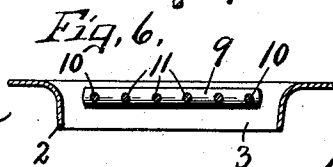
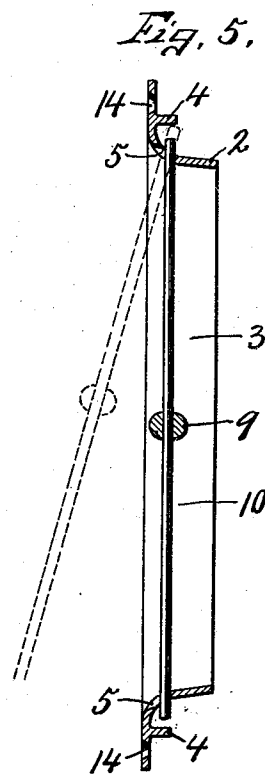
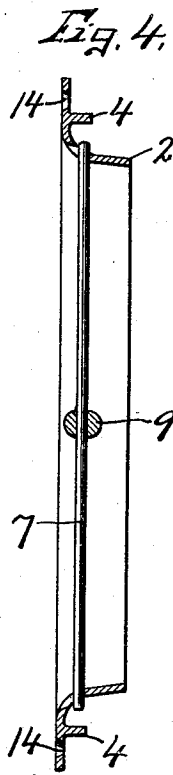
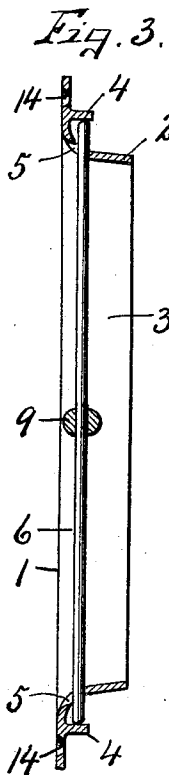
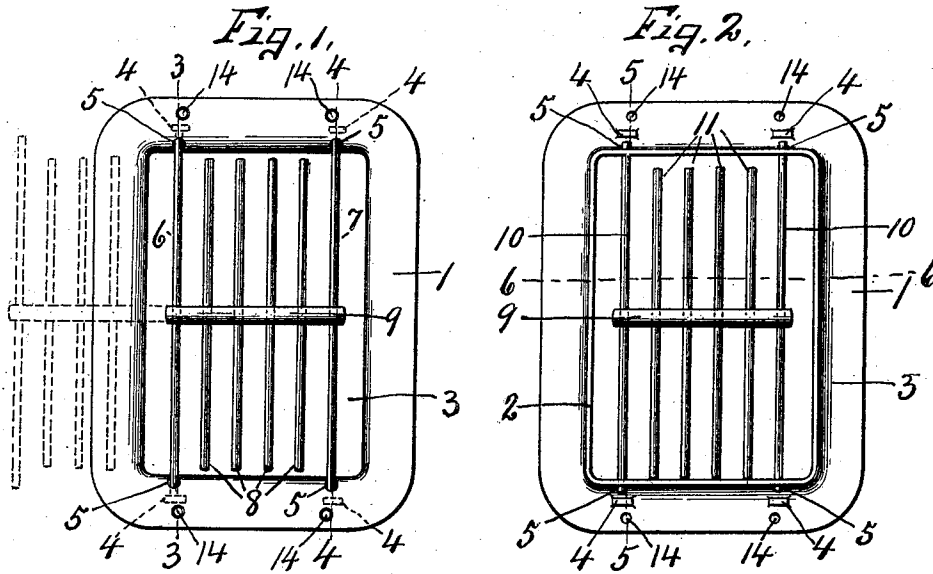


W. S. TUTTLE.
 SANITARY VENT.
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937,893.

Patented Oct. 26, 1909.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLARD S. TUTTLE, OF PHILADELPHIA, PENNSYLVANIA:

SANITARY VENT.

937,893.

Specification of Letters Patent.

Patented Oct. 26, 1909.

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To all whom it may concern:

Be it known that I, WILLARD S. TUTTLE, of Philadelphia, in the county of Philadelphia, in the State of Pennsylvania, have invented new and useful Improvements in Sanitary Vents, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in sanitary vents adapted to be placed in the side walls, ceilings or floors of hospitals and other buildings in connection with suitable ventilation flues where it is desirable to obtain a free and unobstructed ventilation of the rooms and at the same time to reduce to a minimum the liability of lodgment of germs and dust in the ventilating frame or flue and to enable all parts of such frame and flue to be easily accessible for cleansing and sterilization as well as for free ventilation.

I am aware that grille plates of more or less ornamental design have been used for purposes of ventilation but as usually constructed these grille plates not only obstruct the circulation of air and proper ventilation of the rooms but afford comparatively large areas for the lodgment of infectious germs, dust and other foreign matter and render the thorough cleansing and sterilization of the grilles and adjacent portions of the ventilating flue to which such grilles are attached practically impossible. In fact, the unsanitary conditions accompanying the use of the usual grille plates have necessitated in many instances their abandonment and in other instances the grille portion has been entirely cut away to establish a freer circulation of air and to avoid as far as practicable the excessive collection of the dust and germs. It is desirable, however, to provide some sort of grating across the vent to prevent the entrance of papers and other foreign matter therethrough and one of the objects of my present invention is to provide a sanitary vent or ventilator in which the parts are practically smooth and straight and in which round smooth grate bars are arranged in a vertical position so as to avoid as far as practicable horizontal ledges or projections to prevent the lodgment of disease germs, dust and other deleterious matter.

Another object of the round vertical bars across the opening in the plate is to afford a freer circulation of air therethrough and to

avoid as far as practical flat faces which obstruct more or less free ventilation of the room.

A further object is to render the vertical grate bars movable or removable for the purpose of not only increasing the free circulation of air through the ventilating flue but also permitting access to all parts of the ventilating plate and bars for cleansing and sterilization and at the same time permitting access to the interior of the flue for maintaining the same in a thoroughly sanitary condition.

Other objects and uses will be brought out in the following description.

In the drawings—Figures 1 and 2 are front and rear views respectively of modified forms of my invention showing in Fig. 1 the grating as hinged at one side to form a swinging gate adapted to be swung open to the position shown by dotted lines, leaving a clear opening through the frame while in Fig. 2, I have shown a removable grating. Figs. 3 and 4 are enlarged sectional views taken respectively on lines 3—3 and 4—4, Fig. 1, and Fig. 5, is an enlarged sectional view taken on line 5—5, Fig. 2, showing the grate by dotted lines in one position which it is made to assume in removing it from the frame. Fig. 6 is a horizontal sectional view taken on line 6—6, Fig. 2.

The device shown in Figs. 1, 3 and 4 comprises a substantially rectangular frame—1—having a smooth front face and a rearwardly projecting flange—2—surrounding the opening—3—and adapted to fit within a ventilating flue or opening in the wall, said frame being also provided with a series of, in this instance, four rearwardly projecting lugs—4—arranged in pairs on the upper and lower bars of the frame just outside of the marginal flange—2—, the lugs of each pair being arranged in vertical alinement with the apertures—5—. These apertures—5—are formed in the frame—1—at the junction of the rearwardly projecting flange—2—with the front flat portion of the frame and serve to receive the upper and lower ends of a vertical or upright hinge bar—6—. This bar—6—forms a part of a swinging grate or gate composed of upright end bars—6—and—7—and intermediate upright bars—8—, all of which are of rounding cross section and are connected together and held a uniform distance apart by a horizontal bar

—9— which is also rounding in cross section as best seen in Figs. 3 and 4. The bar —7— is of about the same as, but slightly greater vertical height than the vertical height of the opening —3— in the frame, the bar —6— being somewhat longer than the bar —7— and, therefore, projects some distance through and beyond the apertures and terminates in close proximity to the inner faces of the corresponding abutments or lugs —4— which are in vertical alinement therewith to hold the grate or gate against undue vertical movement or complete displacement from the frame, the central portion of the bar 7 being sprung from a straight line when inserting its ends into the apertures 5. In placing the bar —6— in position, its ends are sprung or temporarily bent from a straight line sufficient to permit them to be inserted in their corresponding apertures —5— whereupon said ends are returned to a straight line for retaining the grate in place and forming a hinge connection therefor. The length of this bar —7— is substantially equal to or slightly greater than the vertical distance between the apertures —5— from outside to outside so as to permit said bar —7— to be easily sprung into and out of their corresponding apertures —5— thereby rendering the open side of the gate self-locking and at the same time permitting it to be readily unlocked by pressure upon the center of the gate so as to be swung to the position shown by dotted lines in Fig. 1, the apertures —5— forming pivotal bearings upon which the gate may swing. The vertical height of the intermediate bars —8— is about the same as or slightly less than that of the opening —3— in the frame —1— so as to permit said bars to easily swing between the lower and upper bars of the frame. The cross bar —9— connects the bars —6—, —7— and —8— and holds them a fixed distance apart being located substantially midway between their ends and is provided with apertures through which the bars —6— and —7— and —8— are passed and in which they are secured by fusing or other means of securement without leaving any extra projections or ledges thereon. The vertical bars divide the opening —3— into uniform spaces and in as much as all of these bars —6—, —7—, —8— and —9— are of rounding cross section, it is evident that they produce little resistance to the free circulation of air through the opening —3— and the bars —6—, —7— and —8— being arranged in vertical position and smooth, reduce the liability of lodgment of germs and other foreign matter thereon to a minimum while at the same time the rounding form of the bar —9— although disposed in a horizontal position prevents excessive accumulation of such germs or dust thereon. The purpose of making these bars round and

also making the frame substantially plane and smooth is to enable them to be maintained in a thoroughly sanitary condition by cleansing and sterilizing them which is also facilitated by making the grate movable in the form of a gate permitting access to all sides of the bars for cleaning and sterilizing.

In Figs. 2 and 5, I have shown the same frame —1— as provided with a removable gate or grate composed of vertical end bars —10— and intermediate vertical bars —11—, the bars —10— being of greater length than the vertical height of the opening —3— and are adapted to enter the apertures —5— and —9— respectively which are similar to those shown in Figs. 1, 3 and 4 but are shorter than the distance between the inner edge of one of the horizontal bars of the frame —1— and inner faces of the abutments upon the opposite horizontal bar with which they are alined to permit the entire grate to be lifted vertically out of the lower opening —5— and then rocked forwardly to the dotted position shown in Fig. 5 whereupon the entire grate may be drawn downwardly out of the apertures in the upper part of the frame and entirely disconnected from said frame. This permits access to all sides of the grate for cleaning and sterilization and also permits said grate to be laid aside when it is desired to obtain a greater area of circulation through the opening —3—. In this device shown in Figs. 2 and 5, the intermediate bars —11— are somewhat shorter than the vertical height of the opening —3—, and when in operative position, their lower ends rest upon the inner edge of the lower horizontal bar of the frame —1— while sufficient clearance is left at their upper ends within the frame to permit the entire grate to be removed in the manner previously described. Otherwise this grate is substantially the same as that shown in Figs. 1, 3 and 4, the vertical bars being rounding in cross section and being connected intermediate their ends with a rounding cross bar —9—.

The flat marginal front of the frame —1— is provided with apertures —14— adapted to receive suitable fastening means as screws by which the entire frame may be secured to the wall or to the adjacent end of the ventilating flue, not shown.

What I claim is:

1. A sanitary vent comprising an open frame having apertures in opposite sides thereof and a grate composed of parallel bars arranged side by side and spaced apart, means for holding said bars a fixed distance apart, the end bars of the grate being of greater length than the opening and having their opposite ends seated in said apertures, the intermediate being of less length than that of the opening.

2. A sanitary vent comprising an open frame having apertures in opposite sides thereof, a grate composed of parallel bars of rounding cross section arranged side by side and spaced apart, means for holding said bars a fixed distance apart, the end bars of the grate being of greater length than the opening and having their opposite ends seated in said apertures and the intermediate bars being of less length than that of the opening.

3. In a sanitary vent, a substantially rectangular frame having a central opening, a laterally projecting marginal flange surrounding said opening, said flange being provided with separate pairs of apertures at opposite sides of the opening, and a grate composed of parallel bars spaced apart and a connecting cross bar having apertures receiving the parallel bars, the end bars being of greater length than the opening and having their opposite ends inserted in their respective apertures in the frame, the intermediate bars being of less length than the opening.

4. In a sanitary vent, a substantially rectangular frame having a central opening, a laterally projecting marginal flange surrounding said opening, said flange provided with separate pairs of apertures at opposite sides of the opening and a grate composed of parallel bars spaced apart and a connecting cross bar having apertures receiving the parallel bars, the end bars being of greater length than the opening and their opposite ends inserted in their respective apertures in the frame, the intermediate bars being of less length than the opening, said frame being provided with lugs projecting across the ends of the end bars of the grate.

5. A sanitary vent comprising an open frame having apertures in its upper and lower sides, a grate composed of upright bars, and a cross bar secured to the upright

bars and holding them a fixed distance apart, at least one of said upright bars being slightly longer than the distance between the upper and lower sides of the frame and having its opposite ends inserted in said apertures, all of said bars being of rounding cross section throughout their lengths to reduce the resistance to the passage of air through the gate.

6. A sanitary vent comprising an open frame, angular in cross section and having rounding corners at the angle, said rounding corners having apertures therethrough partly in both sides of the angle, and a grate composed of bars at least one of which has its ends loosely inserted in said apertures whereby the grate may be swung in the opening.

7. A sanitary vent comprising a continuous open frame having alined apertures in opposite sides, and a grate movable in said opening and composed of round bars spaced apart, at least one of which has its ends loosely inserted in said apertures.

8. A sanitary vent comprising an open frame angular in cross section and having rounding corners at the angle, and a grate movably mounted in the opening and having portions thereof loosely engaged with opposite sides of the frame.

9. A sanitary vent comprising an open frame angular in cross section and having rounding corners at the angle, and a grate movably mounted in the opening and composed of round bars, at least one of which is loosely engaged with opposite sides of the frame.

In witness whereof I have hereunto set my hand this fourth day of June 1908.

WILLARD S. TUTTLE.

Witnesses:

EDWARD FELL LUKENS,
WILLIAM S. WALLACE.