

W. LINDEMANN.
WINDOW VENTILATOR.
APPLICATION FILED NOV. 18, 1907.

921,854.

Patented May 18, 1909.

3 SHEETS—SHEET 1.

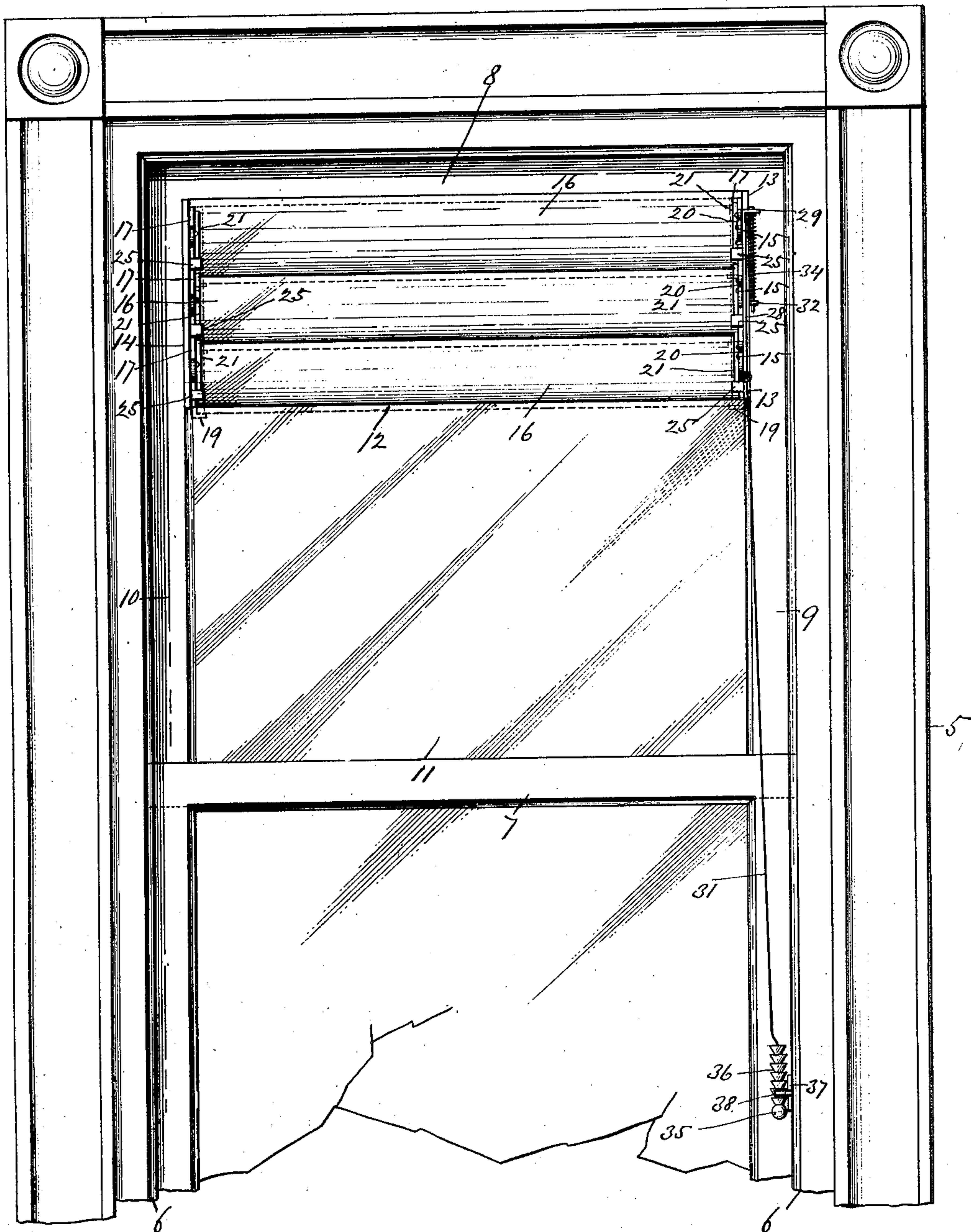


Fig. 1.

WITNESSES=

M. A. Atwood.
Frank H. Parker.

INVENTOR=

Walter Lindemann
By his Atty.
F. W. Williams

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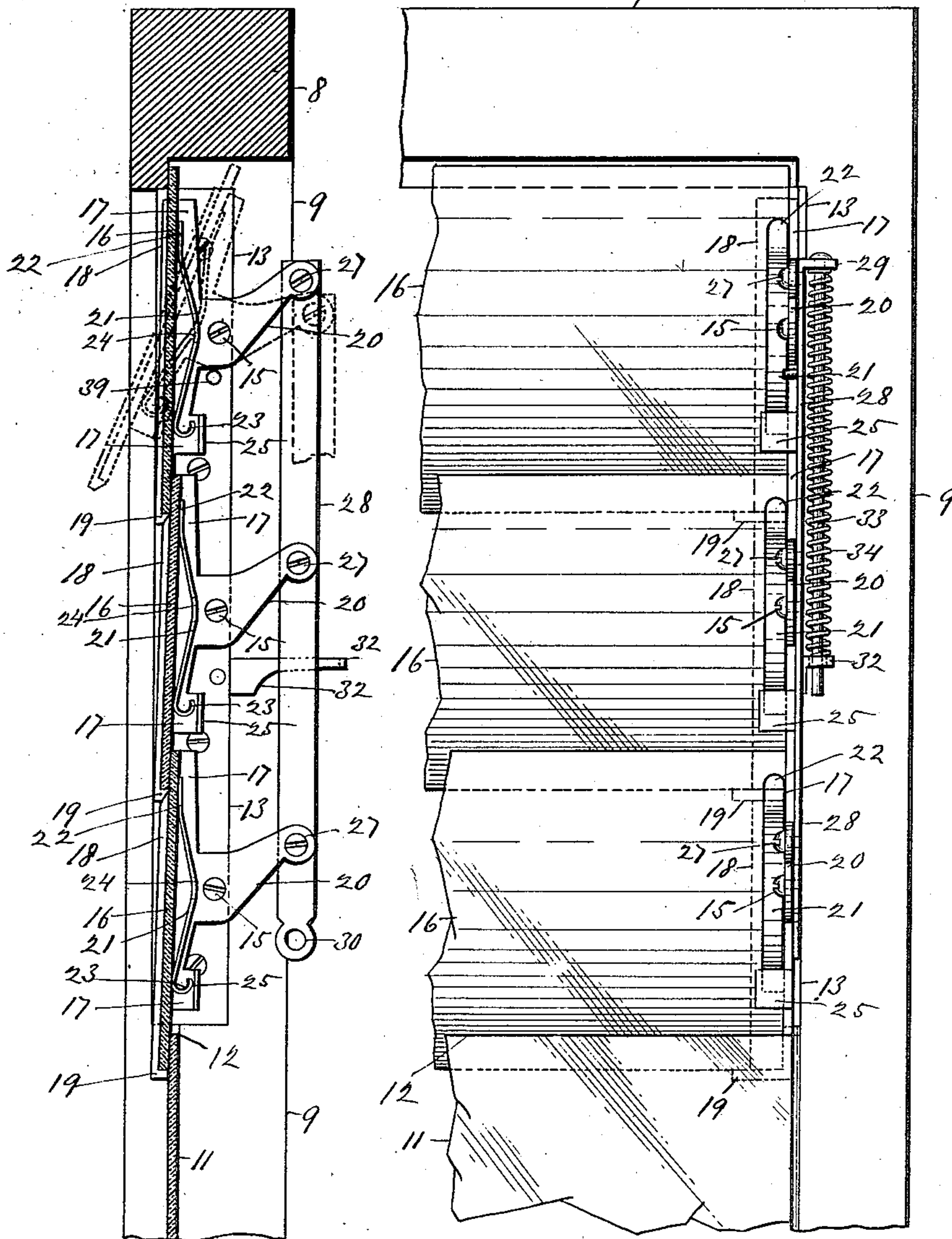


FIG. 2.

WITNESSES:
M. A. Atwood.
Frank G. Parker.

FIG. 3.

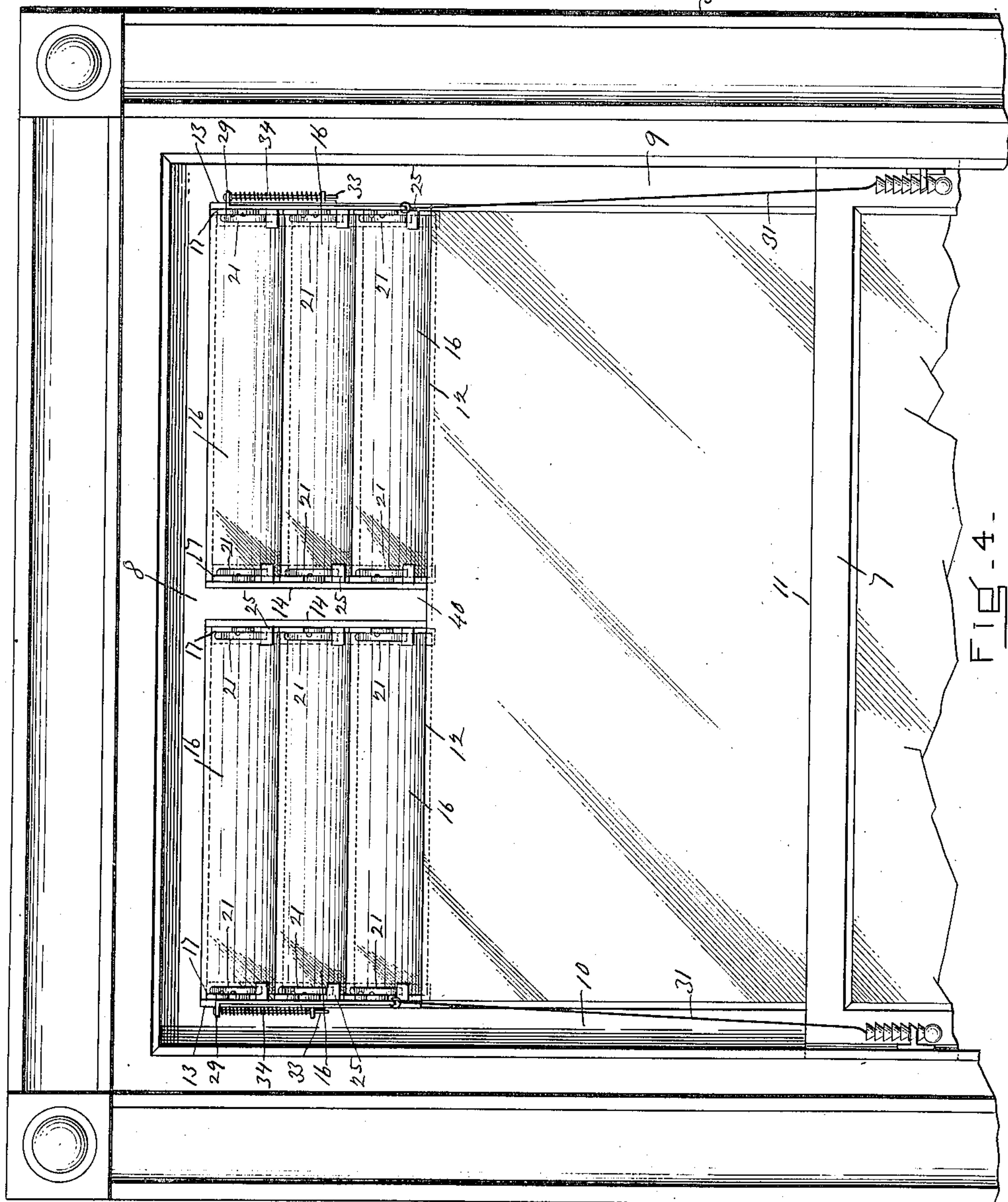
INVENTOR:
Walter Lindemann
By his Atty.
Sherrill, Williams

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3 SHEETS—SHEET 3.



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Frank B. Parker.

INVENTOR:
Walter Lindemann
By his Atty.
Henry W. Williams

UNITED STATES PATENT OFFICE.

WALTR LINDEMANN, OF BOSTON, MASSACHUSETTS.

WINDOW-VENTILATOR.

No. 921,854.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed November 18, 1907. Serial No. 402,644.

To all whom it may concern:

Be it known that I, WALTR LINDEMANN, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Window-Ventilators, of which the following is a specification.

This invention relates to ventilators applicable to windows of buildings, cars, etc., and particularly to that class of window-ventilators which are directly connected with and make a part of the window-sash, preferably the upper sash.

In this invention, horizontal deflecting plates or slats, preferably of glass, are pivotally sustained at their opposite ends by the sash, being preferably two or more in number, and the upper edge of each slat or deflecting plate overlapping the lower edge of the adjacent plate above it, the said slats being adapted to be partially rotated whereby parallel air-spaces may be produced between the lapping ends of the slats, said air-spaces being horizontal and inclining upward and inward through the sash.

The nature of the invention is fully described in detail below, and illustrated in the accompanying drawings, in which:—

Figure 1 is a front elevation of a portion of a window, showing my invention or improvement applied to the upper sash. Fig. 2 is an enlarged central vertical section taken transversely through that portion of the upper sash to which my invention is applied, looking toward the right. Fig. 3 is an enlarged front elevation of the right hand portion of that part of the upper sash to which the invention is applied. Fig. 4 is a front elevation showing a modification. In Figs. 2 and 3 the cord is omitted.

Similar characters of reference indicate corresponding parts.

Referring to Figs. 1, 2 and 3—reference numeral 5 represents an ordinary window-frame, of which 6 is the jamb. 7 represents the lower sash, 8 the top rail of the upper sash, 9 and 10 the right and left stiles thereof, and 11 the glass which extends from the bottom rail of the upper sash to the point 12 where its upper edge extends horizontally across the sash, leaving the space between said upper edge and the top rail to be occupied by my ventilating device.

A vertical plate 13 is secured to the inner surface of the right stile 9, and a similar plate 14 is secured to the inner surface of

the left stile 10. Pivotaly secured at 15 to the plate 13 in a vertical line are a number or series (three being shown in the drawing) of frames or holders which are adapted to support the right ends of slats or deflecting plates 16, each being made preferably of glass. Each of these holders consists of the main portion 17 vertically disposed against the plate 13 to which it is pivoted at 15, said holders being made angle-shaped in horizontal section by means of the flange 18 which extends inward along the outer surface of the glass slat 16, and a foot 19 which extends from the main portion 17 and the flange 18 horizontally under the lower edge of the glass slat, thus supporting it at that end. The main portion 17 of each of the holders is provided with an inwardly, and preferably somewhat upwardly extending arm 20 which is parallel with and extends beyond the plate 13 into or toward the apartment in which the window is placed. A vertically disposed spring 21 is centrally connected with each of the said main portions 17, and the upper end 22 of said spring and the lower curved end 23 bear normally against the inner surface of the adjacent or corresponding slat 16. These springs may be secured in any desired manner to the main portions 17, a practical manner consisting in providing the central portion 24 of each spring with a shank which extends into a corresponding opening in said main portion 17. The lower portions of the main portions are provided with inwardly extending guards or guides 25. These guards serve to impart rigidity to the holders whereby the glass plates 16 are prevented from becoming warped and broken, to prevent the said main portions from catching on the outer edge of the plate 13 when the slats are being closed, and to operate as clearers when snow or ice collects on the adjacent surfaces of the plates 13 while the slats are open. If it were not for these guards there would be danger of the snow or ice interfering with the closing of the main portions 17, or of causing them to become sprung with the result that the glass would become broken. As the slats are closed these guards or clearers 25 push forward and remove any ice or snow which clings to the plates, thus preventing breakage, clogging, or sticking of the pivoted plates.

The plate 14 which is secured to the left stile 10 has pivoted to it at 26 in vertical

line, holders similar in construction to the holders 17, 18, 19; 25, said holders being however without any extending arms 20, and being provided with springs which bear against the inner surface of the glass slat at the left end—the holders and springs at the left end operating exactly like the holders and springs at the right end and having corresponding reference characters so far as their parts are illustrated.

Pivotally connected at 27 with the outer ends of the arms 20 is a vertical bar 28 provided at its upper end with the horizontal lip 29, and at its lower end with a hole 30 (Fig. 2) to which is secured the upper end of a cord 31, see Fig. 1. A bracket 32 extends from the plate 13 to the rear or right hand surface of the bar 28 under the lip 29, and a vertical rod 33 has its upper edge rigidly secured in the lip 29, and its lower end extends slidingly through a suitable hole or slot in the bracket 32. Surrounding this circular rod is a spiral spring 34 which is contracted between said bracket 32 and lip 29, and thus holds the bar 28 normally in the raised position indicated, said bar holding the arms 20 in raised positions and thus causing the holders to retain the glass slats in the closed position, said slats being of such a width that their upper edges overlap the inner surfaces of the lower edges of the next higher slats, and produce at those points tight joints formed by the parallel surfaces of the slats which are necessarily at a slight inward angle. The lowest slat laps over the outer surface of the upper edge 12 of the glass 11, and the upper slat extends inward and overlaps slightly a portion of the top rail.

It will readily be seen that by pulling down on the cord 31 the bar 28 is drawn down and all the slats 16 are swung with their upper edges inward and their lower edges outward, thus producing between the adjacent edges or surfaces of the slats parallel passages on horizontal lines which extend upward inwardly from a vertical line, somewhat as illustrated in the dotted lines in Fig. 2, thus allowing the outer air to be deflected upward before it enters the room, and causing it to enter the room in upwardly moving sheets, said sheets of air being thicker or thinner according to the amount of the pull on the cord 31. In order that the cord, and consequently the bar 28 and the glass slats, may be retained in any desired position, I have secured to its lower end a knob or handle 35 provided with a series of circumferential grooves 36 whereby the shape of the knob resembles that of a number of cones mounted in line on their apexes. Secured to the right jamb 6 is a plate 37 provided with a pair of parallel horizontal arms 38 of shape to embrace the knob within any of the conical grooves, whereby the knob may be held

at the required height to produce the desired width of openings in the ventilator. It will be seen therefore that this ventilator may be adjusted to openings of any width, that the air is deflected upward when it enters whereby it may be distributed in the room gradually and without perceptible draft, that rain or snow striking the outer surface of the slats will be prevented from entering the window, and will flow down outside, and that when the slats are closed, if the glass is true and properly made the joints are tight.

It is evident that by constructing slats of glass there is no obstruction to the light, and the entire apparatus is rather ornamental than otherwise. Moreover, although I have shown the ventilator at the upper end of the upper sash it can be applied to any portion of either sash as desired.

I provide the bar 13 with a stop-pin 39 for the purpose of limiting the downward movement of the arms 20.

In the modification illustrated in Fig. 4 a preferable method is shown of applying the invention to a very broad window or sash, such as is often seen in shop windows. In this figure the glass is cut off at the same point as in Figs. 1, 2 and 3, and a bar 40 extends downward centrally from the top rail of the sash, and two sets of ventilators are applied, made preferably right and left, the outer end of each ventilator being made exactly like the right end in Figs. 1, 2 and 3, and the inner end being made like the left end in Fig. 1. In this modification as there are two distinct ventilators which can be operated independently of each other, I provide two cords.

It will be noticed that strictly speaking this is not a modification of the invention, but an illustration showing the manner in which it is applied to a broad window or sash. The ventilator at the right of the figure is exactly like that shown in the first three figures, and the ventilator at the left is exactly the same in principle and construction except that its operating mechanism is at the left instead of at the right, the supports at the opposite ends being reversed from their positions shown in the first three figures.

By means of the construction shown in Fig. 4, I avoid making the glass slats so long that they might possibly be strained or broken while being operated.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent is:—

In a window-ventilator adapted to be applied to a sash or window in a space produced by removing or omitting a portion of the pane, horizontal slats within said space, holders for supporting the opposite ends of the slats and comprising angle-shaped frames pivotally sustained in position and provided

with feet underlapping the lower edges of the
slats, arms extending inward from the hold-
ers on one side, springs supported by the
holders and bearing against the inner sur-
5 faces of the slats, clearing guards extending
inward from said holders parallel with the
plate and thence bending at substantially
right angles and substantially parallel with
the flanges of the holders over the springs,
10 the said clearing guards extending from the
holders between their lower ends and the

points of their pivotal connection with the
plate, a bar pivotally connecting the outer
ends of said arms, and mechanism for im-
parting vertical movement to the bar.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

15
WALTR LINDEMANN.

Witnesses:

FRED L. HEWITT,
MAY R. O'LEARY.