

No. 860,422.

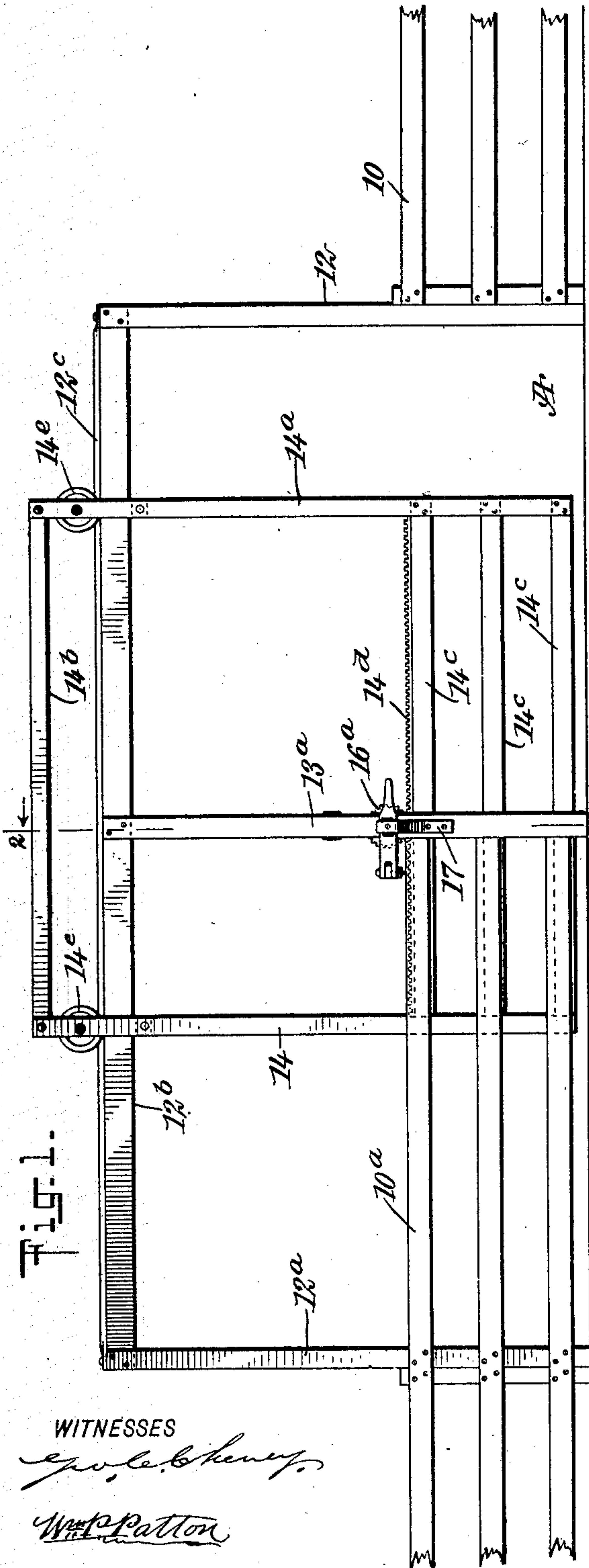
PATENTED JULY 16, 1907.

J. SUTHERLAND.

GATE.

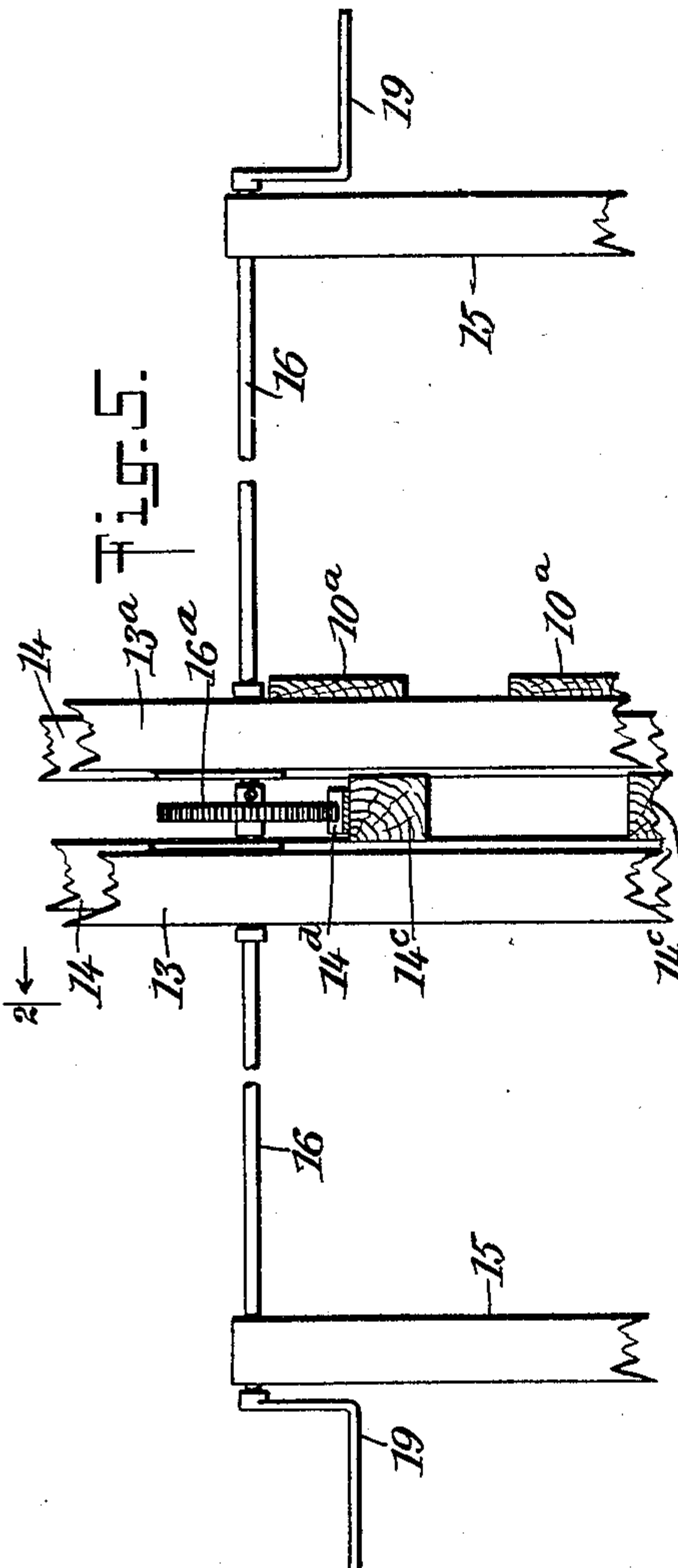
APPLICATION FILED APR. 18, 1907.

2 SHEETS—SHEET 1.



WITNESSES

Wm. C. Cheney
Wm. Patton



INVENTOR

John Sutherland

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ATTORNEYS.

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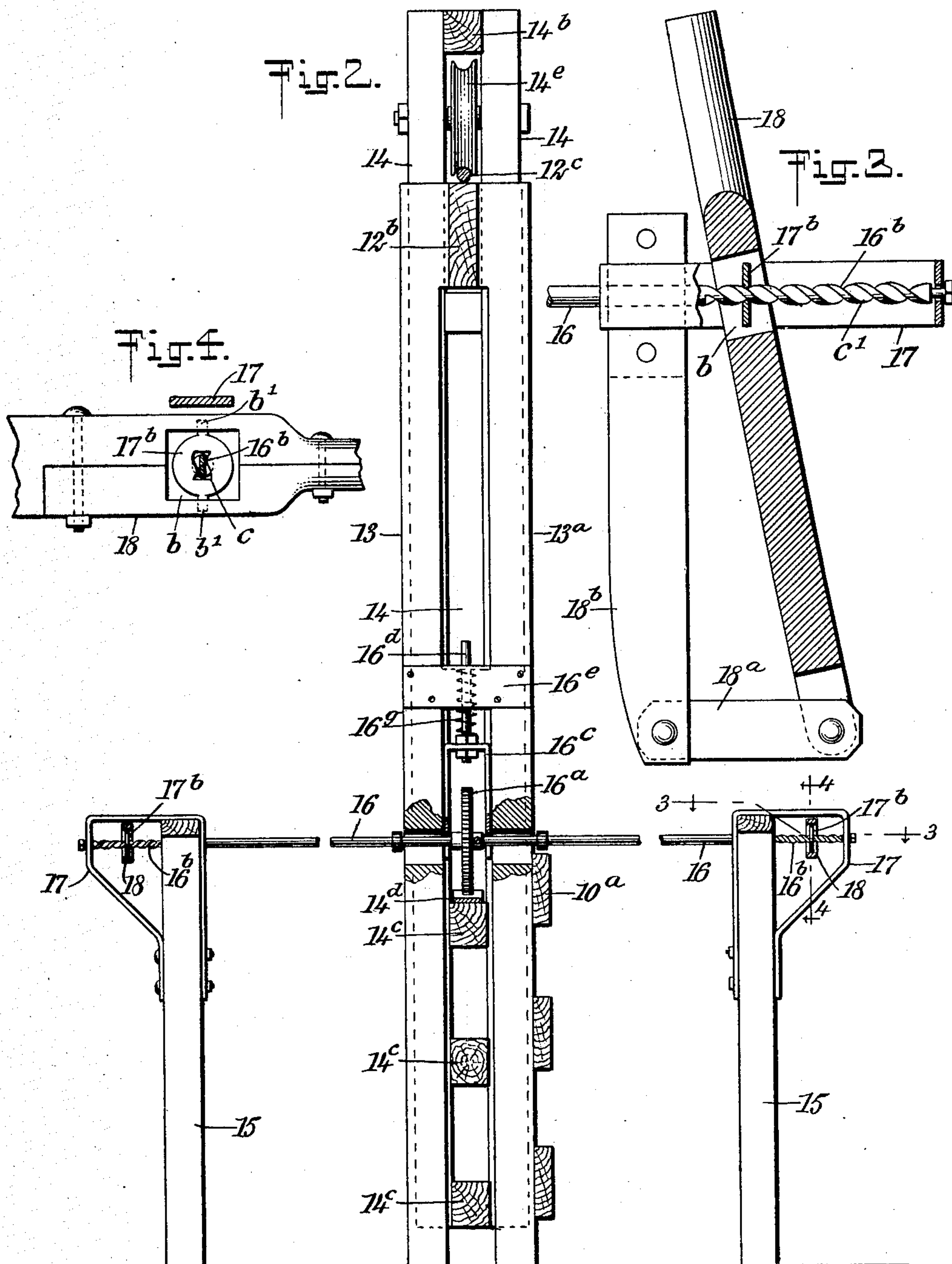
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UNITED STATES PATENT OFFICE.

JOHN SUTHERLAND, OF SPRINGER, TERRITORY OF NEW MEXICO.

GATE.

No. 860,422

Specification of Letters Patent.

Patented July 16, 1907.

Application filed April 18, 1907. Serial No. 368,898.

To all whom it may concern:

Be it known that I, JOHN SUTHERLAND, a citizen of the United States, and a resident of Springer, in the county of Colfax and Territory of New Mexico, have invented a new and Improved Gate, of which the following is a full, clear, and exact description.

The improvements relate to a class of gates which are supported for longitudinal sliding movement by manual effort, and the purpose of the invention is to provide novel details of construction for a gate of the character indicated, which are simple, practical, inexpensive and that afford means for opening and closing the gate with ease.

The invention consists in the novel construction and combination of parts, as is hereinafter described and defined in the appended 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 all the views.

Figure 1 is a side elevation of a gate having the improved means for opening and closing it. Fig. 2 is an enlarged transverse sectional view of the gate and novel features thereon taken substantially on the line 2—2 in Fig. 1. Fig. 3 is an enlarged partly sectional plan view of novel details constituting portions of the gate reciprocating mechanism, taken substantially on the line 3—3 in Fig. 2. Fig. 4 is a transverse sectional view of parts shown in Figs. 2 and 3, taken substantially on the line 4—4 in Fig. 2, and Fig. 5 is a transverse sectional view of the gate and actuating mechanism therefor, showing a modified construction of said mechanism.

In the drawings, 10, 10^a indicate two portions of a rail fence, having an opening between them which affords a passage A therethrough, guarded by a gate having the improvements. At or near adjacent ends of the fence sections 10, 10^a, a rectangular main frame is erected for the support of the gate, said frame comprising two vertical posts 12, 12^a which are respectively positioned at the end of the fence section 10, and a short distance from the end of the fence section 10^a, whereon said fence sections are secured. The posts 12, 12^a are connected together by a horizontal beam 12^b which is secured at its ends thereon, and on said beam a track rail 12^c is longitudinally seated and secured, as appears in Figs. 1 and 2.

Two stanchions 13, 13^a are erected vertically and oppositely near the center of the main frame, the upper ends of said stanchions being secured on opposite sides of the beam 12^b respectively and are spaced apart thereby, the inner faces of said stanchions being disposed in parallel planes. The ends of the spaced rails composing the fence section 10^a, are secured upon the outer side of the stanchion 13^a, so that the width of the gate opening or space A is represented by the distance between the stanchion 13^a and main frame post 12.

The gate in its entirety comprises two pairs of side bars 14, 14^a at opposite ends thereof, that at their upper ends are held spaced apart by a cap bar 14^b, and at and near their lower ends by a plurality of gate rails 14^c, the latter being spaced as indicated in Fig. 1. And it may be here explained that the uppermost rail of the gate is surmounted by a toothed rack bar 14^d which extends the entire length thereof. The height of the side bars 14, 14^a of the gate is such that the cap bar 14^b will be disposed a suitable distance above the beam 12^b when the gate is in position for use and the lower rail thereof has clearance from the ground. Between the spaced side bars 14, 14^a at each end of the gate, a traction wheel 14^e is pivoted, said wheels resting upon the track rail 12^c and imposing the weight of the gate on said track rail. Opposite the stanchions 13, 13^a, two posts 15 are erected and preferably are at an equal distance therefrom, said posts affording support for the end portions of a shaft 16 that is inserted loosely through openings in the stanchions.

Upon the shaft 16, between the stanchions 13, 13^a, a spur gear 16^a is mounted and secured, that meshes with the rack bar 14^d, and it will be seen that a rotation of the shaft 16 in either direction will correspondingly actuate the gate for its opening and closing movement. As shown in Fig. 2, a looped hanger bracket 16^c is loosely mounted upon the shaft 16, and is positioned between the stanchions 13, 13^a, the upper cross bar of said bracket having a stem 16^d erected thereon, which passes through a spring box 16^e on the stanchions 13, 13^a; a coiled spring 16^f carried by the box encircling the stem 16^d and pressing upon the top of the hanger bracket.

It will be seen that the spring pressure on the bracket 16^c will be transmitted to the shaft 16, and enforce the meshed engagement of the spur gear 16^a with the rack 14^d, this being advantageous if an obstruction such as snow or sleet, is deposited on the rack between its teeth, as the gear will then cut its way and crowd out the obstruction, so that the operation of the device will be insured at all times.

The preferred means for rotating the shaft 16 is shown in Figs. 2, 3 and 4 most plainly, and consists of a bracket frame 17 mounted and secured on each post 15. Upon each end of the shaft 16, a screw-threaded extension 16^b is formed or secured, and these extensions that are respectively right and left hand screw-threaded, are journaled in upright portions of the bracket frames 17 respectively.

A handle lever 18 is pivoted at one end upon an end of a short link 18^a, which at the other end is pivoted upon a laterally projected member 18^b of one bracket frame; and as appears clearly in Figs. 3 and 4, there is an opening *b* formed in the handle lever between its ends, through which a corresponding screw cut extension 16^b is inserted.

A nut plate 17^b is journaled by opposite trunnions *b'*

thereon in opposite walls of the opening *b*, and said nut plate is perforated as at *c* in Fig. 4, for loosely embracing the screw-cut body of the threaded extension 16^b between turns of the thread *c'* thereon.

5 It will be seen that when the free end of the handle lever 18 is rocked laterally, the nut plate 17^b, by its loose engagement with the loose screw thread on the extension 16^b, will effect a rotation of the shaft 16, the rocking movement of the lever 18 in one direction caus-
10 ing the opening of the pendent gate and in the other direction a closure of the same. It is to be understood that for convenience in operating the gate, a duplicate of the lever device and its supports is employed at each end of the shaft 16, as is represented in Fig. 2.

15 In Fig. 6, a different means for rotating the shaft 16 and spur gear 16^a is represented; in this construction, the bracket frames 17 are dispensed with and the ends of the shaft which are journaled in or on the upper ends of the posts 15, project outside of the posts, and upon
20 said projecting ends, similar crank handles 19 are secured.

Obviously the rotation of the shaft by manual effort applied through the medium of the crank handles 19, or either of them, will roll the spur gear along the rack
25 14^d and correspondingly actuate the gate for opening or closing it.

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

30 1. The combination with a pendent gate, supported to move endwise across a fence opening, and a rack bar thereon, of a horizontally supported rotatable shaft, a spur gear secured on the shaft and meshing with the rack bar,

and a rockable lever having a nut that engages a screw-threaded end of the shaft, and rotates said shaft when the lever is rocked in either direction. 35

2. The combination with a pendent gate, supported to move endwise across a fence opening, and a rack bar thereon, of a horizontally supported shaft adapted for rotation, a spur gear on said shaft meshing with the rack bar, a screw-threaded extension on each end of the shaft, and two rockable levers having similar nuts thereon which respectively engage the screw-threaded extensions, and rotate the shaft when either lever is rocked in either direction. 40

3. The combination with a frame having upright members and a cross beam thereon, a track rail on the beam, and a pendent gate having wheels seating upon the track rail, of a rack bar on the top rail of the gate, a rotatably supported shaft, a spur gear fixed upon the shaft and meshing with the rack, a spring-pressed hanger bracket located between the upright frame members and loosely engaging the shaft and enforcing the meshed engagement of the spur gear with the rack, and means for rotating the shaft. 45

4. The combination with an upright frame at a gate opening, having a top cross beam, a track bar on said beam, a gate hung by wheels resting on the track bar, and a toothed rack bar on a top frame bar of said gate, of a horizontal shaft supported for rotation on the frame above the gate, means for rotating the shaft at either end thereof, a spur gear thereon, a looped hanger bracket loosely engaging its ends with the horizontal shaft, and a spring adapted to depress the hanger bracket, for holding the spur gear meshed with the rack bar. 50

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 65

JOHN SUTHERLAND.

Witnesses:

W. L. SEVER,
R. E. ALLDREDGE.