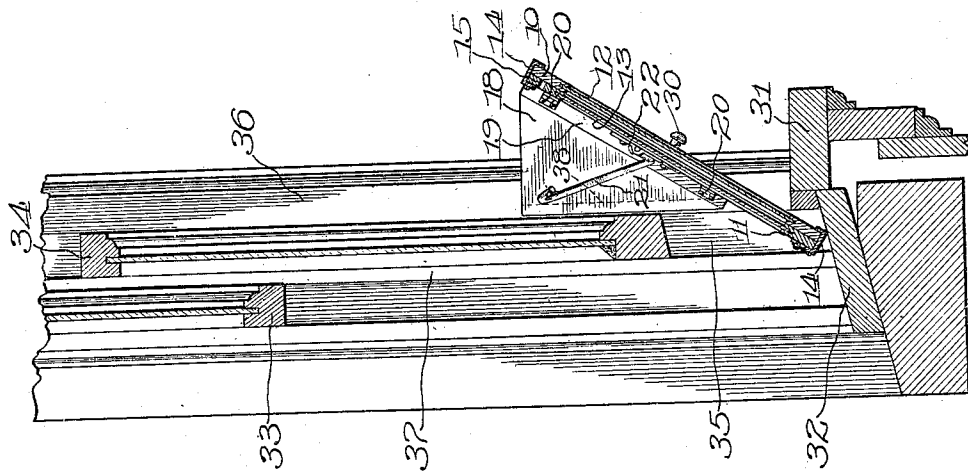
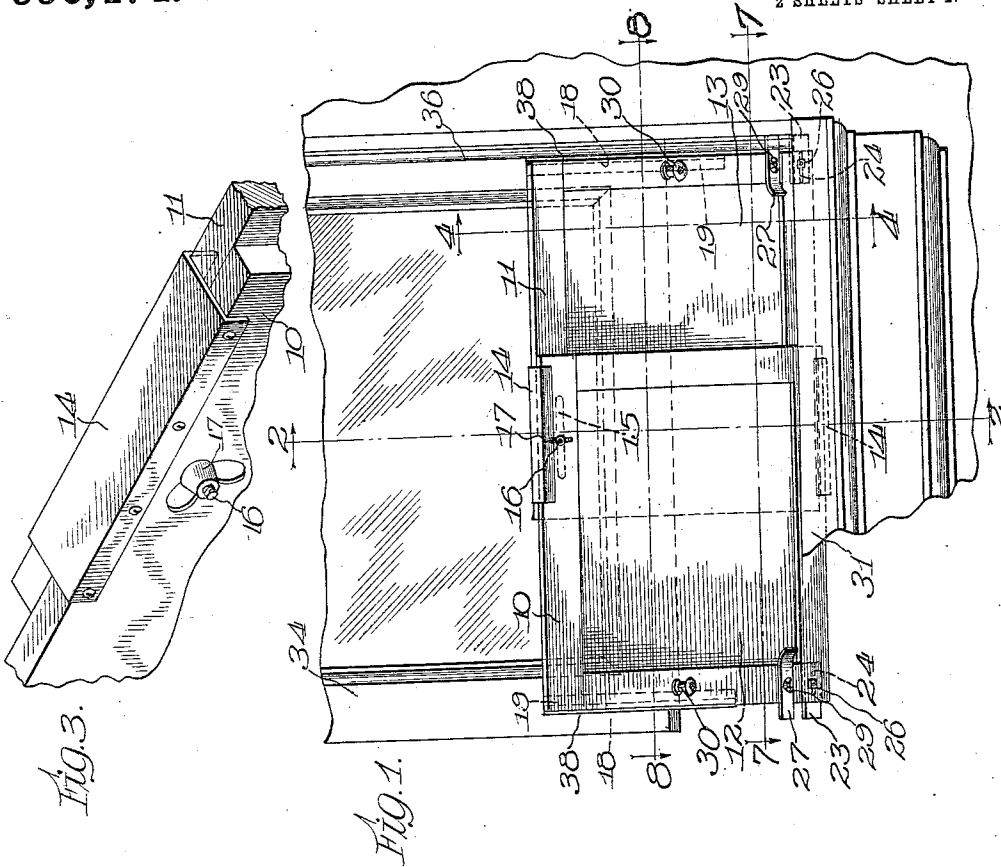


B. J. CRANDALL.
VENTILATOR AND STORM SHIELD.
APPLICATION FILED SEPT. 8, 1910.

Patented Apr. 25, 1911.

2 SHEETS—SHEET 1.

990,474.



Witnesses:
E. V. Downard Jr.
J. A. Paulschmitt

Fig. 2.

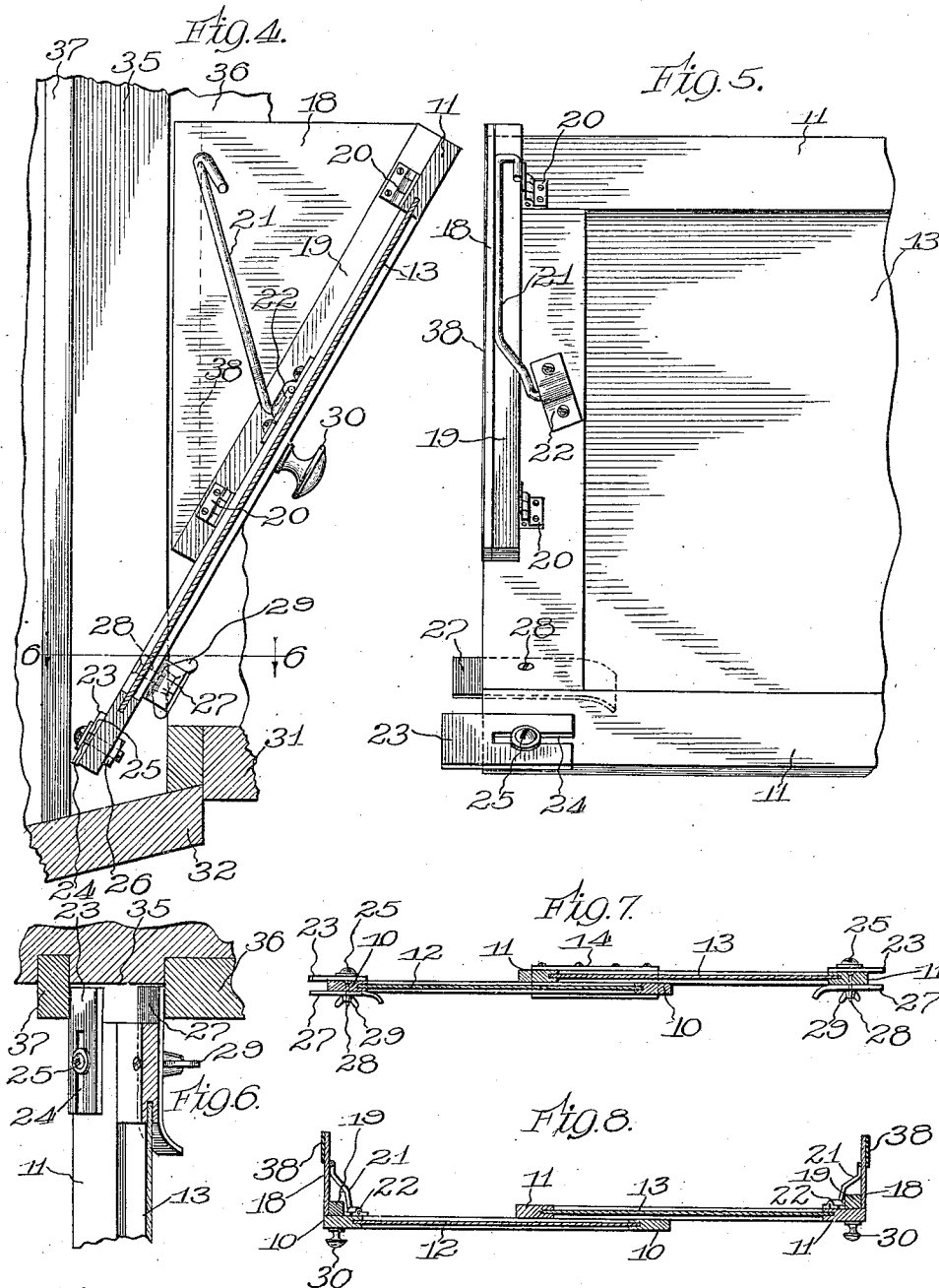
Inventor:
Benjamin J. Crandall
By J. R. Barnett
Att.

B. J. CRANDALL.
VENTILATOR AND STORM SHIELD.
APPLICATION FILED SEPT. 8, 1910.

990,474.

Patented Apr. 25, 1911.

2 SHEETS—SHEET 2.



Witnesses:
G. V. Druar Jr.
G. A. Paulsen

Inventor:
Benjamin J. Crandall
by J. R. Barnett
Att.

UNITED STATES PATENT OFFICE.

BENJAMIN J. CRANDALL, OF CHICAGO, ILLINOIS.

VENTILATOR AND STORM-SHIELD.

990,474.

Specification of Letters Patent.

Patented Apr. 25, 1911.

Application filed September 8, 1910. Serial No. 581,018.

To all whom it may concern:

Be it known that I, BENJAMIN J. CRANDALL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Ventilators and Storm-Shields, of which the following is a specification.

My invention relates to an appliance which may be termed a ventilator and storm shield, and the invention has for its object to provide a device of this sort which shall have certain new and improved features, to be hereinafter described and claimed.

One of the principal objects of the invention, to be more specific, is to provide a simple, economical and convenient appliance for use in the window of a dwelling house, office or the like, which, when put in position in the window, will serve the purpose of a ventilator, directing the incoming air upwardly, as should be the case, and also the purpose of a storm shield to prevent the rain or snow from entering the room, although permitting the window sash to be open to a greater or less extent, as may be desired.

A further object of the invention is to provide a device of the character described which can be quickly and, by simple, easily understood manipulations, fitted into a window and removed therefrom, as occasion may demand; which, moreover, will fit windows of different widths and constructions; and which may be folded up flat for shipment and convenience in laying the device away when not in use, without, however, necessitating the removal of any of the parts of the appliance.

The invention in a preferred embodiment is illustrated in the accompanying drawings, wherein—

Figure 1 is a fragmentary elevation of a window, viewed from inside the building, showing the device of my invention applied thereto. Fig. 2 is a sectional elevation taken on line 2—2 of Fig. 1, looking in the direction of the arrows. Fig. 3 is a perspective view of a portion of the appliance illustrating a preferred form of construction. Fig. 4 is a fragmentary sectional elevation taken on line 4—4 of Fig. 1. Fig. 5 is a fragmentary view in elevation of the appliance looking at the opposite side from that presented in Fig. 1. Fig. 6 is a fragmentary sectional plan taken on line 6—6 of Fig. 4; and Figs. 7 and 8 are sections taken on, respectively,

lines 7—7 and 8—8 of Fig. 1, looking in the direction of the arrows.

Like characters of reference indicate like parts in the several figures of the drawings.

The appliance consists of a front section, end sections and certain devices for removably securing the appliance in windows of different widths and constructions; the end sections being preferably hinged to the front section and the latter consisting of two members so related that the appliance is extensible to fit windows of different widths. In the construction shown, the front section is composed of two rectangular frames 10, 11, inclosing the panels 12 and 13, the frames being of wood and the panels of wood fiber. It will be understood, however, that other materials might be used and other constructions employed than those described. The frames 10 and 11 are extensibly secured together by the channel plates 14, embracing the upper and lower edges of the frame, these plates being secured, as shown, to the frame 10. One of the frames, as, for example, 11, is preferably formed with the slot 15 and a bolt 16 extends through this slot and through frame 10 and receives the thumb nut 17, by means of which the frames may be locked together.

The end members, designated 18, are triangular in shape and preferably consist of wood fiber, although other materials might be employed, and have preferably secured at their inner edges the strips 19 which are hinged to the frames 10 and 11 by means of the hinges 20. Various devices might be employed for holding the end pieces 18 in their extended positions. Preferably I employ the folding struts 21, one for each of the end pieces, which are pivoted in keepers 22 on the frames 10 and 11, the keepers being preferably arranged obliquely with respect to the frames, so that the struts turn in planes oblique to the planes of the end pieces 18 when the latter are unfolded.

At the lower outside corners of frames 10 and 11 are the stops 23, preferably formed with the slots 24 and secured to the frames by means of bolts 25 and nuts 26; or any other means may be employed for attaching the stops to the frames which will give them capacity for lateral adjustment.

The stops 23 are preferably on the outside surface of the frames. On the inside of the frames, a little way above this pair of stops, is another pair of stops 27 pivoted

to the frames by the bolts 28 and adapted to be held at any desired angular position by the thumb nuts 29. For convenience of manipulation, knobs or handles 30 are arranged on opposite ends of frames 10 and 11.

The appliance of my invention, constructed as above described, is shown in the drawings as applied to a window of common construction.

10 In the drawings, 31 designates the inner window sill, 32 the outer window sill, 33 the upper sash, and 34 the lower sash, which runs in guideways 35 formed between the inner stop strips 36 and the parting beads 37.
 15 When my device is applied to the window, the stops 23 bear against the parting bead 37 and the stops 27 against the stop strip 36 or inner side of guideway 35. This engagement holds the appliance in position in the
 20 window frame, supposing, that is, that the frames 10 and 11 have been extended so as to bring the end sections against the inner stop strips 36. The stops 23 are made laterally adjustable because the parting beads in
 25 some windows are set farther back or are narrower than in others. The stops 27 are made adjustable, this adjustment depending upon their angular position, in order to accommodate the appliance to windows hav-
 30 ing sashes of different thickness. The struts 21, it will be seen, bear against the end pieces 18 and force the same against the faces of stop strips 36. Because of the oblique arrangement of the struts, the further forward
 35 they are carried the greater pressure will be exerted by them against the end pieces. Preferably the end pieces are made of somewhat thin, flexible material, such as the wood fiber mentioned, so that these parts of the
 40 appliance can be made to bind against the window frame. In order to increase this bind, the outer surfaces of the end pieces may be provided with thin strips 38 of rubber or the like. The engagement of the end
 45 pieces 18 with the window frame helps to hold the appliance firmly in position. The frames 10 and 11, constituting what has been termed the front section, may be clamped together by means of the thumb nut 17.

50 It will be seen that the extensible construction of the front section is a desirable feature, not only because it allows the appliance to be used on windows of different widths, but also so that a close engage-
 55 ment may be obtained between the end members 18 and the window frame. The outer edges of the end members 18 lie close to the lower sash, but, with a proper adjustment of stops 27, they will not interfere with the
 60 movement of the sash, which can be moved up or down so as to vary the ventilation of the room. The close engagement of the appliance with the window frame, and particularly the binding engagement of the prefer-
 65 ably thin and flexible end members 18 against

the stop strips 36, or equivalent portions of the window frame, effectually prevents rain or snow from entering the room when the lower sash is in a proper position, even though it may be raised considerably from
 70 the sill.

While I have shown and described my invention in the form which I consider most suitable for use under ordinary conditions, it will be realized that modifications might
 75 be devised without departure from the spirit of my invention. Therefore, I do not limit myself to the particulars of construction shown and described, except so far as the same are made limitations on certain of the
 80 claims herein.

I claim:

1. In an appliance of the character described, the combination with a front section arranged so as to slant inwardly and
 85 upwardly from the window sill into the room, of end sections, and engaging means on said front section at the lower corners thereof adapted to extend into the guide-
 90 way of one of the sashes of the window, so as to hold said appliance in its operative position.

2. In an appliance of the character described, the combination with a front section arranged so as to slant inwardly and
 95 upwardly from the window sill into the room, of end sections, and adjustable engaging devices adapted to engage with opposite sides of the guideway of one of the sashes of
 100 the window, so as to hold said appliance in its operative position.

3. In an appliance of the character described, the combination with a front section, of end sections, stops on the lower corners of the front section adapted to bear
 105 against the outer edge of one of the sash guideways, and stops above said first-mentioned stops adapted to bear against the inner edge of one of said guideways.

4. In an appliance of the character described, the combination with a front section, of end sections, laterally adjustable stops at the lower corners of the front section adapted to bear against the outer edge
 110 of one of the sash guideways, and stops above said first-mentioned stops adapted to bear against the inner edge of one of said guideways.

5. In an appliance of the character described, the combination with a front section, of end sections, stops on the lower corners of the front section adapted to bear
 120 against the outer edge of one of the sash guideways of the window, and, above said stops, pivotally mounted stops adapted to bear against the inner edge of one of said guideways.

6. In an appliance of the character described, the combination with a front section, of end sections, and two pairs of stops,
 130

one pair being arranged above the other pair, which stops are adapted to bear against portions of the window frame, substantially as described.

5 7. In an appliance of the character described, the combination with a front section, of end sections, and two pairs of stops, one pair being arranged above the other pair, which stops are adapted to bear against
10 portions of the window frame, said stops being adjustably mounted on said front section, substantially as described.

8. In an appliance of the character described, the combination with a front section, of end sections, laterally adjustable stops at the lower corners of said front section, and adjacent thereto stops having capacity for angular adjustment, substantially as described.

20 9. In an appliance of the character described, the combination with a front section, of end sections hinged to the front section, and means interposed between said sections for holding said end sections in their
25 open position.

10. In an appliance of the character described, the combination with a laterally extensible front section, of end sections hinged to the front section, and means interposed
30 between said sections for holding said end sections in their open position.

11. In an appliance of the character described, the combination with a laterally extensible front section provided with means
35 at its lower corners adapted to engage with the window frame, of end sections hinged to the front section, and means for holding said end sections in their open position.

12. In an appliance of the character described, the combination with a front section, of end sections hinged to the front section, and foldable struts adapted to bear upon the end sections and force the same
40 against the window frame.

13. In an appliance of the character described, the combination with a laterally extensible front section, of end sections hinged to the front section, and foldable struts adapted to bear upon the end sections and
45 force the same against the window frame.

14. In an appliance of the character de-

scribed, the combination with a laterally extensible front section, of end sections hinged to the front section, and foldable struts adapted to bear upon the end sections and
55 force the same against the window frame, said struts being pivoted to the front section so as to turn in planes oblique to the planes of the end sections when open.

15. In an appliance of the character described, the combination with an extensible front section, of end sections hinged to the front section, two pairs of stops at the lower corners of the front section adapted to bear against portions of the window frame, and
60 foldable struts which are adapted to force the end sections against the window frame, substantially as described.

16. In an appliance of the character described, the combination with an extensible
70 front section, of end sections hinged to the front section, a pair of laterally adjustable stops at the lower corners of the front section, adjacent thereto a pair of pivoted stops, and struts which are pivoted to said
75 front section, so as to turn in planes oblique to the planes of the end sections when open and to bear against said end sections, substantially as described.

17. In an appliance of the character described, the combination with a front section provided at its lower corners with sustaining means adapted to engage with the window frame in the guideway for one of the window sashes, of end sections hinged
80 to the front section, and means for holding said end sections in their open position.

18. In an appliance of the character described, the combination with a front section, of end sections hinged to the front section, and means adapted to force said end sections into contact with the window frame.

19. In an appliance of the character described, the combination with a laterally extensible front section, of end sections hinged
90 to the front section, and means adapted to force said end sections into contact with the window frame.

BENJAMIN J. CRANDALL.

Witnesses:

P. H. TRUMAN,

LUCY A. FALKENBERG.