

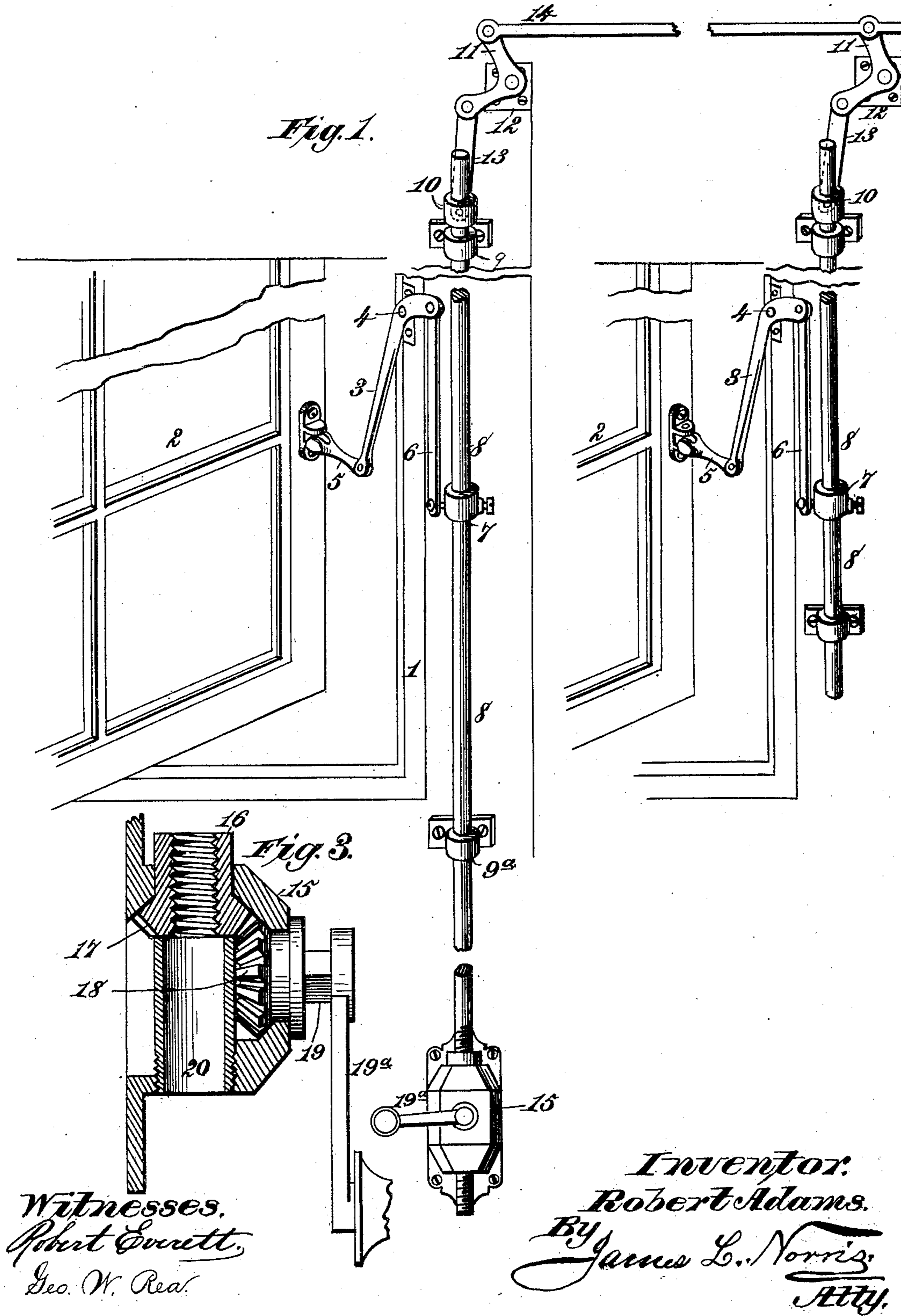
(No Model.)

2 Sheets—Sheet 1.

R. ADAMS.
TRANSOM LIFTER.

No. 354,296.

Patented Dec. 14, 1886.



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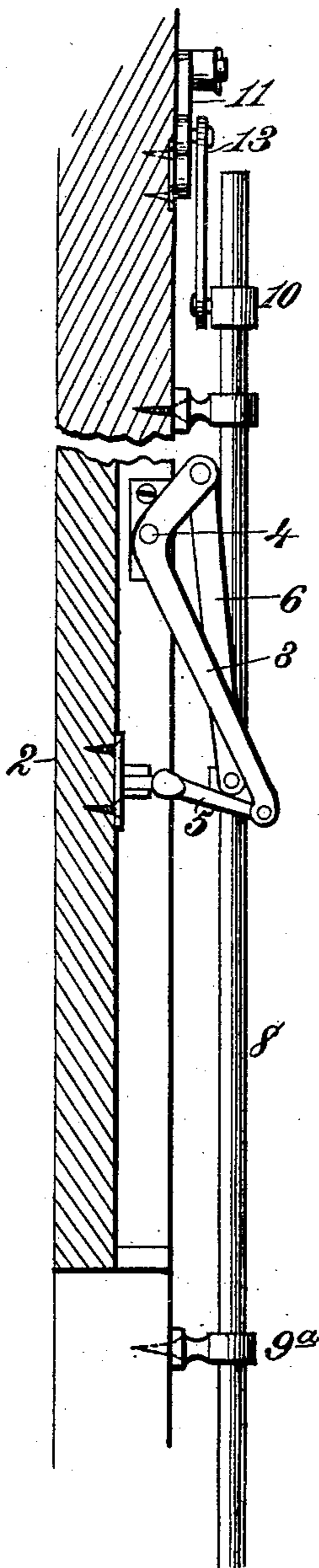
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Fig. 2.



Witnesses.
Robert Swett.
Geo. W. Rea.

Inventor:
Robert Adams.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

ROBERT ADAMS, OF SOUTHWARK, COUNTY OF SURREY, ENGLAND.

TRANSOM-LIFTER.

SPECIFICATION forming part of Letters Patent No. 354,296, dated December 14, 1886.

Application filed December 8, 1883. Serial No. 114,005. (No model.)

To all whom it may concern:

Be it known that I, ROBERT ADAMS, a subject of the Queen of Great Britain, residing at No. 7 Great Dover Street, Southwark, in the county of Surrey, England, engineer, have invented certain new and useful improvements in means and apparatus for opening, adjusting, closing, and securing objects hung on hinges or centers, such as casements, fan-lights, louvers, ventilators, lanterns, and skylights and doors, of which the following is a specification.

My invention relates to improvements in means for operating revolving window-sashes and other analogous devices; and it consists, essentially, in a bell-crank lever pivoted to the window-casing and connected at one end by a link or arm to the sash to be revolved. The other arm of the bell-crank lever is connected by means of a rod or arm to a vertically-movable bar operated by a bell-crank lever, so that when said bar is raised or lowered motion will be imparted to the arm connected with the bell-crank lever pivoted to the casing, which in turn will be operated, and, being connected with the window-sash, will revolve the same to open or close it, as desired.

Figure 1 is a perspective view of two window-sash frames and their connections, showing the manner of operating the same. Fig. 2 is a vertical section of one of the sash-frames closed. Fig. 3 is a detail section of the actuating device.

In said drawings, the reference-numeral 1 designates the window frame or casing, and 2 the window-sash, which is centrally pivoted in said casing.

3 designates a bell-crank lever, pivoted to the window-casing at 4. One arm of this lever carries a pivoted link or arm, 5, which is secured to the window-sash. To the other or short arm of the lever 3 is secured an arm or bar, 6, which is also secured to a collar, 7, on the vertically-movable rod 8. This rod 8 moves in bearings or guides 9 9^a, secured to the wall of the building or other convenient support, and is provided with a collar, 10,

which limits its downward movement by abutting against the upper bearing, 9.

To the upper end of the rod 8 is connected, by an arm, 13, one arm of a bell-crank lever, 11, pivoted at 12, the other arm of the lever being connected with the corresponding arm of a similar lever pivoted to actuate the next adjoining sash-frame. This connection is made by the rod 14, and the latter may be extended and connected to any required number of bell-cranks 11, whereby a series of sash-frames may be opened or closed simultaneously, as in a railway-car having ventilators composed of hinged sashes. The other arm of the bell-crank 11 is connected by means of a link, 13, to a vertically-movable rod, 8, sliding in eyes 9^a. The lower end of said rod is threaded, and engages with a sleeve, 16, having a female thread and provided with a miter-gear, 17, which meshes with a second driving-miter, 18, having a squared bearing, 19, which receives a crank, 19^a. Both the gears 17 and 18 have bearing within the casing 15, as shown in Fig. 3, and as the crank 19^a is operated the sleeve 16 will revolve and draw the rod 8 down, or raise it.

In order to secure perfect fit and retain all the parts securely in place, I prefer to employ a tube, 20, the lower end of which is threaded and screwed into an aperture in the casing 15.

The operation is as follows: When the sash is in the position shown in Fig. 1, and it is desired to revolve the same, and thereby close the window, the rod 8 is operated by revolving the crank 19^a in the proper direction, thereby raising said rod 8 and the short arm or lever 3, which is connected to said rod. This movement also actuates the bell-crank 11 by means of the link 13, and communicates the action to the next window through rod 14, causing lever 3 to assume the position shown in Fig. 2, thereby revolving the sash and closing the window.

What I claim is—

The combination, with the pivoted sash 2 or analogous object and the supporting-frame 1, of the link 5, pivoted to the sash, the verti-

cal bell-crank lever 3, pivoted to the frame 1 and connected with the link 5, the arm 6, extending in a downward direction from the short arm of the bell-crank lever, the vertical
5 rod having a collar, 7, to which the arm 6 is pivoted, and provided with a stop-collar, 10, the guide-eyes 9 9^a, the arm 13, the bell-crank lever 11, and the operating device connected with the latter, all constructed and relatively
10 arranged substantially as herein set forth.

In testimony whereof I have hereunto set my hand this 8th day of November, 1883.

ROBERT ADAMS.

Witnesses:

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