

March 15, 1932.

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1,849,115

VENTILATOR

Filed June 29, 1931

2 Sheets-Sheet 1

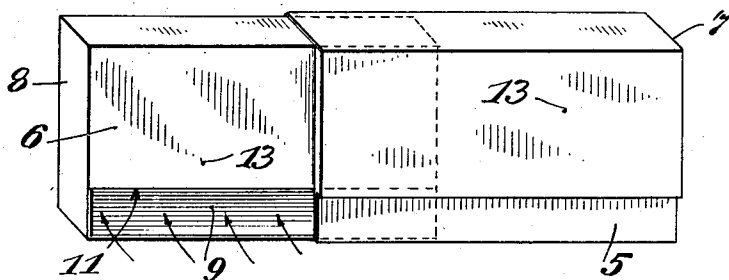


Fig. 1.

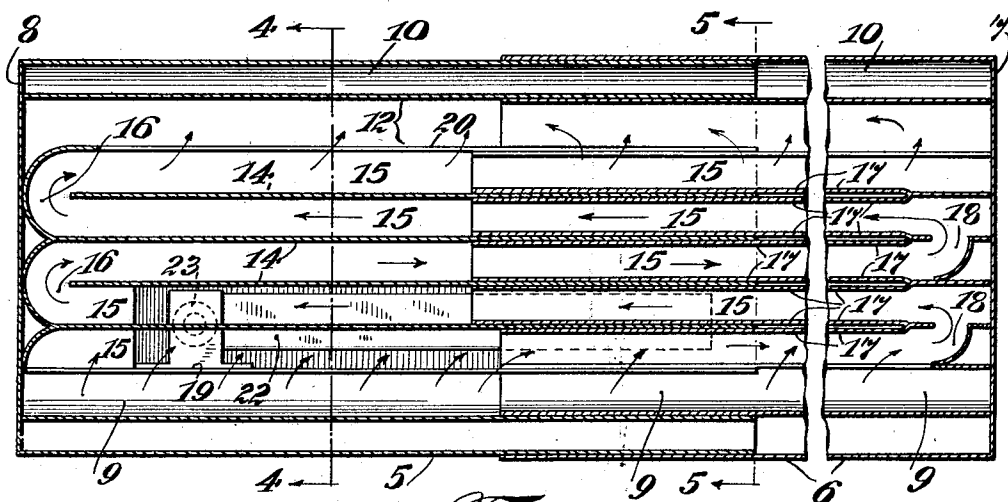


Fig. 3.

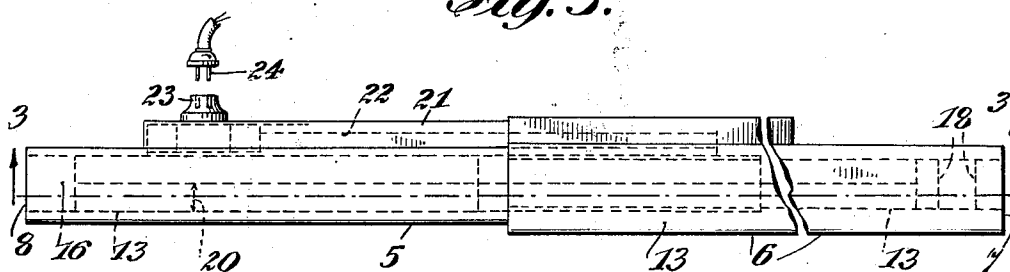


Fig. 2.

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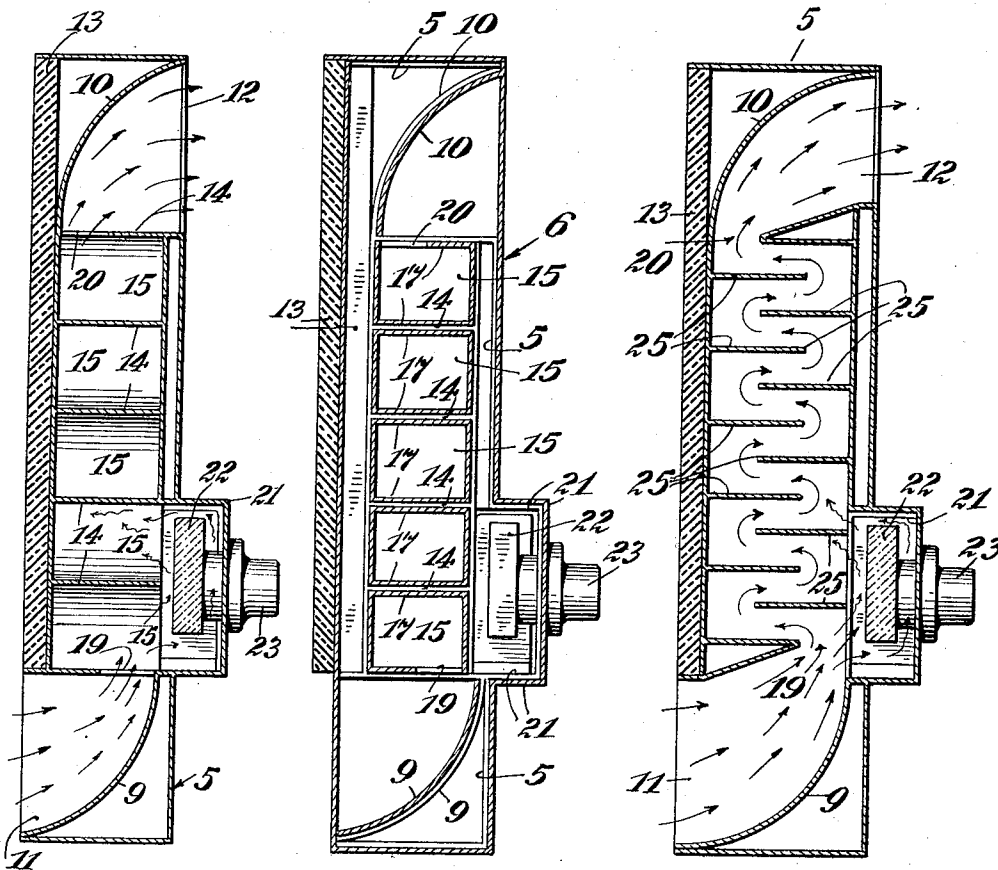


Fig. 4.

Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE

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VENTILATOR

Application filed June 29, 1931. Serial No. 547,592.

The invention relates to ventilators and has for its primary object and purpose to provide a simply constructed and serviceable window ventilator provided with means for heating the incoming air prior to its admission to the room or apartment.

It is also an important object of my invention to provide a ventilator of this kind which may be easily and quickly adjusted to windows of various widths to fit closely between the opposite sides of the window frames and beneath the vertically movable sash.

More particularly, in one embodiment of the invention, I provide an outer casing consisting of two telescopically connected sections, one of which carries a heating unit and each of said sections being internally provided with longitudinally extending telescopically engaged sections of a continuous air passage whereby the air is circulated around and in contact with the heating element between an inlet opening and the outer lower side of one of said casing sections, and an outlet opening at the upper inner side thereof.

It is a further general object of the invention to provide a window ventilator as above characterized which will be comparatively light in weight, strong and durable in its construction and capable of manufacture at relatively low cost.

With the above and other objects in view, the invention consists in the improved ventilator, and in the form, construction and relative arrangement of its several parts as will be hereinafter more fully described, illustrated in the accompanying drawings, and subsequently incorporated in the subjoined claims.

In the drawings, wherein I have disclosed several simple and practical embodiments of my present invention, and in which similar reference characters designate corresponding parts throughout the several views,—

Figure 1 is a perspective view of my improved ventilator;

Fig. 2 is a top plan view;

Fig. 3 is a vertical longitudinal section thereof;

Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a similar sectional view taken on the line 5—5 of Fig. 3, and

Fig. 6 is a vertical section similar to Fig. 4, illustrating a modified form of the device.

Referring in detail to the drawings, 5 and 6 designate the two casing sections which in the illustrated embodiment of the device are of elongated rectangular form and have their opposed open ends telescoped together whereby said casing sections may be readily shifted longitudinally relative to each other to position the end walls 7 and 8 respectively thereof, in close engagement with the inner sides of the vertical frame parts at the relatively opposite sides of the window opening.

Each of the casing sections within the upper and lower ends thereof is provided with a longitudinally extending transversely curved wall as indicated at 9 and 10 respectively, said walls being curved in relatively reverse directions and the corresponding walls of the two casing sections having relatively sliding movement upon each other. The wall 9 of the casing section 6 extends upwardly from the lower edge of the air inlet opening 11 which extends longitudinally along the outer side of said casing section at the bottom thereof, while the curved wall 10 of the casing section 6 extends inwardly and downwardly from the upper edge of the longitudinally extending air outlet opening 12 provided on the inner side of said casing section at its upper end. To the outer side walls of the two casing sections, a suitable insulating material as shown at 13 is secured.

Between the upper and lower curved air directing walls 9 and 10 of each casing section a plurality of parallel longitudinally extending sheet metal walls 14 are suitably secured to provide the air passages or conduits 15. Certain of the walls 14 in the casing section 6 terminate in spaced relation to the closed end of the casing section while the walls 14 at either side of said spaced wall are connected with each other so that the adjacent air conduits 15 are in communication as indicated at 16. The walls 14 forming certain of the conduits in the casing section 7 have closely spaced parallel portions 17 between which the walls 14 of the casing sec-

tion 6 are slidably received. Thus, it will be understood that the walls of the several conduits of the casing sections 5 are telescopically engaged within the conduits 15 of the casing section 6. The conduits 15 of the casing section 5 are in communication with each other adjacent the closed end of said casing as shown at 18. The bottom wall of the lowermost conduit 15 in casing section 6 is relatively narrow and spaced from the upper end of the curved wall 9 to provide the air inlet opening 19. Similarly, the top wall of the uppermost conduit 15 in the casing section 6 is relatively narrow to provide an outlet opening 20 at the lower end of the curved wall 10.

Each of the casing sections at its inner side immediately above the curved walls 9 thereof has a transversely offset wall section 21. These offset parts of the casing section provide a housing for an electrical heating unit of any desired type indicated at 22 provided with a socket 23 to receive a plug 24 whereby said heating unit may be readily connected with the electrical wiring circuit of the house.

From the above description, it will be understood that when the ventilator is arranged beneath the window sash and properly adjusted so as to engage the closed ends of the casing section against opposite sides of the window frame, cold air will enter through the opening 11 in the outer side of the casing section 6 and as it flows longitudinally in reverse directions through the lower conduits 15 of the two casing sections in contact with the heating element 22, the air will be highly heated. This heated air, successively passing through the remaining conduits of the ventilator, results in the deposit of dust and other foreign matter which may be carried in suspension thereby upon the walls of the conduits so that when the air finally passes through the outlet opening 20 of the uppermost conduit and through the outlet opening 12 in the inner side of the casing section 6, it will be substantially free of dust and in a suitably heated condition. In this manner, while proper ventilation of the room or apartment is obtained, cold drafts of air entering into the room through the ventilator is avoided.

In Fig. 6 of the drawings, I have shown a slightly modified form of the device, in which instead of the conduits 15 being in communication with each other at the opposite ends of the ventilator casing and extending longitudinally thereof, these communicating conduits extend transversely of the ventilator casing. This arrangement of the conduits is produced by the provision of the vertically spaced baffle plates or walls 25 extending inwardly from opposite side walls of each casing section and terminating in spaced relation to the opposite side wall thereof, the latter edge portions of these baffle plates being

in overlapping relation as clearly shown in Fig. 6 of the drawings. Thus, the heated air is caused to flow alternately transversely of the ventilator in opposite directions between the inlet and outlet openings. This form of the invention may be also made in the two relatively adjustable sections as above explained, in which case the baffle walls 25 of the respective sections will have overlapping sliding engagement upon each other, or the ventilator may be made in the form of a single non-adjustable unit as desired.

From the foregoing description considered in connection with the accompanying drawings, the construction, manner of operation and several advantages of my improved ventilator will be clearly and fully understood. It will be apparent that since the device with the exception of the heating unit, is entirely constructed from sheet metal, that it will be relatively light in weight, and can be easily and quickly arranged in proper position and adjusted below the window sash.

While I have herein indicated several practical and desirable arrangements of the air circulating conduits and the mounting and arrangement of the heating units, it will be understood that in these particulars, as well as the various other detail features herein disclosed, the device may be embodied in various other alternative mechanical structures. I therefore, reserve the privilege of incorporating the essential features of my invention in such other modified forms or constructions as may be fairly considered within the spirit and scope of the appended claims.

I claim:

1. A window ventilator comprising telescoping casing sections, one of said casing sections at opposite sides thereof and adjacent its upper and lower ends being provided with air outlet and inlet passages respectively, and a plurality of intercommunicating conduits causing a circuitous travel of the air between said inlet and outlet passages, parts of the walls of said conduits being carried by the respective casing sections for movement relative to each other in the adjustment of said casing sections.

2. A window ventilator comprising telescoping casing sections, one of said casing sections at opposite sides thereof and adjacent its upper and lower ends being provided with air outlet and inlet passages respectively, a plurality of intercommunicating conduits causing a circuitous travel of the air between said inlet and outlet passages, parts of the walls of said conduits being carried by the respective casing sections for movement relative to each other in the adjustment of said casing sections, and an electrical heating unit carried by one of said casing sections adjacent to the air inlet passage.

3. A window ventilator comprising telescoping casing sections, one of said casing

sections at opposite sides thereof and adjacent its upper and lower ends being provided with air outlet and inlet passages respectively, a plurality of intercommunicating conduits causing a circuitous travel of the air between inlet and outlet passages, parts of the walls of said conduits being carried by the respective casing sections for movement relative to each other in the adjustment of said casing sections, each of said casing sections being provided on its inner wall with telescopically engaged parts of a housing, and an electrical heating unit mounted on one of the casing sections extending longitudinally within said housing parallel to certain of the air conduits and adjacent to said air inlet passage.

4. In a window ventilator, relatively adjustable telescoping casing sections, one of said casing sections having an air inlet passage extending inwardly from the outer side thereof at its lower end and an air outlet passage opening upon the inner side of said casing section at its upper end, a plurality of longitudinally extending air conduits, each conduit consisting of complementary sections carried by the respective casing sections and having telescoping engagement with conduit sections of the other casing section, the adjacent conduit sections at the outer ends of the respective casing sections being in communication with each other to thereby cause a circuitous travel of the air through said conduits between the inlet and outlet passages, and an electrical heating unit carried by one of the casing sections adjacent to said air inlet passage.

5. In a window ventilator, relatively adjustable telescoping casing sections, one of said casing sections having an air inlet passage extending inwardly from the outer side thereof at its lower end and an air outlet passage opening upon the inner side of said casing section at its upper end, longitudinally extending baffle walls projecting transversely from the opposite side walls of the respective casing sections and terminating in spaced relation to the side wall of the other casing section, said baffle walls being vertically spaced apart and causing the air to flow alternately in reverse transverse directions between the air inlet and outlet passages, each of the casing sections being provided with a housing part on the inner side wall thereof, said housing parts being telescopically engaged with each other, and an electrical heating unit carried by one of the casing sections extending longitudinally within the housing adjacent to the air inlet passage.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

JOHN A. H. SIERS.