

1,298,336.

F. L. GUNTON.  
WINDOW CONTROLLING APPARATUS.  
APPLICATION FILED OCT. 5, 1918.

Patented Mar. 25, 1919.

3 SHEETS—SHEET 1.

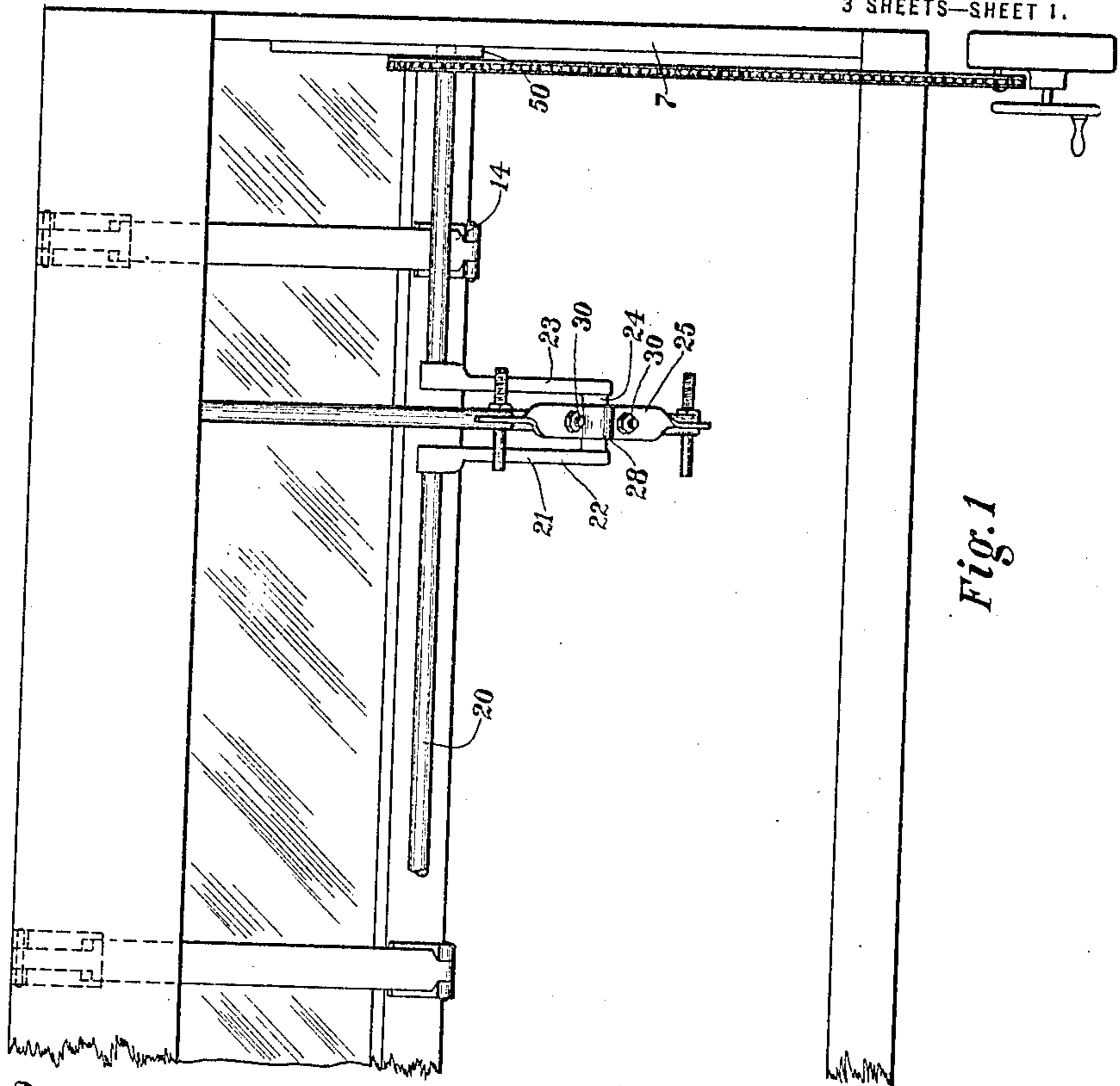


Fig. 1

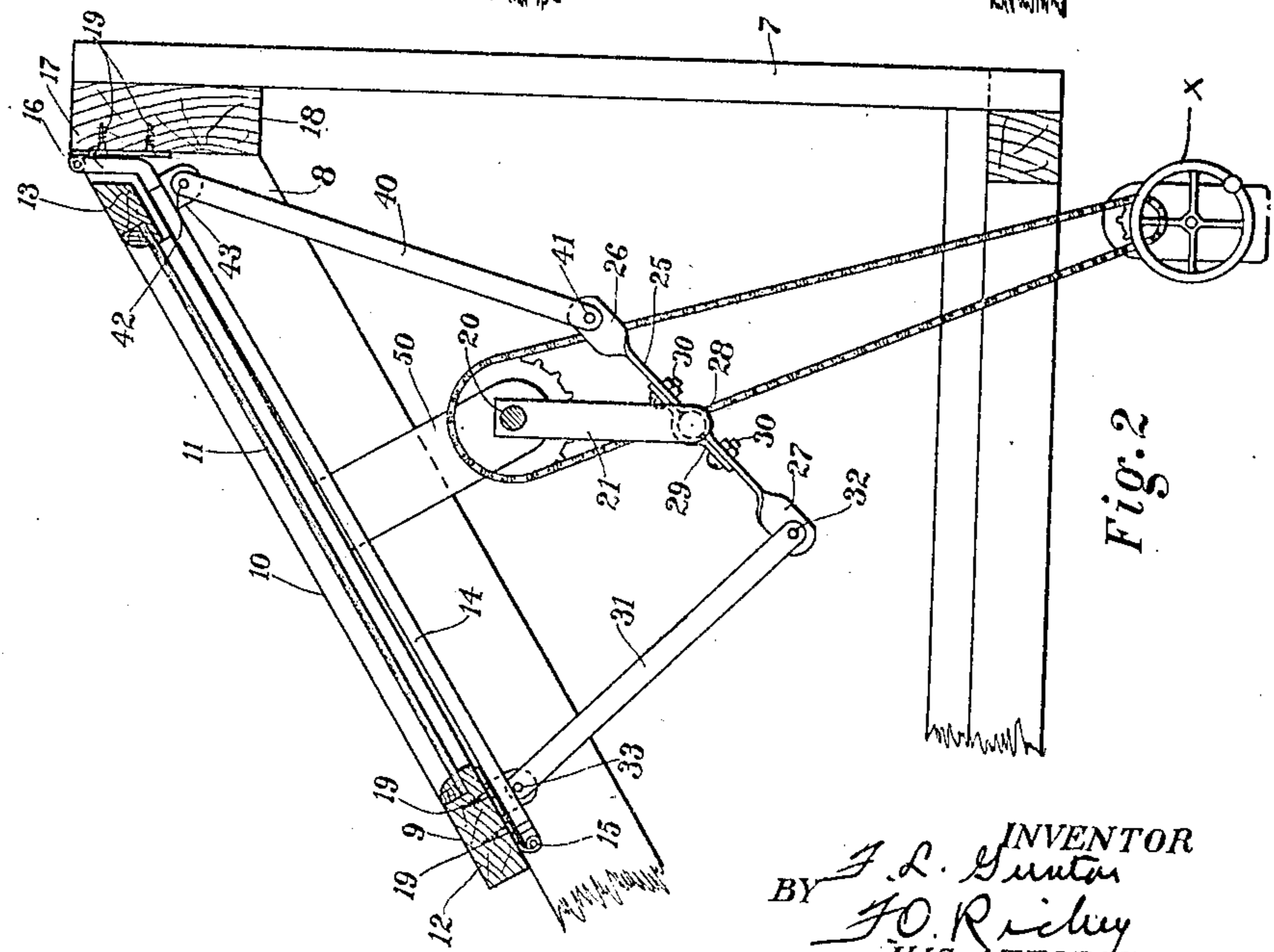


Fig. 2

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HIS ATTORNEY

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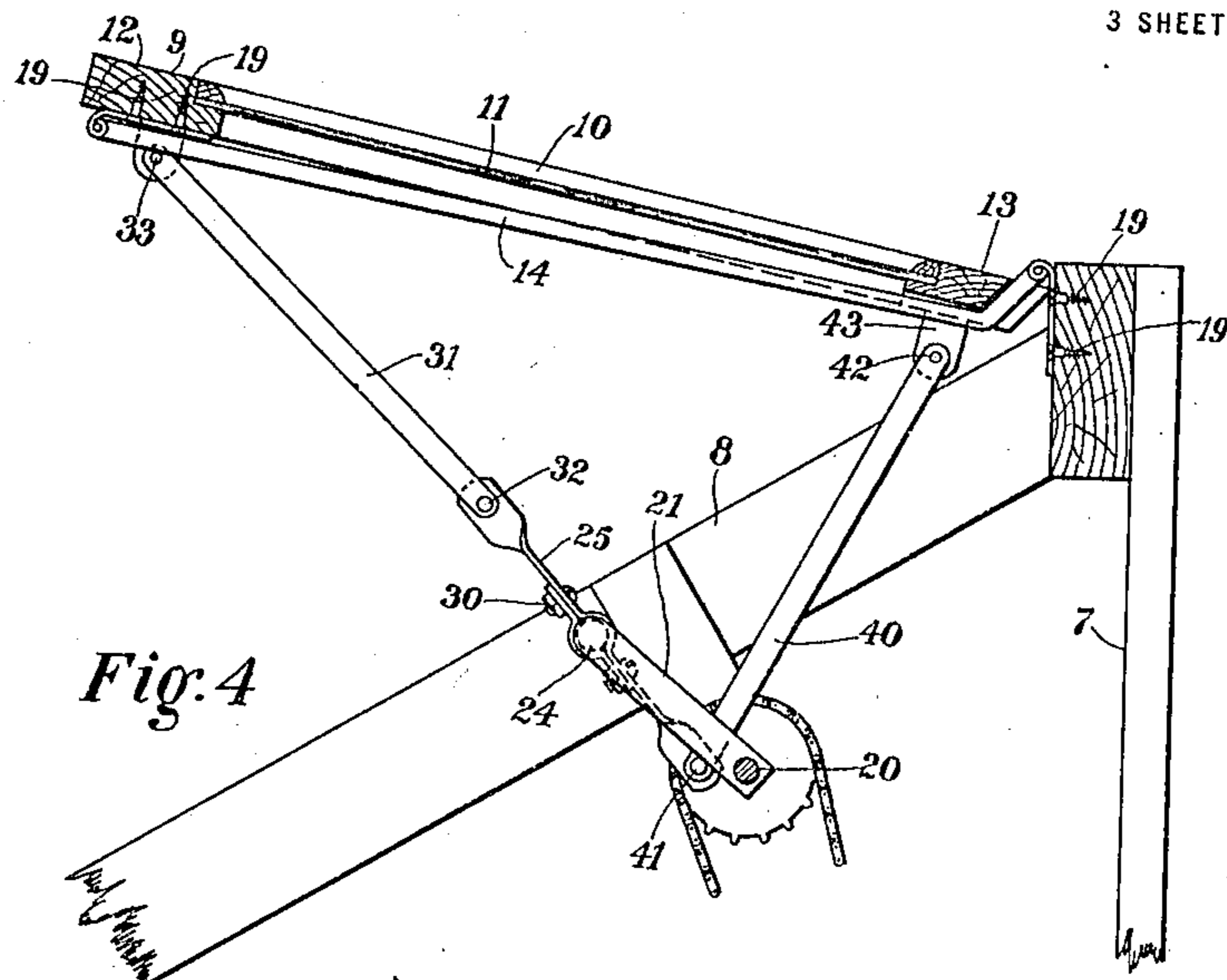


Fig. 4

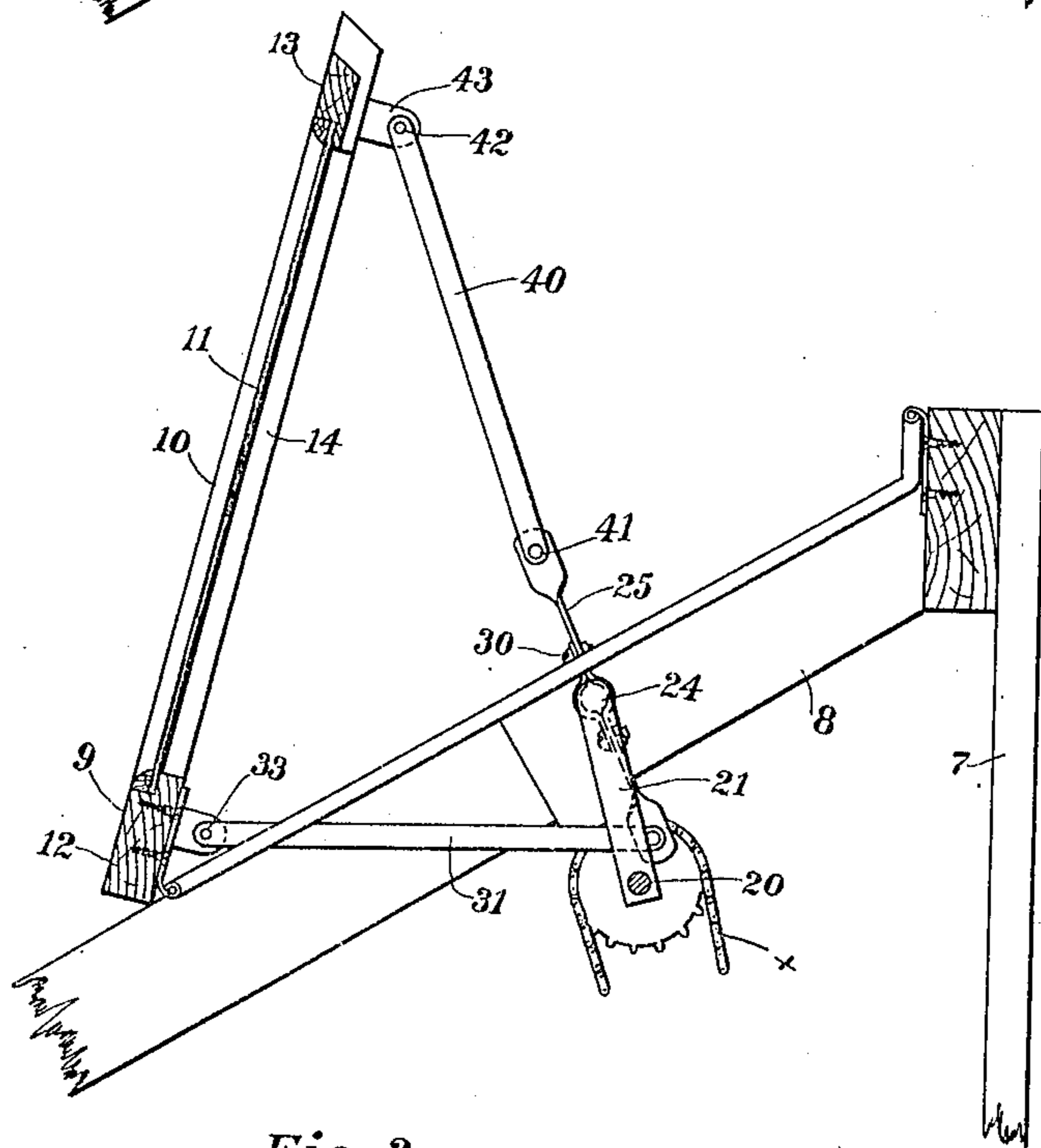


Fig. 3

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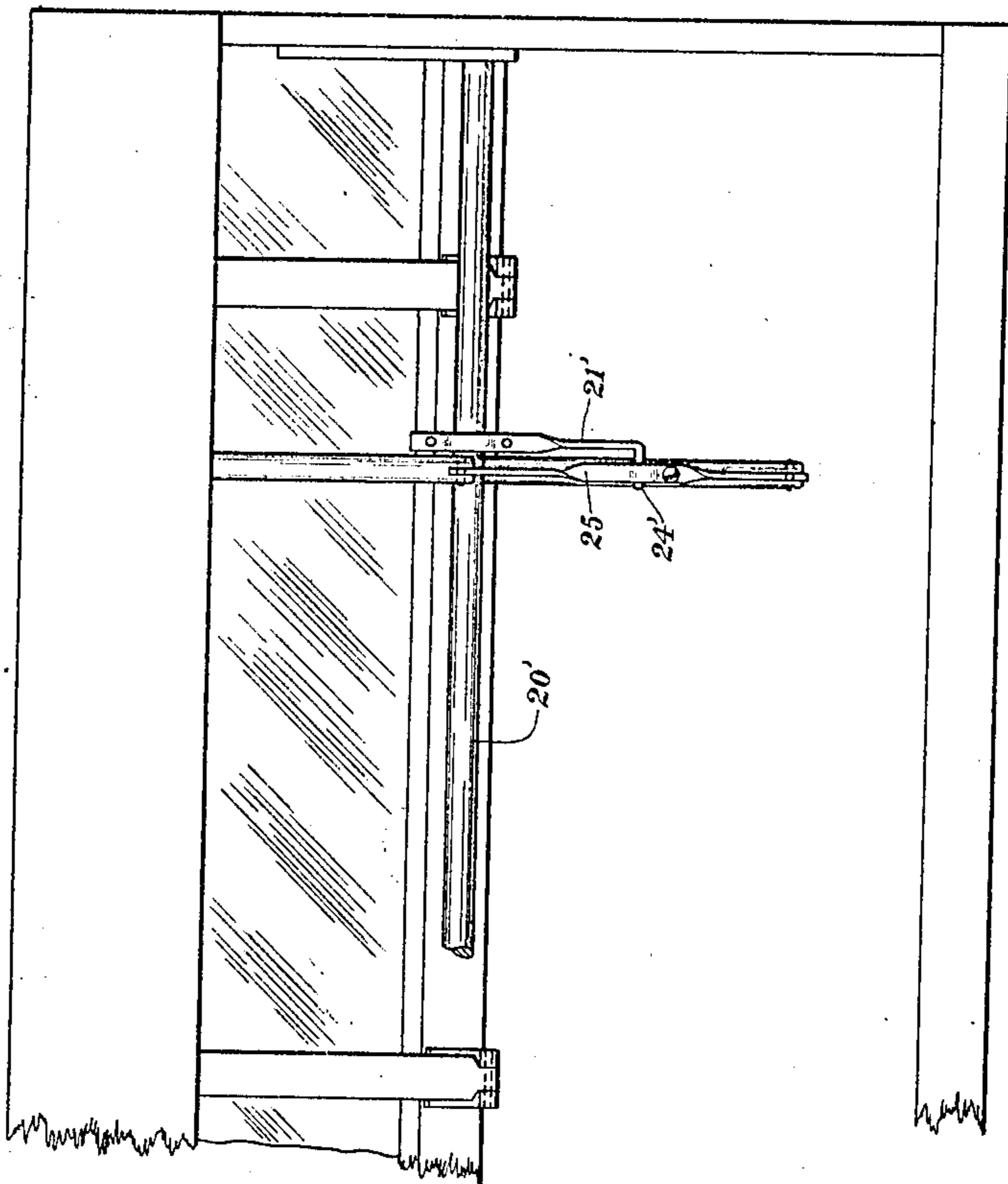


Fig. 5

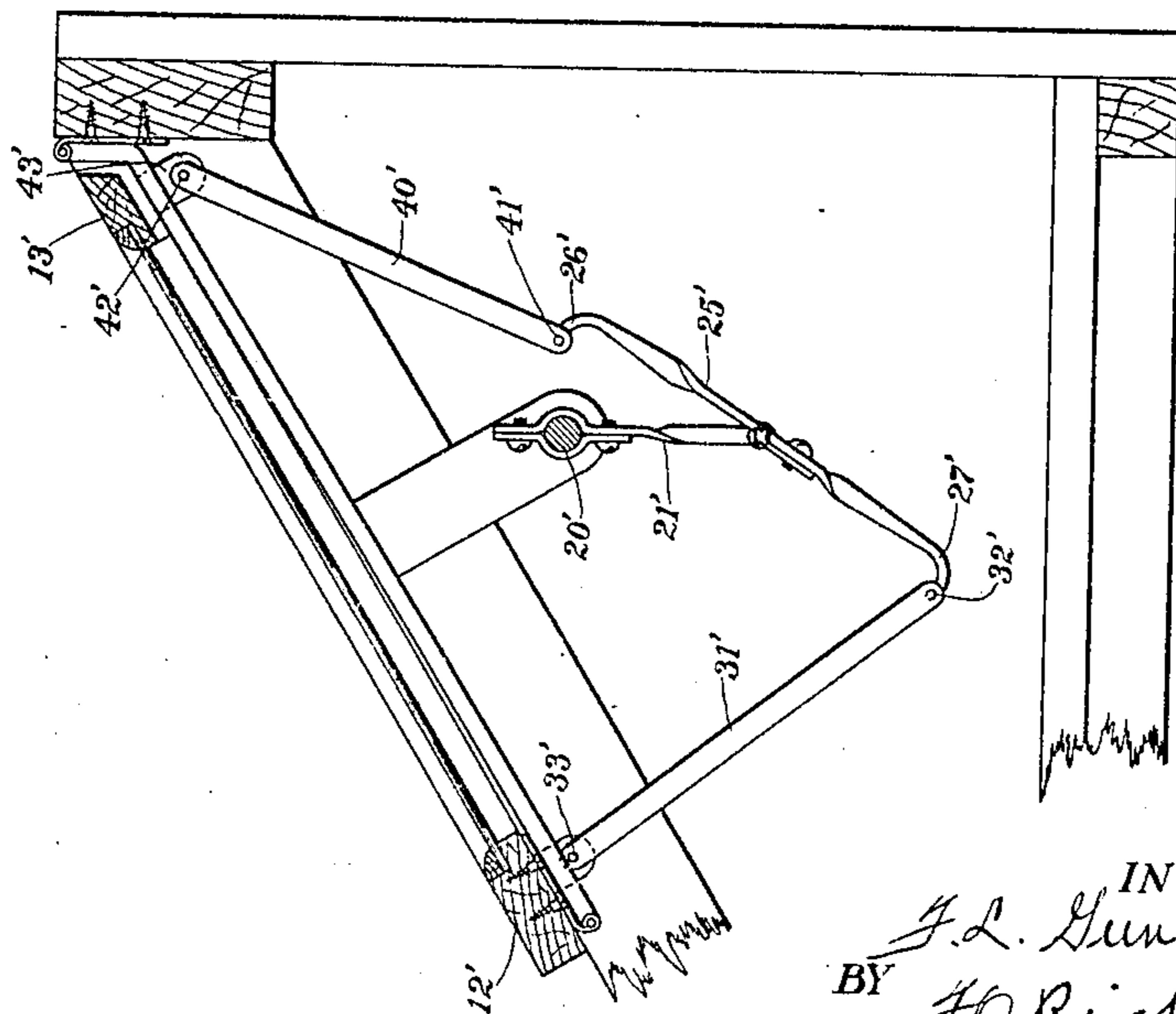


Fig. 6

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# UNITED STATES PATENT OFFICE.

FRED L. GUNTON, OF ELYRIA, OHIO, ASSIGNOR OF ONE-HALF TO FRANK M. STEVENS,  
OF ELYRIA, OHIO.

## WINDOW-CONTROLLING APPARATUS.

1,298,336.

Specification of Letters Patent.

Patented Mar. 25, 1919.

Application filed October 5, 1918. Serial No. 256,938.

*To all whom it may concern:*

Be it known that I, FRED L. GUNTON, a citizen of the United States, and a resident of Elyria, Lorain county, Ohio, have invented certain new and useful Improvements in Window-Controlling Apparatus; 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 apparatus for controlling windows, and is especially adapted for use in controlling windows of green houses, and the like, though adapted to be used to control windows, especially for the admission or exclusion of air from houses or rooms of various types.

One of the objects of my invention is to provide means for controlling windows in such a way that they can be conveniently and readily opened in either direction by tilting the window casement about one or the other of the edges thereof, at will.

My invention is very useful in controlling the window casements constituting the sections of the roof of green houses and the like.

I also aim to provide apparatus which can be readily and conveniently controlled from a distance.

Another object of my invention is the provision of means which can be tilted in one direction or the other by oscillating or rotating the controlling means in one direction or the other.

Another object of my invention is to provide apparatus of the character mentioned which is simple, cheap and easy to make, and simple, cheap and easy to operate.

These and other objects of my invention will be understood from a description of embodiments of the invention.

Figure 1 is a plan view of an embodiment of my invention.

Fig. 2 is a sectional view through the casing showing the controlling apparatus in section with the apparatus in the position in which the window is closed.

Fig. 3 is a view of the apparatus similar to that shown in Fig. 2 with the casing tilted up in one direction.

Fig. 4 is a view similar to Fig. 3 with the casing tilted in the other direction.

Fig. 5 is a plan view of a second embodiment of the invention.

Fig. 6 is a sectional view of the embodiment shown in Fig. 5, showing the casing in section and parts of the apparatus in elevation with the casing in position to close the window.

Referring now to the drawings, and first to the embodiment shown in Figs. 1 to 4 inclusive, at 7 is shown the frame of the building, which here consists of a green house. The rafters are shown at 8 and a window casement at 9. This casement consists of a section of the roof of the green house, and is formed of a frame and a glass 11. For convenience, the parts 12 and 13 will be spoken of as the side or side edges of the casing. The casement is connected to the roof by means which permit it to be tilted in either direction.

At 14 are shown arms which are hinged at one end to one side of the casement and at the other side to the frame of the building. At 15 is shown a hinge connecting one end of the arm 14 to the side 12 of the casing, and at 16 is shown a second hinge connecting the other end of the arm to the frame. In the embodiment shown, a finger 17 is formed on one end of the arm, which extends up parallel to the frame member 18 and is normally substantially vertical, as shown in Fig. 2. The finger 17 is formed to make an obtuse angle with the arm 14 and the edge of the side 13 of the casement is beveled off to make a close fit in this angle. The hinges are connected to the casement and the roof frame by any suitable means, such as screws 19.

When the window casement is in position to close the window, the arms extend along parallel to the casement, as shown in Fig. 2. At 20 is shown a movable member, which here consists of an oscillatory shaft provided with a crank 21. In the embodiment shown in Figs. 1 to 4 inclusive, the crank consists of two parallel members 22 and 23 connected together by a crank pin 24. A link 25 is pivoted on the crank pin. In the embodiment shown in Figs. 1 to 3, this link is formed out of a piece of strap or sheet metal, whose ends are turned about as shown at 26 and 27 until they are substantially at right angles to the main portion of the link. A depression 28 is formed

at the center of the link to form a bearing for the pin, and a second member 29, similarly formed, is connected to the link 27 by suitable means, such as bolts 30. A rod 31 is pivoted at one end, as shown at 32, to the end 27 of the link, and at the other end, as shown at 33, to the side 12 of the casing. A second link 40 is pivoted at one end, as shown at 41, to the end 26 of the link, and at the other end, as shown at 42, to a bracket 43 connected to the side 13 of the window casement.

The shaft 20 is mounted in any suitable manner in the frame. In the embodiment shown hangers 50 are employed for this purpose, and the shaft is journaled to rotate therein.

The operation of the embodiment shown in Figs. 1 to 4 is as follows: By rotating the means  $\alpha$  in one direction, the shaft 20 is caused to rotate clockwise, as shown in Fig. 2, to the position shown in Fig. 4. The crank is rotated and through the link and rod 31, the window casement is moved to the position shown in Fig. 4. In this operation, the link 25 operates as a lever rotating about the pivot 41 by a force applied at the axis of the shaft 20. When the controlling means is rotated in the other direction, the link now operates as a lever about the pivot 32 and moves the casement to the position shown in Fig. 3. Of course, the casement may be moved to any intermediate position for either direction of movement of the controlling means, and may be set there, if desired.

Suitable means  $\alpha$  is provided for oscillating the shaft 20, here shown as sprocket wheels, chain and crank wheel. In the embodiment shown in Figs. 5 and 6, the shaft 20' is provided with a crank arm 21' bent at right angles to 20'. The free end of the crank arm is turned over at 124 to form a crank pin 24'. The link is shown at 25' and is provided with a clamp 29' fastened to the link by a screw 30'. In the embodiment shown in Figs. 5 and 6, the link consists preferably of a flat piece of metal, twisted and having its ends turned over, as shown at 26' and 27'. The rod 31' is pivoted at one end, as shown at 32', to the end 27' of the link, and at the other end is pivoted, as shown at 33', to the side 12' of the casement. The rod 40' is pivoted at one end, as shown at 41', to the end 26' of the link, and at the other end, as shown at 42', to a bracket 43' mounted upon the side 13' of the casement.

In the embodiment shown in Figs. 5 and 6, the casement may be opened in either direction by the oscillation of the shaft 20', in the same manner as explained in connection with the operation of the embodiment shown in Figs. 1 to 4, inclusive.

I have shown this particular embodiment

of my invention and the details thereof for the purpose of better explaining my invention. It will be apparent to those skilled in the art that numerous and extensive departures may be made from the form and details of the embodiments illustrated, without departing from the spirit of the invention.

I claim:

1. In window controlling apparatus, the combination with a window casement or sash, of a frame in which the casement fits when the window is closed, arms hinged at one end to the frame and at the other to the casement opposite the part of the frame to which the arms are hinged, a rotatable member journaled adjacent the window, a crank arm on said rod and controlled thereby, a crank pin on said arm, a link pivoted on said pin, rods connecting the ends of said link to opposite sides of said casement and means to oscillate said member clockwise or counterclockwise to tilt said casement about either side thereof and open said window.

2. In window controlling apparatus, the combination of a window casement, means to connect said casement to the sides of the window frame and to permit the tilting of the casement about either side of the frame to open the window, an oscillatory member journaled in said frame, a crank arm controlled by said member, a crank pin on said arm, a link pivoted on said pin, rods connecting the ends of the link to the sides of the casement pivoted both to the link and the casement, and means to oscillate said member to tilt the casement about either side of the window frame and open the same.

3. In window controlling apparatus, the combination of a window casement, means to pivot said casement to tilt about either edge thereof, an oscillating member journaled adjacent said window and means including a crank arm, a link and connecting rods for causing said window to tilt in either direction when said member is oscillated and apparatus for oscillating said member.

4. In window controlling apparatus, the combination of a window casement, means to pivot said casement to tilt about either edge thereof, an oscillatory member and means through which said window is caused to tilt in either direction at will when said member is oscillated and remotely controlled means for causing said member to oscillate.

5. In window controlling apparatus, the combination of a window casement tiltable in the window frame about either of its two sides, a crank shaft and crank arm, a two-piece motion transmission member connecting the crank arm to each of the two sides of the window casement, means to pivot said two pieces together and apparatus through which said crank shaft is oscillated to tilt the window about either of its two sides.

6. In window controlling apparatus, the

combination of a window casement, arms pivoted at one end to a window sill and at the other end to the opposite side of the casement, an oscillatory crank shaft, a crank 5 arm having one end clamped to said shaft and the other end turned over at right angles to form a crank pin, a link connected intermediate its ends to the crank pin, the ends of the link being turned over, connecting rods pivoted at one end to the turned 10 over ends of the link and pivoted at the other ends to opposite side edges of said casement and means to oscillate the crank shaft.

In witness whereof, I have hereunto signed 15 my name this 1st day of October, 1918.

FRED L. GUNTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."