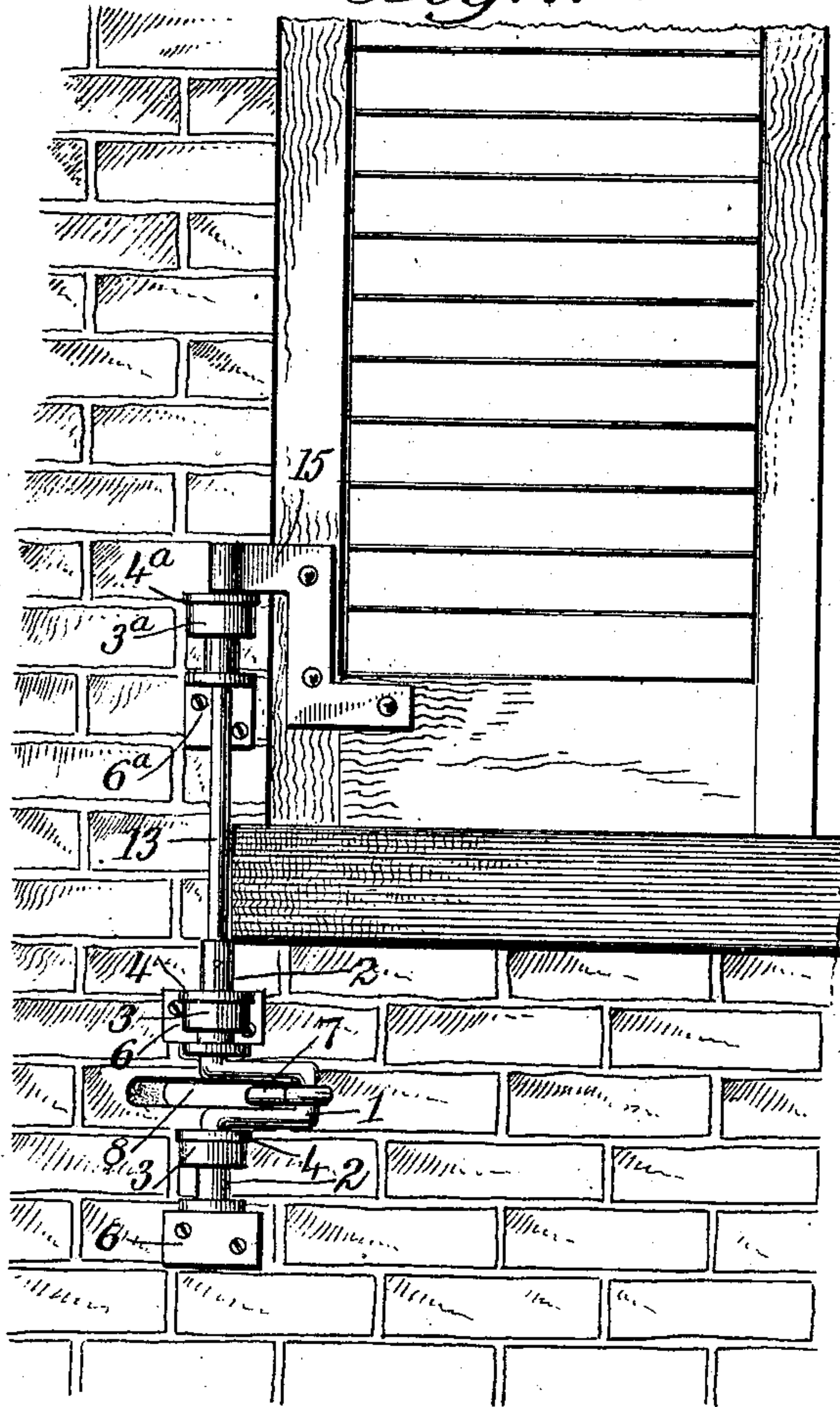


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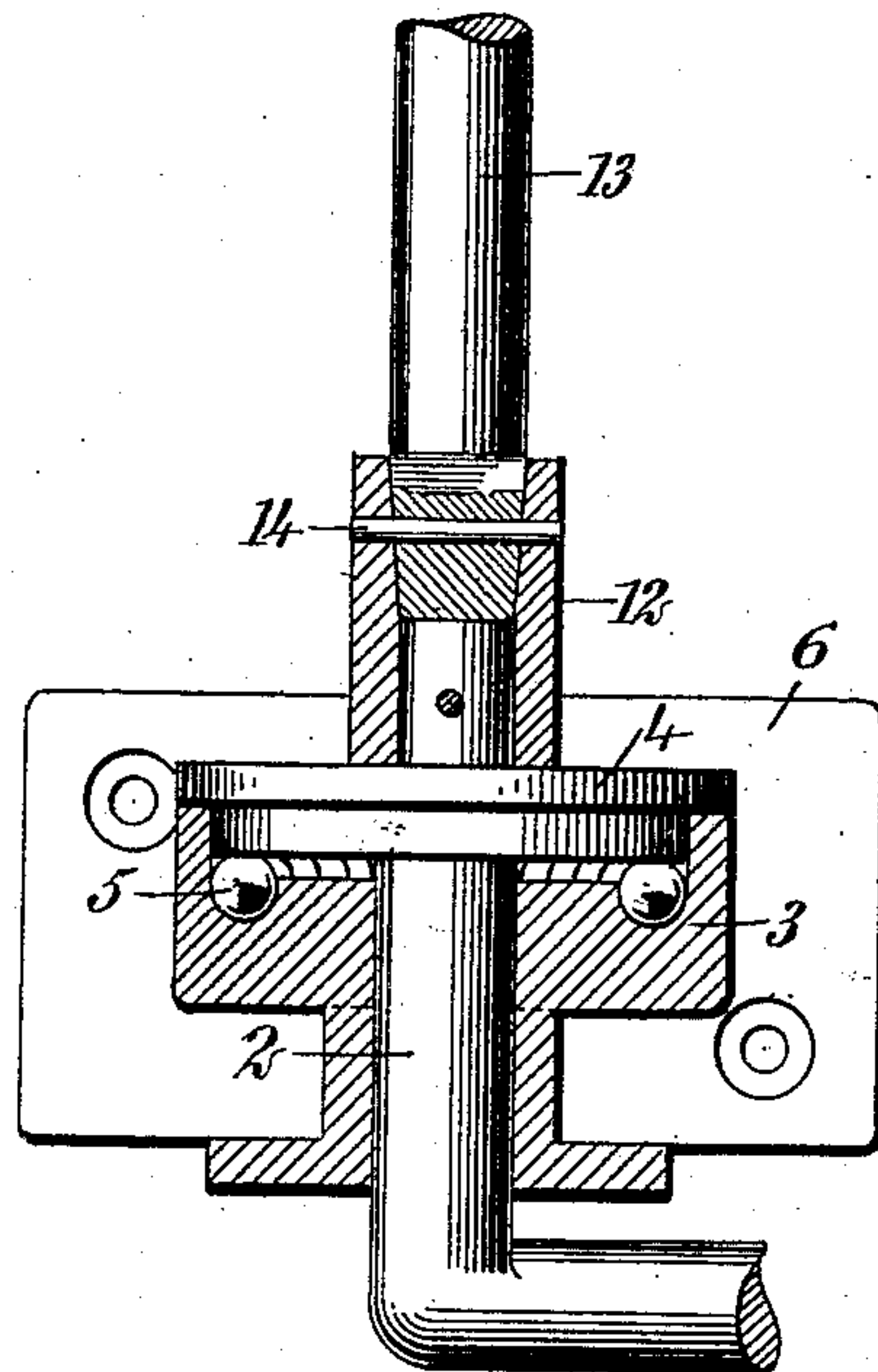
PATENTED SEPT. 10, 1907.

D. F. LONERGAN.  
DEVICE FOR OPERATING WINDOW BLINDS.  
APPLICATION FILED MAR. 11, 1907.

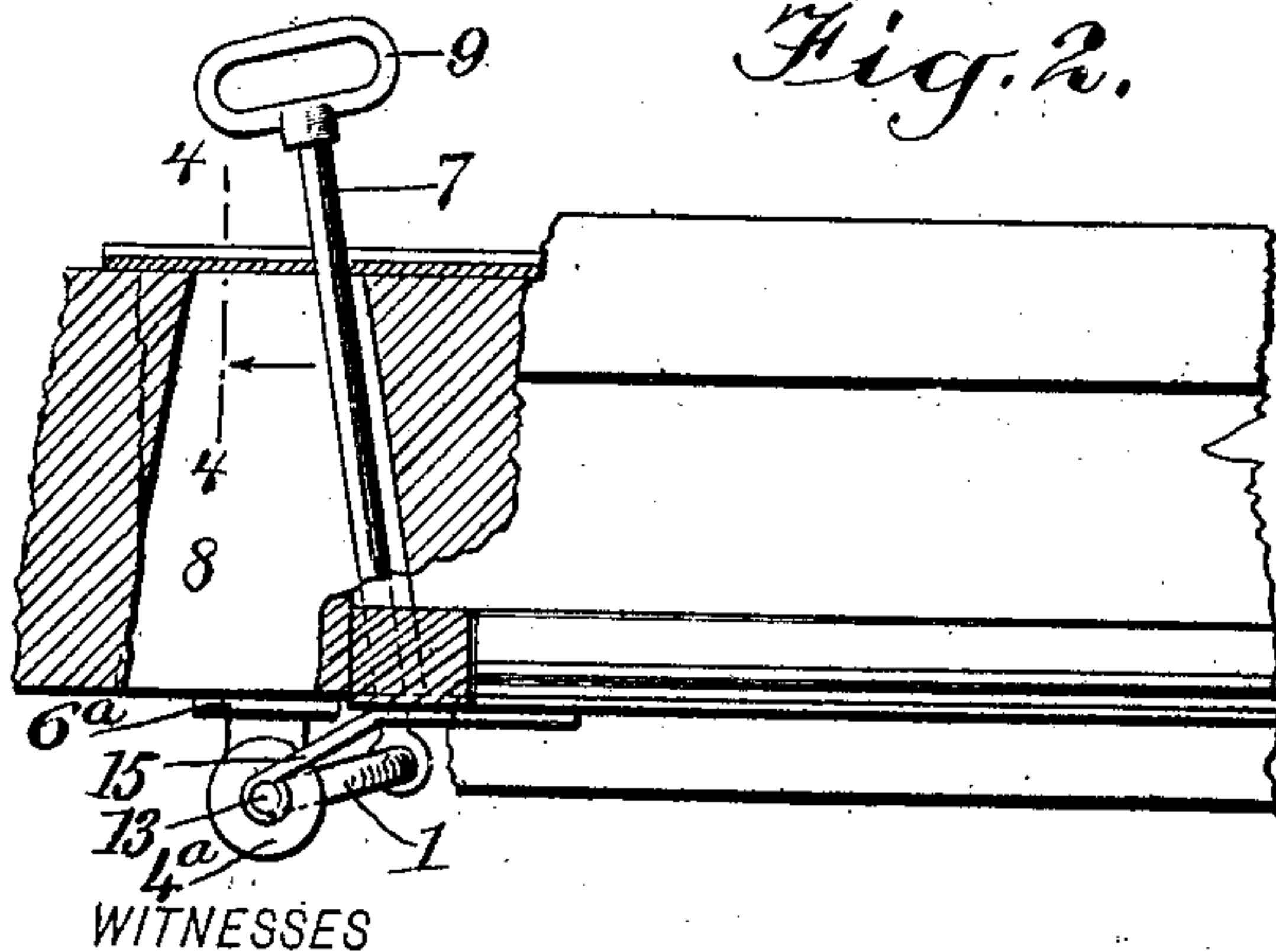
*Fig. 1.*



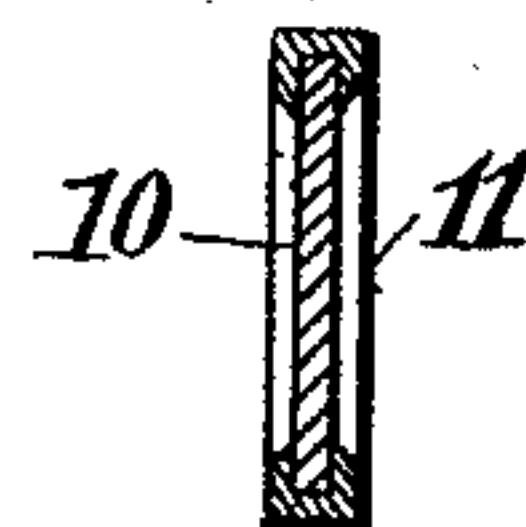
*Fig. 3.*



*Fig. 2.*



*Fig. 4.*



WITNESSES

*Geo. W. Naylor*  
*W. W. Abel*

INVENTOR  
*Daniel F. Lonergan*  
BY *Mum & Co*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

DANIEL F. LONERGAN, OF MORRISTOWN, NEW JERSEY.

## DEVICE FOR OPERATING WINDOW-BLINDS.

No. 865,922.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed March 11, 1907. Serial No. 361,827.

*To all whom it may concern:*

Be it known that I, DANIEL F. LONERGAN, a citizen of the United States, and a resident of Morristown, in the county of Morris and State of New Jersey, have invented a new and Improved Device for Operating Window-Blinds, of which the following is a full, clear, and exact description.

This invention has reference to improvements in devices for opening and closing the outside blinds of windows, being especially directed to a device of this character operable from the inside of the house, whereby the blinds and shutters may be swung to the desired position without the necessity of raising or opening the window sash.

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 all the figures.

Figure 1 is a side elevation of a house, showing a fragment of a window blind and the manner of applying my improvement thereto; Fig. 2 is a plan of the construction shown in Fig. 1, partly in section; Fig. 3 is a fragmentary view on an enlarged scale and partly in central, longitudinal section of one of the bearings for the device, and Fig. 4 is a cross section on the line 4-4 of Fig. 2, looking in the direction of the arrows.

The device as it is preferably constructed, comprises a crank 1, the ends of which are oppositely turned to provide alining shafts 2, the latter being journaled in ball bearings consisting of cups 3 and flanged disks 4 seated in their upper faces, the disks being rigidly fixed to the shafts 2 and resting on balls 5 arranged in annular grooves in the bottom of the cups, this construction being clearly illustrated in detail in Fig. 3. The cups 3 are rigidly connected and supported from plates 6, which are provided with screw holes or other suitable fastening means for securing them to the outer wall of the building.

The crank 1 has journaled thereon a push bar 7, which is to be passed through an outwardly-flaring slot 8 cut into the wall of the building when the device is applied to the blind. The bar 7 is provided with an operating handle 9 at its free end and passes through a plate 10 slidable in suitable guides 11 fixed to the inner wall of the house. By this construction, on operating the crank by the handle 9 of the bar 7, the plate 10 will be caused to travel with the movement of the bar and serve to keep the slot 8 at all times closed.

The flanged disk 4 at the upper side of the crank 1 is provided with a coupling 12 which is keyed or otherwise fixed to the extended end of the shaft 2,

said coupling having an angular tapered bore at its upper end which receives the lower end of a spindle 13, the coupling and spindle being secured together by a cross-pin 14.

The upper end of the spindle 13 has secured thereto a Z-shaped plate 15, which is designed to be attached to the lower inner corner of the blind, as illustrated in Fig. 5.

Directly under the plate 15 the spindle 13 is provided with a ball-bearing consisting of a cup 3<sup>a</sup> and flanged disks 4<sup>a</sup> of the same construction as the bearings 3 and 4 just described. The cup 3<sup>a</sup> is also supported from the wall of the building by a plate 6<sup>a</sup> corresponding to the plates 6 which carry the cups 3.

The ball bearings for the crank and spindle operate to receive the entire weight of the blind as it is swung and thereby reduce the power required to work the bar 7 to a minimum.

It is evident that the invention is susceptible to numerous modifications falling within the scope of the annexed claims.

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

1. A device for operating window blinds, comprising a crank, ball bearings for revolubly supporting the crank, means for working the crank, and means in fixed relation to the crank adapted to be secured to a blind.

2. A device for operating window blinds, comprising a crank, ball bearings for revolubly supporting the crank, means for working the crank in said bearings, a spindle in fixed relation to the crank, ball bearings for the spindle, and means fixed to the spindle adapted to be attached to a window blind.

3. A device for operating window blinds, comprising means adapted to be attached to a blind, a spindle fixed to said means, a crank in fixed relation to the spindle, a bar for working the crank, a closure plate carried by the bar and ball bearings in which the crank and spindle are revolubly mounted, acting to support the weight of the blind.

4. A device for operating window blinds, comprising a crank, bearings for revolubly supporting the crank arranged at the bottom and top thereof, a spindle fixed to the upper end of the crank, means for attaching said spindle to a window blind, and a push bar for operating said crank.

5. A device for operating window blinds, comprising a crank, bearings for revolubly supporting the crank at the top and bottom thereof, a spindle fixed to the upper end of the crank, a plate fixed to the spindle adapted to be attached to a window blind, a bearing in which said spindle is revolubly mounted adjacent to said plate, and a push bar for operating said crank.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL F. LONERGAN.

Witnesses:

SIDNEY COLLINS,

MARTIN I. O'BRIEN.