9 to move upward thus raising the arm 9, and automatically open the valve 7, and when the sash frame is pulled down it will contact with the enlargement 10 and thus automatically close the valve and shut off the escape of the air, as is clearly shown in Fig. 7 of the drawings.

If desired two air distributing frames of tubing may be arranged around the openings in a building in place of one, as shown in Figs. 3 and 5.

As will be seen by reference to the modification shown in Fig. 9, small tubes *a* may be used in the air distributing frames in place

of the perforations, and an upwardly inclined projecting flange *b* is attached thereto, or integral therewith to prevent flies or other insects from crawling between the tubes and into the opening in the building.

It will be seen that I may employ an atomizer or vaporizer B, provided with a medicant chamber, so that medicated or disinfected air can be pumped into the air storage tank or reservoir C, and distributed therefrom to the air distributing frames or screens outside of an opening in the building, thus serving as a further medium for preventing the entrance of insects and acting as a disinfectant for the premises.

It will be understood that all the necessary piping and automatically operated valves for the automatic manipulation of my improvements are contemplated, and when the pressure of air in the storage tank is reduced to a certain degree a controlling valve device (not shown) will turn on the electric switch and current and start the electric motor and air pumping devices into action, and when the pressure of air is sufficient within the storage tank the electric current may be automatically switched off and thus stop the further pumping of air to the tank.

It will be perceived that my invention is applicable to any kind of opening in a building necessary to be screened against the entrance of insects, dust and outside sounds or noise, also that the screen tubing or air distributing frame located on the outside of an opening may be made into any number of desired divisions, and in each open space is formed a whirlpool film of air across the opening when the air is forced through the perforations of the tubing, and the perforations being made at distinct angles to the tubing and arranged to discharge the air outwardly under pressure a swift whirlwind or whirlpool film of air is formed in an outward direction, so that when a fly or other insect seeks an entrance to the opening it is caught up in the air currents and swiftly forced away.

The air distributing tube or frame 5 is made of metal, rubber, or any suitable material and is so arranged around the outside of an opening that it is invisible from the inside of the building, and there is nothing to obstruct the vision of the occupants of the premises.

Slight changes in the details of the construction of my improvements may be resorted to without departing from the spirit of my invention.

Having thus described my invention what I claim and desire to secure by Letters Patent is:—

1. A combined invisible window screen and ventilator for buildings comprising, an air distributing tube or frame located on the outside of and surrounding an opening in a

building, said distributing frame or tube being provided with perforations or openings whereby air under pressure is ejected therefrom to form a whirlpool sheet or film of air entirely across each opening.

2. A combined invisible window screen and ventilator for buildings comprising, a tube screen surrounding the outside portion of a window frame, said tube screen being provided with perforations at an angle with respect to the side of the tube screen and air under pressure ejected through said perforations in an outward direction to form a whirlpool film of air entirely across the window.

3. A combined invisible window screen and ventilator for buildings comprising, an air distributing tube or frame located in the outside of and surrounding an opening in a building, a volume pipe or chamber surrounding the distributing tube, and pipes connecting the volume pipe or chamber with the distributing tube, said distributing tube having perforations therein through which air under pressure is ejected therefrom in an outward direction to form a whirlpool film or sheet of air across the opening.

4. A combined invisible window screen and ventilator for buildings comprising, an air distributing tube or frame located on the outside of and surrounding an opening in a building, a volume pipe or chamber within the building, pipes connecting the volume pipe or chamber with the distributing tube or frame, and automatically operated valves for supplying air to the distributing tube or frame, said distributing tube or frame being provided with perforations through which air under pressure is projected in an outward direction to form a whirlpool sheet or film of air across the said opening.

5. A combined invisible window screen and ventilator for buildings comprising, an air distributing tube or frame located on the outside of and surrounding an opening in

a building, a volume pipe or chamber within the building, pipes connecting the volume chamber with the distributing tube, automatically operated means to cut off or supply air to the distributing tube, means within the building for medicating or disinfecting the air supplied to the distributing tube, said distributing tube or frame being provided with perforations so arranged that air under pressure will issue therefrom in an outward direction to form a whirlpool sheet of air entirely across the said opening.

6. A combined invisible window screen and ventilator for buildings comprising, an air distributing tube or frame outside of and surrounding an opening in a building, means within the building to automatically cut off or supply air to the distributing tube, said distributing tube or frame being provided with perforations at an angle with respect to the sides of the tube or frame whereby air under pressure is caused to be ejected therefrom to form a whirlpool sheet or film of air across said opening for the purposes herein set forth.

7. A combined invisible window screen and ventilator for buildings comprising, an air distributing tube or frame surrounding the outside portion of a window frame, and air supplying pipes within the building connected thereto, said distributing tube or frame being provided with a series of perforations at an angle with respect to the sides of said tube or frame whereby air under pressure is caused to be ejected therefrom in an outward direction to form a whirlpool sheet or film of air entirely across the window for the purposes herein described.

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

DAVID WILEY ANDERSON.

Witnesses:

CLARENCE E. ANDERSON,
D. C. KENNEDY.