

Feb. 21, 1928.

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P. F. KIMBALL

WINDOW VENTILATOR

Filed Nov. 7, 1927

2 Sheets-Sheet 1

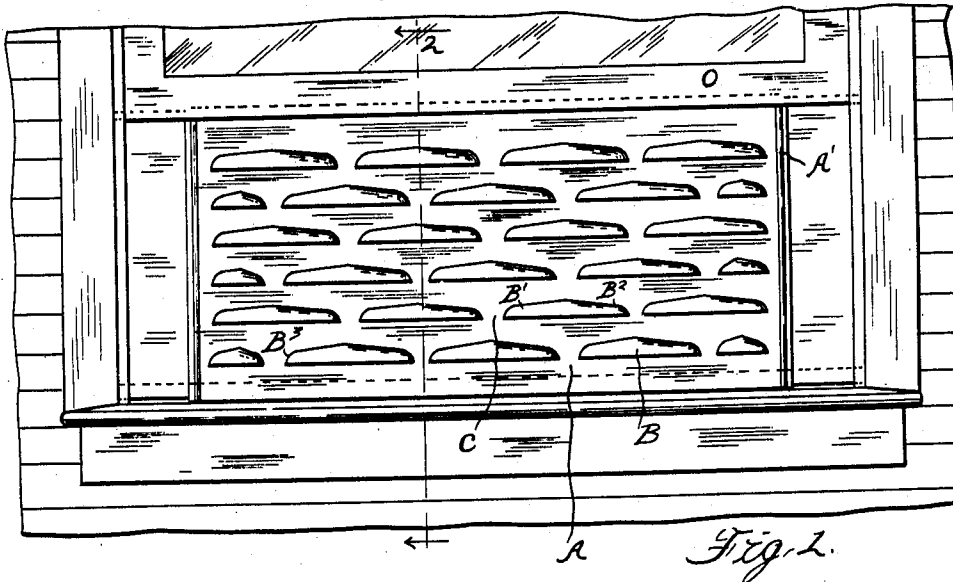


Fig. 1.

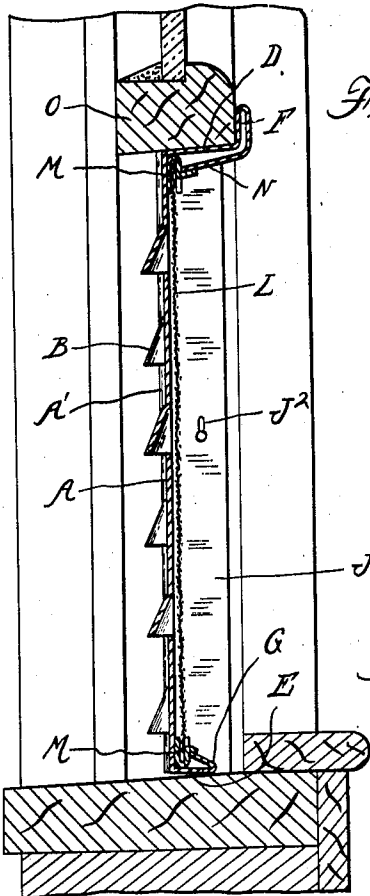


Fig. 2.

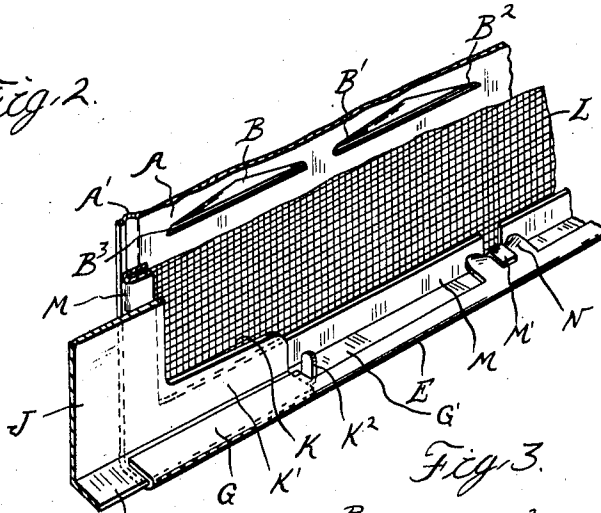


Fig. 3.

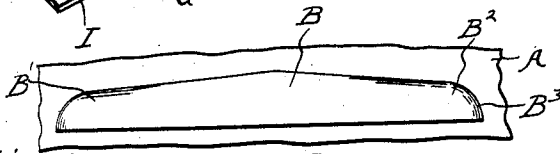


Fig. 6.

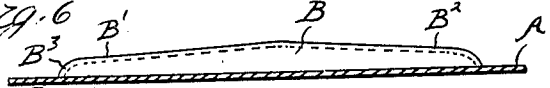


Fig. 7.

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2 Sheets-Sheet 2

Fig. 4.

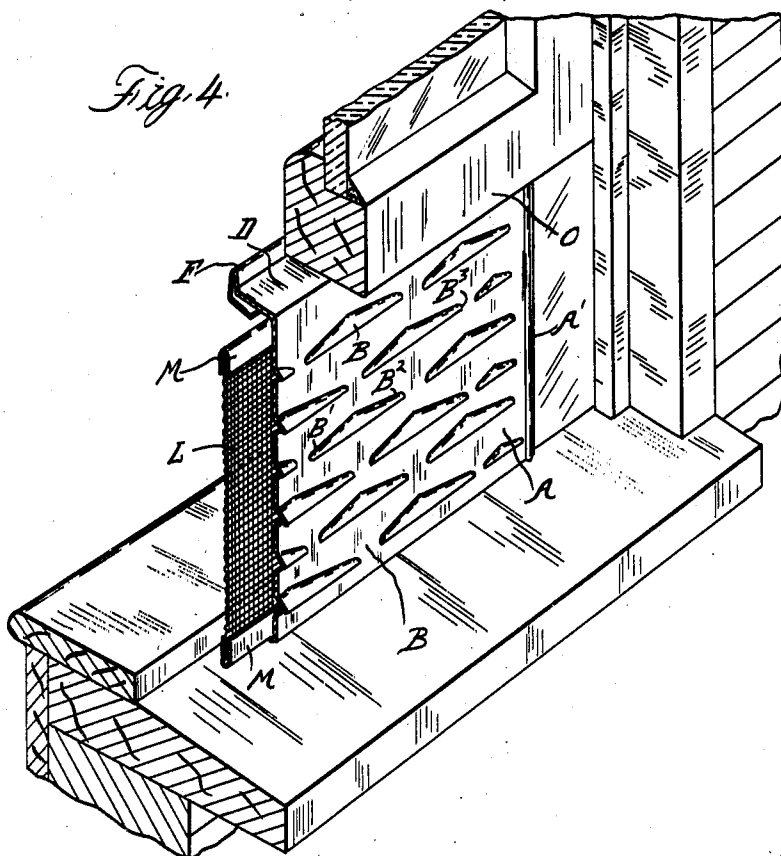
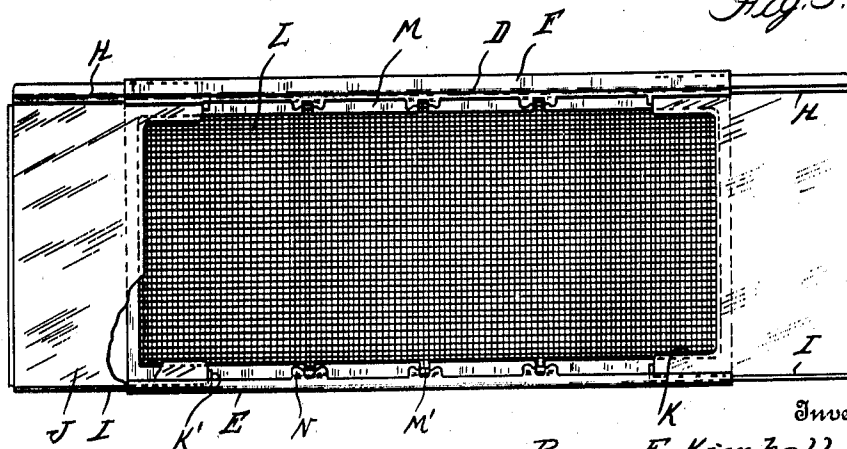


Fig. 5.



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UNITED STATES PATENT OFFICE.

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WINDOW VENTILATOR.

Application filed November 7, 1927. Serial No. 231,733.

The invention relates to window ventilators of the type particularly adapted for use in bedrooms and in other places to provide for admission of air while excluding rain or snow. The invention consists in various features of construction as hereinafter set forth.

In the drawings;

Figure 1 is an elevation of the ventilator viewed from outside the window.

Figure 2 is a vertical cross section thereof on line 2—2 of Figure 1.

Figure 3 is a sectional perspective view of a portion of the structure.

Figure 4 is a similar view showing the ventilator in position in the window opening.

Figure 5 is an elevation viewed from the inside.

Figure 6 is a front elevation and

Figure 7 is a plan showing the specific construction of one of the louvers.

It is the primary object of the invention to obtain a construction of ventilator which may be readily inserted in and fitted to any window opening which provides ample open space for the entrance of air but which will exclude rain. It is a further object to produce a construction which has an ornamental appearance which makes a tight fit with the window sash and casing, screens the openings against entrance of insects and is simple and inexpensive to manufacture.

With these and other more specific objects in view the invention consists in the construction as hereinafter set forth.

In detail A is a sheet metal plate which is stamped to form a series of louvers B. These louvers are preferably arranged in horizontal rows extending across the width of the plate and staggered in alternate rows. Each louver is formed by slitting the metal horizontally and pressing outward the portion above the slit to form an inclined shield. The metal bulges out farthest at the center which causes the inner section between the inclined and vertical surfaces to incline downwardly from the center to the opposite ends as indicated at B', B². At their ends the inclines B', B² curve downward as indicated at B³ to the end of the slits thus making a funnel shaped space between each louver in one row directly above the central portions of the louvers in the next lower row.

The construction just described not only

produces a pleasing appearance but also has the effect of causing the water draining over the plate to travel laterally down the incline B', B² and through the throats C. From here the water will travel again laterally along the incline of the next lower series of louvers to the throats between the adjacent louvers and so on until the bottom of the sheet is reached. This is due primarily to the force of adhesion between the water and the surface of the plate which, when the quantity of water is limited, prevents dropping off from the lower edge of the louver thus keeping it out of the path of the air.

The plate A is provided at its upper and lower edges with inwardly extending flanges D and E. The upper flange D terminates in an upwardly extending open return bent flange F while the lower flange E has the open return bend G. These return bent portions are adapted to receive flanges H and I of extension pieces J which may be slid outward to extend the width of the plate so as to fit the window opening. The extensions J are cut away at K between the flanges H and I so as not to interfere with the louver openings while at the same time leaving flanges K' providing a proper telescopic engagement. The inner ends of these flanges K' are provided with lugs K² which may be bent to form stops and the return bent flange G is cut away at G' to permit a limited movement of said stops. Thus, while the extensions J are permitted a full adjustment for fitting to the window they cannot be accidentally detached from the louvered plate.

L is a screen preferably formed of non-corrodible material such as bronze which lies adjacent to the inner face of the plate A. This screen is provided with a border frame M preferably formed of return bent strips of sheet metal and this frame is clamped to the louvered plate by tongues N projecting in an inwardly inclined direction from the return bent flanges F and G at a plurality of spaced points. The tongues N are slightly concave and the screen frame is locked thereto by tongues M' struck outward from the border frame M. Thus the screen is firmly secured to the louver plate and without the necessity of either soldering or riveting. To prevent any openings between the louvered plates and the screen frame at the ends thereof, said plate is preferably provided with reinforcing beads A' at the ends thereof as

shown in Figures 1, 4 and 3. This holds the plate A in parallelism with the frame M and effectually prevents any gap.

To keep a weather tight joint between the ventilator and window sash the flange D is inclined to correspond to the inclination of the lower sash rail O while the return bent flange F wedges against the front of the sash rail and holds both the sash and the ventilator from rattling.

The construction is one which can be manufactured with great accuracy as it is largely the work of dies and at the same time the expense of manufacturing is lessened by dispensing with such operations as soldering or riveting. In the assembly of the parts the tongues M' and N are originally in position which permits the screen L with its border frame M to be slit endwise into engagement with the inner face of the louvered plate A. When in position the tongues N are pressed to slightly straighten the inclination thereof thereby clamping the border frame tightly to the louver plate and at the same time the tongues M' are bent outward to engage the concave faces of the tongues N. The result is to effectually lock the screen to the louvered plate and to hold it in tight engagement preventing rattling.

In use, the louvers will effectually guard the ventilator openings from the entrance of rain. In all but very severe storms the greater part of the water will drain around the louvers instead of dropping therefrom across the air passages, while the screen will intercept any water which may blow through the openings. As the openings are substantially in a horizontal plane the air entering will be directed upward in an inclined position instead of blowing horizontally into the room. Also the opposite inclination of the portions of the louver on opposite sides of the center thereof tends to deflect the air into the openings of the next higher row of louvers thereby increasing the quantity of air entering the room.

What I claim as my invention is:

1. A window ventilator comprising a sheet metal plate slitted and struck out to form a plurality of horizontal series of elongated spaced louvers, the louvers of one series being staggered in relation to those in the next adjacent series to overlap the same and the entire struck out portions being inclined to the plane of the plate and intersecting therewith in lines which incline from the center of each louver toward opposite ends whereby water is directed from center to opposite ends of each louver.

2. A window ventilator comprising a louvered plate, flanged at its upper and lower edges, a screen lying adjacent to the inner face of said plate and tongues return bent

from said flanges in an inclined direction engaging said screen to clamp the same to said plate.

3. A window ventilator comprising a louvered plate provided with open return bent flanges at its upper and lower edges, extension plates telescopically engaging said return bent flanges, a screen lying adjacent to the inner face of said louvered plate and tongues projecting from said return bent flanges for clamping and securing said screen to said louvered plate.

4. A window ventilator comprising a louvered plate provided with return bent flanges at its upper and lower edges, extension plates telescopically engaging said return bent flanges, a screen lying adjacent to the inner face of said louvered plate, a border frame for said screen, inter-engaging tongues on said border frame and return bent flanges for clamping the screen in engagement with said louvered plate.

5. A window ventilator comprising a louvered plate provided with open return bent flanges at their upper and lower edges, end extensions telescopically engaging said open return bent flanges, a screen lying adjacent to the inner face of said louvered plate, a border frame for said screen formed of return bent strips, tongues projecting in an inclined direction from said return bent flanges for clamping said screen frame to said louvered plate and tongues struck out from said border frame for engaging with said first mentioned tongues to lock the screen from disengagement.

6. A window ventilator comprising a louvered plate, open return bent flanges at the upper and lower edges of said plate, end extensions telescopically engaging said open return bent flanges, a screen lying adjacent to the inner face of said louvered plate, a border frame for said screen holding the same in a plane, projections from said flanges for clamping said border frame to said louvered plate, at the top and bottom edges thereof, and a reinforcing bead across the end of said louvered plate for holding the same in contact with the end of said screen frame.

7. A window ventilator comprising a louvered plate having open return bent flanges at its upper and lower edges, an end extension for said frame telescopically engaging said return bent flanges and a bent lug on said extension engaging the cut away portion of said return bent flange permitting adjustment of said extension and constituting a stop for preventing disengagement thereof.

In testimony whereof I affix my signature.

PERRY F. KIMBALL.