

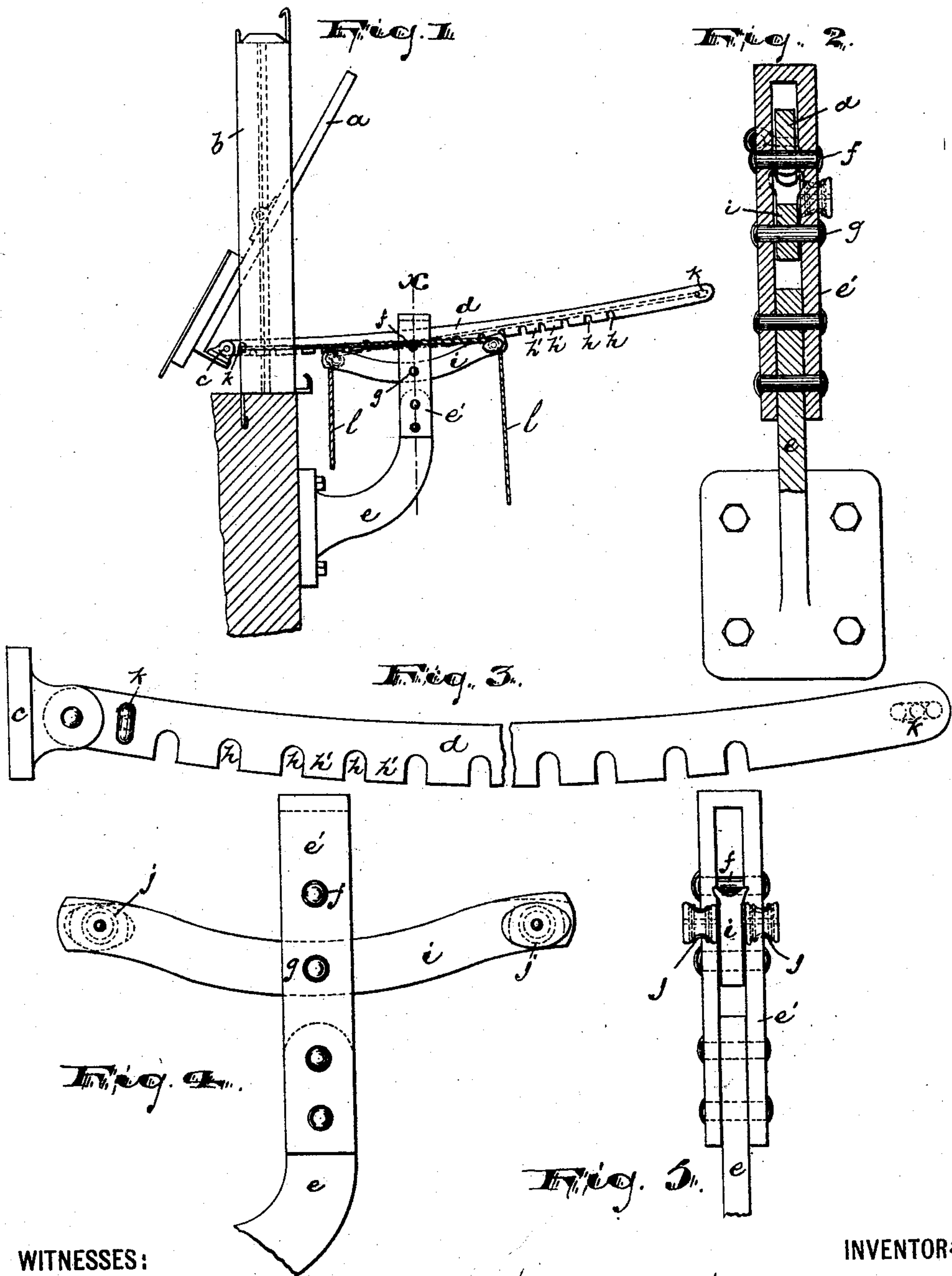
(No. Model.)

G. SCHWING.

LIFT FOR SASHES, TRANSOMS, OR SKYLIGHTS.

No. 605,681.

Patented June 14, 1898.



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LIFT FOR SASHES, TRANSOMS, OR SKYLIGHTS.

SPECIFICATION forming part of Letters Patent No. 605,681, dated June 14, 1898.

Application filed November 20, 1897. Serial No. 659,222. (No model.)

To all whom it may concern:

Be it known that I, GEORGE SCHWING, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Skylight, Transom, or Sash Operators; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to facilitate and render more convenient the operation of opening and closing skylights, transoms, and other pivotal sashes, to provide means for firmly securing the sash in various positions, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved skylight, transom, or sash operators and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a side view showing my improved operator in connection with a pivotal sash or skylight. Fig. 2 is a section on an enlarged scale, taken at line *x*, Fig. 1. Fig. 3 is a detail view of a certain rack adapted to be applied to the sash. Fig. 4 is a side view of a keeper adapted to engage said rack, and Fig. 5 is an edge view of said keeper.

In said drawings, *a* indicates a pivotal sash, transom, or skylight arranged in a frame *b* of any desirable kind or construction. At one end or edge of said sash the same is provided with a bracket *c*, upon which is pivoted the end of a supplemental rack *d*, of strap-like metal, adapted to extend into the room from said sash at substantially right angles when the transom is in closed position, as indicated in Fig. 1. Said rack *d* is preferably more or less curved and has its concave edge uppermost in order to secure its better adjust-

ment in relation to the other parts of the device, as will be understood.

Said rack has a series of notches or recesses *h h* on its convex or lower edge, which notches are adapted to receive a horizontal pin or bar *f*, arranged in the keeper in a manner to be hereinafter described. Near the extremities of said rack are provided cord-holders *k k*, which project from opposite sides of the rack *d* and consist of eyes having shanks for attachment to said rack or of any other suitable means for securing the end of a cord.

Below the frame *b* is arranged a bracket *e*, which has a broad foot adapted to be fastened to the wall by screws or bolts. The arm of said bracket is preferably upturned at its outer end and carries a loop or keeper *e'*, which may be an independent piece or may be formed integral with said bracket in any suitable manner. Said loop provides a space of sufficient width to loosely receive the said rack *d* in an edgewise position and has its sides of considerable width to prevent lateral movement of the parts inclosed therebetween. Across the open space of said loop are arranged transverse pins *f* and *g*, which have bearings in the sides of the loop and are riveted in position. Of said pins the upper one *f* serves as a pawl-tooth to enter the notches *h* of the rack, and the lower one *g* serves as the pivot for a lever *i*, inclosed by the keeper *e'* in the same position as the rack *d*. The said lever *i* consists of a piece of strap-like metal pivoted in the loop or keeper *e'* below the rack *d* upon the pin *g*, preferably at its middle point, so as to bear at either end with equal force upon the rack *d*, as will be hereinafter described. Said lever is preferably upwardly concave or has its ends bent upward, whereby the said ends may be brought to bear more positively upon the rack above. At the opposite extremities of said lever *i* the upper edges of its arms are preferably grooved or forked for a short distance, as at *i'*, to provide bearings to better engage the under edge of the rack *d*, in a manner to be hereinafter more fully described. The lever *i* has, further, pulleys *j j*, fastened flatwise against its sides near the extremities of said lever. These pulleys are on opposite sides of the lever and each one faces in the same direction as the cord-holder on the oppositely-pointing

end of the rack *d* above. These pulleys may in some cases be made with their frames integral with the lever *i* and the sheaves pivoted therein.

5 For operating my device cords *l l* are fastened at their ends to the cord-holders *k k* on the opposite sides of the opposite ends of the rack *d*. Then each cord is carried along the side of the rack and run through the pulley
10 *j* which is on the corresponding side, but the oppositely-pointing end, of the lever *i*. From thence said cords may hang downward or may be passed through any pulley necessary to bring them into the desired position to be
15 conveniently grasped by the hand.

When it is desired to open the skylight or transom, the cord *l* nearest the wall is pulled. This draws the inner end of the lever *i* or end nearer the wall *m* downward and causes the
20 lever to swing upon its pivot *g*, throwing the outer end or end farthest from the wall *m* upward, forcing up the free end of the rack *d* and raising the recess *h* from engagement with the pin *f*. The upward movement of
25 the free end of the rack *d* is limited and stopped by the closed upper end of the keeper *e'*, and at the same moment the pivotal movement of the lever *i* is stopped. Then the cord *l* draws over the then stationary pulley
30 and slides the rack *d* horizontally, thus opening the sash *a*. Upon releasing the cord the free end of the rack *d* falls by its own weight, bringing a recess *h* into engagement with the pin *f* and locking the sash in position. It
35 will be understood that the above-described actions of the different parts may take place simultaneously to a greater or less extent, according to the nicety of adjustment. To close the sash *a*, the outer cord *l* is pulled, which

produces an action precisely similar to that 40 just described in opening the sash, except that the rack *d* is slid horizontally in the opposite direction, thus closing the sash.

Having thus described the invention, what I claim as new is—

45 1. The combination of the rack *d*, having a series of notches or recesses in its lower edge, a keeper *e'*, for said rack and having a transverse pin to enter said notches, a lever arranged in said keeper and having its opposite 50 ends grooved or forked at the upper edges to engage said rack, and means for operating said lever, substantially as set forth.

2. In a sash-operator, the combination with a rack *d*, pivoted at one end to the sash, and 55 supporting-pin *f*, of a lever upwardly curved and having its opposite ends grooved or forked at the upper edges to engage said rack, and cords attached to the opposite ends of said rack and passed over the sheaves on the ends 60 of said lever, substantially as set forth.

3. In a sash-operator, the combination with a keeper *e'*, arranged on the wall of a rack *d*; sliding longitudinally in said keeper, a transverse pin *f*, to support said rack and a lever 65 *i*, pivoted in said keeper in the same vertical plane with the rack, the ends of said rack having means for fastening the ends of cords thereto, and the ends of the lever having sheaves to receive the cords, and said cords, 70 substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of October, 1897.

GEORGE SCHWING.

Witnesses:

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C. B. PITNEY.