

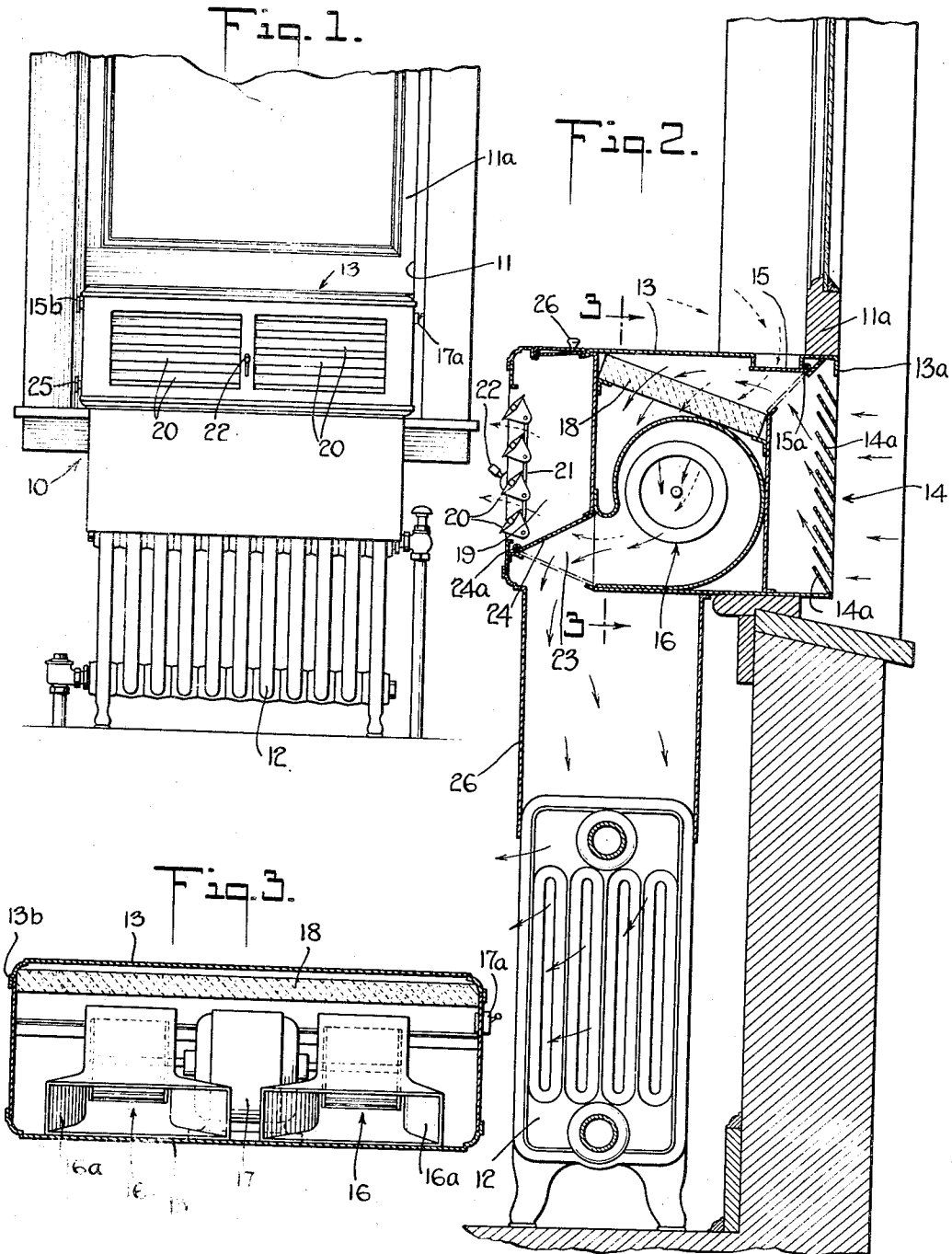
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PORTABLE VENTILATING ATTACHMENT FOR RADIATORS

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## PORTABLE VENTILATING ATTACHMENT FOR RADIATORS

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My present invention relates to portable ventilating attachments for radiators.

More particularly, my invention is directed to a portable ventilating attachment, preferably designed for association with the frame opening of a window or the like of a building or the like, and with any conventional or other approved thermal radiator, serving a room or other space of such building, to provide at the option of the user fresh air, i. e., air of the atmosphere outside of such building, and/or air of such space re-circulated. Heating or cooling of such fresh air and/or re-circulated air, in variant relative proportions and variant total quantity may be accomplished as desired.

Structurally, embodiments of my invention comprise each a casing having an air ingress opening leading to the outer atmosphere; a regulatable air ingress opening for the inflow of air of the room; air outflow means having two outflow discharges, regulatable in respective relative proportions, leading, respectively, directly into the interior of the room and in thermal exchange relation to the thermal surfaces of a radiator or equivalent; and air projecting means for positively, and at regulatable rate of effective flow, inducting fresh air and/or re-circulating room air and projecting the same into the interior of the room in desired proportions of thermally and non-thermally treated air.

Further features and objects of my invention will be more fully understood from the following detail description and accompanying drawing, in which—

Fig. 1 is a front elevational view illustrating a manner of practical application of an embodiment of my invention, installed in a window opening of a building, in association with a radiator of conventional type serving a room of such building;

Fig. 2 is a transverse vertical sectional view of a preferred type of embodiment of my invention installed and associated as illustrated in Fig. 1, and shown in an enlarged scale;

Fig. 3 is a detail sectional view taken on line 3—3 of Fig. 2.

Referring to the preferred embodiment illustrated in the drawing, such embodiment of my invention, indicated generally by the reference number 10, is shown constructed and arranged to be installed in the opening 11 of a window and in association with a radiator or other suitable thermal appliance. Certain preferred types of embodiments of my invention are designed for association with a radiator 12, of conventional type,

such as is indicated in Fig. 1, which may be supplied in such instance with steam, hot water or other appropriate heating medium.

The illustrated embodiment of my invention comprises, a casing 13, generally of attachable and freely portable cabinet form, and provided at one side, see side 13a, with an opening, designated generally 14, for the ingress of air derived from the outer atmosphere; said casing being provided further with air ingress means, designated generally 15, for the inflow of air of the room for circulation and re-circulation; suitable air inducting and projecting means such as a fan, or equivalent, indicated generally at 16, for positively inducting air through the stated fresh-air ingress opening 14 and/or the stated air ingress means 15, and outlet means communicating with the discharge of such air inducting and projecting means 16, for projecting air either in thermal exchange relation with the thermal surfaces of any suitable type of radiator or other thermal appliance and/or directly into the interior of the room, provision of means being had for regulating the respective inducted air flows and respective thermally and non-thermally treated projected air streams.

The stated attachable and freely portable cabinet types of embodiments of my invention, as will appear, possess the advantages of simplicity of construction, attendant low cost of assembly, ease of installation, ease of removal, simplicity of operation and setting of regulatable parts, etc.

Commercial embodiments of my invention may be produced of variant sizes and capacities; one type being that indicated in the drawing, namely dimensioned for a particular width of frame opening of a window or the like; however, the dimensions and capacity of commercial embodiments may be standardized, say, in restricted number of sizes, and auxiliary devices such as plates of variant sizes or adjustable plates, disposed laterally of the cabinet to completely fill the frame opening.

As indicated, in Figs. 1 and 2, it is convenient in the use of cabinet types of embodiments of my invention to install the same in a window opening by raising the lower sash of such window, indicated at 11a, sufficiently to receive such cabinet and upon lowering such lower sash 11a to engage the upper wall of the cabinet 13, thus securely retaining my cabinet in position and restricting the influx of the outer air solely through and under control of my cabinet.

The fans or other air inducting and project-

ing means 16 may be of any suitable type. As illustrated in the drawing, see particularly Fig. 3, there may be provided a pair of the fans, 16, 16, the shafts of which are respectively directly connected, on opposing sides, with the shaft of a suitable motor 17, desirably an electric motor, regulatable by a switch indicated at 17a, for "on", "off" and intermediate speeds, and operated either manually or automatically for temperature and/or humidity control. The discharge channels of the respective fans 16 are indicated at 16a. Such fans 16 may be of the squirrel-type, to afford freedom of air movement there-through during the period of non-operation.

Advantageously, the air ingress opening 14 is provided with a set of mutually spaced baffles 14a, extending horizontally and inclined upwardly in the direction of air flow to provide for the paths of flow of the outer atmospheric air indicated by the applied arrows.

The inner walls of such air ingress opening 14 may be lined with sound absorbing material, if preferred. Desirably, a filter 18, for removing dust, noxious fumes, etc., and also reducing the noise level, may be employed, such filter being preferably, as shown, interposed in the path of air flow through the air projecting means 16.

The discharge of the outer air and/or re-circulated air in regulated relative proportions, is effected, as desired, either directly into the room or other space served by the radiator or in thermal exchange relation with the thermal surfaces of a radiator or other thermal unit, or both in desired regulated proportions. To such or like purposes, the cabinet includes a compartment 19 provided with louvre elements 20, preferably regulatable, as by pivoting the same and interconnecting by means of a link 21 setttable by a manually or other operated lever 22, the compartment 19 communicating with the discharges 16a of the fan compartments through the opening 23 controlled by a valve 24, shown hinged at 24a and operated to desired set position by any suitable means, such as a knurled head 25. Discharge of the air delivered by the one or more fans 16 in thermal exchange relation with a radiator such as is conventionally illustrated at 12, is afforded by a depending conduit portion of the casing 26 communicating through the opening 23 with the fan compartments 16, and regulated by the valve 24.

Desirably, the casing 26 is dimensioned to extend, when positioned within a window opening, as is indicated in Figs. 1 and 2, in close adjacency relative to the uppermost areas of the thermal surfaces of such radiator 12, to afford effective cooperative substantially coextensive relation with such upper surfaces by snugly enclosing relationship, and to further afford ready dis-association with the radiator by mere grasping and removal in upward direction of the cabinet as a whole.

The control of the desired proportion of re-circulated air is shown effected by the valve 15, hinged at 15a and controlled in setting by a knurled head 15b, secured to a suitable shaft, to which the valve 15 is also secured.

Accordingly, upon setting the valve 15 and the valve 24, the proportion of re-circulated air inducted with fresh air is regulated as is also the proportion of thermally treated to thermally untreated of such combined air constituents. The setting of the louvre elements 20 regulates the paths of flow of the thermally untreated air. The respective full outlines and dot-and-dash out-

lines of the valves 15 and 24, shown in Fig. 2, indicate the range of movements of the same, as will be understood.

The relative parts of the casing 13 and the assembly of the same are desirably designed for simplicity of individual formation, usually of metal, and for affording removal of dust, access to the filter, access to the motors, fans, for inspection, oiling and other attention, replacement, etc. As shown, the upper and front sides of the compartment 19 are "snapped" in position, and are made correspondingly removable by means of suitable spring means, operated by the button 26. Access to the filter 18 and to the motor 17 and/or fans 16, is afforded by a friction joint indicated at 13b. Access to the compartment 14, open to the outer atmosphere, is afforded by removing the casing from the frame opening.

Whereas I have described my invention by reference to specific forms thereof, it will be understood that many changes and modifications may be made without departing from the spirit of the invention.

I claim:

1. For use with a radiator positioned within an inclosure, a portable ventilating attachment comprising a casing having air ingress means at one end adapted for connection with a source of exterior air and having a depending conduit provided with air egress means at its lower end adapted for substantially coextensive engagement solely with and snugly around the top surface portion of the radiator in communication with the heat exchange passages thereof; and means for effecting intake of said exterior air to the casing, forced flow thereof through the casing, and discharge thereof at the location of engagement for passage over the heat exchange surfaces of the radiator.

2. For use with a radiator positioned within an inclosure, a portable ventilating attachment comprising a casing having air ingress means at one end adapted for connection with a source of exterior air and having air egress means at another end adapted for engagement solely at a face of a radiator in communication with the heat exchange passages thereof; air ingress means for admitting inclosure-air to said casing; means for regulating the relative admission of exterior-air and inclosure-air to said casing; air egress means in said casing apart from the first named air egress means and communicating directly with the inclosure; means for regulating the relative discharge of air from the casing directly into the inclosure or indirectly therinto over the heat exchange surfaces of the radiator; and means effecting intake of air to said casing by way of either or both of said air ingress means, passage of air through said casing, and discharge of air through either or both of said air egress means.

3. For use with a radiator positioned within a room and beneath a window thereof, a portable ventilating attachment comprising a casing having an open end adapted to fit over the opening provided when the window is partially opened, and having a depending conduit with an open end adapted to fit entirely over and snugly around the top surface portion only of the radiator in communication with heat exchange passages thereof; and an air circulator disposed within the casing and adapted to draw exterior air into the casing from said window opening and to discharge the air through said depending

conduit and over the heat exchange surfaces of the radiator.

4. For use with a radiator positioned within a room and beneath a window thereof, a portable ventilating attachment comprising a substantially rectangular casing having an open side adapted to fit over the opening provided when the window is partially opened, and having an open ended conduit extending from the bottom of the casing for registry at its open end with a face of the radiator and communication with the heat exchange passages thereof, a baffle disposed in the casing opposite the said open side for directing entering air upwardly in the casing; an air inlet disposed in the top wall of the casing adjacent the said baffle and communicating with the room; a valve member operable between said air inlet and the top end of said baffle for regulating the relative admission of exterior air and

room air into the casing, a front baffle spaced forwardly from the first named baffle and extending from the top of the casing to a location short of the bottom of the casing; an air outlet disposed in the bottom wall of the casing proximate the said front baffle and leading into said open ended conduit; an air outlet in the casing disposed forwardly of the said front baffle above the bottom of the casing and communicating with the room; a valve member operable between the two last named air outlets for regulating the relative discharge of air from the casing directly into the room and indirectly into the room over the heat exchange surfaces of the radiator; and air circulating means disposed in the casing between the said first named baffle and the said front baffle for inducting air into the casing and discharging air from the casing.

CLARENCE M. WOOLLEY.