

July 11, 1939.

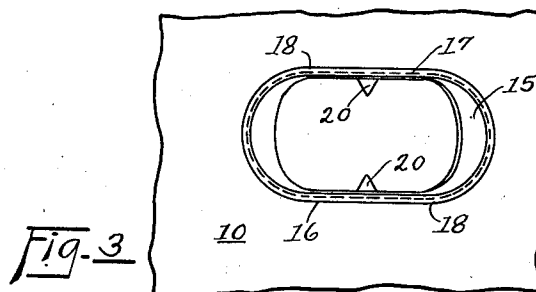
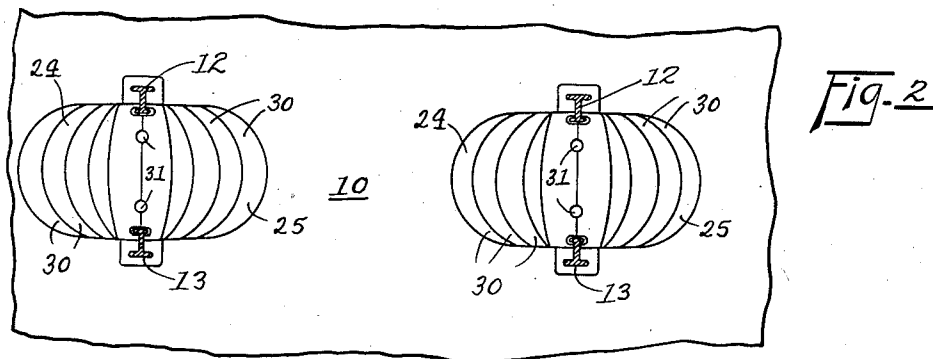
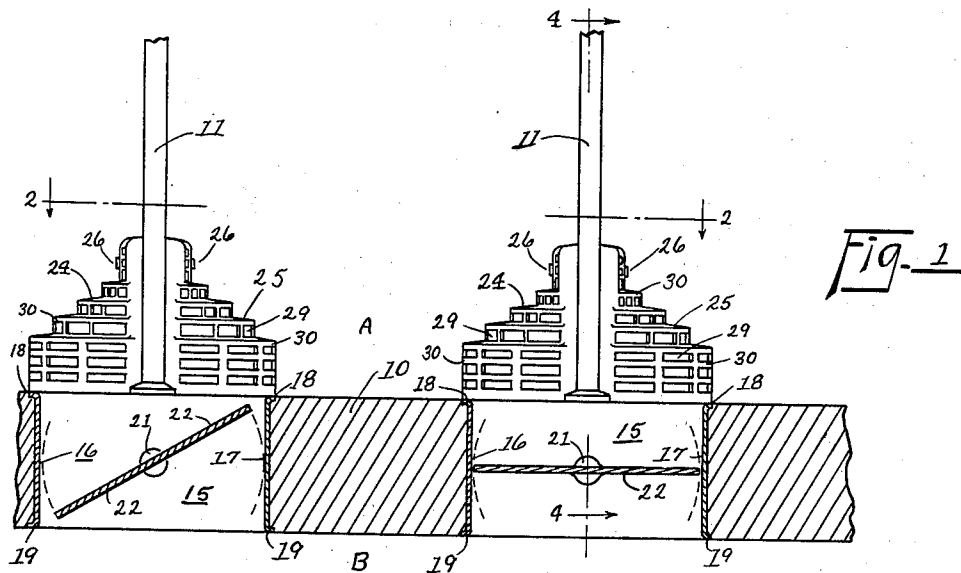
J. M. VER MEULEN ET AL

2,165,593

VENTILATING SYSTEM

Filed Jan. 27, 1936

2 Sheets-Sheet 1



Witness:  
Geo L. Chapel

James M. VerMeulen  
Glen Bucher  
BY Rice and Rice  
ATTORNEYS.

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2 Sheets-Sheet 2

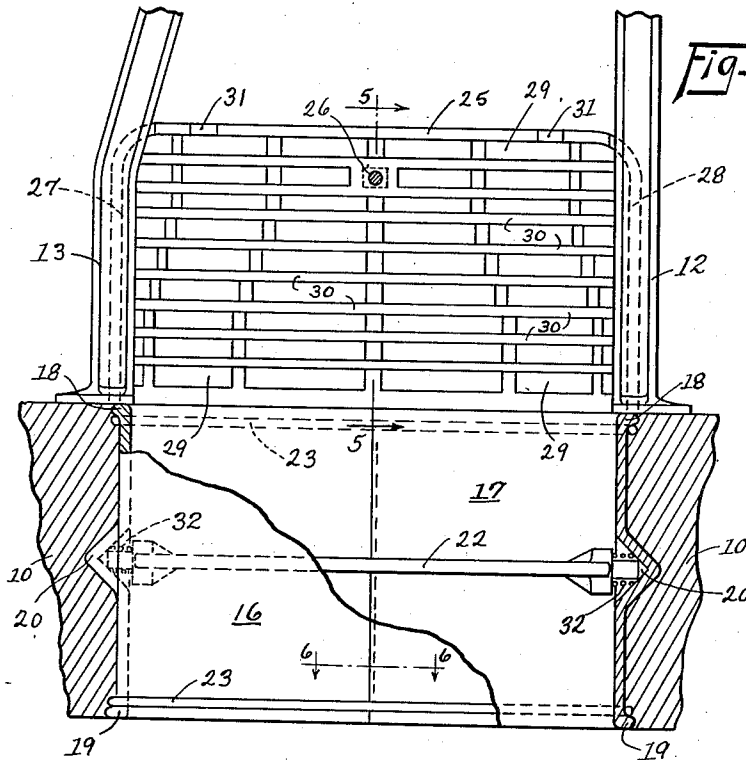


Fig. 4

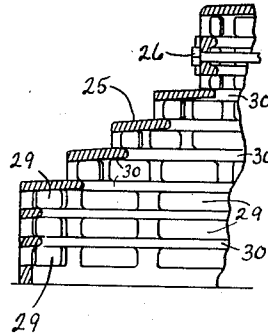


Fig. 5



Fig. 6

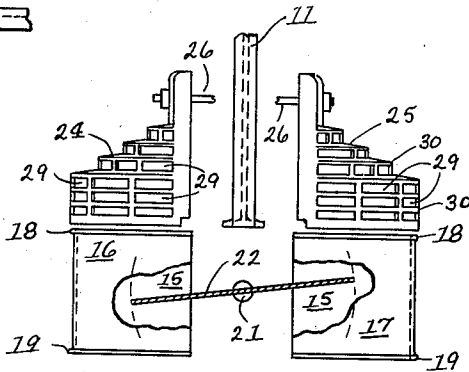


Fig. 7

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## UNITED STATES PATENT OFFICE

2,165,593

## VENTILATING SYSTEM

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Application January 27, 1936, Serial No. 60,957

11 Claims. (Cl. 98—40)

The instant invention relates to ventilating systems and more particularly to ventilating hoods for flues in such systems which are especially in use in theatres, civic auditoriums and other similar public and semi-public buildings.

The primary objects of the present invention are to provide a novel ventilating system for buildings of the character above indicated; to provide a hood for each of a number of flues each having a damper that may be readily and conveniently adjusted; to provide such a ventilating system whereby the hood for the flue is arranged both for convenient cleaning of the floor and is likewise arranged to provide considerably more room for the feet of occupants of the chair under which the hood is disposed and for the feet of occupants in the chair rearwardly thereof; to provide such a ventilating system having a plurality of flue hoods each having a series of stepped baffles so as to permit of greater diffusion of air; to provide a ventilating system having a plurality of flue hoods having a series of angularly declined baffles so as to diffuse the air downwardly toward the floor before it rises; and, to provide novel means for constructing ventilating systems of the character herein described.

An illustrative embodiment of the invention is shown in the accompanying drawings, wherein—

Figure 1 is a view partially in section showing the ventilating flues set in the floor of the hall or auditorium above a plenum chamber, the several hoods above their respective flues being retained beneath the fixed seats in the theatre or auditorium between the front and rear legs of the seat standard;

Figure 2 is a sectional view thereof on line 2—2 of Figure 1;

Figure 3 is a top plan view of a flue and its damper set within the floor of the building disposed above a plenum chamber;

Figure 4 is an enlarged sectional view on line 4—4 of Figure 1;

Figure 5 is a sectional view thereof on line 5—5 of Figure 4;

Figure 6 is a sectional view thereof on line 6—6 of Figure 4; and

Figure 7 is a view showing the several parts of the flue and its hood before they are secured together in their assembled relation with respect to the seat standard.

Ventilating systems for theatres, civic auditoriums and other public and semi-public halls and the like wherein fixed seats are provided are not broadly novel. The so-called "mushroom" type of ventilator is well known and is in considerable use. It is however so constructed that ready and convenient cleaning of the floor is difficult because of the overhanging peripheral edge of the ventilating hood. The ventilating hood

herein shown and described rests upon the floor and the difficulty of sweeping and cleaning the floor is thus minimized. Other novel structural features will likewise appear herein.

Referring to the drawings in which like parts of the ventilating construction herein shown are designated by the same numerals in the several views, the floor 10 of the hall or auditorium is provided with a series of rows of fixed seats or chairs (not shown) disposed and secured between conventional end standards 11 which are provided with front and rear legs 12 and 13 respectively, here shown as of cast metal I-beam construction.

Beneath certain of the end standards of the seats or chairs there is a flue 15 connecting the hall or auditorium A with the plenum chamber B below the floor 10. This flue is here shown as formed from a pair of substantially identically cast semi-oval shaped members 16, 17, each having upper and lower overhanging peripheral flanged edges 18, 19. Each of these flue members is provided with a trunnion receiving well 20 and the opposite ends of the trunnion 21 of the damper 22 are adapted to fit within the wells 20 when the flue members are fitted and secured together in assembled relation as by wires or bands 23. When the several flues have been thus assembled, the concrete floor may be poured flush with the overhanging upper and lower peripheral flanged edges of the assembled flue and as shown in Figures 1 and 4.

Ventilating hoods for each flue are here shown as formed from two identically cast sections 24, 25 secured together in assembled relation by means of a bolt 26. These hoods are disposed above each flue and flush with the floor upon which they rest and a pair of oppositely disposed recesses 27, 28 on either side of the assembled hood received the spaced legs 12, 13 of the seat standard 11 whereby the hood is maintained in position over its flue.

These hoods in their assembled relation have stepped side walls and a plurality of openings 29, here shown as interstitial in character. A vertical series of fins 30, here shown as integrally cast with the side walls of the hood, and extending inwardly-upwardly at an angle therefrom between the interstitial openings, as best shown in Figure 5, provide and form baffles for deflecting the ventilating air outwardly and downwardly to the floor through the openings of the side walls of the hood.

The hoods are each preferably provided with a pair of spaced apertures 31 through their domes permitting insertion of a rod therethrough for adjusting the damper 22 which is maintained in adjusted position by the expansion springs 32 encircling both ends of the trunnion 21 of the damper.

It will thus be seen that the ventilating hoods for flues of the character herein shown and described provide means whereby the damper may be readily and conveniently adjusted and that the hoods are so arranged that both convenient cleaning of the floor and space for the feet of occupants is enlarged. The stepped baffles likewise provide for greater diffusion of air and their angular declination diffuses the air downwardly toward the floor before it rises.

While but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

We claim:

1. In a ventilating system for theatres or the like, the combination of a chair standard secured to the theatre floor, a plenum chamber flue thereunder, and a hood over said flue comprising complementary sections disposed on opposite sides of said chair standard, said sections each having side walls provided with a plurality of openings therethrough, and a vertical series of baffles disposed substantially transversely of the side walls of the hood sections.

2. In a ventilating system for theatres or the like, the combination of a chair standard secured to the theatre floor, a plenum chamber flue thereunder, and a hood over said flue comprising complementary sections disposed on opposite sides of said chair standard, said sections each having side walls provided with a plurality of openings therethrough, and a vertical series of baffles disposed substantially transversely of the side walls of the hood sections and extending inwardly therefrom.

3. In a ventilating system for theatres or the like, the combination of a chair standard secured to the theatre floor, a plenum chamber flue thereunder, and a hood over said flue comprising complementary sections disposed on opposite sides of said chair standard, said sections each having side walls provided with a plurality of openings therethrough, and a vertical series of baffles disposed at an angle upwardly-inwardly from the side walls of the hood sections.

4. In a ventilating system for theatres or the like, the combination of a chair standard secured to the theatre floor, a plenum chamber flue thereunder, and a hood over said flue comprising complementary sections disposed on opposite sides of said chair standard, said sections each having stepped side walls and a plurality of openings through the vertical portions of its side walls, the horizontal portions of the side walls of the hood forming a vertical series of baffles disposed substantially transversely of the side walls of the hood sections.

5. A hood for a ventilating system of the class described having stepped side walls and a plurality of openings through the vertical portions of its side walls, the horizontal portions of the side walls of the hood forming a vertical series of baffles disposed substantially transversely of the vertical side walls of the hood, each horizontal portion extending inwardly beyond the vertical portion above it.

6. A hood for a ventilating system of the class described having stepped side walls and a plurality of openings through the vertical portions of its side walls, the horizontal portions of the side walls of the hood forming a series of baffles

disposed at an angle upwardly-inwardly from the vertical portions of the side walls of the hood.

7. In a ventilating system for theatres or the like, the combination of a chair standard secured to the theatre floor, a plenum chamber flue thereunder, and a hood over said flue comprising complementary sections disposed on opposite sides of said chair standard, said sections each having substantially vertically disposed side walls provided with a plurality of horizontally disposed interstitial openings therethrough, and a vertical series of fins integrally formed with the vertical side walls of the hood sections and disposed in parallelism between the several interstitial openings for forming baffles to deflect the ventilating air outwardly through the openings of the vertical side walls of the hood sections.

8. In a ventilating system for theatres or the like, the combination of a chair standard secured to the theatre floor, a plenum chamber flue thereunder, and a hood over said flue comprising complementary sections disposed on opposite sides of said chair standard, said sections each having substantially vertically disposed side walls provided with a plurality of horizontally disposed interstitial openings therethrough, and a vertical series of fins integrally formed with the vertical side walls of the hood sections and extending inwardly therefrom and disposed in parallelism between the several interstitial openings for forming baffles to deflect the ventilating air outwardly through the openings of the vertical side walls of the hood sections.

9. In a ventilating system for theatres or the like, the combination of a chair standard secured to the theatre floor, a plenum chamber flue thereunder, and a hood over said flue comprising complementary sections disposed on opposite sides of said chair standard, said sections each having substantially vertically disposed side walls provided with a plurality of horizontally disposed interstitial openings therethrough, and a vertical series of fins integrally formed with the vertical side walls of the hood sections and extending inwardly therefrom upwardly at an angle and disposed in parallelism between the several interstitial openings for forming baffles to deflect the ventilating air outwardly and downwardly through the openings of the vertical side walls of the hood sections.

10. A hood for a ventilating system of the class described having stepped side walls and a plurality of interstitial openings through the vertical portions of the side walls of the hood, the horizontally disposed portions of the side walls of the hood forming a vertical series of baffles extending inwardly from the vertical portions of the side walls of the hood and upwardly at an angle therefrom and disposed in parallelism between the several interstitial openings for deflecting the ventilating air outwardly and downwardly through said openings.

11. A hood for a ventilating system of the class described having stepped side walls and a plurality of openings through the vertical portions of its side walls, the horizontal portions of the side walls of the hood forming a series of baffles disposed at an angle upwardly-inwardly from the vertical portions of the side walls of the hood, each horizontal portion extending inwardly beyond the vertical portion above it.

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