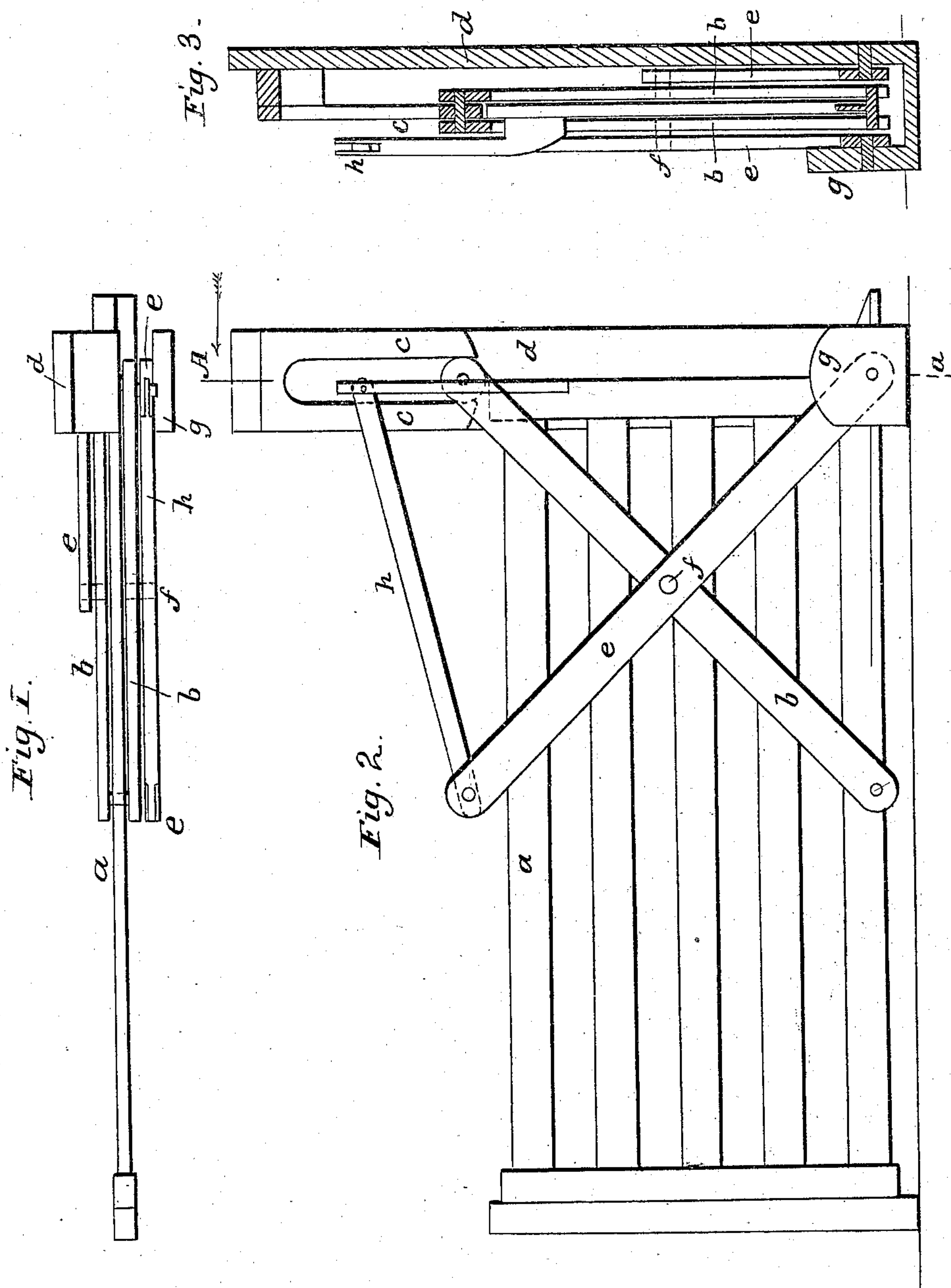


N. W. CILLEY.

Gate.

No. 10,928.

Patented May 16, 1854.



UNITED STATES PATENT OFFICE.

N. W. CILLEY, OF NOTTINGHAM TOWNSHIP, ROCKINGHAM COUNTY, NEW HAMPSHIRE.

METHOD OF HANGING GATES, &c.

Specification of Letters Patent No. 10,928, dated May 16, 1854.

To all whom it may concern:

Be it known that I, N. W. CILLEY, of Nottingham township, Rockingham county, New Hampshire, have invented an Improvement in Sliding Gates, Doors, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a plan; Fig. 2, an elevation; and Fig. 3, a vertical section taken at the line A, *a*, of Fig. 2.

The same letters indicate like parts in all the figures.

My invention relates to a method of suspending gates, doors, scene frames, and other like structures which are now generally made to work on slides or on ways, with the view to reduce the amount of power required to work them, and avoid, in a great measure, the wear and tear to which such structures have heretofore been exposed. And my invention consists in suspending the gate or other movable structure to one end of a lever, or pair of levers, the other end of which slides in vertical ways or the equivalent thereof, when this is combined with another lever or pair of levers jointed to the first at the middle of their length, the one end of the said latter lever turning on a fixed fulcrum while its other end is connected by a joint link with a standard attached to the gate or other structure to be moved, by means of which arrangement the gate or other structure is sustained and maintained in the same or nearly the same line, and can be moved back and forth with only so much friction as is due to the turning joints which sustain the weight. The levers performing the double function of joints for the motion, and braces to sustain the weight.

In the accompanying drawings *a* represents a gate of open frame work which, near the lower edge, and at, or near, the middle of its length is connected by a fulcrum pin to a lever *b*, made in two parts, one on each side, the better to support the gate without strain. The upper end of this lever is adapted to slide between ways *c*, *c*, attached to the upper part of the post *d*, on one side of the gate way. Another lever *e*, of equal length with the first, is pivoted to the first at the middle of their length, as at *f*, and the lower end of this lever *e*, turns on a fixed fulcrum in a fixed standard *g*,

opposite the post *d*, the other or upper end being connected by a joint link *h*, with a vertical standard on the inner end of the gate, and of such height relative to the length of the lever *e* that during the entire motion of the gate, the link vibrates to an equal extent above and below a line parallel with the line of motion of the gate. This lever *e*, can be double, one part on each side of the gate, although on one side there is no necessity for extending it above the central fulcrum.

From the foregoing it will be seen that the gate is sustained entirely by the levers, and is free to move back and forth turning the levers on their several joint pins, their upper ends moving up and down, the one in its ways and the other with its joint link. When the gate is shut, the two levers are at right angles to each other, and both diagonal to the line of motion of the gate, the two levers acting as reversed braces to sustain the gate, and when the gate is entirely open the two levers assume just the reverse of the position they occupy when the gate is shut. As the only wearing points are the connections at the several joint pins, the liability to derangement and wear will be much less than when working in slides or on ways.

Instead of having the upper end of one pair of levers working in a slide, it may be maintained in its vertical movement by a joint link like the other, except that the joint link must be connected at one end with a fixed post. Wherever, as in working the scene frames of theaters, the levers on each side would be in the way, they can all be located above, and connected with the upper instead of the lower edge.

I deem it unnecessary to enumerate the various structures to which my invention can be applied with advantage, as it will be obvious that all cumbersome frame work or structures, which have to be moved back and forth in a straight, or nearly straight, line like a sliding door or gate, can be suspended and operated on my improved plan.

I am aware that a system of connecting levers or links have been used, called the "parallel motion" for connecting the end of the working beam with the piston rod in steam engines, and that the same arrangement has also been applied to other machines to impart a rectilinear motion from

a vibrating circular motion, and therefore I do not wish to be understood as making claim to any such device.

What I claim as my invention and desire
5 to secure by Letters Patent is—

The method of suspending gates and other structures to bracing levers jointed to each

other and to the gate or other structure and to the fixed work, substantially as specified and for the purpose set forth.

N. W. CILLEY.

Witnesses:

WM. H. BISHOP,

CHAS. N. BAMBURGH.