V. M. ALLEN.

COMBINED VENTILATOR AND SHADE.

APPLICATION FILED SEPT. 11, 1917.

1,346,800. Patented July 13, 1920.

3 SHEETS—SHEET 1.

Fig. 1.

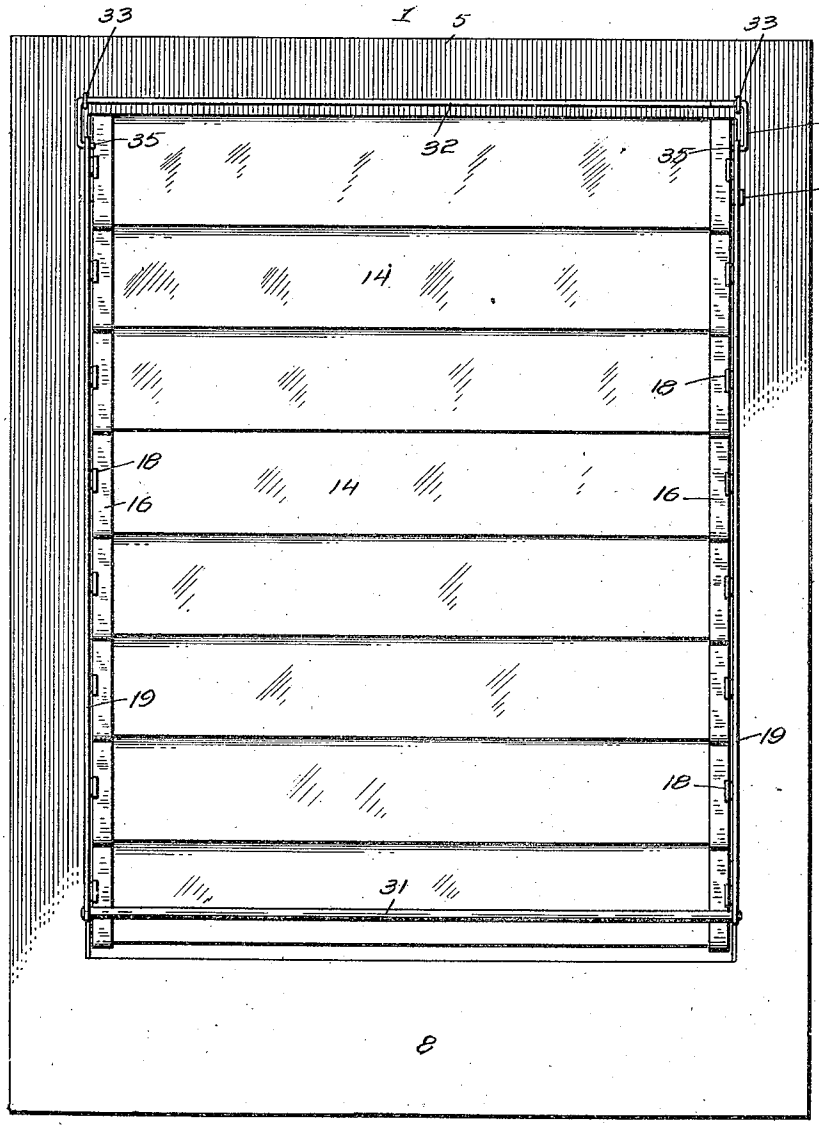
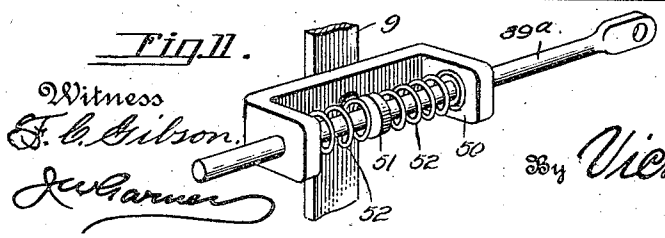


Fig. II.



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3 SHEETS—SHEET 2.

Fig 2.

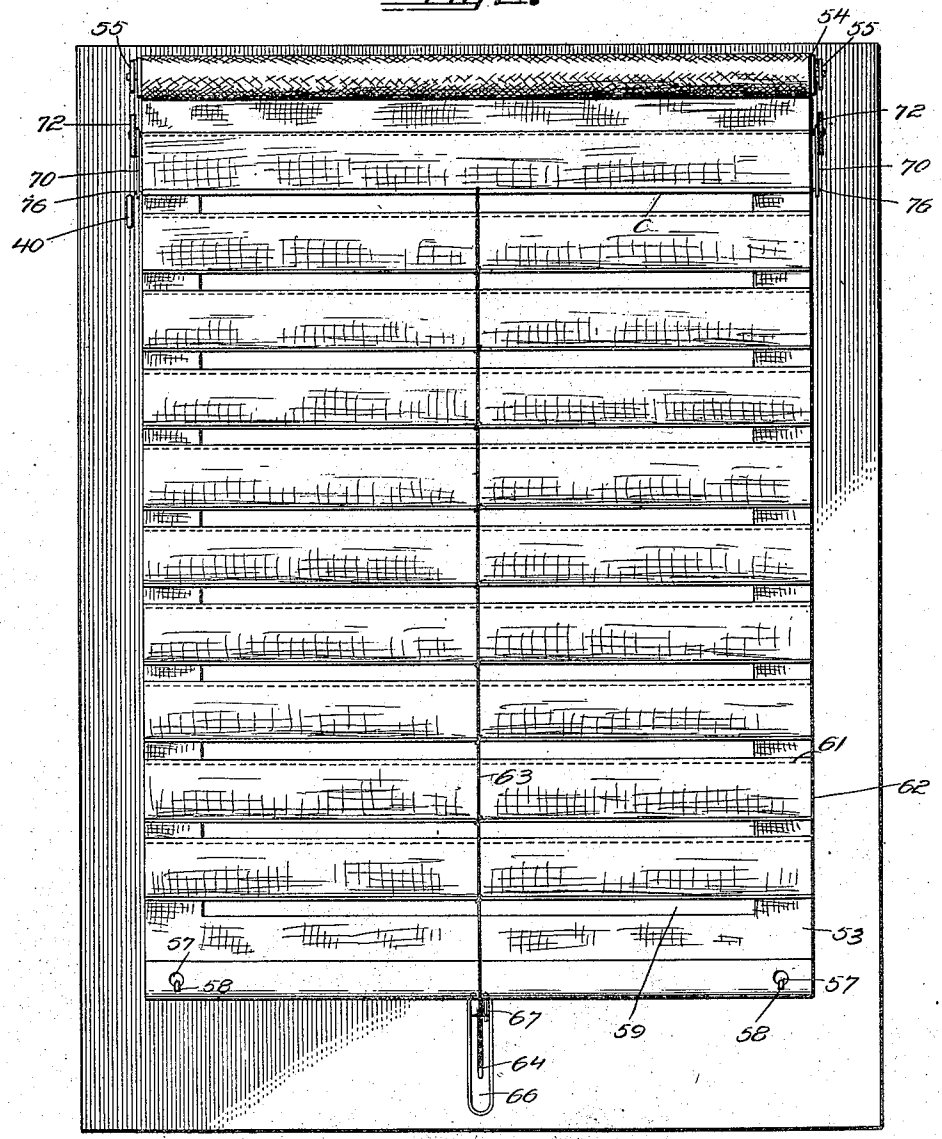
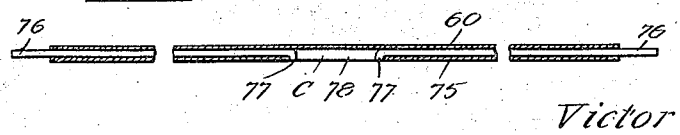


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

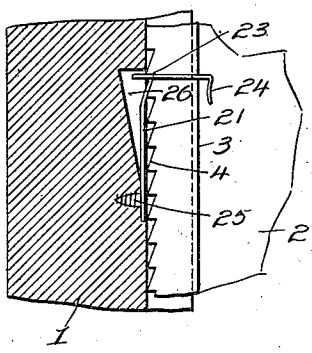


Fig. 5.

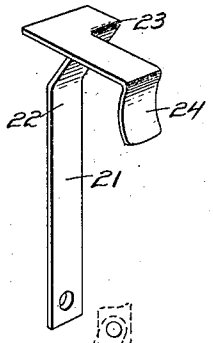


Fig. 3.

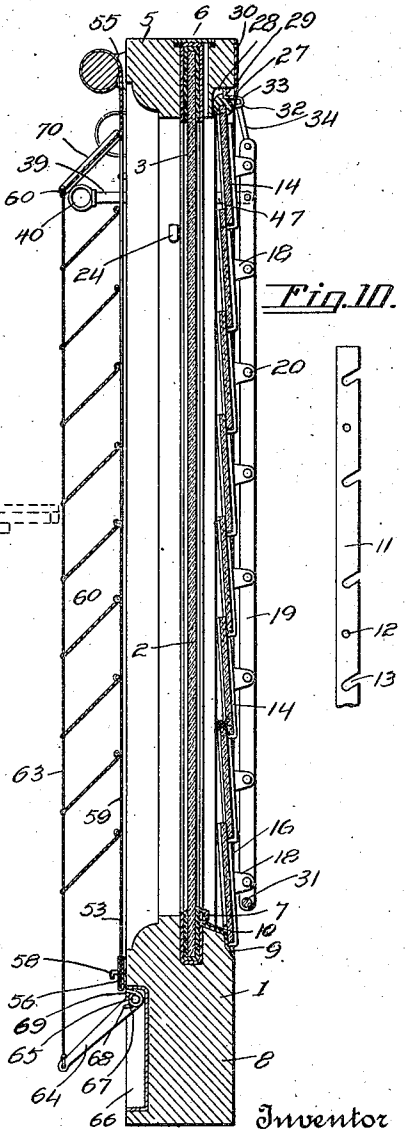


Fig. 10.

Fig. 6.

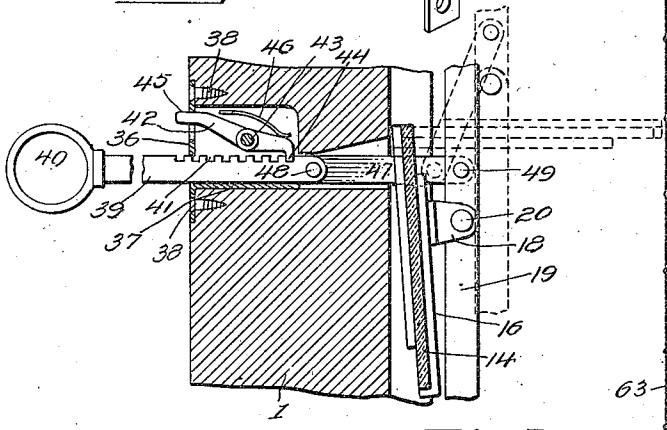


Fig. 7.

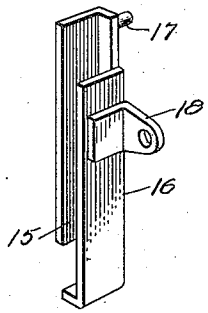
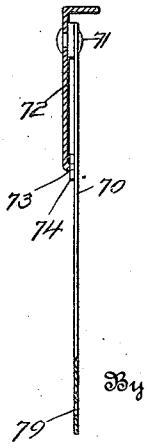


Fig. 8.



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UNITED STATES PATENT OFFICE.

VICTOR M. ALLEN, OF SHINGLEHOUSE, PENNSYLVANIA.

COMBINED VENTILATOR AND SHADE.

1,346,800. Specification of Letters Patent. Patented July 13, 1920.

Application filed September 11, 1917. Serial No. 190,843.

To all whom it may concern:

Be it known that I, VICTOR M. ALLEN, a citizen of the United States, residing at Shinglehouse, in the county of Potter and State of Pennsylvania, have invented new and useful Improvements in Combined Ventilators and Shades, of which the following is a specification.

This invention relates to improvements in windows and the like and especially with reference to the provision of a window sash which embodies a ventilator and also embodies a shade and which can be used as a double window, a screen, a shade, a ventilator, and under all weather conditions, and can be changed from one to another use in an instant.

One object of the invention is to provide a window which is composed of a series of glass or other transparent panels which serve to admit light and which can be adjusted and arranged in fully opened or partially opened position to afford ventilation.

Another object is to provide a window sash or the like with a removable glass pane and also with glass or other transparent panels which may be adjusted to afford ventilation when the pane is removed or raised and which, when closed, and the glass pane is in place, provide a double window for winter use and which serves to protect the glass pane from frost.

Another object is to provide a window sash or the like with a glass pane and also with a screen which may be interchangeably used.

Another object of the invention is to provide an improved window shade which embodies bars which may be arranged either in closed position or in partially or fully opened position and which when opened or partly opened admit air and sun-light into the room and permit a person within the room to see freely out through the window and at the same time prevent a person on the outside from seeing into the room.

With the above and other objects in view the invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings:—

Figure 1 is an elevation of the outer side of a window sash constructed and arranged in accordance with my invention and showing the panels closed.

Fig. 2 is a similar view of the same, from the inner side, and showing the shade and the bars of the shade in open position.

Fig. 3 is a vertical sectional view of the same.

Fig. 4 is a detailed perspective view showing the means for holding the removable glass pane in any desired adjusted position.

Fig. 5 is a detailed perspective view of the holding and adjusting dog.

Fig. 6 is a detailed sectional view showing the panel adjusting and operating means.

Fig. 7 is a detailed perspective view of one of the panel carriers.

Fig. 8 is a detailed sectional view and plan of one of the shade bar adjusters.

Fig. 9 is a detailed sectional view of the uppermost bar of the shade, showing the locking rod which detachably secures said bar to the adjusters.

Fig. 10 is a detailed elevation of one of the holder strips in which the panel carriers are detachably pivotally mounted.

Fig. 11 is a perspective view showing a modified construction of the panel adjuster.

In accordance with my invention, a sash 1, door or the like is provided with a removable glass pane 2. The pane is held in a frame 3 which is preferably made of sheet metal and which extends around the edges of the pane and said frame is provided on one side with a series of ratchet teeth 4. The upper bar 5 of the sash has an opening arranged vertically therein and in which the top of the frame 3 is arranged and through which said frame and the glass pane are removable, a filler strip 6 being provided to close the upper side of said opening and conceal the top of the frame. The lower side of the frame 3 is provided with a downwardly and outwardly turned flange 7. The lower bar 8 of the sash is provided on its upper, outer side, with a sheathing 9 of sheet metal which has an upwardly extending flange 10 over which the flange 7 of the frame 3 engages so that a tight joint is effected and rain and the like is excluded. When the pane 2 is removed from the sash a wire screen may be substituted in its place in the sash to prevent flies and other insects from entering.

In the vertical sides of the sash, at the outer side thereof, are holder strips 11 which are secured by nails or screws that pass through openings 12 with which said strips are provided. The holder strips also

have outwardly and upwardly inclined slots 13 the outer ends of which are open and the lower inner ends of which are semi-circular and form bearings. I also provide a series of panels 14 which may be made of glass, celluloid, or other suitable transparent material. Each panel has its ends fitted in the channels 15 of panel carriers 16 each panel carrier being provided on its outer side near its upper end with a journal 17 which is adapted to enter and have a bearing in one of the slots 13 of the holder strips. Each panel carrier also has an outwardly extending lug 18. The panels are connected together for simultaneous pivotal movement by rods 19 to which the lugs 18 of the panel carriers are pivotally connected as at 20. Owing to the pivotal mounting of the panels the same may be arranged in partial overlapping relation, one above another, when closed, as shown in Fig. 3 or the panels may be swung outwardly and upwardly to open them apart to any desired extent for ventilation and to enable air to freely enter a room through the spaces between the panels and without creating objectionable drafts. The panels being transparent freely admit light and sunshine so that they serve the purpose of glass panes as well as affording ventilation means for the window.

When the pane 2 is in place, in the window sash, and the panels 14 are closed, a double window is formed which is especially adapted for use and is desirable in cold weather. The panels serve to protect the glass pane as well as to confine air between them and the glass pane and also prevent the formation of frost on the pane. The glass pane may be partly raised if desired and may be held in any desired adjusted position to admit air and for this purpose I provide a holding and adjusting dog 21 which is shown in detail in Figs. 4 and 5 and which is secured to the sash and is formed with a spring 22, a shoulder 23 to engage under any of the adjusting teeth 4 and is also formed with a finger piece 24 by means of which the dog may be disengaged from the tooth. The dog is secured to the sash by a screw 25 or other suitable device and the sash is provided with a recess 26 in which the free end of the dog operates.

The upper edge of the uppermost panel 14 is provided with a weather strip 27 which is made of rubber or the like and which is formed on the upper side with a shoulder 28 which extends longitudinally thereof and which, when the glass panels are in closed position, closes against a flange 29 which is formed on the inner lower side of a sheathing piece 30 of sheet metal or the like which is secured on the upper bar of the sashes. The holder strips 11 are recessed in the sash so that the panels lie snugly therein when in closed position. It will be observed upon reference to Figs. 3, 6 and 7 that each panel may be readily removed through the upper ends of the carriers 16 so that either one of the panels may be removed independently of and without disturbing any of the others. It will be also understood upon reference to Fig. 10 that owing to the provision of the slots 13 the panel carriers may be readily removed from the sash.

The connecting rods 19 of the panels are connected together at their lower ends by a cross bar 31. I also provide a connecting rock shaft 32 which in practice is made of wire and which is arranged above the uppermost panel and is mounted in bearings 33 with which the sash is provided. At the ends of the shaft 32 are crank or rock arms 34 which are pivotally connected as at 35 to the upper ends of the rods 19. Hence all of the panels are connected together and at both ends, so that the panels are all adapted for simultaneous pivotal movement and to the same extent.

I will now describe means for adjusting the panels and for locking them at any desired adjustment either when in closed or when in partly open position. A casing 36 is mortised as at 37 in one side of the sash 1, is secured by screws 38 and forms a guide for a horizontally arranged longitudinally movable adjusting and locking bar 39. The said bar has a handle 40 at its outer end and is provided on its upper side with a series of lock notches 41. A dog 42 is pivotally mounted in the casing as at 43, has one end 44 adapted to engage in any of the notches 41 and at the opposite end of the dog is a finger piece 45 which projects slightly from the outer side of the casing. A spring 46 is also provided to hold the dog in locking position. A link 47 has one end pivotally connected to the bar 39 as at 48 and has the other end pivotally connected to one of the rods 19 as at 49. By moving the bar 39 the panels may be readily arranged either in closed or in open position, or at any desired intermediate position, and by engaging the dog with one of the notches 41 at an appropriate point the panels may be held and securely fastened when in such adjusted position, as will be understood.

In Fig. 11 I show a modified construction of the panel adjuster in which the rod 39ª which is connected by a link to one of the rods 19 is mounted for longitudinal movement in a U-shaped member 50 and is provided with a stop 51 at a point intermediate the arms of the U-shaped member. Said U-shaped member is secured to one side of the sash 1. Counteracting springs 52 are arranged around said rod 39ª on opposite sides of the stop, the inner end of each spring bearing against the stop and the outer end of each spring bearing against one

of the arms of the member 50. Hence the panel adjuster is held yieldably by the springs and the panels are adapted to yield somewhat to the force of the wind but are normally held by the springs and the panel adjuster in closed position. By pressing outwardly on the rod 39ª the panels can be arranged in open position and suitable means may be employed in connection with the rod 39ª to hold the panels in open position.

On the inner side of the sash is a shade 53 which may be made of any suitable flexible material and the upper end of which is attached to the usual spring roller 54 which is mounted in brackets 55 of the usual construction which brackets are secured to the sash so that the shade is carried by the sash and may be raised or lowered therewith. The usual stiffening bar or strip 56 is at the lower end of the shade and near the lower corners of the shade are openings 57. The sash is provided near its lower corners with downwardly turned hooks 58 for engaging through said openings 57 to secure the sash and to normally hold the same in stretched condition on and across the inner side of the sash. By first disengaging the shade from the hooks, however, the shade may be rolled up on the roller 54 as will be understood.

The shade is formed with an opening 59 which is nearly coextensive therewith and the shade is also provided with a series of bars 60 which are preferably made of the same material as the shade and which extend across the opening 59 and which are secured, as by stitching, at their upper sides to the sides of the shade as at 61. The shade bars are connected together at their ends by cords 62 and they are also connected together at their centers and lower edges by a cord 63. The lower end of said cord is attached to the free end of an arm 64, said arm being pivotally mounted at its inner upper end as at 65 in a casing 66 which is mortised in the lower bar 8 of the sash. A coil spring 67 is arranged around the pivot 65 and has one end attached to the arm as at 68 the other end of the spring bearing against the upper side of the casing as at 69. The spring exerts its tension to turn or move the arm 64 downwardly and thereby cause the cord 63 to draw downwardly on the centers and lower edges of the shade bars.

I also provide shade bar adjusters 70 each of which is an arm pivotally mounted as at 71 on the inner side of a bracket 72. Each bracket is secured to one side of the sash and is substantially semi-circular and is provided on its inner side with segmental serrations 73. The adjusters 70 are formed with teeth 74 to engage said serrations so that each adjuster may be secured in any desired position, the pivots 71 adapting the adjusters for vertical angular movement. The uppermost shade bar 60 is provided at its lower edge with a casing 75. Locking rods 76 are arranged for longitudinal movement in the casing each rod having an arm 77 at its inner end which operates in a slot 78 in the center of the casing and the outer end of each locking rod being adapted to engage in an opening 79 in one of the shade bar adjusters 70. When the rods 76 are thus engaged with the arms or adjusters 70 the ends of the uppermost shade bar are attached to said adjusters 70 and hence by appropriately adjusting said bars 70 all of the shade bars may be adjusted as may be desired, to open to any extent or to an entirely closed position as desired. All of the shade bars will be adjusted to the same extent, by reason of the cord 63 by which said shade bars are connected together. When it is desired to roll up the shade on its roller 54 the rods 76 must be moved inwardly and disengaged from the adjusters 70 and the cord 63 must be also detached from the arm 64.

In practice the lower edges of the shade bars are stiffened by wires or other suitable means. The shade bars may be adjusted in the evening, when the room is lighted, so as to prevent persons on the outside from seeing into the lighted room. The shade can be used in bath-room windows and also in the windows of hospitals and other like places, affording privacy and at the same time enabling light and air to enter the room.

The panels of the window can be adjusted to afford full and free ventilation, to exclude drafts and also to keep out dirt and storms.

While I have herein shown and described a preferred form of my invention, I would have it understood that changes may be made in the form, proportion and construction of the several parts without departing from the spirit of my invention and within the scope of the appended claims.

Having thus described my invention, I claim:—

1. A window sash including a sliding unbroken pane, a plurality of pivotally mounted transparent panels wholly disposed at one side of the pane, and when closed forming therewith a double window, and means for adjusting said panels to either open or closed position.

2. A window sash including an unbroken pane, a plurality of pivotally mounted transparent panels disposed at one side of the pane, means for moving said panels to open or closed position, and when closed forming with said pane a double window, and said pane being susceptible of vertical adjustment independently of the panels to afford ventilation when the panels are in opened position.

In testimony whereof I affix my signature.

VICTOR M. ALLEN.