(No Model.) 2 Sheets—Sheet 1.

H. ILIOWIZI.

VENTILATING APPARATUS.

No. 547,996. Patented Oct. 15, 1895.

fig. 1.

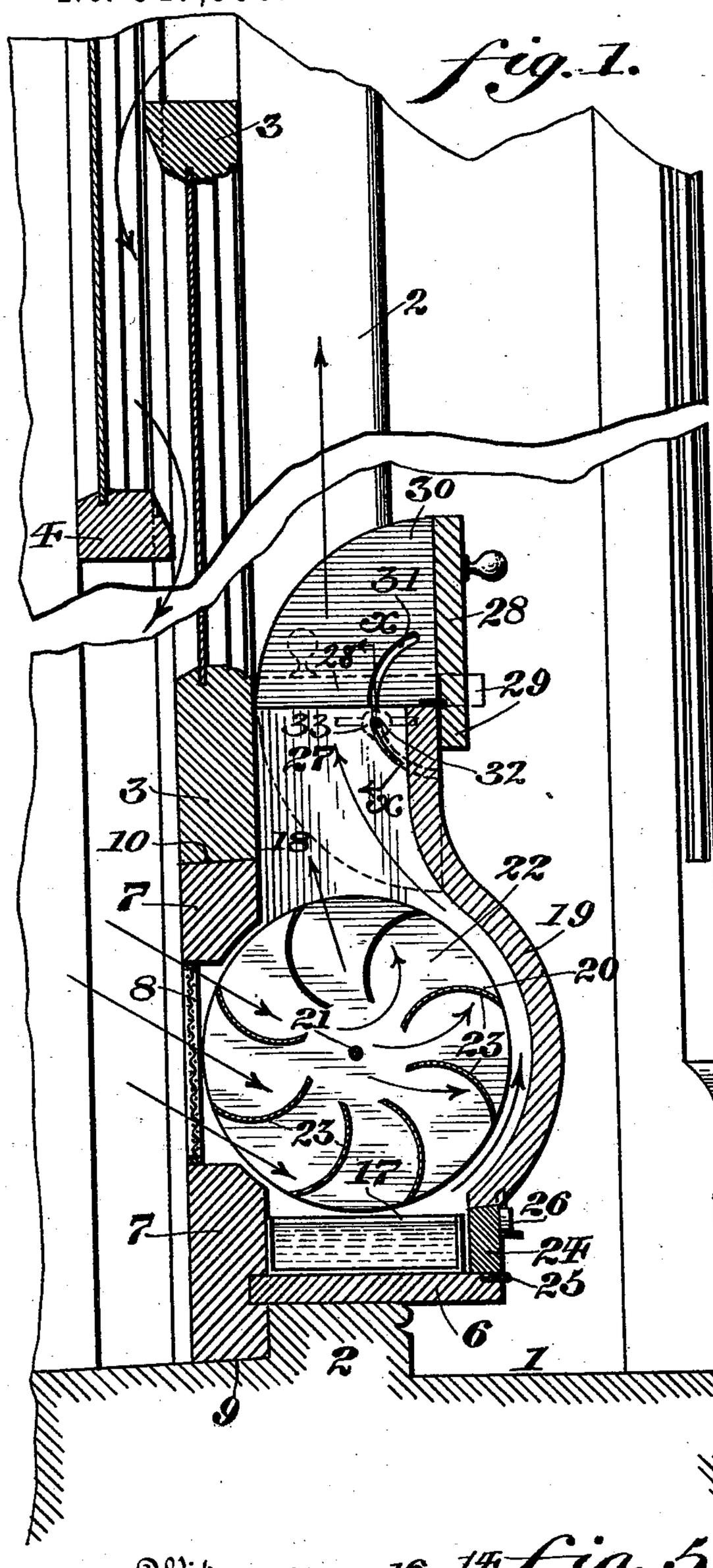


fig. 2.

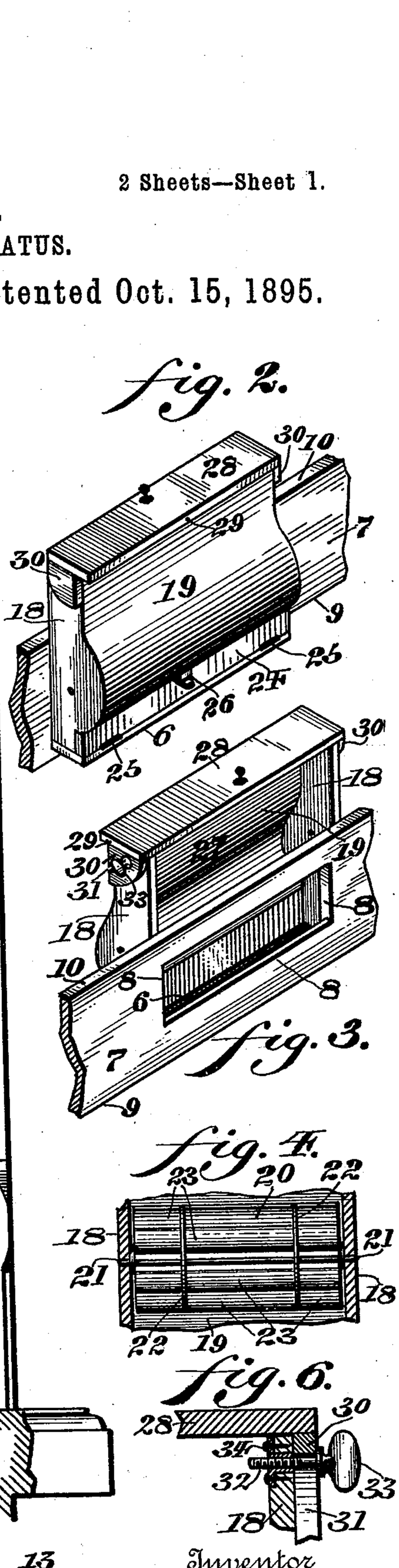
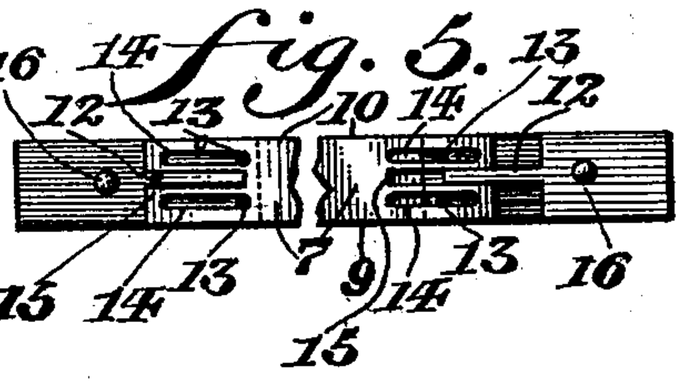


fig. 3.

fig. 4.

fig. 6.

fig. 5.



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(No Model.) 2 Sheets—Sheet 2.

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fig. 7.

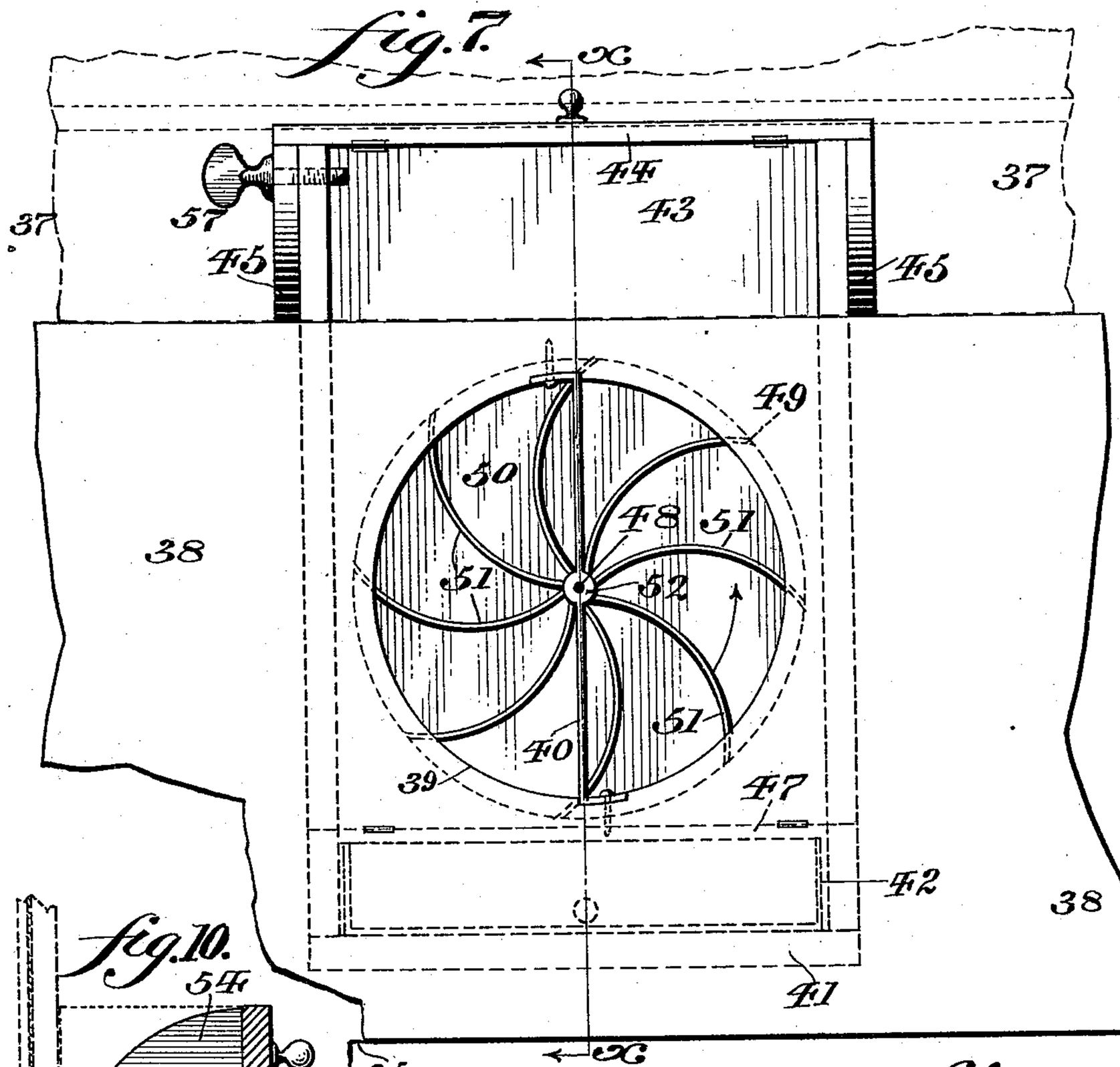


fig. 10.

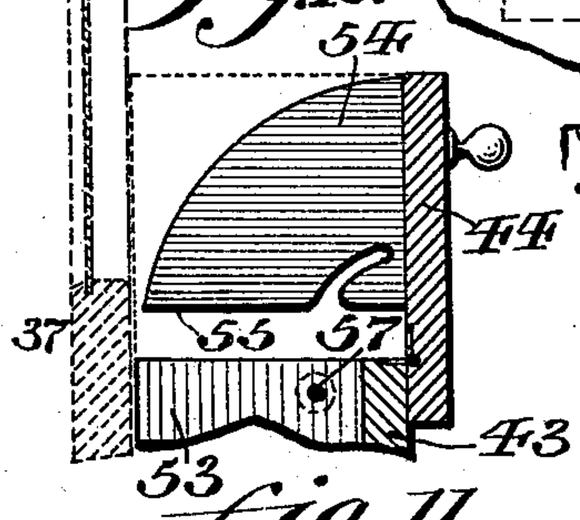


fig. 11.

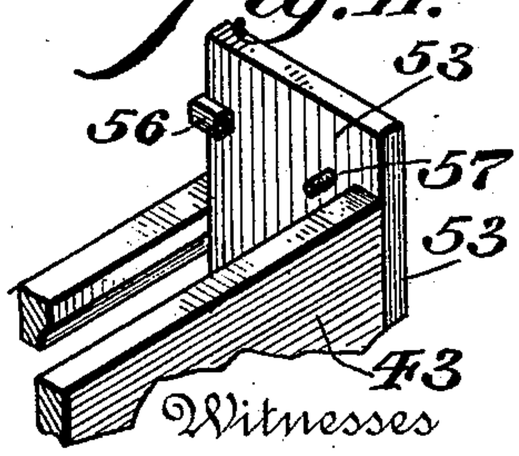


fig. 8.

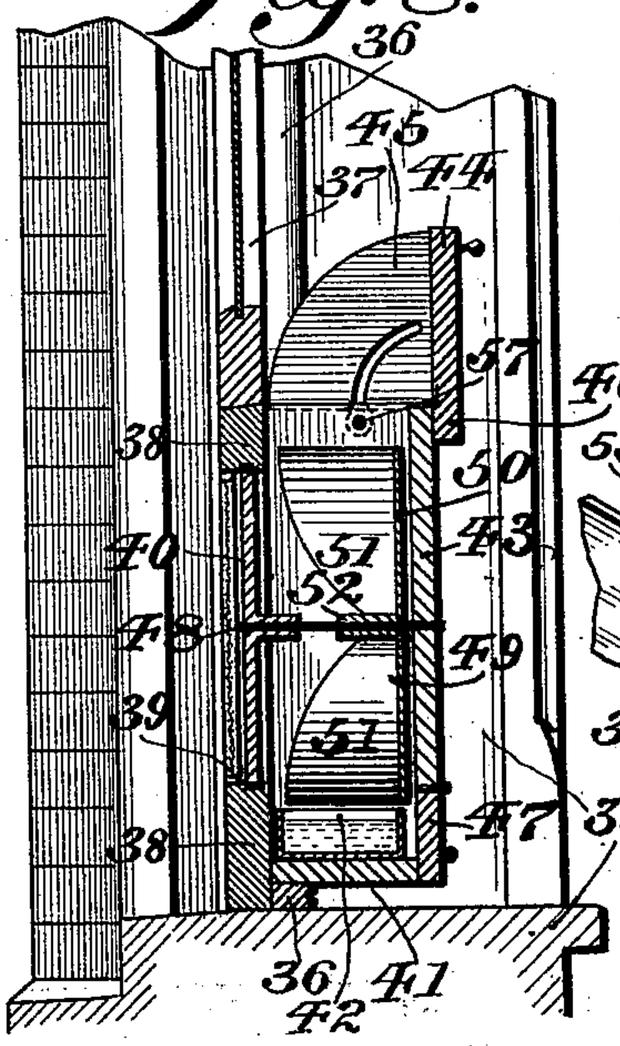


fig. 9.

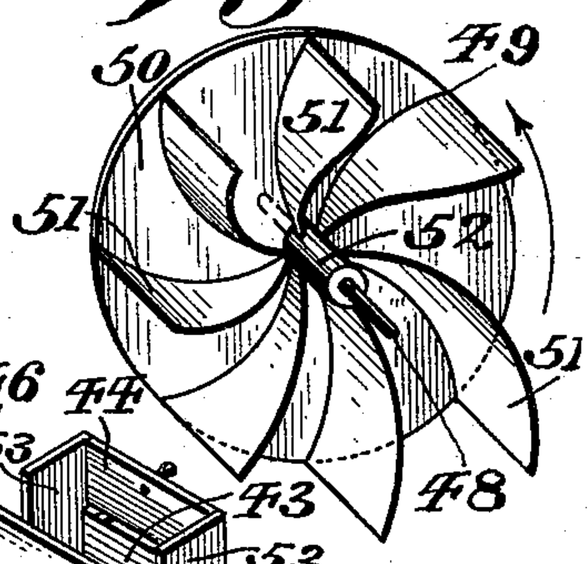
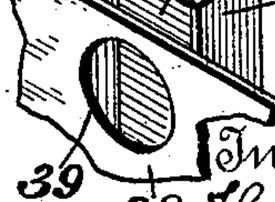


fig. 12.



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VENTILATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 547,996, dated October 15, 1895.

Application filed January 31, 1895. Serial No. 536,796. (No model.)

To all whom it may concern:

Be it known that I, HENRY ILIOWIZI, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Ventilating Apparatus, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a novel construction of ventilating apparatus for houses, apartments, &c., which can be readily adjusted and applied to windows and openings of various widths, whereby the incoming air is deflected by a suitable fan upon a body of water or other fluid adjacent thereto, and is thereby relieved of the dust and other impurities contained therein, said air being afterward discharged in a purified condition into the apartment.

It also consists of a novel construction of valve for regulating the discharge of air from the apparatus.

It further consists of novel details of construction, all as will be hereinafter set forth.

Figure 1 represents a vertical sectional view of a ventilating apparatus embodying my invention and a portion of a window-frame to which the same is applicable. Fig. 2 represents, on a reduced scale, a perspective view of the front of said apparatus, showing, especially, the inclosing casing of the same and its support. Fig. 3 represents a perspective view of the rear of the apparatus, the fan being removed. Fig. 4 represents a front view of the rotary fan employed, the casing inclosing the same being broken away. Fig. 5 represents a front view of the ends of the adjustable back support for the apparatus. Fig. 6 represents a section on line $x\,x$, Fig. 1. Fig. 7 represents a front view of a ventilating apparatus similar to Fig. 1, but showing the fan arranged in a different position. Fig. 8 represents a section on line $x\,x$, Fig. 7. Fig. 9 represents, on an enlarged scale, a perspective view of the rotary fan employed in Figs. 7 and 8. Fig. 10 represents a sectional view, on an enlarged scale, of the upper portion of the casing, valve, &c., seen in Fig. 8. Fig. 11 represents, on an enlarged scale, a perspective view of a detail of the modification shown in Fig. 10, to be hereinafter referred to. Fig. 12 represents a perspective view of a modification of the upper part of inclosing sides for the deodorizing tray or pan.

Similar numerals of reference indicate corresponding parts in the several figures.

In the drawings, referring first to Fig. 1, 1 designates a portion of a window-casing, 2 the inside stop, and 3 and 4 the lower and upper sashes, respectively, all the above parts being of the usual construction and requiring no further description. 6 designates the base of the ventilating apparatus, which is shown resting on the top of the stop 2, and is set into or otherwise suitably attached to the back wall 7, which is of less height than the front shell or wall of the same, and has an opening 8 for the ingress of air, the lower edge 9 of said back 7 resting on a suitable portion of the window-frame, while the upper edge 10 sustains the window 3. Each end of the back 7 is made adjustable by means of the end pieces seen in Fig. 5, each end piece being provided with the tongues 12 and the pins 13, which engage the grooves 14 and the slots 15, respectively, the said ends being moved toward or away from each other by means of the knobs 16, whereby it will be seen that the apparatus can be readily adjusted and applied to a window or other opening of any width. 17 designates a pan or tray, which is supported upon the base 6, and is adapted to contain water or other suitable fluid, deodorant or disinfectant. The said pan 17 is inclosed by the sides 18, which are suitably attached to the base 6, and by the front shell or housing 19, which may have an outward curvature to conform to the shape of the fan 20, whose construction will be apparent from Figs. 1 and 4, the same having the axis 21, whose ends are journaled in the sides 18. 22 designates disks, which are mounted on said axis 21 at a short distance from the ends of the same and have attached thereto the blades 23, which latter are curved and extend from the periphery of the disks 22 toward their center, but terminate at a short distance therefrom, as will be understood from Fig. 1, whereby the greater portion of the air entering the slot 8 will be deflected into the fluid in the pan, as will be evident. The space between the base 6 and the bottom of the shell 19 is closed by the door 24, through which the pan 17 may be inserted. The said door may be removable or

provided with hinges 25 and a catch 26, as may be expedient. Immediately above the fan 20 is formed a passage or outlet 27 between the upper part of the shell 19 and the sides 18 and the adjacent portion of the window 3, which passage is controlled by the cover or valve 28, which is movably attached to the shell 19. The said valve has a portion 29, which overhangs the shell 19, so that when the valve is raised to a vertical position this overhanging portion 29 will act as a stop and limit the movement of the valve, as will be understood from Fig. 1, the dotted lines in said figure showing the valve closed. 30 designates wings, which are attached to each end of said valve 28, and may be substantially the shape of a quadrant, one of said wings having a curved slot 31 therein, through which freely passes the threaded shank 32 of the thumb-screw 33, said shank engaging the internally-threaded bushing 34, which is suitably attached to the side 18, as will be understood from Fig. 6, whereby it will be seen that by manipulating the thumb-screw the valve 28 can be held in any desired position relative to the passage 27, the function of the wings 30 being to prevent the air from being discharged sidewardly from the passage 27.

The operation is as follows: The apparatus is placed in the position seen in Fig. 1, with the window 3 resting on the back 7 and the valve 28 open. The incoming air entering through the slot 8 will cause the fan 20 to revolve, and some or all of said air will be deflected down upon the water in the pan 17 and afterward discharged through the passage 27, as indicated by the arrows, the amount of air discharged being regulated by adjusting the position of the valve 28, as has been explained, the valve and wings preventing objectionable lateral drafts into the apartment. The foul air will be discharged from the apartment through the space between the adjacent windows 3 and 4, as indicated by the arrows in the upper left-hand portion of Fig. 1.

In the construction seen in Figs. 7 to 12, inclusive, 35 designates the window-frame, 36 the inside stop, and 37 the window, which is shown in a raised position, as before. 38 designates the back of the ventilating apparatus, which is provided with the hole 39 therein for the ingress of the air, in which hole is secured the bar 40. 41 designates the base of the ventilator, which is attached to the back 38 and on which is supported the pan 42. 43 designates the front piece, to which is hinged the valve 44, having the slotted wings 45 and the overhanging portion 46, said front 43 having the door 47 also hinged thereto, through which the pan may be inserted. All the above parts are substantially the same as has been described with reference to Fig. 1, with the exception of the bar 40, which serves as a bearing for one end of the axis 48, the other end of the latter being journaled in the front piece 43. The said axis 48 has mounted thereon the fan 49, the same consisting of the disk 50, which has the curved blades 51 thereon, which latter extend from the periphery of said disk to the hub 52 and are widest at said periphery and narrowest at their junction with said hub, as will be understood from Figs. 8 and 9. It may be desirable in some instances to dispense with the wings 45, in which case the sides 53 will be extended upwardly, as shown in Fig. 12, so that their tops will be substantially coincident with the upper edge of the cover or valve 44 when the same is raised, as will be readily understood from Fig. 12, the front and back supports 38 and 43 remaining unchanged. In some instances it may be desired to arrange the wings 45 so that they will be concealed from view within the apparatus when the valve 44 is closed. In such construction the wings 54 are employed, whose lower edge 55 must terminate at a sufficient distance above the top of the front 43, so that the valve 44 can be readily closed, as will be understood from Fig. 10, without said edge 55 contacting with the top of the front 43, and in order to fill the space between said edge 55 and the top of the sides 53 the latter are extended upwardly, as seen in Fig. 11, a stop 56 being attached to each side 53 for the valve 44 to rest on when closed, the thumb-screw 57 having the same function as the one shown in Fig. 6. The operation will be as has already been described with reference to Fig. 1, except that it will be noticed that the incoming air strikes the disk 50 at substantially a right angle instead of on a line parallel to the plane thereof, as in said Fig. 1, the air being deflected down upon the body of the water, and after the impurities, &c., are removed therefrom being discharged into the apartment, the amount of such discharge being controlled by the valve 44, as before explained.

The function and operation of the modified valve constructions seen in Figs. 10 and 12 have already been explained. When it is not desired to employ the fluid in the pan 17, the same may be removed or said pan dispensed with. It will also be evident that the opening 8 in the back wall 7 may be provided with a screen, if desired. It will be apparent that whenever desired, according to requirements, the fan in both structures may be dispensed with, the construction and function of the other parts of each apparatus remaining unchanged.

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

1. A ventilating apparatus consisting of a casing having a front shell, sides and a back wall with an opening therein, the said wall being of less height than the said front shell and adapted to sustain a sash thereon, a rotatable fan journaled in said casing adjacent to said opening, an adjustable valve at the top of said casing a trough in said casing below said fan and a door in said shell adjacent said trough, said parts being combined substantially as described.

2. A ventilating apparatus consisting of a casing formed of a base, a front shell, sides and a back wall, the latter having an opening therein of less height than said front shell, a rotary fan in said casing opposite said opening, a trough below said fan, and an adjustable valve located adjacent the upper portion of the throat in the casing, said parts being combined substantially as described.

3. A ventilating apparatus consisting of a base, a front shell, sides and a back wall, the latter having an opening therein of less height than said front shell, and adapted to bear a sash thereon, a fan in said casing opposite said opening, and a valve at the upper end of the casing having wings adapted to inclose the upper part of the sides of the casing, said parts being combined substantially as described.

4. A ventilating apparatus having a casing formed of a front shell, sides and a back wall with an opening therein, said wall being of less height than the said front shell and adapted to sustain a sash thereon, a rotatable fan in said casing, and a valve at the top of the latter, said fan having curved blades which extend from the periphery of their supports toward the axis, but terminate at a short distance from the latter, substantially as described.

HENRY ILIOWIZI.

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