

(No Model.)

2 Sheets—Sheet 1.

J. H. GIESEY.
WINDOW.

No. 488,761.

Patented Dec. 27, 1892.

Fig. 1.

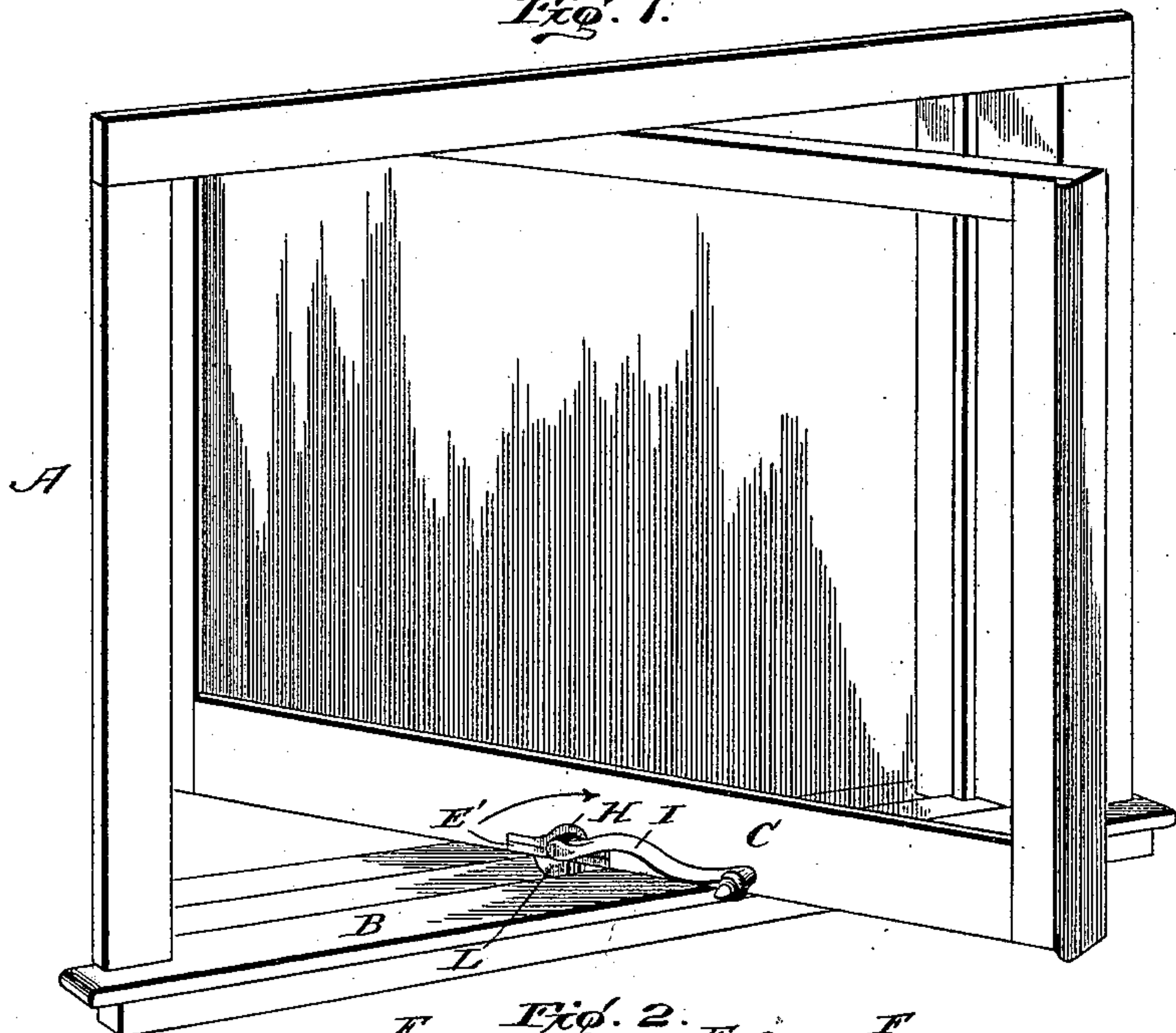
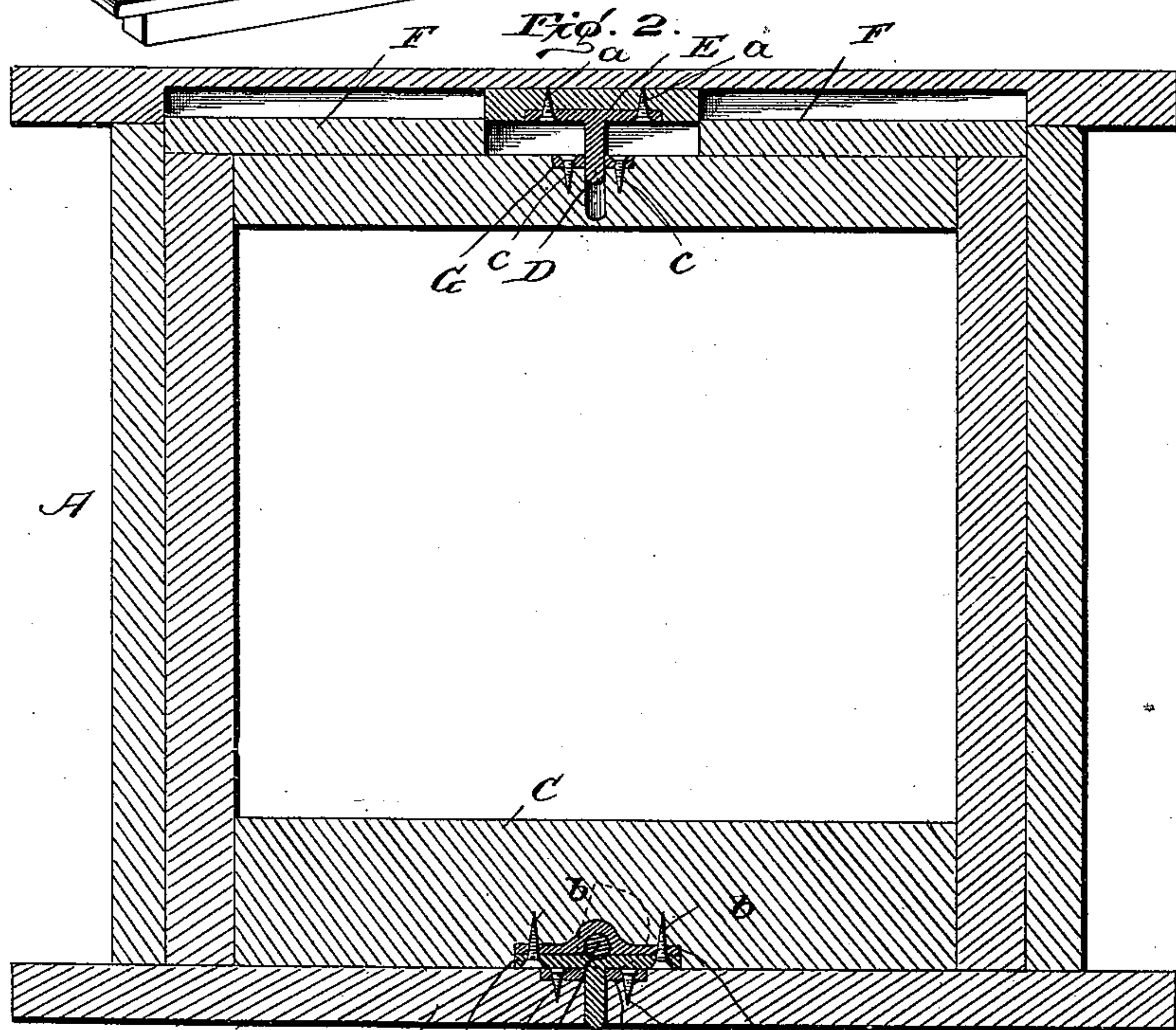


Fig. 2.



Witnesses:

Edwin L. Bradford
Curtis Hammond

B E d H C' d H
D'

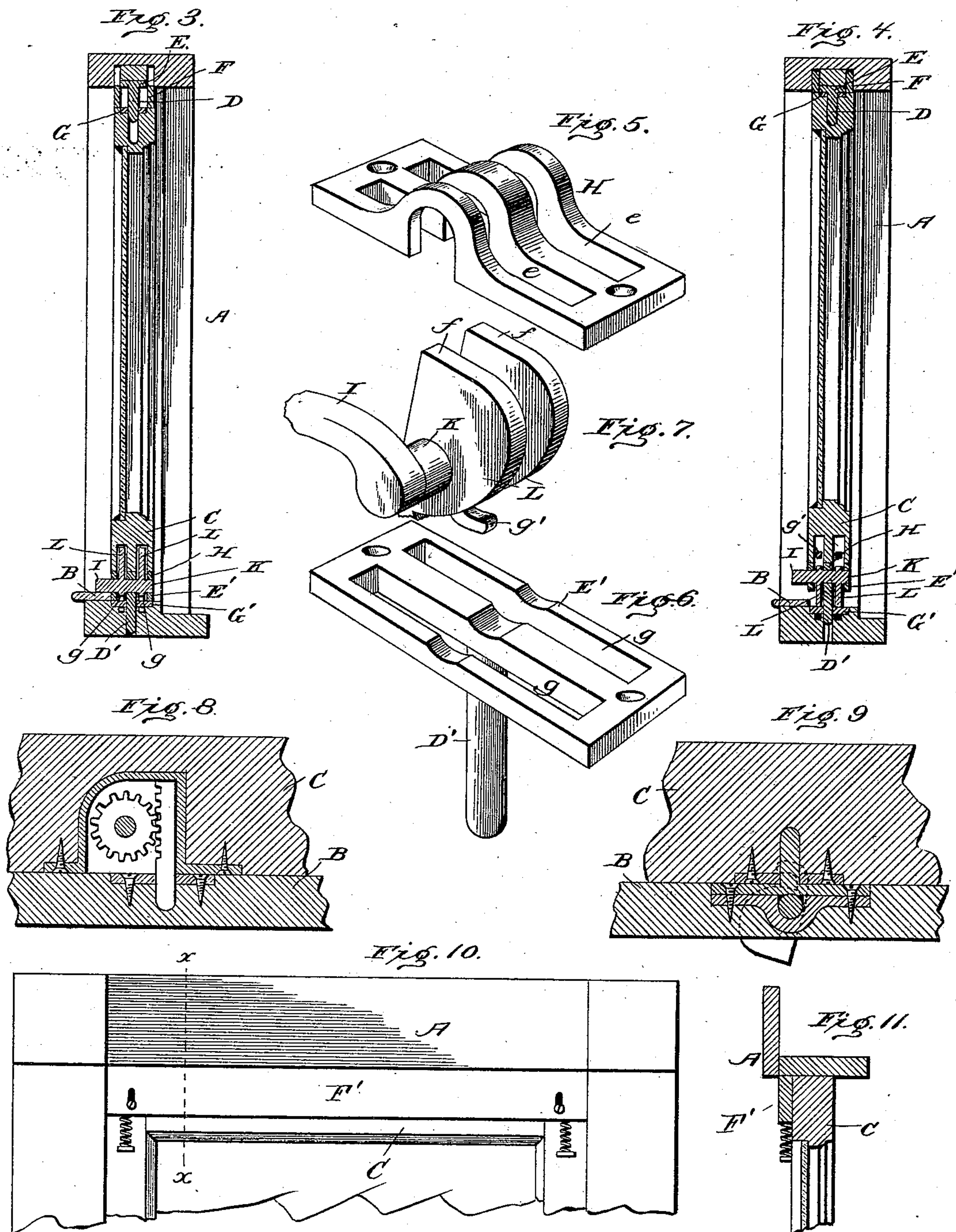
Inventor:

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UNITED STATES PATENT OFFICE.

JAMES H. GIESEY, OF HIGHLAND, OHIO.

WINDOW.

SPECIFICATION forming part of Letters Patent No. 488,761, dated December 27, 1892.

Application filed September 22, 1892. Serial No. 446,597. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. GIESEY, a citizen of the United States, residing at Highland City, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Windows; 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 certain new and useful improvements in windows for dwellings and other buildings, and particularly to that class of windows which are pivoted vertically and adapted to rotate into an open or closed position.

Prior to my invention, so far as I am aware, pivoted windows have been so constructed and normally arranged with reference to the sill that the sash in its rotary movement has always moved in a plane slightly above the plane of the window sill, and consequently a neat or weather tight joint could not be made. Efforts to overcome this inherent disadvantage have been suggested, consisting in providing the sill with a molding or strip adjacent to that half of the sash which in its rotary movement traveled away from the inside of the sill, but a concomitant disadvantage of this arrangement laid in the fact that the molding or strip formed a check against the rotation of the sash beyond one half of a complete circle and consequently great difficulty has been experienced in cleaning the outside surface of the window; and the further disadvantage has existed in the fact that that half of the sill which of necessity was devoid of the molding or strip was in a condition to admit between it and the window sash wind, dirt and rain; another disadvantage of the construction referred to lying in the fact that the entire weight of the sash is at all times exerted upon the central lower vertical pivots and a consequent sagging of the same takes place each side of said pivot to such an extent that the sill is marred and defaced by the rotary movement of the sash.

My invention has for its objects to overcome all these defects and disadvantages of a pivoted sash, and to secure in such a sash all the advantages which are inherent with an ordinary vertically movable sash; and

with these objects and ends in view my invention consists generically of a vertically pivoted sash so arranged with the frame and sill of a window that it shall have both a vertical movement, by which it may be raised out of and lowered into a seat, and a rotary movement by which it may be revolved to open and close the window, as will be hereinafter more fully explained.

My invention also consists in the peculiar construction and arrangement of the devices employed for securing the results aimed at.

In order that those skilled in the art to which my invention appertains may fully understand the same, I will proceed to describe its construction, arrangement and mode of operation, referring by letters to the accompanying drawings in which—

Figure 1 is a perspective view of a sash and frame embodying my invention. Fig. 2 is a central vertical section. Fig. 3 is a transverse vertical section showing the sash in closed position in the rabbet of the sill. Fig. 4 is a similar view showing the sash elevated into position ready to be rotated. Fig. 5 is a perspective view of the casting or box designed to receive the lifting device. Fig. 6 is a perspective view of the lower pivot and plate. Fig. 7 is a similar view of the lifting device with the lever or arm broken off. Fig. 8 is a detail sectional view showing a modification of the lifting device. Fig. 9 is a partial sectional detail view showing the lifting device located in the sill, instead of the sash. Fig. 10 is a partial front elevation showing a modification of the means for closing the space at the top between the sash and the frame; and Fig. 11 is a vertical cross section at line x, x of Fig. 10.

Similar letters of reference indicate like parts in the several figures of the drawings.

A represents an ordinary window frame with the sill B provided with a rabbet or seat for the lower rail of the sash C as is customary in the construction of windows in which the sash is raised and lowered to open and close the window; this seat or rabbet in the sill being essentially necessary to form a guard against the entrance of wind, dirt and rain when the window is closed. The sash C is swung centrally upon vertical pivots D, D'; the upper one D is formed integral with a

rectangular plate E and the latter is secured to the frame by screws *a*. The lower pivot D' is formed integral with a plate E' which plate is secured by screws *b* in a mortise on the under side of the lower rail of the sash, and formed with two longitudinal channels *g, g*, to permit of the movement, hereinafter described, of the eccentrics. The sash is made less than the length of the opening in the frame, and consequently when the lower rail of the sash is properly seated upon the sill or in the rabbet thereof, the upper rail of the sash will be below the under side of the upper part of the frame, and to close the space thus created I provide an ordinary "follower" F which rests upon the upper rail of the sash and is lifted thereby, when the sash is raised, and falls by gravity when the sash is lowered; this follower is mortised out centrally to surround the upper pivot plate D, when the said follower is lifted, as is clearly shown at Fig. 2.

G is a plate mortised in the upper rail of the sash and secured by screws *c* and forms a guide and circumferential support for the upper pivot D; and G' is a similar plate secured by screws *d* within a mortise in the sill B, to similarly guide and support the lower pivot D'.

Above the lower pivot plate E, and within a mortise in the lower rail of the sash is located a casting H, which is secured in place by the same screws (*b*) which secure the plate E'. This casting H is cored out centrally as clearly shown, and when in position forms with the plate E' a journal box for the shaft of the lifting device to be presently explained. The casting H is also formed with two longitudinal channels *e, e*, to receive and guide the eccentrics employed to lift the sash.

The lifting device consists preferably of a single casting composed of an arm or lever I, journal K, and preferably two eccentrics L, so that said eccentrics will straddle or lie one each side of the lower pivot D' when in place. In locating the lifting device the journal K thereof is placed within the cored out portion or box in the casting H and the plate E' is then put in place to confine the journal, the eccentrics L, L, being arranged within the channels *e, e* and the parts thus adjusted are secured within the mortise in the lower rail of the sash by the screws *b*. It will be seen that the lifting portion of the eccentrics L terminate in substantially straight feet at *f* so that after the cam face portion of the eccentrics, when rotated by the lever I, have lifted the sash away from the sill to the extreme limit of movement, the straight foot portions *f* will rest upon the guiding plate G' and prevent the sash from dropping and the journal K from accidental rotation; and when in this position the lower edge of the sash is sufficiently far above the sill of the frame to permit the former to be freely rotated to open the window. When the sash is closed and

the eccentrics are returned to their normal position, the extensions or nose portions *g', g'*, swing under the solid portion of the plate G' and thus form a substantial and strong sash lock, which prevents the lifting and rotation of the sash unless the lifting device on the inside of the sash be first operated. If the locking device be thought unnecessary, the eccentrics L, L, may be made without the extensions *g', g'*, but I prefer to make them as described.

In lieu of the lifting device described, I may employ any other suitable lifting device, such for instance as the modification shown at Fig. 8, consisting of a rack and pinion, and though I prefer the one fully described I do not wish to be limited in that particular. The casting constituting the lifting device should of course be proportioned to the weight it is designed to lift, and, if thought desirable, the lever may be cast separate from the journal and eccentrics, and adapted to fit a square head formed on the journal.

In lieu of the follower F, the upper rail of the sash may be provided with a spring strip F' shown at Figs. 10 and 11 the springs tending to keep the upper edge of the strip always in contact with the under side of the upper part of the frame A; or any other suitable means may be employed for closing the space between the sash and frame. It will also be understood that in lieu of arranging the lifting devices within a recess or mortise in the lower rail of the sash, they may be reversed and placed within the sill, though I prefer to arrange them as described and illustrated.

Having described the construction and arrangement of the several parts of my improved window I will now proceed to describe the operation of the same. The window being in a closed condition, and it being desired to open the same, the lever I is turned to the right as indicated by the arrow until the journal K has rotated sufficiently far for the eccentrics to lift the sash free from the rabbet in the sill and for the feet or straight portion of the eccentrics to rest upon the plate G', during which movement the follower F has been lifted up into its pocket or box in the upper portion of the frame A. The sash may now be freely rotated upon its vertical pivots D, D' at any angle to the natural plane of the window, and to such an extent that the outside surface of the sash (or glass) is readily accessible from the inside for the purpose of cleaning the same. When it is desired to restore the sash to its closed position it is rotated in a reverse direction until it reaches its normal plane within the frame, the lever I is then thrown back and the weight of the sash causes it to descend within the rabbet in the sill and to rest with its entire weight throughout its entire width upon the sill, and as the sash in ordinary use is for a greater portion of the time closed, it will be seen that its own weight operates to keep it in true and stiff condition,

thus avoiding the sagging or distortion occurring in pivoted windows as ordinarily constructed.

Many variations may be made in the details of construction without departing from the spirit of my invention, the gist or genus of which consists in the broad idea of a pivoted sash so arranged that it can be moved vertically to seat itself within a recess or rabbet in the sill, and to be released from and rotate above such seat.

What I claim as new and desire to secure by Letters Patent, is:—

1. A window sash pivoted within the frame and also movable vertically therein, said sash being of less height than the frame space, and having means for closing the opening between the sash and frame, substantially as described.

2. A window sash pivoted within the frame, and also movable vertically therein, said window sash being of less height than the frame space, and a vertically movable strip for closing the space between the sash and frame, substantially as described.

3. A window sash pivoted within the frame and also movable vertically therein, said window sash being of less height than the frame space, and having means for closing the opening between the sash and frame, in combination with means for lifting the sash, substantially as described.

4. A window sash pivoted within the frame and also movable vertically therein, said sash being of less height than the frame space, and having means for closing the opening between the sash and frame, in combination with a lifting device composed of a lever, rotating journal and eccentrics, substantially as described.

5. In combination with the sash the lifting device consisting of a suitable casting or box H, the lever I, journal K and eccentrics L, moving through slots in casting H substantially as described.

6. In combination with the sash the casting or box H provided with a bearing surface for the journal and formed with longitudinal channels *e* to receive and guide the eccentrics, and said eccentrics substantially as described.

7. In combination with the sash the lifting device having the eccentrics L formed with an extension *g'* in combination with the slotted plate *G'* secured to the sill, whereby the sash may be locked, substantially as described.

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

JAMES H. GIESEY.

Witnesses:

D. G. STUART,
CURTIS LAMMOND.