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VENTILATING, HEATING, COOLING, AND SHADE APPARATUS FOR ROOMS

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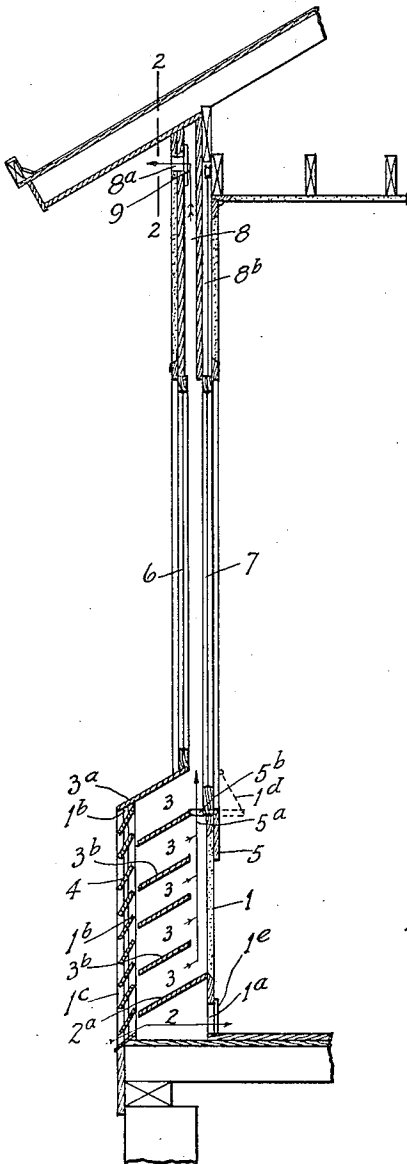


FIG. 1.

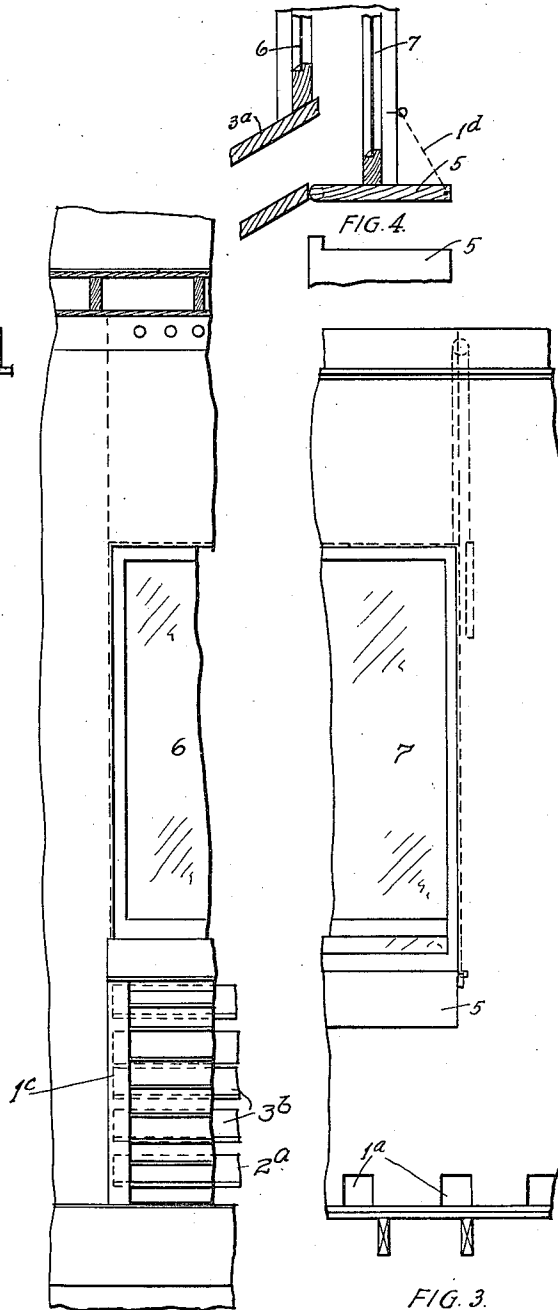


FIG. 2.

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VENTILATING, HEATING, COOLING, AND SHADE APPARATUS FOR ROOMS.

Application filed September 22, 1921. Serial No. 502,516.

To all whom it may concern:

Be it known that I, JOHN LAWRENCE, a citizen of the United States, residing at San Diego, in the county of San Diego and State of California, have invented a certain new and useful Ventilating, Heating, Cooling, and Shade Apparatus for Rooms, of which the following is a specification.

My invention relates to a ventilating, heating, cooling, and shade apparatus for rooms and the objects of my invention are: first, to provide an apparatus which is substituted for the ordinary windows of a room that are positioned in the walls of the room; second, to provide such a means that may be used for either heating by solar radiation or cooling the interior of the room; third, to provide a means of this class which eliminates the necessity for ordinary shades for the windows of a room; fourth to provide a means of this class in which the window may be made stationary and the room thoroughly ventilated; fifth, to provide a novel wall construction for a room; sixth, to provide a means of conducting dust, odors and so forth through ventilating channels so that they will not remain in the room; seventh, to provide a means of this class in which an ordinary sleeping room may be used to obtain a sun and fresh air bath which in addition to an agreeable color tone diffused by translucent shade windows are important factors in promoting good health; eighth, to provide a means of this class in which there is no opening large enough for the passage of burglars and the like; ninth, to provide a means of this class which eliminates the necessity for fly screens and tenth, to provide a means of this class which is very simple, economical of construction and operation, easy to install, efficient in its action and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon which form a part of this application in which:

Figure 1 is a sectional view of a window showing my apparatus in the side wall of a room; Fig. 2 is a fragmentary front view

thereof showing a portion in section through 2—2 of Fig. 1; Fig. 3 is a fragmentary elevational view thereof from the interior of the room; Fig. 4 is a sectional view showing the means of supporting the sliding sill in the slot at the end and showing a top view of a fragmentary portion of said sill.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawings.

The interior wall member 1, sub-air ducts 2, intake vents 3, louver member 4, slide sill member 5, transport window 6, translucent shade window 7, air passage 8, and the slide member 9 constitute the principal parts and portions of my apparatus.

The inner wall member 1 is in alinement with the other portion of the inner wall. It is provided in its lower side with a plurality of perforations 1^a next to the floor and it serves as a part of the wall structure. These perforations are closed by means of a slide 1^e. On each side of the air intake system below the window are provided supports 1^c which are provided therein with vertical grooves and in these grooves are shiftably mounted the louver member supports 1^b, one at each end and the louvers 4 are positioned therein in spaced relation to each other between the two supports 1^b and below the window 6, forming a frame.

It will be here noted that this louver member frame may be removed and a glass or metal radiating plate substituted which fits in the grooves in the supports 1^c to be used during cold weather conditions.

Positioned at the top is the upper member 3^a which is the support for the transparent window 6. Interposed between the louver member 4 and the inner wall 1 are a plurality of angular partitions 3^b that may be made of brick or other material that will serve to absorb solar heat for reserve use and which form spaces for the vents 3. It will be noted that the lower partition 2^a is wider and extends from the louver to the wall 1. This forms a separate duct permitting the air to pass in from the outside through the perforations 1^a next to the floor of the room. Positioned on the members 1 and 3^a on opposite sides of the air passage 5^a are the windows 6 and 7. The window 6 is preferably a stationary window of transparent glass while the window 7 is movable up and down and is composed of translucent

substance, preferably glass and may be any color desired to bring about desirable lighting conditions. This provides a permanent sanitary window shade. This window 7 is adapted to be raised but not lowered from the position shown best in Fig. 1 of the drawings. When this shade window 7 is raised air will pass in between the louvers 4, through the intake vents 3, up through the passage 5^a and out into the room between the upper edge of the member 1 and the lower side of said window 7. Air may also be permitted to enter through the bottom series of ducts 2 by raising the slide 1^e. It will be noted that the wall is slotted at 8^b to permit the window to pass upwardly in the wall. If, however, this window is down as shown in Fig. 1 of the drawings the air will then pass up between the windows 6 and 7 through the vent 8 and out through perforations 8^a near the roof, it being noted that in case it is desired for the air to pass into the interior of the room below the shade window the slide 9 is closed, thereby closing the perforations 8^a so that there is no circulation of air between the windows 6 and 7. Mounted in the end walls 1^e in horizontal slots 5^b is a slide sill member 5 which is adapted to be moved inwardly and outwardly and when out, in a certain position will drop down against the inner surface of the wall member 1 as shown best by solid lines in Fig. 1 of the drawings but may be held in horizontal position by means of a hook 1^a for supporting it in said horizontal position as shown best by dotted lines in Fig. 1 of the drawings. This slide sill member 5 performs the function of changing the circulation of the air for the purposes of heating and cooling as follows: For heating, close the sliding sill member 5 against the inner side of member 1, open sub-air duct slide 1^e, place in position a glass or metal radiating plate which excludes air from the outside, close slide 9 above the windows, raise the translucent shade window as high as desired, thereby exposing the top row of intake vents which are situated above the sliding sill 5. This adjustment permits air to be drawn from the floor of the room outwardly through the sub-air ducts 2 and upwardly through the space between the radiating plate and the solar heat absorptive structure marked 3^b and back again into the room. The heat in the brick members 3 accumulated during the day may be released in the room in the cool of the evening or night. For cooling, substitute the louver shade member 4 for the radiating plate, draw the sliding sill member 5 out into the room, open the slide 9 above the windows and also the sub-air duct slide 1^e. Raise the translucent shade window 7 to any height desired, as in any case whether this window is open or shut down

there is a constant circulation of air passing over the outer transparent window resulting in the interior of the room being kept cool.

Though I have shown and described a particular construction, combination and arrangement of parts and portions I do not wish to be limited to this particular construction, combination and arrangement but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

It is obvious that with this construction there is provided an apparatus for ventilating rooms combined with means for providing shade; that there is provided means for heating the interior of the room by placing in position a glass plate or metal radiating plate which is spaced from the outer surface of vents 3 and is used in place of the louver 4 so that the sun shining on the same will heat the air which will pass into the room when the slide 9 is closed and the slide sill member 5 is properly positioned and the sub-air duct slide 1^e is opened to permit air from the floor of room to be drawn out to the heating surface. If, however, it is desired to cool the room the slide 9 is opened and the louvers permit the air to pass in through the vents 3 up through the opening between the windows 6 and 7 and out through the perforations 8^a at the top. The sub-air duct is also opened at the same time. It is further obvious that no shades are required for the windows except the inner translucent window which forms the inner partition for the air channel; that no fly screens are required because flies will not enter through the louvers and dark vents into the room; that the circulation of air into the room may be easily regulated as desired; that if the sun is shining the room may be readily heated if desired; or may be cooled by causing air to pass between the window panes and out at the top as described.

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

1. An apparatus of the class described, including a wall provided with vents, a transparent outer window in said wall, a translucent inner window spaced therefrom and movable up and down and means for admitting air from the outside through the vents to the inside of the inner window below said inner window or between the inner and outer windows as desired.
2. An apparatus of the class described, including a wall, a transparent outer window in said wall, a translucent inner window spaced therefrom and movable up and down, means for admitting air from the outside through the wall to the inside of the

inner window below said inner window or between the inner and outer windows as desired and means for regulating the flow of air through the space between said inner and outer windows.

3. An apparatus of the class described, including a wall provided with vents, an outer window in said wall, an inner window spaced therefrom and means for admitting air from the outside through the vents to the inside of the inner window at its lower side or between the inner and outer windows as desired.

4. An apparatus of the class described, including a wall provided with vents, an outer window in said wall, an inner window spaced therefrom and means for admitting air from the outside through the vents to the inside of the inner window at its lower side or between the inner and outer windows as desired and means for regulating the flow of air through the space between said inner and outer windows.

5. An apparatus of the class described, including a wall provided with vents, an outer window in said wall, above said vents, an inner window spaced therefrom and means for admitting air from the outside through said vents to the inside of the inner window at its lower side or between the inner and outer windows as desired.

6. An apparatus of the class described, including a wall provided with vents, an outer window in said wall above said vents, an inner window spaced therefrom, means for admitting air from the outside through said vents to the inside of the inner window at its lower side or between the inner and outer windows as desired and outlet means for said air above said windows.

7. An apparatus of the class described, including in combination with a wall of an outer transparent window, an inner translucent window shiftable up and down, an inner wall extending from the lower edge of the inner window to the floor and provided with apertures therein adjacent the floor, a plurality of air ducts positioned outwardly and spaced from said inner wall, a louver member positioned at the outer ends of said ducts adapted to shade same and permit air to come in from the exterior into said ducts and means for opening and closing the space between said windows above said windows.

8. An apparatus of the class described, including a wall, a transparent outer window mounted in said wall, a translucent inner window spaced therefrom and movable up and down, means for admitting cool air from the outside through said wall to the inside of the inner window below said inner window, or between the inner and outer windows as desired, means for regulating the flow of air through the space between said inner and outer windows and means for excluding cold air from the outside during the winter season.

9. An apparatus of the class described, including a wall provided with vents, a window in said wall, an adjustable partition spaced therefrom and means for admitting air from the outside through the vents to the inside of said partition at its lower side or between said partition and the window as desired.

In testimony whereof I have hereunto set my hand at San Diego, California, this 16th day of September, 1921.

JOHN LAWRENCE.