Nov. 3, 1953 W. G. MOORE 2,657,570

WALL VENTILATOR

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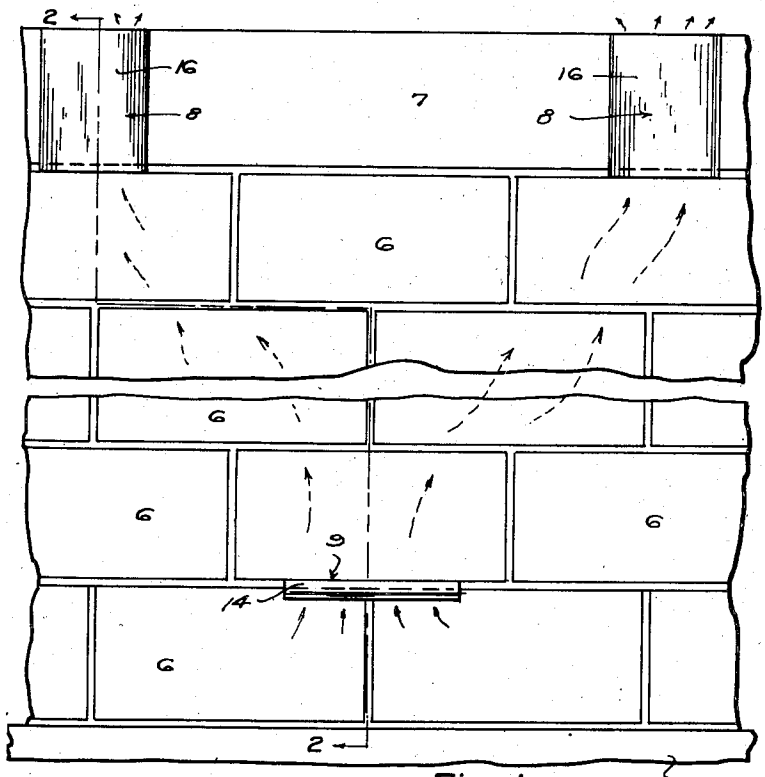


Fig. 1.

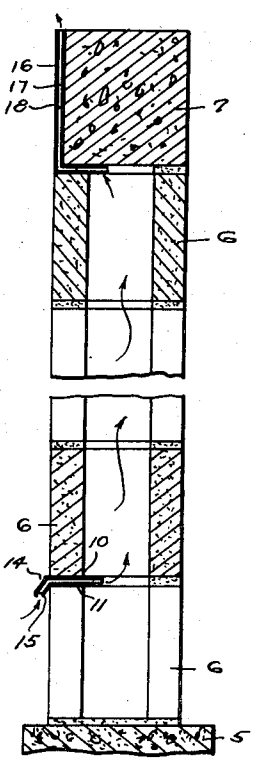


Fig. 2.

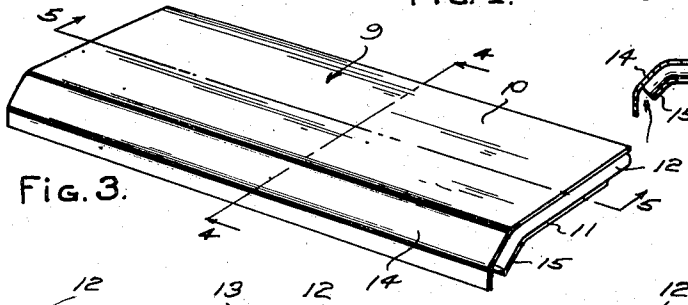


Fig. 3.

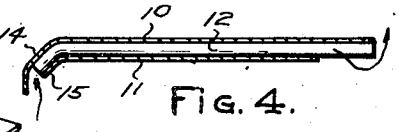


Fig. 4.

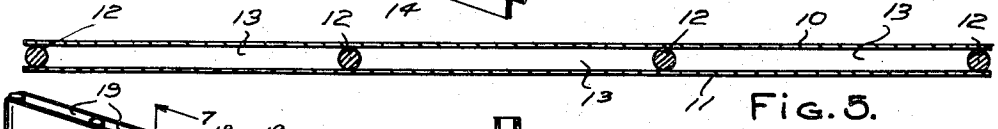


Fig. 5.

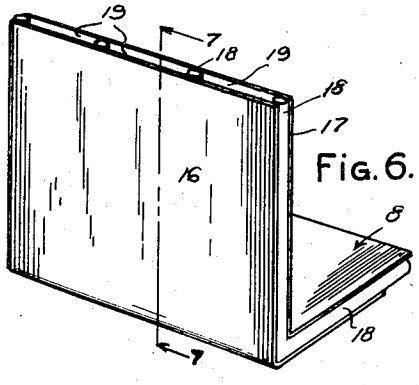


Fig. 6.

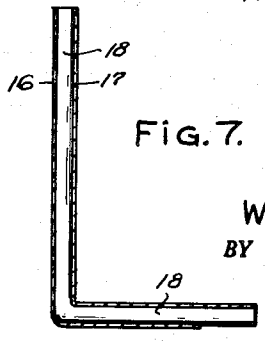


Fig. 7.

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WALL VENTILATOR

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1 Claim. (Cl. 72—127)

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This invention relates to improvements in wall ventilators and particularly to walls of conventional concrete blocks or other walls provided with an air space.

It is an object of the present invention to provide ventilators constructed in a manner and of a size as to easily and conveniently be installed in the walls during construction, conforms in thickness to the recognized mortar joints, thus utilizing a space that will not interfere with the laying of the blocks in a level course and may be placed at predetermined points in the wall to insure of proper ventilation thereof.

A further object of the invention resides in wall ventilators having the above named characteristics, are adapted to be placed at strategic points along the lower portion of the wall and further may be placed at strategic points along the upper portion of the walls, thus setting up a flow of air through the normal openings of the concrete blocks to insure of a dry interior surface to the wall that permits plastering directly to the wall without the necessity of furring and lathing.

Another important object of the invention resides in a wall ventilator adapted to lie within the usual mortar joint and comprises a plurality of air passages formed by spaced sheets of metal held in spaced relation in a manner to prevent crushing by the weight of the wall blocks, is constructed to prevent clogging at its inner discharge end by falling mortar during the construction of the wall and at its outer or inlet end is provided with a weather bend to prevent the entry of water, while at the same time permitting a free passage of air therethrough.

Another object of the invention resides in an upper air discharge ventilator to be used in conjunction with the lower inlet ventilator. It is constructed similar to the lower ventilator with respect to its reinforced air passages and readily adapts itself to positioning upon the upper course of concrete blocks in a manner to be cast into the conventional poured concrete belt course for establishing an air passage from the openings of the wall to a point above the belt course.

A further object of the invention resides in the extreme simplicity of the invention and its adaptability to wall constructions, is cheap to manufacture, is strong, durable, results in a considerable saving in the cost of a building, since it permits the application of plaster directly to the wall without the necessity of furring and lathing, insures of a dry interior wall, is installed with a minimum of effort and is highly efficient in use.

Other advantages of the invention will be readily apparent during the course of the following description, reference being had to the accompanying drawings, wherein have been illustrated preferred forms thereof and wherein

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like characters of reference denote like parts throughout.

In the drawings,

Figure 1 is a side elevation of a concrete block wall showing the invention in use,

Figure 2 is a vertical section taken on line 2—2 of Figure 1,

Figure 3 is a perspective view of a lower ventilator,

Figure 4 is a transverse section taken on line 4—4 of Figure 3,

Figure 5 is a longitudinal section taken on line 5—5 of Figure 3,

Figure 6 is a perspective view of an upper ventilator and,

Figure 7 is a section taken on line 7—7 of Figure 6.

Referring specifically to the drawings and particularly to Figures 1 to 5 inclusive, the numeral 5 designates a conventional concrete wall footing upon which is laid in courses, the conventional concrete blocks 6. The upper course of blocks 6 is usually capped by a poured concrete belt course 7. This forms the well known concrete block wall. The blocks 6 illustrated for purposes of this invention, are provided with the usual core openings.

Upper and lower ventilators, indicated by the numerals 8 and 9 are adapted to be positioned in the wall, as shown. The lower ventilator 9 is formed of a pair of flat metallic sheets 10 and 11, held in spaced relation by reinforcing rods 12. The sheets 10 and 11 are elongated and the rods 12 are spaced at predetermined points and extend transversely of the sheets to form air passages 13. The spacing of the sheets 10 and 11 is such as to provide a ventilator having a thickness corresponding to the conventional mortar joint. At the outer ends, the sheets 10 and 11 are bent downwardly at 14 and 15 at an angle of approximately 45 degrees, while the terminal ends of the rods 12 are likewise bent to a similar angle and terminate along the terminal edge of the sheet 11. The sheet 10 is further bent downwardly at 16 to form a vertical flange that extends below the terminal edge of the sheet 11 to form a positive water shield for the air passages 13. At the inner edges of the ventilator, the sheet 10 is extended beyond the sheet 11, as clearly shown in Figure 4, while the inner terminal ends of the rods 12 extend to the terminal edge of the sheet 10. The extended edge of the sheet 10 provides a protective overhang against mortar or the like clogging the air passages 13 during the construction of the wall. The ventilator 9 obviously can be made in various lengths with the air passages being governed by the spacing of the rods 12 at predetermined points to insure of sufficient load bearing strength that will maintain the ventilator against crushing by the weight of the superimposed wall structure.

In the use of this form of the invention, it has been found desirable to first lay a course of blocks 6 upon the footing 5. At predetermined points around the wall, the ventilators 9 are placed upon the blocks, with their outer ends 14 and 15 extending beyond the wall a distance to permit of an application of stucco to the wall without danger of closing the air passages 13. The ventilator 9 is of such width that its inner edges extend into the line of the block openings, as clearly shown in Figure 2. The reason for placing the ventilators 9 upon the first course of blocks, is due to the fact that during the construction of the wall, mortar is continually dropped through the openings of the blocks to a considerable depth in the openings of the blocks of the lower course. Thus, the ventilators are maintained above the level of the waste mortar. The overlapping end of the sheet 10 insures that no mortar will be able to enter the air passages. Air will flow freely through the air passages 13 to the openings of the blocks and will circulate upwardly through the wall in a tortuous manner. The air passages are adequately protected against the entry of water and any water flowing down the side of the wall, will drip from the end 14, yet will permit the free passage of air through the ventilator.

The upper ventilator 8 is constructed in a manner similar to the ventilator 9, in that it is formed of two metallic sheets 16 and 17, bent to substantially an L-shape and held in spaced relation by reinforcing rods 18, bent in a similar manner. The rods of the ventilators 8 and 9 are welded or otherwise secured to the sheets 10 and 11 and 16 and 17 to form rigid structures. The sheets 16 and 17 of the ventilator 8 have their upper ends flush with each other and the height of the vertical leg of the L is adapted to correspond to the height of the poured beam 7 and in use, the upper end will preferably terminate flush with the top of the beam. The lower leg of the L is horizontally arranged and is adapted to rest upon the upper course of concrete blocks in the manner illustrated in Figure 2, with the terminal ends overlying the openings of the blocks. The lower terminal end of the sheet 17 is extended beyond the sheet 16, as shown and affords a protective overhang against mortar entering the air passages 19. The ventilators 8 are arranged around the wall in staggered relation to the ventilators 9 to insure that air circulation will take place throughout the inner area of the wall. It is contemplated that this form of upper ventilator will be employed for use in connection with the conventional poured concrete beam and when so used, it is placed in position upon the upper course of concrete blocks with the vertical leg of the L arranged flush with the outer surface of the block wall. Conventional concrete forms are then placed in position for pouring the beam and the ventilator is thus molded into the beam, thus affording a continuous air passage from the wall interior to a point of discharge above the beam. Normally, the beam would close off the air passage of the blocks. While the form of upper ventilator has been found highly advantageous, it will be apparent, that the form of ventilator first described may be employed with equal success along the upper course of blocks in the same manner as they are employed for the air inlet at the lower portion of the wall. The spacer rods, while having been illustrated as being round, may also be formed square or the sheets themselves may be bent to form reinforcing ribs transversely.

However, it has been found, that the use of solid rods provides a more rigid structure against any tendency to crush the ventilators under the extreme weight of the blocks.

It will be apparent from the foregoing, that a very simple and highly effective means has been provided for the ventilation of masonry walls, such as concrete block having an interior air space. The structure of the ventilator permits it to be installed in a space normally the thickness of a mortar joint, requires no cutting of the blocks nor any special tools for installation. The several spacer rods maintain the sheets in their proper spaced relation for insuring of an uninterrupted passage of air through the several air channels. The inner edges of the ventilator extend over the conventional block openings and the extended edges of the upper sheet prevent mortar from dropping into and clogging the air channels. The ventilators may be formed in varying lengths and may be readily cut to desired length. The device is simple and inexpensive to manufacture and represents a very considerable saving in building cost over the present method of first furring and lathing before plastering on what heretofore has been generally recognized as damp walls. The ventilators maintain a constant flow of air upward through the blocks at all times, insuring of dry interior walls that permit plastering directly on the blocks. The water shield further prevents the entry of water through the ventilator even during hard driving rains.

It is to be understood, that while preferred forms of the invention have been illustrated and described, obvious changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

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

A ventilating device for concrete block walls having mortar joints and air passages extending through the blocks, a ventilator formed of a pair of upper and lower metallic sheets co-extensive in length and held in spaced relation, a plurality of rods extending transversely between the sheets and equidistantly spaced in parallelism for providing a plurality of air channels opening at either edge of the ventilator, the rods and sheets welded into a rigid structure, the forward edges of the sheets bent downwardly at an angle to form a water shield for the air channels, the upper sheet at the rear edge of the ventilator extended beyond the lower sheet throughout the length of the ventilator to provide a mortar shield for the air channels, the said rods extending substantially the full width of the upper extended sheet to the rear edge thereof, said ventilator being of a thickness adapted to correspond to the mortar joint of a wall and adapted to be positioned in the mortar joint with its forward edge extended beyond the forward face of the wall and its rear edge partially overlying and communicating with the air passages of the blocks.

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