May 20, 1924. 1,494,376

A. E. RENTSCHLER

VENTILATOR

Filed March 7, 1921 2 Sheets-Sheet 1

Fig. 1.

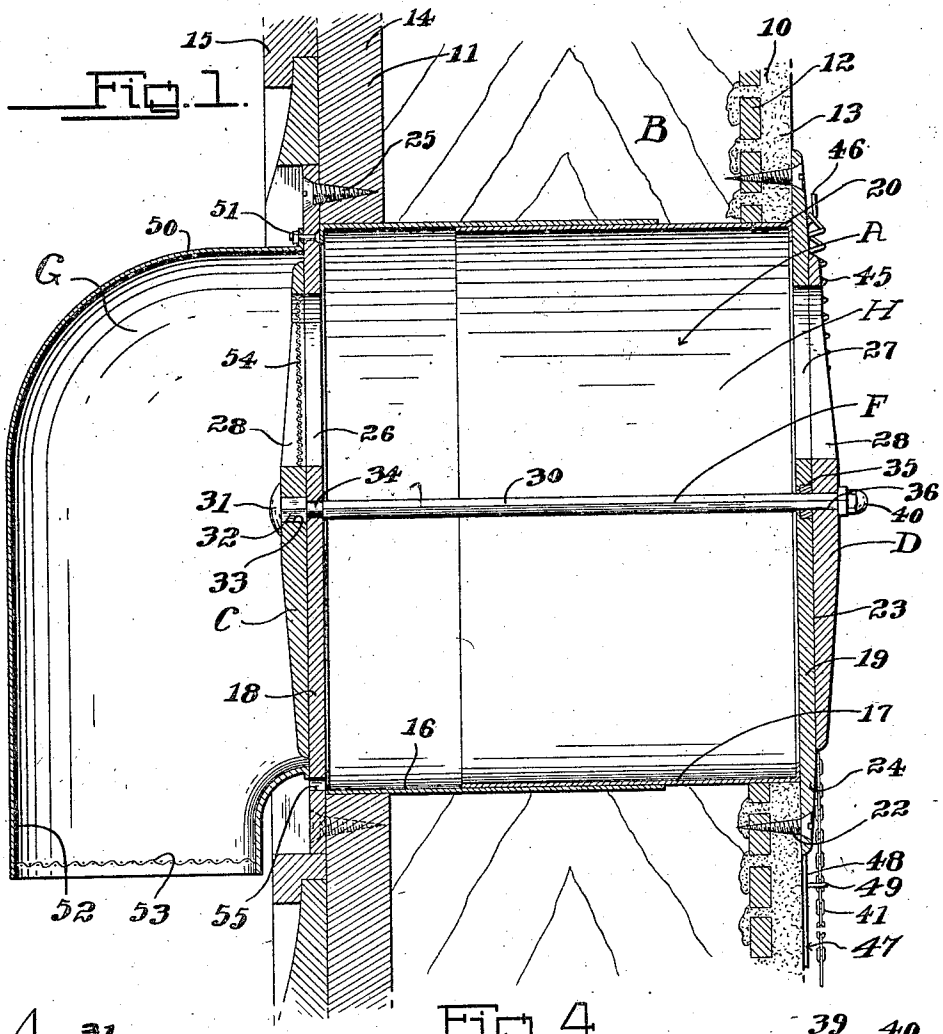
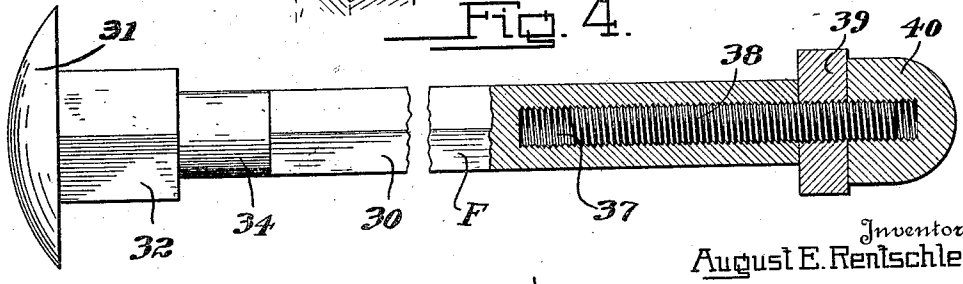


Fig. 4.



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Fig. 2.

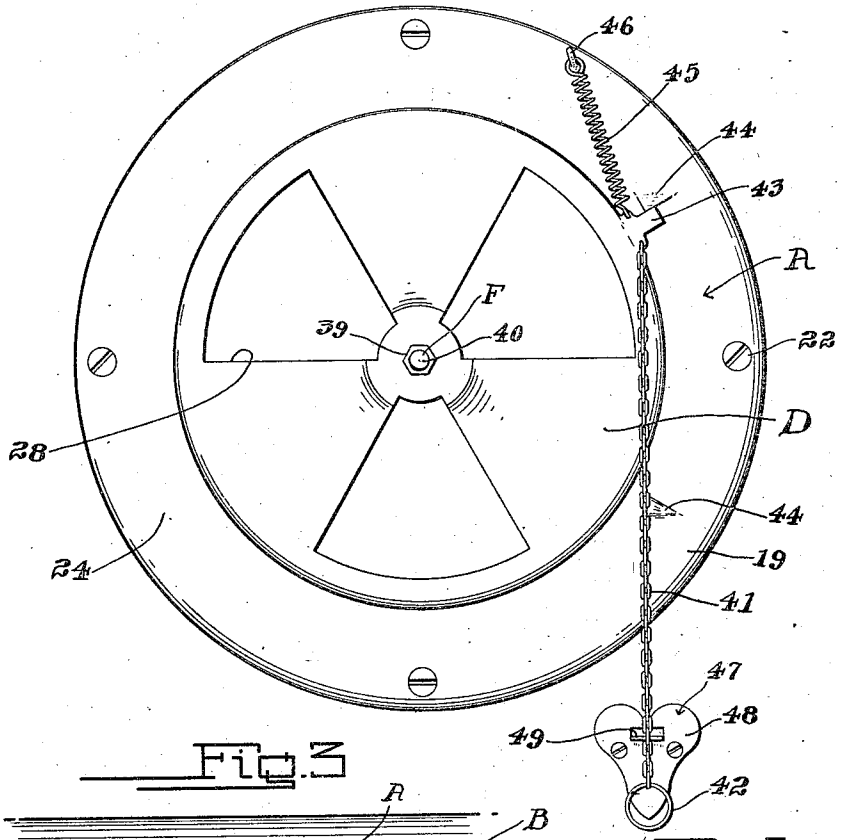


Fig. 3

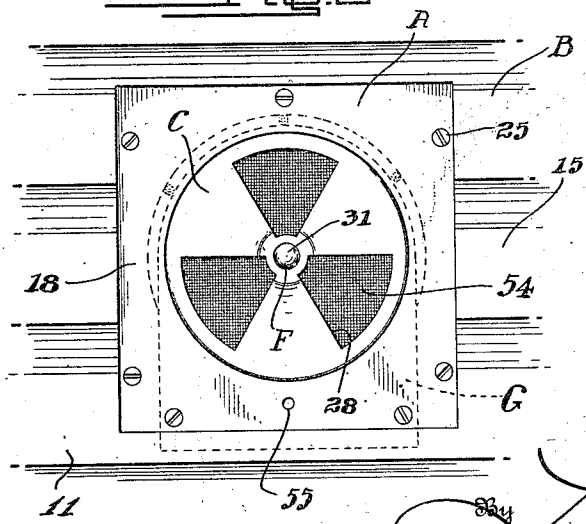
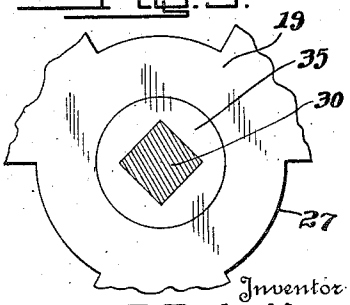


Fig. 5.



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UNITED STATES PATENT OFFICE.

AUGUST E. RENTSCHLER, OF HOWARD, SOUTH DAKOTA, ASSIGNOR TO CLIFFORD O. HANSON, OF HOWARD, SOUTH DAKOTA.

VENTILATOR.

Application filed March 7, 1921. Serial No. 450,240.

To all whom it may concern:

Be it known that I. AUGUST E. RENTSCHLER, a citizen of the United States, residing at Howard, in the county of Miner and State of South Dakota, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

This invention relates to ventilators for dwellings, office buildings, barns and the like, and the primary object of the invention is to provide an improved ventilator embodying an adjustable thimble or flue adapted to be arranged in the wall of the building for conveying fresh air in the building or for conveying foul air from the building, stationary apertured plates carried by the terminals of the flue or thimble for engaging the opposite sides of the wall, rotatable valve plates arranged exteriorly of the stationary plates, a novel means for operatively connecting the plates together, and a novel means for operating said valve plates.

Another object of the invention is to provide a novel guard for the ventilator, which is so constructed as to prevent the entrance of dust, dirt, rain or snow into the ventilator, and to prevent the direct entrance of strong air currents into the ventilator.

A further object of the invention is to provide a novel means for permitting the automatic draining of the ventilator, so as to preclude the seeping of water from the ventilator between the walls of the building.

A still further object of the invention is to provide an improved ventilator of the above described character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described, claimed and illustrated in the accompanying drawings, forming a part of this specification, in which:

Figure 1 is a vertical longitudinal section through the improved ventilator showing the same in position in a wall of a building.

Figure 2 is an inner end elevation of the improved ventilator.

Figure 3 is an end elevation of the improved ventilator looking in the opposite direction from Figure 2, the novel guard being shown removed in Figure 3.

Figure 4 is an enlarged view of the novel bolt utilized for operatively connecting the valve plates for synchronous movement, parts of the same being shown in section, and

Figure 5 is a fragmentary transverse section through the ventilator, illustrating the means of rotatably mounting one end of the novel bolt utilized for connecting the valve plates together in one of the stationary plates.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter A indicates the improved ventilator, and B, a wall of a building with which it is associated.

The wall B may be of the usual or any preferred construction and has merely been shown in the drawing, for the purpose of illustrating the use of the invention, and the means of connecting the ventilator with the wall. As shown the wall B includes the inner skin 10 and the outer skin 11. The inner skin 10 includes the usual lathes 12, which are connected in the ordinary manner to the supporting beam, and the plaster 13. The outer skin includes the sheeting 14 and the weather boarding 15.

The improved ventilator A includes the flue H and the end plate carried thereby, the valve plates C and D, the means F for operatively connecting the valve plates together for synchronous movement, and the guard hood or cap G.

The flue consists of a pair of telescopic collars or thimbles 16 and 17, and the outer ends of these collars or thimbles 16 and 17 have secured thereto in any preferred manner the end plates 18 and 19. The collars or thimbles 16 and 17 are adapted to snugly fit within an aperture 20 formed within the wall B and the end plates 18 and 19 are adapted to engage the outer faces of the wall and overlie said opening. The inner plate 19 is of a disc shape and can be of an ornamental character, if so desired, and is secured in position by any preferred type of screws 22 or bolts. As shown the outer surface of the end plate 19 is provided with an enlarged central flat surface 23 and a down-

wardly and outwardly inclined annular portion 24.

The outer plate 18, as shown, is of rectangular configuration, and can be countersunk in the weather boarding 15, and can be held in position by any preferred type of screws 25 or bolts or the like. If desired this plate 18 can also be of an ornamental form. The plates 18 and 19 are provided with radially extending triangular shaped openings 26 and 27 through which the fresh air is adapted to enter the room. The openings 26 and 27 in the plates 18 and 19 may or may not be arranged in direct alignment with each other, and it can be seen that when the openings 26 and 27 are arranged out of alignment, the possibility of a direct draft through the ventilator will be prevented.

The valve plates C and D are provided for controlling the passage of the air through the ventilator, and these plates are of substantially the same construction, and are each provided with radially extending triangular shaped openings 28 which are adapted to be brought into registration with the openings 26 and 27 in the inner and outer plates 18 and 19 when it is desired to permit a flow of air through the ventilator. These openings 28 are of substantially the same size as the openings 26 and 27 in the plates 18 and 19 and as the spaces between the openings 26 and 27, and it can be seen that when the openings 28 are arranged between the openings 26 and 27 in the plates, the flow of air through the ventilator will be prevented.

The means F for connecting the valve plates C and D together is of a novel construction, and is so constructed as to permit the synchronous movement of the valve plates C and D. As shown the means F comprises a longitudinally extending bolt or shaft 30, which is polygonal shaped in cross section, for a purpose which will be hereinafter more fully described. The outer end of the bolt or shaft 30 is provided with a head 31 and an enlarged polygonal shaped shank portion 32. The head 31 is adapted to engage the outer surface of the valve plate C and the valve plate C is provided at its axial center with a polygonal shaped bore 33 for receiving the enlarged polygonal shaped portion 32 of the shaft or bolt. The shaft or bolt 30 directly inward of the enlarged polygonal portion 32 is provided with a cylindrical bearing portion 34 which is mounted in the outer plate 18.

This permits the rotation of the bolt or shaft 30 within the plate 18. The opposite or inner end of the bolt or shaft 30 has fitted thereon a bearing washer 35, which is rotatably fitted within the inner plate 19, so as to permit the free rotation of the bolt or shaft 30 within the plate 18. The extreme outer end of the bolt or shaft 30 is fitted within a polygonal shaped bore 36 of the plate D, so as to permit the rotation of the plate D therewith. The inner end of the bolt or shaft 30 is provided with an inwardly extending threaded way or bore 37, which is adapted to receive a threaded pin 38, which is adjustable within the bore. In the fitting of the shaft or bolt 30 to the ventilator, the same is placed through the ventilator, and the inner end thereof is cut off flush with the outer surface of the plate D and the pin 38 is threaded therein so as to protrude slightly beyond the inner end thereof. A lock nut 39 is threaded on the pin 38 into tight engagement with the outer surface of the shaft or bolt 30, and a cap nut 40 is then utilized as a further means for preventing the rotation of the nut 39. This connection permits the synchronous operation of the valve plates C and D and the inner plate D is provided with a pull chain 41, the lower end of which is provided with a finger loop 42. The upper end of the chain is connected to a radially extending lug 43 formed on the plate D, and this lug 43 is adapted to be confined between a pair of outstruck ears 44 carried by the inner plate 19. This limits the rotary movement of the valve plates C and D in relation to the outer and inner plates 18 and 19 and insures the correct aligning of the openings formed in these plates during the operation of the valve plates. The valve plates C and D are normally held in such a position that the openings 28 therein will be held out of alignment with the openings 26 and 27 formed in the plates 18 and 19. The means for holding the plates C and D in this position consists of a contractile coil spring 45, which has its inner end secured to the lug 43 and its outer end to an eye 46 secured to the outer surface of the inner plate 19. It can be seen that when it is desired to operate the ventilator it is merely necessary to pull down the chain 41. Upon release of the chain 41, the plates C and D will be automatically returned to their normal positions by means of the contractile coil spring 45. In order to hold the plates C and D in their open positions against the tension of the coil spring 45, a latch 47 is provided. This latch 47 includes a base plate 48 which can be secured in any preferred manner to the inner surface of the wall B and this base plate is provided with a pair of outstruck horizontally disposed spaced ears 49. These ears 49 are adapted to receive therebetween one of the links of the chain 41.

The guard, hood or cap G which is provided for preventing the direct entrance of air drafts into the ventilator, and for preventing the entrance of dust, dirt, snow, rain or the like therein, comprises an annular body 50 which is bolted or otherwise secured as at 51 to the outer plate 18. The

body 50 is provided with a depending lateral extension 52 which extends below the plate 18 and the lateral extension 52 forms the entrance for the air into the ventilator. A suitable guard screen 53 is placed across the mouth of the lateral extension 52, so as to prevent the entrance of birds, insects or the like into the ventilator. To further guard against the entrance of insects or the like into the ventilator a relatively fine mesh screen 54 is arranged in the openings 28 of the plate C. If so desired, this mesh 54 may be formed so as to also strain the air, so as to prevent the entrance of dust into the building with the air.

From the foregoing description, it can be seen that an exceptionally simple ventilator has been provided, which will effectively permit the ventilation of a building in all kinds of weather, and will eliminate the necessity of providing the usual ventilators in window sashes and the like.

In order to prevent the collecting of water within the ventilator and the seeping thereof into the walls, a drain opening 55 is provided in the plate 18 adjacent to the lower edge thereof. This opening 55 leads to the exterior of the building and permits the free flow of water from the ventilator to the exterior of the building.

It can be seen that the telescopic sections or thimbles 16 and 17 permit the ventilators to be readily connected to walls of various thicknesses and the overlapping ends of the sections or thimbles absolutely preclude the possibility of the seeping of water and the like between the same.

Changes in details may be made without departing from the spirit or scope of this invention; but,

I claim:

1. A ventilator comprising an adjustable flue, end plates carried by the flue arranged to engage the opposite faces of a wall and having air openings therein, a longitudinally extending bolt rotatably carried by the plates, valve plates mounted on said bolts for movement therewith, a radially extending arm formed on the periphery of one of the valve plates, spring means engaging the arm and their adjacent face plate for normally maintaining the valve plates in one position, a struck out lug formed in the mentioned base plate and disposed in the path of the arm for limiting the movement of the valve plates, a pull chain carried by the arm for permitting the operation of the valve plates against the tension of said spring means, and a rigid bracket member arranged below the face plates for receiving any one of the chain links for holding the valve plates in their adjusted position against the tension of said spring means.

2. A ventilator for buildings comprising a telescopic flue, face plates carried by the terminals of the flue having air escape openings therein, valve plates for controlling the flow of air through the openings, means for operating said valve plates, a hood carried by one of the face plates for surrounding one of the valve plates, screens carried by the guard hood and by one of the valve plates, the outermost face plate having a drain opening therein arranged in alignment with the lower portion of the flue.

AUGUST E. RENTSCHLER.