

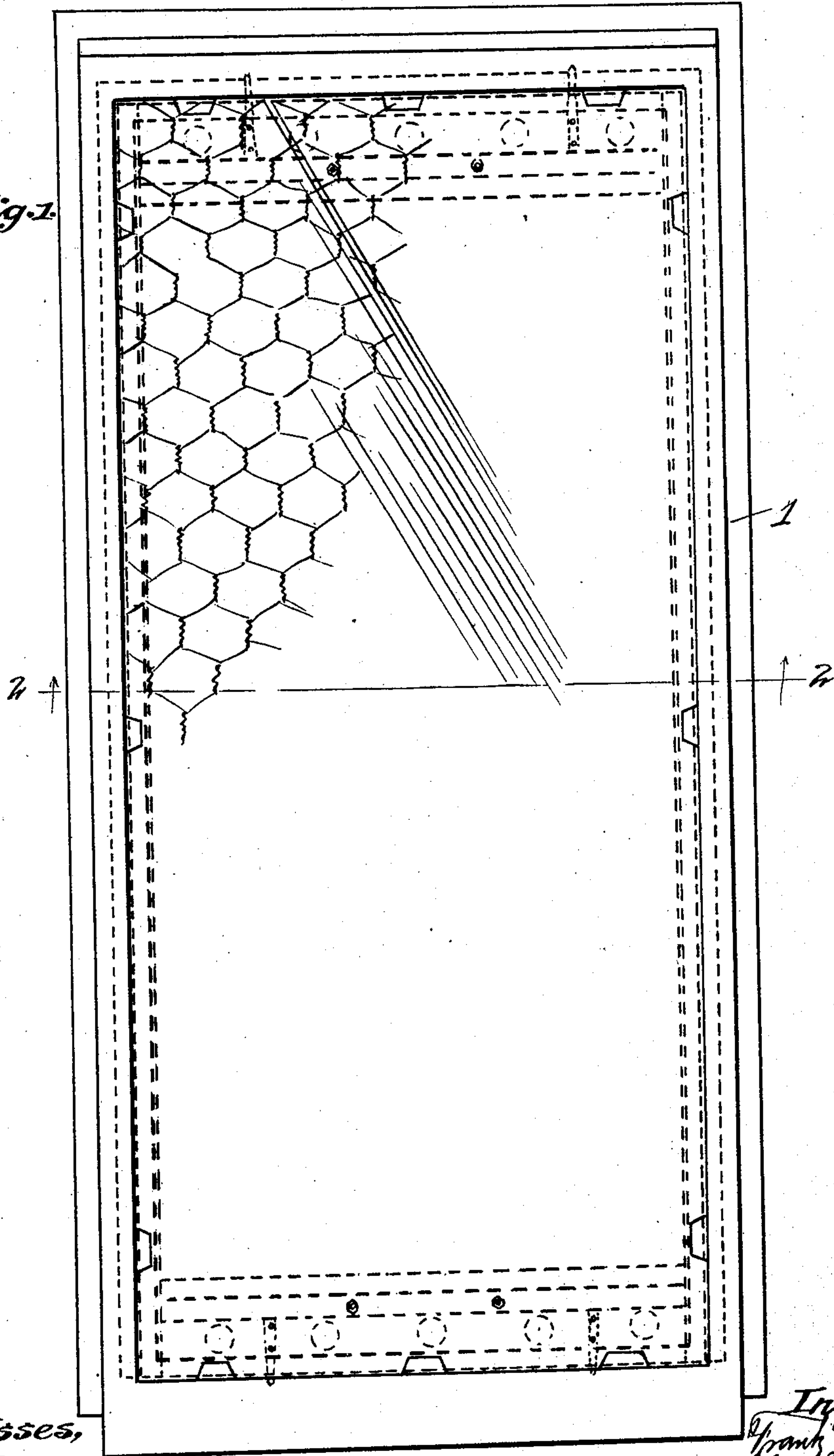
F. VOIGTMANN & S. H. POMEROY.
ANTIHEAT RADIATING WINDOW.

APPLICATION FILED SEPT. 24, 1903.

3 SHEETS—SHEET 1.

NO MODEL.

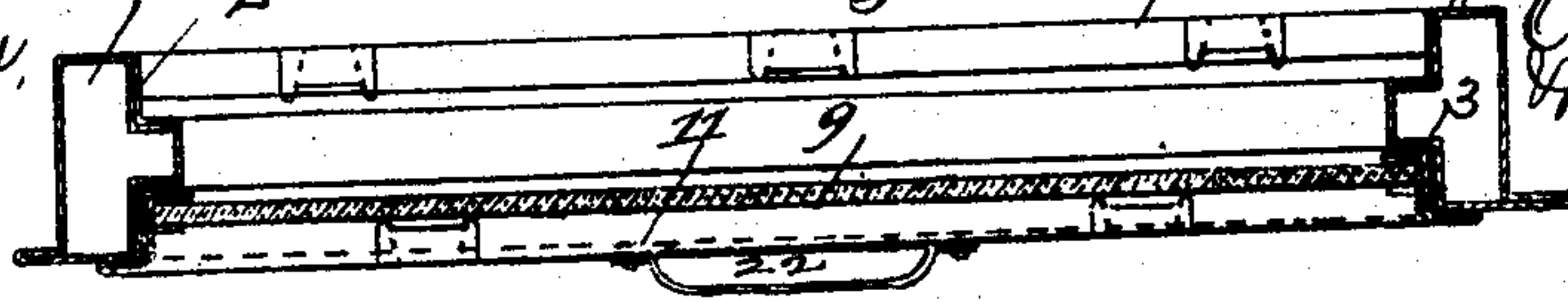
Fig. 1.



Witnesses,
J. O. Mann,
A. N. Moore,

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Fig. 2.



Inventors,
Frank Voigtman
and Silas H. Pomeroy,
 By *Offield North*
A. Kinticum,
Attys.

No. 753,765.

PATENTED MAR. 1, 1904.

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3 SHEETS—SHEET 2.

Fig. 3.

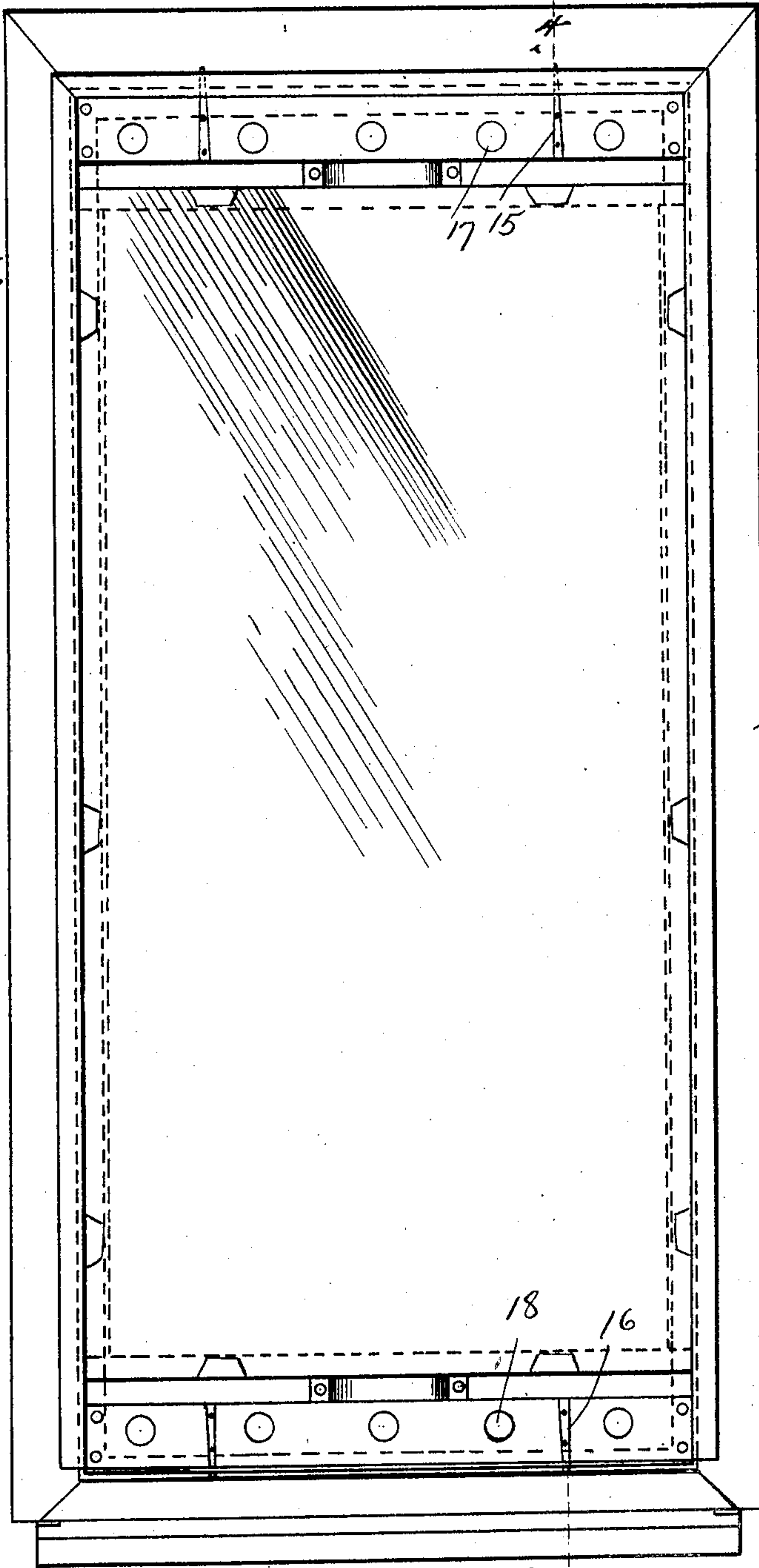
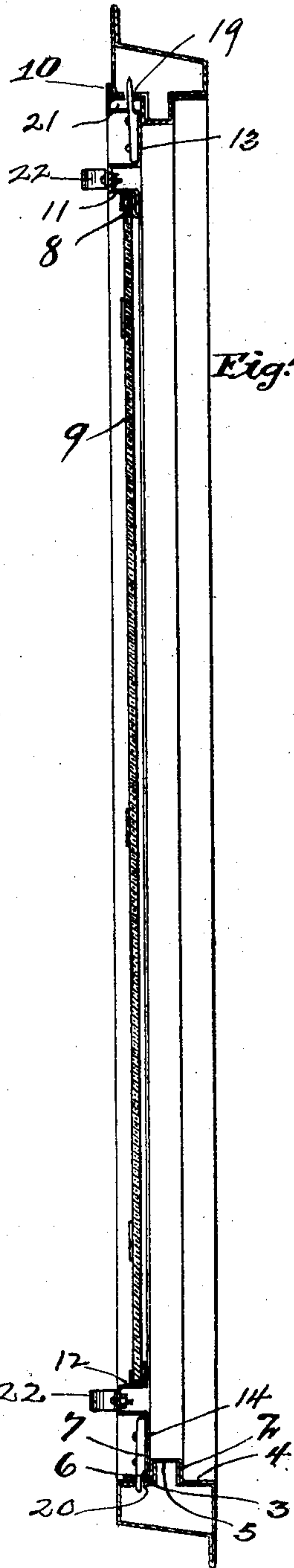


Fig. 4.



Witnesses,
J. D. Mann,
A. N. Graves

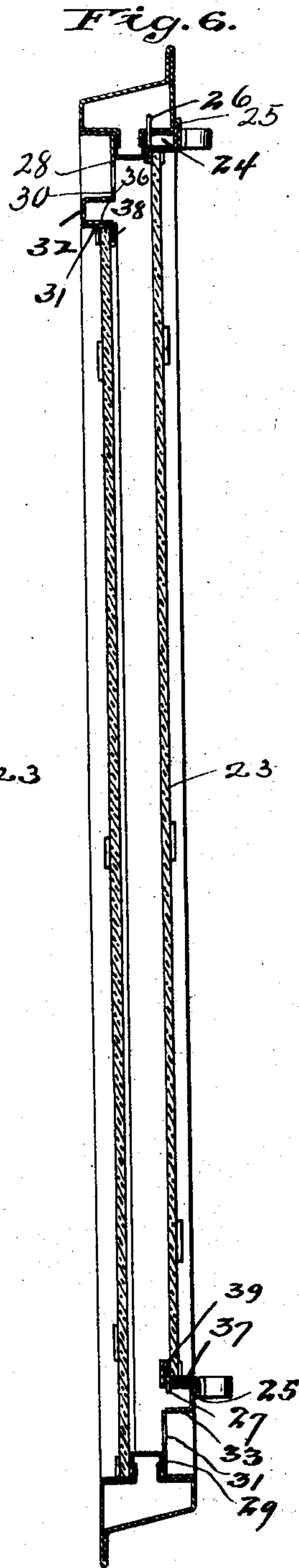
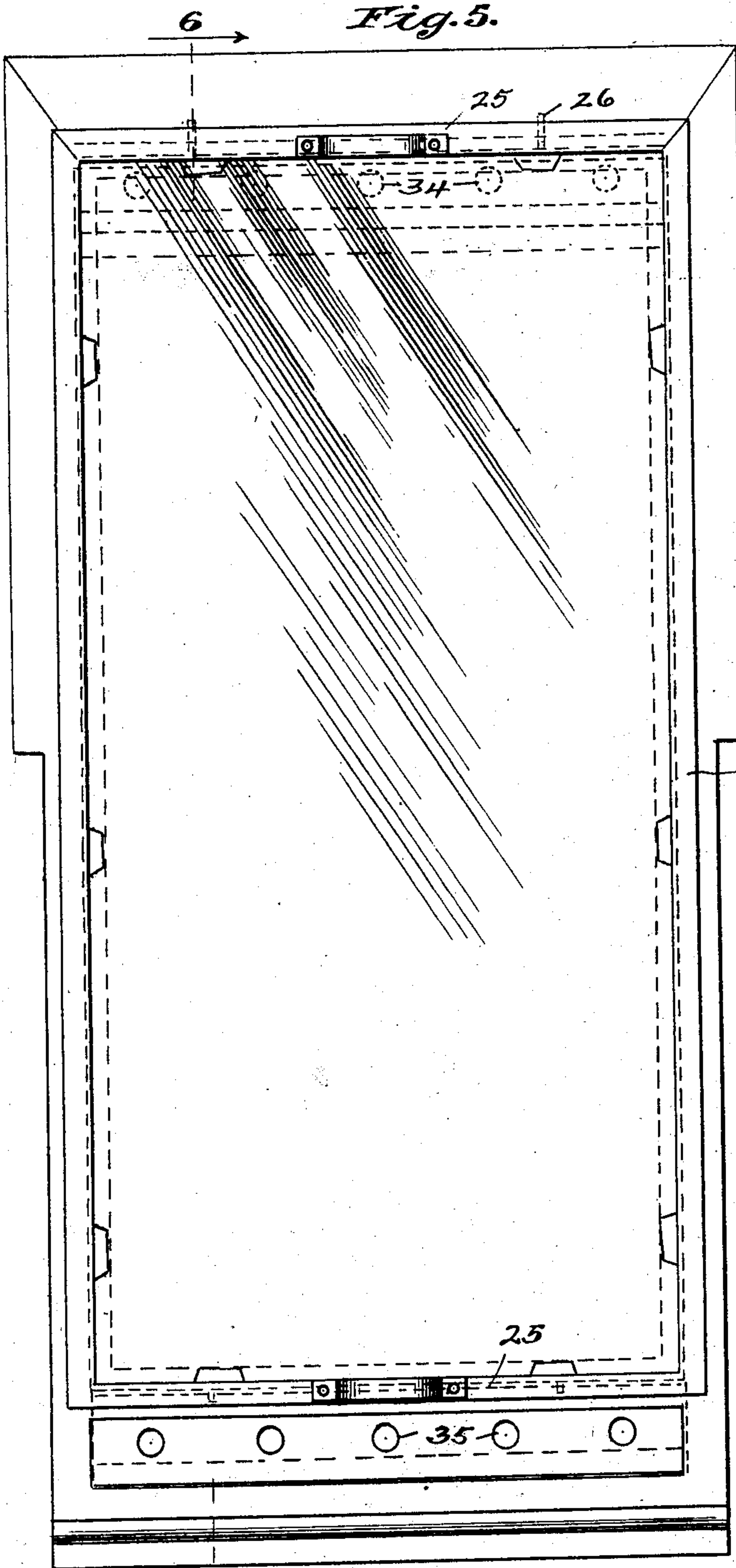
Inventors
Frank Voigtman and
Silas H. Pomeroy,
By: Offield Fowler & Hitchcock,
Attys.

F. VOIGTMANN & S. H. POMEROY.
ANTIHEAT RADIATING WINDOW.

APPLICATION FILED SEPT. 24, 1903.

NO MODEL.

3 SHEETS—SHEET 3.



Witnesses,
J. D. Mann,
A. H. Crane,

Inventors
Frank Voightmann
and Silas H. Pomeroy,
 By *Offield Corlett & Johnson*
Attys.

UNITED STATES PATENT OFFICE.

FRANK VOIGTMANN, OF CHICAGO, ILLINOIS, AND SILAS H. POMEROY, OF
NEW YORK, N. Y.

ANTIHEAT-RADIATING WINDOW.

SPECIFICATION forming part of Letters Patent No. 753,765, dated March 1, 1904.

Application filed September 24, 1903. Serial No. 174,523. (No model.)

To all whom it may concern:

Be it known that we, FRANK VOIGTMANN, residing at Chicago, Illinois, and SILAS H. POMEROY, residing at New York city, New York, citizens of the United States, have invented certain new and useful Improvements in Antiheat-Radiating Windows, of which the following is a specification.

This invention relates to improvements in antiheat-radiating windows, and refers more specifically to a window of fireproof construction provided with double glazing and ventilation and so constructed and arranged that in case of fire that glazing remote from the fire will be maintained cool at all times, and will therefore not radiate heat to an appreciable extent, and will therefore effectually bar the progress of the fire through the window.

Among the salient objects of the present invention are to provide a double-glazed construction which has one of its glazings seated in a removable frame or frames readily detachable to afford access to the inner or proximate faces of the glazings, to provide a construction of the character referred to which is thoroughly fireproof in all its details, to provide a construction in which the detachable frame or frames which support the removable glazing is or are conveniently and reliably held in position without dependence upon springs, to provide a preferred construction in which the ventilation afforded for the space or spaces between the glazing communicates at both upper and lower ends of the window with the interior of the building, so that the structure is weather-proof, and in general to provide a simple, cheaply-constructed, and neatly-finished construction of the character referred to.

To the above ends the invention consists in the matters hereinafter described, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is an outside view in elevation of a fireproof sash embodying our invention. Fig. 2 is a horizontal sectional view taken on line 2 2 of Fig. 1 and looking in the direction of the arrows. Fig. 3 is an inside elevation of the window shown

in Fig. 1. Fig. 4 is a longitudinal vertical section taken on the line 4 4 of Fig. 3 and looking in the direction of the arrows. Fig. 5 is an inside elevation of a modified construction, and Fig. 6 is a longitudinal vertical section taken on the line 6 6 of Fig. 5.

Referring to the drawings, 1 designates as a whole a sash-frame, which is of sheet metal and so far as the present invention is concerned may be of any preferred or suitable construction so long as it is provided at one side with a suitable rabbet 2 to receive one glazing and at its other side with a suitable rabbet 3 to receive a detachable glazing-frame. In the preferred construction (shown in Figs. 1 to 4, inclusive) the construction of the outer side of the sash is a usual one, the rabbet 2 being formed by means of the inwardly-facing side 4 of the frame in conjunction with an inwardly-extending hollow rib or bead 5. Similarly the inner side of the sash is provided with a rabbet 3, which is likewise formed by the inwardly-facing sides 6 of the main portion of the sash-frame and the adjoining side of the rib 5. In the construction shown the rabbets are located transversely opposite or in register with each other; but they may be otherwise constructed.

7 designates as a whole a detachable frame which is constructed of external shape and size to fit within the rabbet 3 of the main sash-frame. The frame 7 is also provided with an internal rabbet 8, adapted to receive the glazing 9, and is preferably provided with an outwardly-extending marginal flange 10, extending parallel with the main plane of the sash and arranged to overlie the meeting joints between the exterior of the detachable sash and the meeting faces of the rabbet of the main frame. The glazing of the adjustable frame is sufficiently shorter than the main sash-frame to provide means for ventilating the space between the glazings at both upper and lower ends of the sash. To this end the detachable frame is provided at points some distance removed from and parallel with its respective upper and lower ends with transverse bars 11 and 12, which bars are not only connected at their ends with the marginal frames, but are

also connected or formed integrally with webs 13 and 14, which bridge the space between the transverse bars 11 and 12, respectively, and the ends of the frame. These webs 13 and 14 are desirably set back from the outer plane of the detachable frame, being in the present instance coincident with the inner plane of the frame and forming supports, to which are respectively secured sets of holding prongs or studs 15 and 16, respectively. Ventilating-openings 17 and 18 are formed through the respective webs 13 and 14, as seen clearly in Figs. 1 and 3, and the holding-studs 15 are so located as not to interfere with these openings and are conveniently riveted in place. The oppositely-extending ends of the holding-studs extend out through the end frame members of the detachable frame and project some distance beyond the same in order to engage suitable openings 19 and 20, formed in the opposing faces of the rabbet 3. The length of that portion of the detachable frame which seats within the sash-rabbet is somewhat less than the corresponding measurement of the seat, so that a slight endwise-shifting movement of the detachable frame within its seat is afforded, this lost motion or space being indicated at 21 in Fig. 4. The lower set of holding-prongs 16 are made sufficiently short, so that when the detachable sash is shifted upwardly as far as permitted by the rabbet the lower prongs will be carried out of the holding-apertures and the lower end of the sash freed to swing outwardly out of the rabbet. When thus swung outwardly, the detachable frame may be lowered to disengage the upper set of holding-prongs in a similar manner. In order to facilitate such handling of the detachable frame, the latter is provided with suitable handles or loops 22.

While the hereinbefore-described construction in which the ventilating-apertures are provided entirely within the detachable frame, so that the circulation is from the inside of the building into the space between the glazings and thence outwardly into the same room at the upper end, yet it is sometimes desirable to provide a construction in which the ventilation is from within the room into the space between the glazing and thence out to the open air, or vice versa. Accordingly in Figs. 5 *et seq.* we have shown a modification embodying such construction. In this latter construction the detachable frame 23 is constructed generally similar to that hereinbefore described except that the web extensions at the upper and lower ends are omitted, the frame consisting, essentially, of a rim adapted to support the glazing made slightly shorter than the seat within which it is to rest, as indicated at 24, and provided, as in the former case, with marginal flanges 25, which overlie the meeting joints. Similarly sets of holding-prongs 26 and 27 are provided for removably holding the frame in place. The main frame-

sash is in the present instance provided at its upper and lower ends with filling-in sections or extensions 28 and 29, respectively, comprising recessed or setback web portions 30 31 and transverse hollow bars or beads 32 and 33, respectively. The filling-in extension 28 is in the embodiment shown arranged at the outer side of the sash-frame, while the lower filling-in extension is at the opposite or inner side of the sash. Each of the webs 30 and 31 is provided with ventilating-openings 34 and 35. The transverse bars 32 and 33 are so shaped as to provide rabbets 36 and 37 for the upper end of the outer glazing and the lower end of the detachable frame, respectively, and to this end each bar is provided with a flange-like extension, as 38 and 39, forming the ledges against which the glazing and frame rest. In this construction it will be seen that the provision for ventilation is entirely within the main sash-frame, while in the former construction the provision for ventilation is entirely within the detachable frame. Obviously each of these forms may be modified without departing from the spirit of the invention.

The reason of the double glazing and the provision for circulation of air through the space between the glazings, it will be understood that heat will not be transmitted from one side of the window to the other, and accordingly readily-inflammable articles may be piled against the windows either within or outside of the same with impunity. It will be understood that as soon as the body of air between the glazings becomes heated to any extent by fire on one side of the window the warmed air rises, and cooler air flows in to take its place. Since there is usually no danger that highly-inflammable material will rest against the outside of the window, that form in which the ventilation is all derived from the air within the building is deemed preferable, because it is equally defective against preventing the heat from an outside fire from being transmitted and is at the same time weather-proof. The detachability of the inner glazing is of greatest importance in that it affords ready access for cleansing the inner surfaces of the two glazings. It possesses the further advantage that in case one of the glazings be of wire-glass and the other of unwired glass if the detachable frame be glazed with the wire-glass the window may be instantly destroyed or broken through after the detachable frame has been removed. This is a feature of some importance in the case of stationary windows or those which cannot be opened.

We claim as our invention—

1. In a fireproof window, the combination to form a self-contained, double-glazed sash, of a main marginal sash-frame externally constructed to fit within the frame of a window-opening and provided in its inwardly-facing sides with seats for two glazings, a glazing

mounted in one of said seats and a detachable glazing-frame mounted in the other seat, said detachable glazing-frame being provided with a second glazing, and ventilating-passages leading into the upper and lower portions of the space between said glazings.

2. In a fireproof window, the combination to form a self-contained, double-glazed sash, of a main, circumferentially continuous marginal sash-frame, externally constructed to fit within the frame of the window-opening and provided in its facing margins with rabbets for two parallel glazings, a glazing directly mounted in one of said rabbets a glazing-frame detachably mounted in the other rabbet, a glazing mounted in said detachable glazing-frame and ventilating-passages leading into the upper and lower portions of the space between said glazings.

3. In a fireproof window, the combination to form a self-contained, double-glazed sash, of a main, circumferentially continuous marginal sash-frame, externally constructed to fit within the frame of the window-opening and provided in its facing margins with rabbets for two parallel glazings, a glazing directly mounted in one of said rabbets, a glazing-frame detachably mounted in the other rabbet, a glazing mounted in said detachable glazing-frame, said detachable frame being provided with a glazing of less length than the opening of the main frame and having at one end a filling-in extension perforated to provide ventilation and said glazing-frame, its filling-in extension and both glazings being arranged entirely or substantially inside of the two outer face planes of the main sash-frame.

4. In a fireproof window, the combination to form a self-contained, double-glazed sash, of a main marginal sash-frame externally constructed to seat or fit within the frame of the opening and provided in its inwardly-facing margins with seats for two glazings, one of said seats containing a permanently-mounted fireproof glazing, a removably-seated glazing-frame mounted in the other rabbet, a fireproof glazing mounted in said glazing-frame and ventilating-passages leading into the space

between said glazings at the upper and lower ends of the sash, the removably-seated glazing-frame, its glazing, and the permanently-seated glazing being all arranged entirely within the main marginal sash-frame and between the outer face planes of the latter.

5. In a fireproof window, the combination of a main sash-frame provided with outer and inner rabbets, a glazing permanently seated in the outer rabbet, and a detachable glazing comprising a glazing-frame removably seated in the inner rabbet and itself provided with a glazing-opening of less length than that of the main frame, filling-in metal webs above and below the glazing of said detachable frame, ventilating-apertures formed in said webs, and holding-prongs arranged to project outwardly at opposite sides of the frame and parallel with the general plane of the latter, substantially as described.

6. In a fireproof window, the combination of a main sash-frame provided with outer and inner rabbets, a glazing permanently seated in the outer rabbet, a glazing-frame removably seated in the inner rabbet and itself provided with rabbets, a glazing seated in said removable frame of less length than the full length of the frame, metal filling-in webs above and below the glazing of said detachable frame, ventilating-apertures formed through said webs, and holding-prongs arranged to project upwardly and downwardly at opposite sides of the removable frame and parallel with the general plane of the latter, and registering apertures in the main sash-frame to receive said prongs, said removable frame being made shorter than the seat within which it fits so as to be capable of being shifted upwardly to disengage the lower pair of prongs, substantially as described.

FRANK VOIGTMANN.
SILAS H. POMEROY.

Witnesses to Voigtmann's signature:

ALBERT H. GRAVES,
A. M. CRONA.

Witnesses to Pomeroy's signature:

GEO. M. BAKER,
E. G. DUVALL.