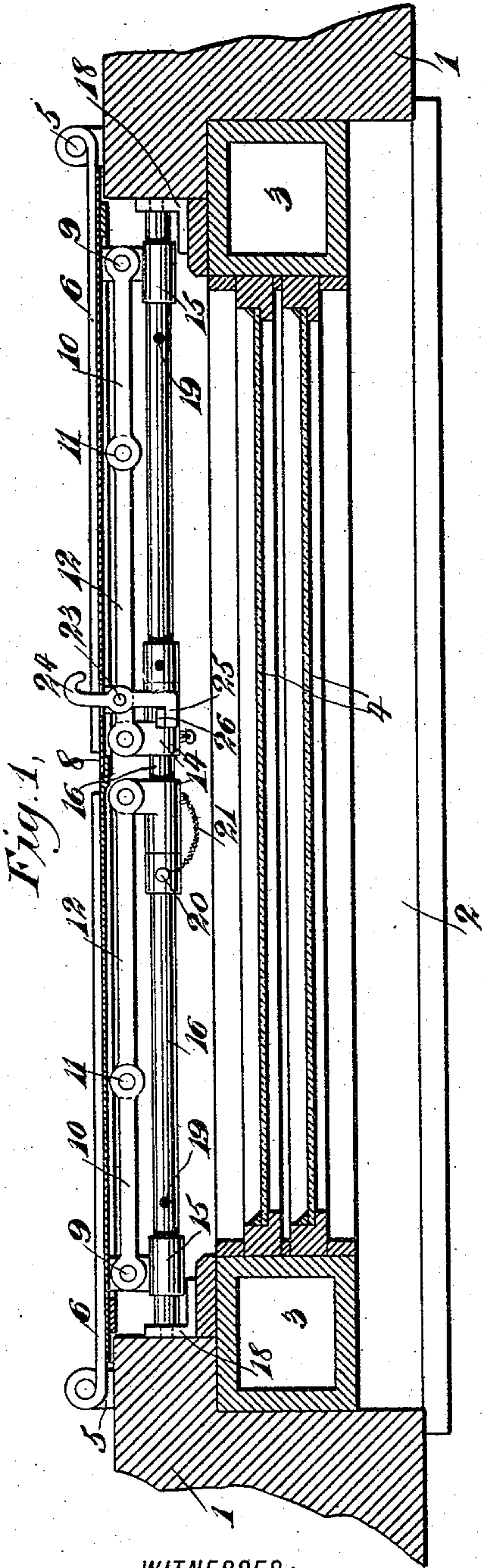


(No Model.)

R. H. IRELAND.
DEVICE FOR OPERATING SHUTTERS.

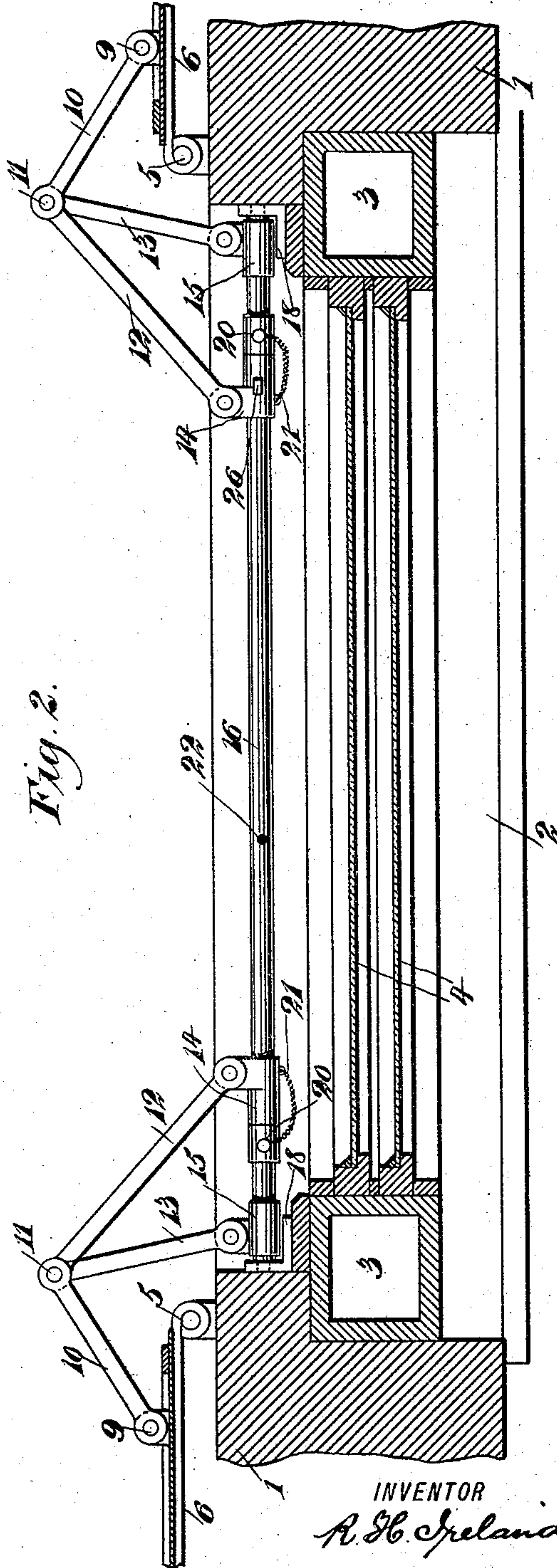
No. 572,804.

Patented Dec. 8, 1896.



WITNESSES:

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ROBERT H. IRELAND, OF NEW YORK, N. Y.

DEVICE FOR OPERATING SHUTTERS.

SPECIFICATION forming part of Letters Patent No. 572,804, dated December 8, 1896.

Application filed February 18, 1896. Serial No. 579,744. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. IRELAND, of New York city, in the county and State of New York, have invented a new and Improved Device for Operating Shutters, Gratings, and the Like, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in that class of devices which are employed for opening and closing shutters, doors, gratings, and the like, and has for its object to provide a device of this character, of a simple and inexpensive nature, which shall be strong and durable and not liable to be broken or deranged, being especially adapted for use on buildings for operating fire-shutters and the like.

The invention consists in certain novel features of the construction, combination, and arrangement of the various parts of the improved device whereby certain important advantages are attained, and the device is made simpler, cheaper, and otherwise better adapted and more convenient for use than various other similar shutter and grating operating mechanisms heretofore employed, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the views.

Figure 1 is a section taken horizontally through the wall of a building at a window-opening provided with fire-shutters operated by a device constructed in accordance with my invention, the shutters being shown closed; and Fig. 2 is a similar view, showing the shutters in their opened position.

In the views, 1 indicates the walls of a building to which the device is applied, and 2 indicates the window-opening, having a casing or frame 3, wherein are mounted sashes 4 in the ordinary way.

6 indicates the shutters, herein shown as ordinary fire-shutters, formed of metal plate, these being hinged, as indicated at 5, to the outer walls of the building at opposite sides of the window-opening 2 therein and adapted to be closed over said opening, as shown in Fig. 1. When closed, the adjacent edges of

the shutters 6 are arranged to overlap, as indicated at 8 in Fig. 1, and when opened the shutters will fold flat against the wall of the building in the ordinary way.

On the inner side of each shutter 6, adjacent to the hinge-point thereof, is formed a bearing piece or stud 9, whereon is pivoted one end of a link 10, the outer end of which is pivotally connected, as indicated at 11, with two links or levers 12 and 13, the lever or link 12 being of greater length than the link 13, and the opposite ends of the links or levers 12 and 13 are pivotally connected, as clearly indicated in the drawings, with sleeves 14 and 15, mounted to slide on a bar or rod 16, extending transversely across the window-opening 2 outside of the sashes 4 therein, being supported at its ends upon bearing-pieces 18. The rod or bar 16 will be by preference formed of metal tubing, and will be held at its ends on pins projecting from the bearing-pieces 18 in a well-known way.

The links 10 and 13, which are coupled together at 11, are of substantially equal length, while the links 12 are of greater length, and when the shutters 6 are opened, as indicated in Fig. 2, the links 10 and 13 stand substantially at right angles to each other, while the links 12 are inclined to the links 13 and have their sleeves 14 engaging the bar or rod 16 at points beyond the sleeves 15. The bar or rod 16 is provided adjacent to its opposite ends with apertures 19, as clearly shown in Fig. 1, adapted to be engaged by pins 20, which are held in openings in the sleeves 14, being provided with chains 21 for connecting them to said sleeves. In this way it will be seen that when the pins 20 are inserted through the apertures in the sleeves 14 and the openings 19 in the bar or rod 16 the links or levers 10, 12, and 13 will be locked against movement, so as to prevent the shutters 6 from being closed. When the pins 20 are removed, the sleeves 14 may be slid toward each other on the rod or bar 16 in such a way as to close the shutters over the opening 2 with their edges overlapping, as shown at 8 in Fig. 1, and when the shutters are closed the links or levers 10, 12, and 13 will be in alinement with each other, as indicated in Fig. 1.

Near its central portion the bar or rod 16 is provided with another opening 22, adapted

for the passage of the pin 20 on one sleeve 14 when the shutters are closed, so that said sleeve and the corresponding shutter may be securely locked against being opened. In order to lock the other shutter in such a way as to permit of opening the shutters from the outside in case of fire, I provide that shutter 6 with an opening extending through its body portion, through which opening extends a hook 24, pivoted, as indicated at 23, to the inside of the shutter and having an angular arm or hook 25 at its inner end adapted to engage a stud or projection 26 on one of the sleeves 14, whereby it will be seen that as the shutters are closed said hook 24 will be swung pivotally by engagement with the lug or projection 26, and its hooked end 25 will engage behind the same, so as to securely hold the shutters closed; but when it is desired to open the shutters from the outside of a building this may be accomplished by simply swinging the hook pivotally, so as to disengage the angular end 25 thereof from the stud or projection 26, whereupon the shutters may be readily swung open.

The link 13 serves to hold the joint between the links 10 and 12 a considerable distance outside the shutter, thus securing greater leverage in working the shutter, as will be readily understood. Where the links 13 and 10 are of the same length, the sleeve 15 may be fixed on the bar 16 and so operate as a brace for the shutter and permit it to operate easier and more evenly.

From the above description it will be seen that my improved device is of an extremely simple and inexpensive construction and is especially adapted for use in connection with shutters, doors, gratings, and the like for operating the same, since it affords not only a convenient means for opening and closing the shutters, but also acts as a lock to hold the shutters in closed and open positions, and also serves to brace the shutters upon their hinges.

It will also be obvious from the above description that the invention is susceptible of

some modification without material departure from its principles or spirit, and for this reason I do not wish to be understood as limiting myself to the precise arrangement of the parts herein set forth.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the shutter, a link pivoted at one end to said shutter, two links both pivotally connected at one end with the said first link and a rod along which the opposite ends of said two links slide, substantially as set forth.

2. The combination of a shutter, grating or the like, a bar extending across the space closed by the shutter, grating or the like, two sleeves mounted to slide on the bar, links of different lengths each connected at one end to one of the sleeves, both such links being coupled at their other ends to the same shutter, and means for holding the sleeves against movement on the bar, substantially as set forth.

3. The combination of a shutter, grating or the like, a bar extending across the opening closed by the shutter, grating or the like, sleeves on the bar, a link coupled at one end to the shutter, links of different lengths each coupled at one end to the front end of the first-mentioned link and at its other end to one of the sleeves, and means for holding the sleeves against movement, substantially as set forth.

4. The combination of a shutter, grating or the like, a bar extending across the opening closed by the shutter, grating or the like, sleeves mounted to slide on the bar, pivotally-connected links coupled to the sleeves and connected with the shutter, a projection on one of the sleeves, and a hook carried by the shutter arranged to engage said projection, substantially as set forth.

ROBERT H. IRELAND.

Witnesses:

J. STANLEY VOORHEES,
WILLIAM KURZ.