C. SAUNDERS.

COMBINED SKYLIGHT AND AUTOMATIC VENTILATOR.

APPLICATION FILED FEB. 1, 1909.

969,199.

Patented Sept. 6, 1910.

2 SHEETS—SHEET 1.

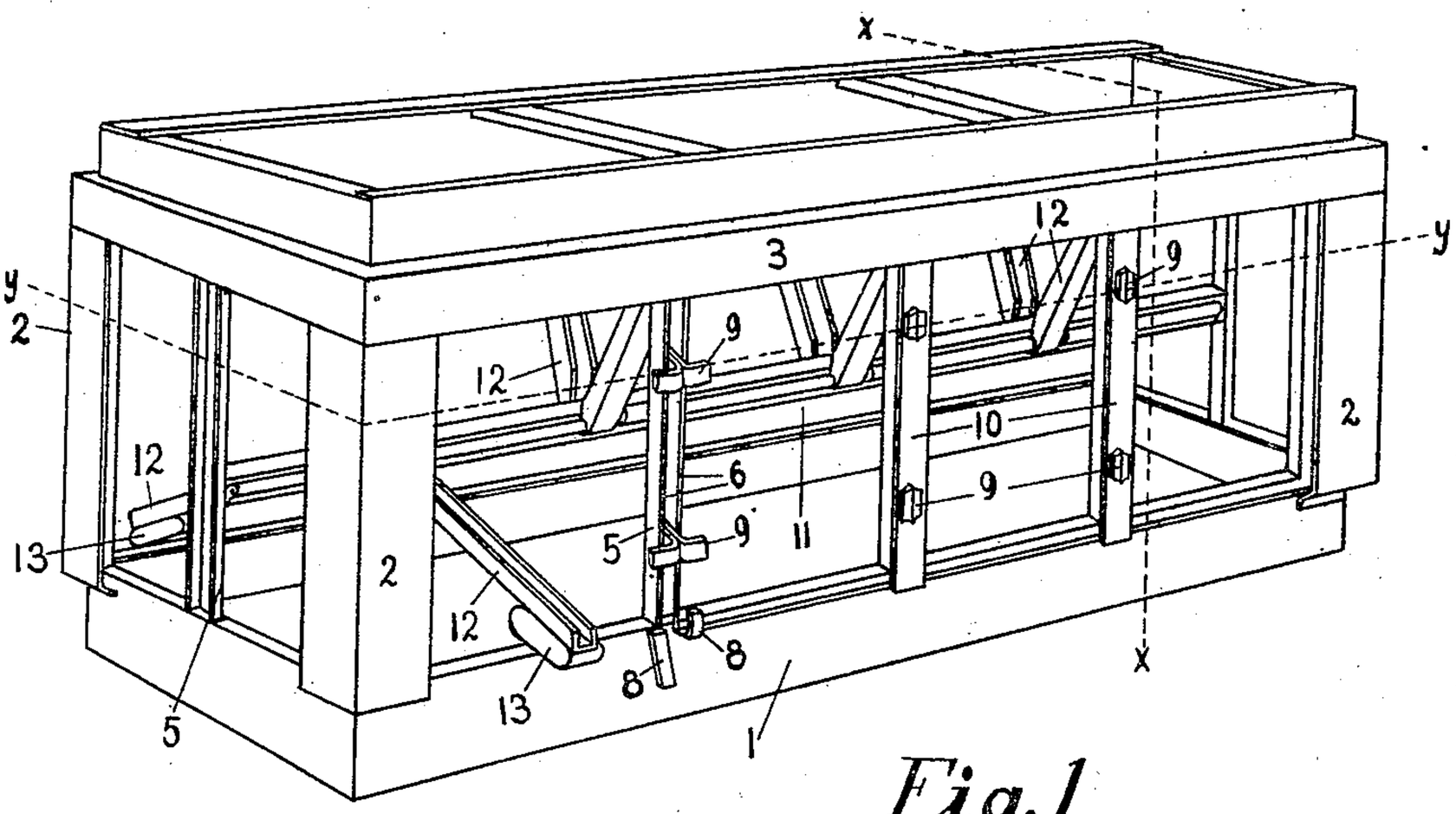

Fig. 1

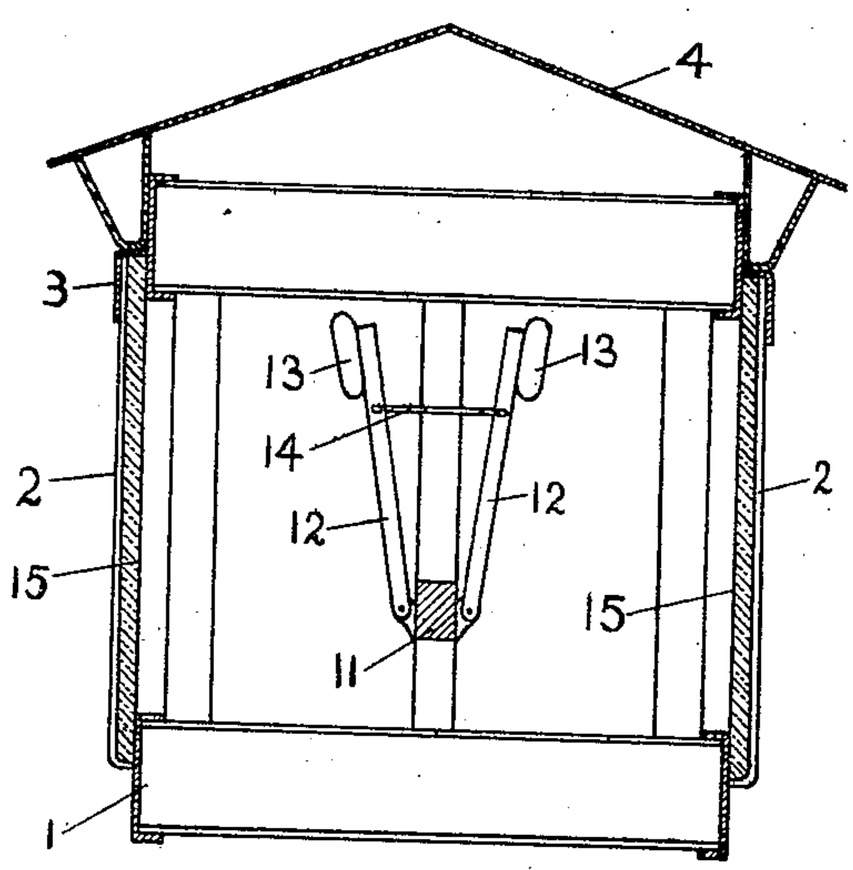

Fig. 2

WITNESSES:

J. Ray Abbey

Ralph S. Warfield.

Charles Saunders INVENTOR

BY

Geo. B. Willcox

ATTORNEY

C. SAUNDERS.

COMBINED SKYLIGHT AND AUTOMATIC VENTILATOR.

APPLICATION FILED FEB. 1, 1909.

969,199.

Patented Sept. 6, 1910.

2 SHEETS—SHEET 2.

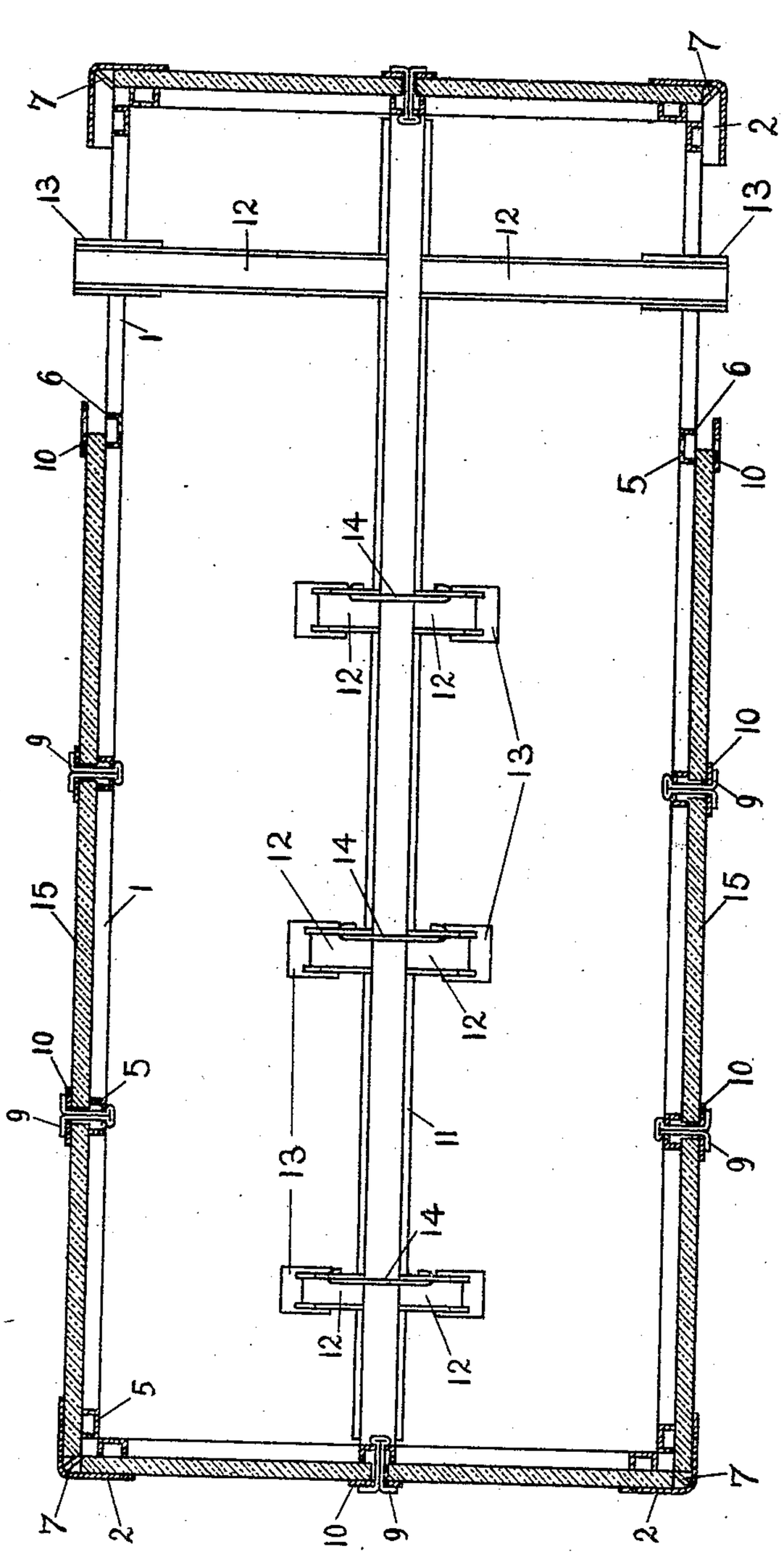

Fig. 3

WITNESSES:

J. Ray Abbey

Ralph S. Warfield

INVENTOR

Charles Saunders

BY

Geo. B. Willcox

ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES SAUNDERS, OF SAGINAW, MICHIGAN.

COMBINED SKYLIGHT AND AUTOMATIC VENTILATOR.

969,199. Specification of Letters Patent. **Patented Sept. 6, 1910.**

Application filed February 1, 1909. Serial No. 475,481.

To all whom it may concern:

Be it known that I, CHARLES SAUNDERS, a citizen of the United States, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Combined Skylights and Automatic Ventilators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to combined skylights and automatic ventilators.

As is well known, it is desirable in the event of fire breaking out in a building, that an outlet be immediately provided for the smoke in order that the firemen may not be overcome by smoke and also to give visible notice, in case the fire has not been discovered. It is also a fact that fires will follow the natural draft in buildings. Thus, in buildings equipped with elevator, light or air shafts, the flames will be drawn to and up such shaft, which in effect, forms a chimney. Such shafts are customarily provided with sky-lights.

My invention contemplates the provision of means held in inoperative position by fusible links for breaking the glass in such sky-lights upon the outbreak of a fire, to emit the smoke.

A further object of my invention is the provision of novel means for normally retaining the glass in position in the sky-light frame in such manner that when the glass is broken, the entire pane will automatically disengage itself to leave an unobstructed opening.

To these and other ends, therefore, my invention consists of certain novel features and combinations such as will be more fully described hereinafter and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a sky-light equipped with one form of my invention, the cover being omitted to better disclose the parts beneath, Fig. 2 is a cross-sectional view on line *x*—*x*, and Fig. 3 is a horizontal cross-sectional view on line *y*—*y* showing the means for releasably retaining the glass in place.

It will be understood that sky-light constructions differ in view of the varying structural conditions to be met and hence, the drawing does not illustrate the only form of construction possible.

My invention consists, first, in combination with a sky-light having a frangible portion, of means normally held inoperative but released through the agency of an excessive and dangerous degree of heat for automatically breaking the frangible portion.

Secondly, my invention consists of means for retaining the frangible portion in place when whole, and admitting of its automatic release when broken.

The drawings disclose a sky-light frame which may be of any suitable construction, that shown comprising a rectangular base 1, corner posts 2, 2, the upper ends of which are connected by means of braces 3, 3 and a cover 4. Extending between the base and the braces intermediate the corner posts 2, 2 are the channeled stiles 5, 5, the grooved faces of which preferably face outward. The spaces between the stiles are covered by panes of glass which may be painted black if desired to prevent the passage of light therethrough. The longitudinal edges of the glass rest against the respective flanges 6, 6 of the stiles.

The corner posts 2, 2 are offset relative to the base 1, a drainage aperture 7 being located at the lower end of the corner post to permit the escape of moisture. The longitudinal edges of the glass panes or panels adjacent the corner posts are received behind the respective faces of the posts and rest against stiles located behind such posts. The upper edges of the panes or panels lie behind the braces 3, 3, and the lower edges overlie the base 1. The object of this construction is to prevent rain or snow from beating in. Any moisture which may find its way in between the adjacent longitudinal edges of the panes is caught in the channels and conducted out onto the base.

In case moisture collects on the inside face of the glass, it can run out onto the base because the lower edge of the glass overlaps the base.

As one means for retaining the panes in position, I preferably provide the flexible metallic lips 8, 8, 9, 9. The lower corners of the panes are supported by the lips 8, 8, which project from the base and take over the edges of the panes, as shown, leaving those portions of the panels between the stiles practically unobstructed. The lips 9,

9 are preferably arranged in pairs along the longitudinal edges of the panes, such lips being carried by the stiles and projecting between the longitudinal edges of adjacent panels.

In order to conceal the joint between the adjacent longitudinal edges of the panels, I provide the slotted strips 10 extending parallel with the stiles and superposed upon the joints. The lips 9 carried by the stiles extend through the slots in the strips and are turned or bent over in opposite directions to retain the panels and the strips in position. The lower ends of the strips overlap the lips 8 to retain them closed over the edges of the panels.

It will be observed that there is no means for fastening the panels in place at the top and that the panels are supported on the lips 8 only.

My automatic ventilator in the construction herein shown, consists of one or more arms supported to swing by gravity against the panes and carrying weights which will break the panes. Such arms are housed within the sky-light where their action, when once released, is not liable to be clogged by accumulations of ice, snow, or other material.

In the drawings I have shown a bar 11 extending lengthwise of the sky-light frame, the arms 12 being arranged in pairs. The lower ends of the arms are hinged in any suitable manner to the bar, the upper free ends of the arms carrying weights 13. These arms are held in raised position by means of the fusible links 14 extending between and connecting the arms. The arms are positioned opposite the frangible panes and are longer than the distance between the hinged ends and the panes, so that when the links are fused, the arms move downward in the arc of a circle, due to gravity, their free weighted ends contacting with the panes near the upper ends thereof and crashing through until the weights bring up against the upper edge of the base 1. Obviously, this instantly creates an outlet for the smoke. Furthermore, because the panes are supported only at the lower corners, those portions remaining after the weights have burst through will fall out, leaving an unobstructed outlet. As it is hardly possible that all the links 14 will fuse at the same instant, the successive blows imparted to the frame when the weights bring up against the edge of the base, will jar out any fragments of the panes remaining in place.

It is obvious that sky-lights may be narrower than that shown, or otherwise structurally different, and hence, some other arrangement of the means for breaking the panes may be necessary, the important feature being the provision of a weight normally held inoperative by means of a connection which parts under excessive temperature and permits the weight to break a frangible portion of the sky-light.

From the foregoing it is plain that I have devised a most simple, inexpensive device for attaining the desired result and one which is not liable to get out of order.

Having thus fully disclosed my invention, what I claim as new, is:—

1. An automatic ventilator comprising a frame having a frangible portion, a movably supported weight adapted to burst the frangible portion, and means for normally retaining the weight removed from the frangible portion of the frame such means adapted to be affected by excessive heat to release the weight.

2. An automatic ventilator comprising a frame having a frangible portion, a swinging arm, a weight carried by such arm, the frangible portion of the frame lying in the path of movement of the weight, and a fusible link normally retaining the weight removed from the frangible portion of the frame.

3. An automatic ventilator comprising a frame having a frangible portion, a gravity-actuated weight, and means for normally maintaining the weight removed from the frangible portion such means adapted to be affected by excessive heat to release the weight.

4. An automatic ventilator for building shafts, comprising a frame having a frangible portion, a gravity-actuated weight suitably housed within the frame and adapted to burst the frangible portion, and a fusible member for normally retaining the weight removed from the frangible portion.

5. An automatic ventilator comprising a frame, two opposite walls of the frame being frangible, suitably supported swinging arms arranged in pairs, adapted for movement in opposite directions to burst the opposite frangible walls, and a fusible member normally connecting the arms in pairs.

6. An automatic ventilator comprising a frame having a frangible wall, a swinging arm tending and adapted to burst the wall, and fusible means for normally retaining the arm removed from the wall.

7. An automatic ventilator comprising a frame having a frangible wall, a bar extending parallel with the wall and housed within the frame, an arm pivotally supported on the bar, and tending to crash through the frangible wall, and fusible means normally preventing movement of the arm toward the wall.

8. A combined sky-light and automatic ventilator comprising a frame, frangible panes supported in the frame in such manner that when a pane is broken, the fragments will drop out to leave an unobstructed opening, means for breaking the panes, and

means affected by excessive heat for normally retaining the breaking means in inoperative position.

9. A combined sky-light and automatic ventilator comprising a frame consisting of a base, stiles and braces, frangible panes extending between the stiles, the lower edges of the panes overlapping the base, means for supporting the frames at the sides and lower corners, and means normally tending to break the panes.

10. A combined sky-light and automatic ventilator comprising a frame, a frangible pane supported at its lower corners in the frame, a weight adapted to crash through the pane and engage the frame, the jar imparted to the frame by the impact of the weight thereagainst operating to cause the fragments of the broken pane to dislodge, leaving an unobstructed opening, and a member affected by heat for normally retaining the weight inoperative.

11. A combined sky-light and automatic ventilator comprising a frame consisting of a base, stiles having channeled outer faces braces and corner posts, the braces and corner posts offset from the base, the corner posts provided with drain apertures, panes extending between the stiles, the lower edges of the panes overlapping the base, the braces overlapping the upper ends of the panes, flexible lips in which the lower corners of each pane are set, slotted strips superposed upon the adjacent edges of the panes, flexible lips carried by the stiles and passing through the slots in the strips to assist in maintaining the panes in position, and normally inoperative means tending to break the panes.

12. A ventilator comprising a frame having a frangible portion, a movably supported weight adapted to burst the frangible portion, and releasable means for normally retaining the weight removed from the frangible portion.

In testimony whereof, I affix my signature in presence of two witnesses.

CHARLES SAUNDERS.

Witnesses:

RALPH S. WARFIELD,

CHRISTINE A. BRAIDEL.