

No. 612,456.

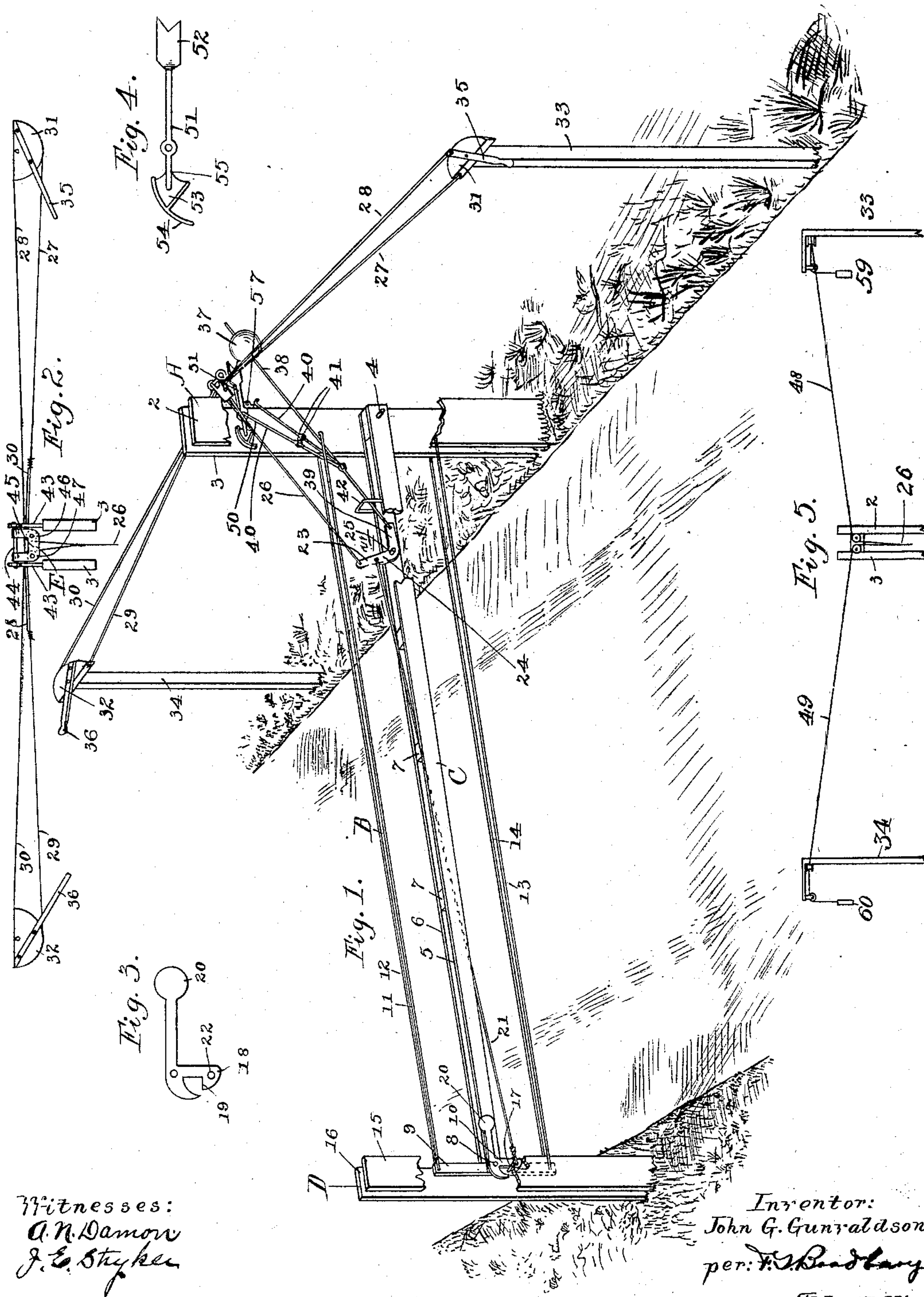
Patented Oct. 18, 1898.

J. G. GUNVALDSON.
FENCE GATE.

(Application filed Aug. 2, 1897.)

(No Model.)

2 Sheets—Sheet I.



Witnesses:
A. N. Damon
J. E. Styker

Inventor:
John G. Gunvaldson.
per: F. J. Roadway.
Attorney.

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2 Sheets—Sheet 2.

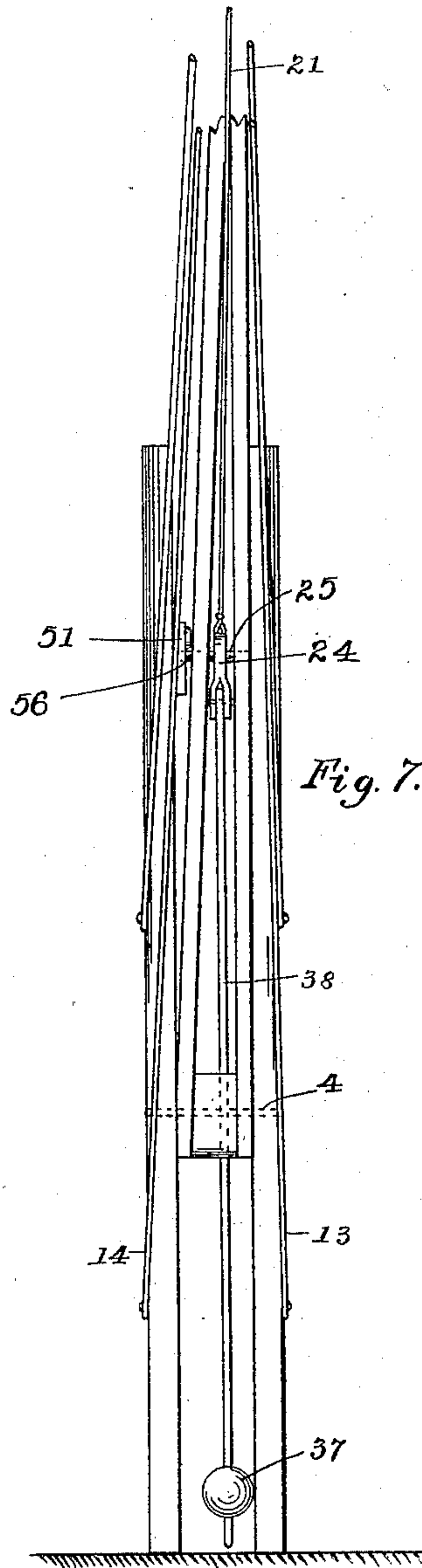


Fig. 7.

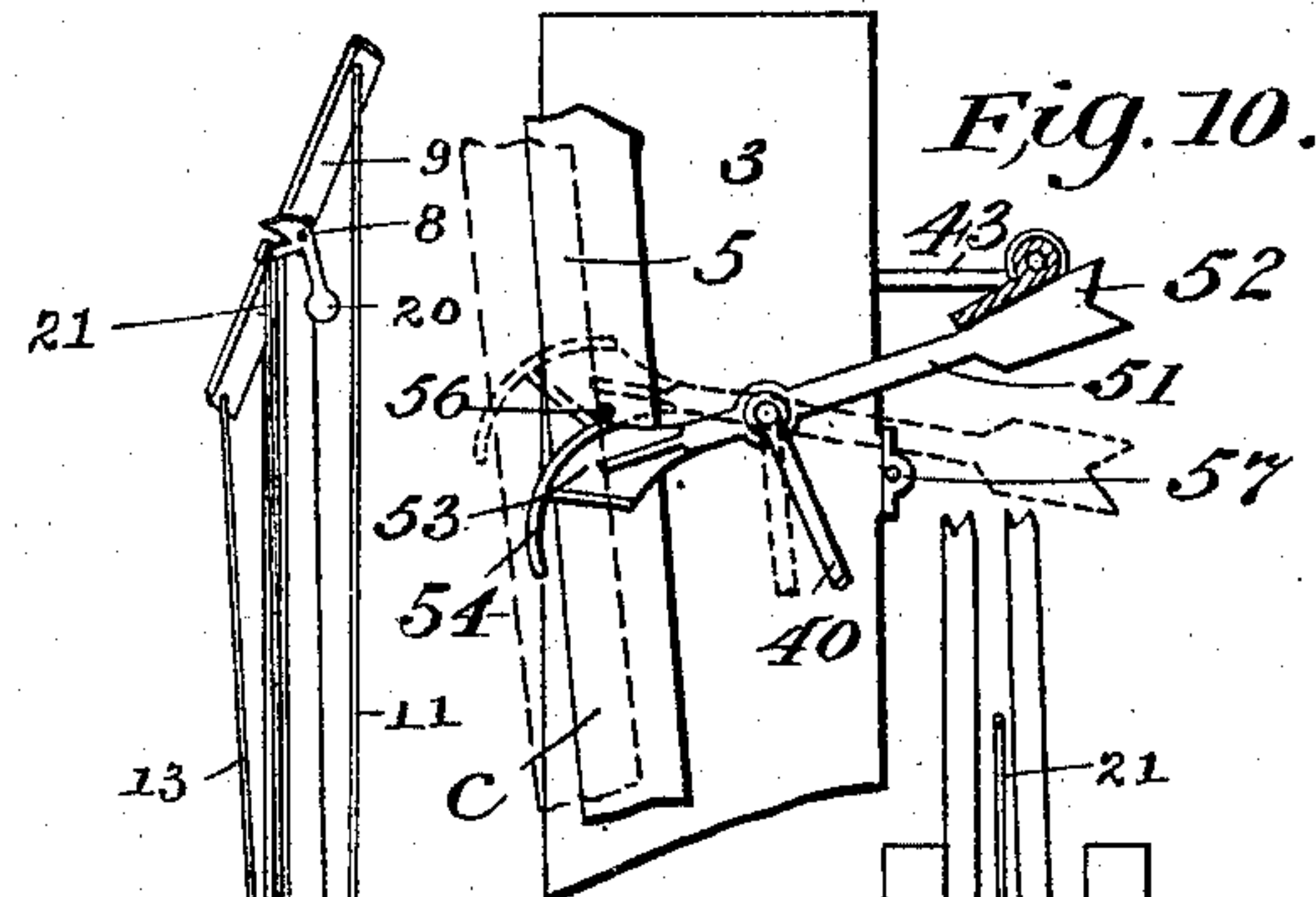


Fig. 10.

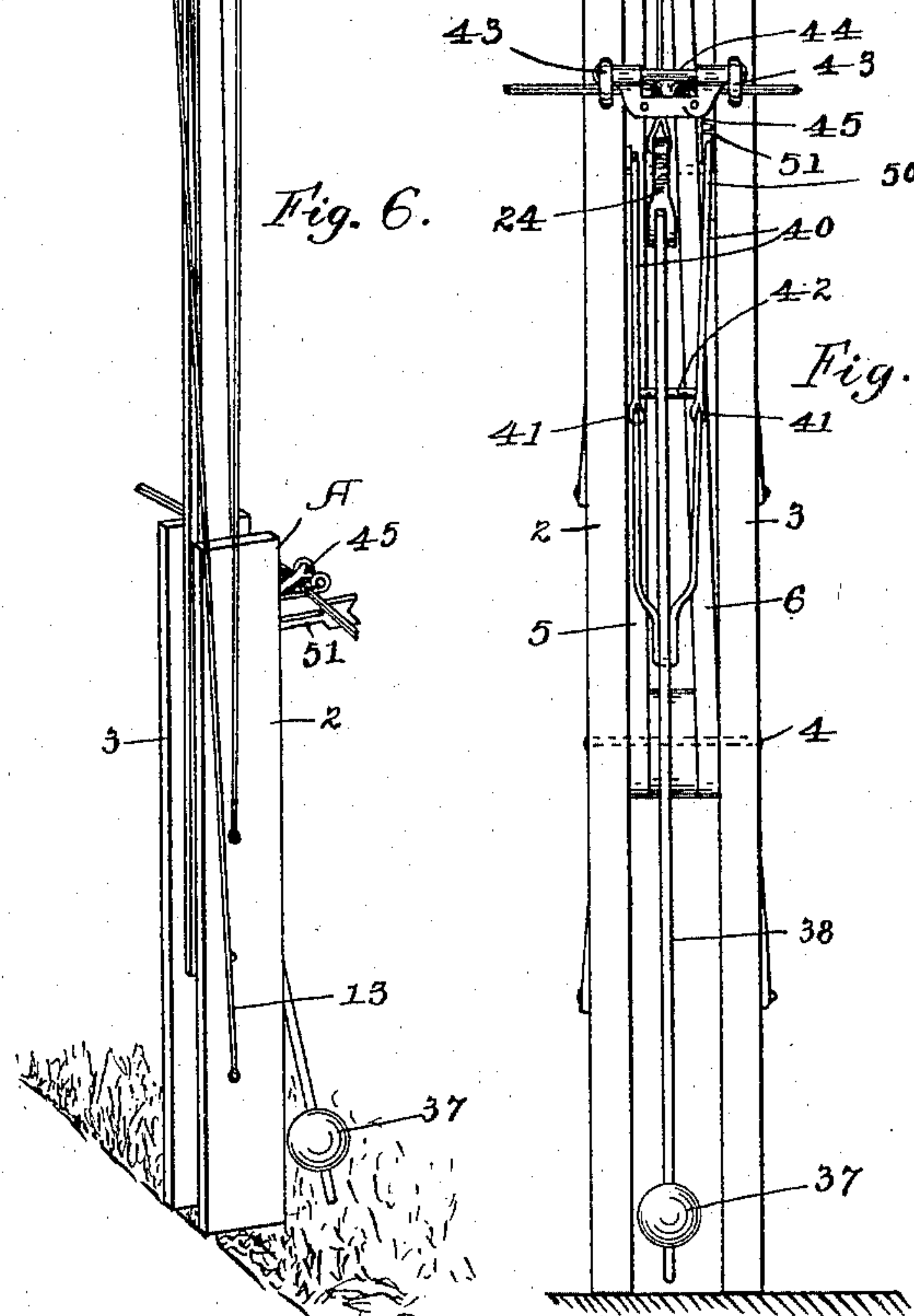


Fig. 6.

Fig. 8.

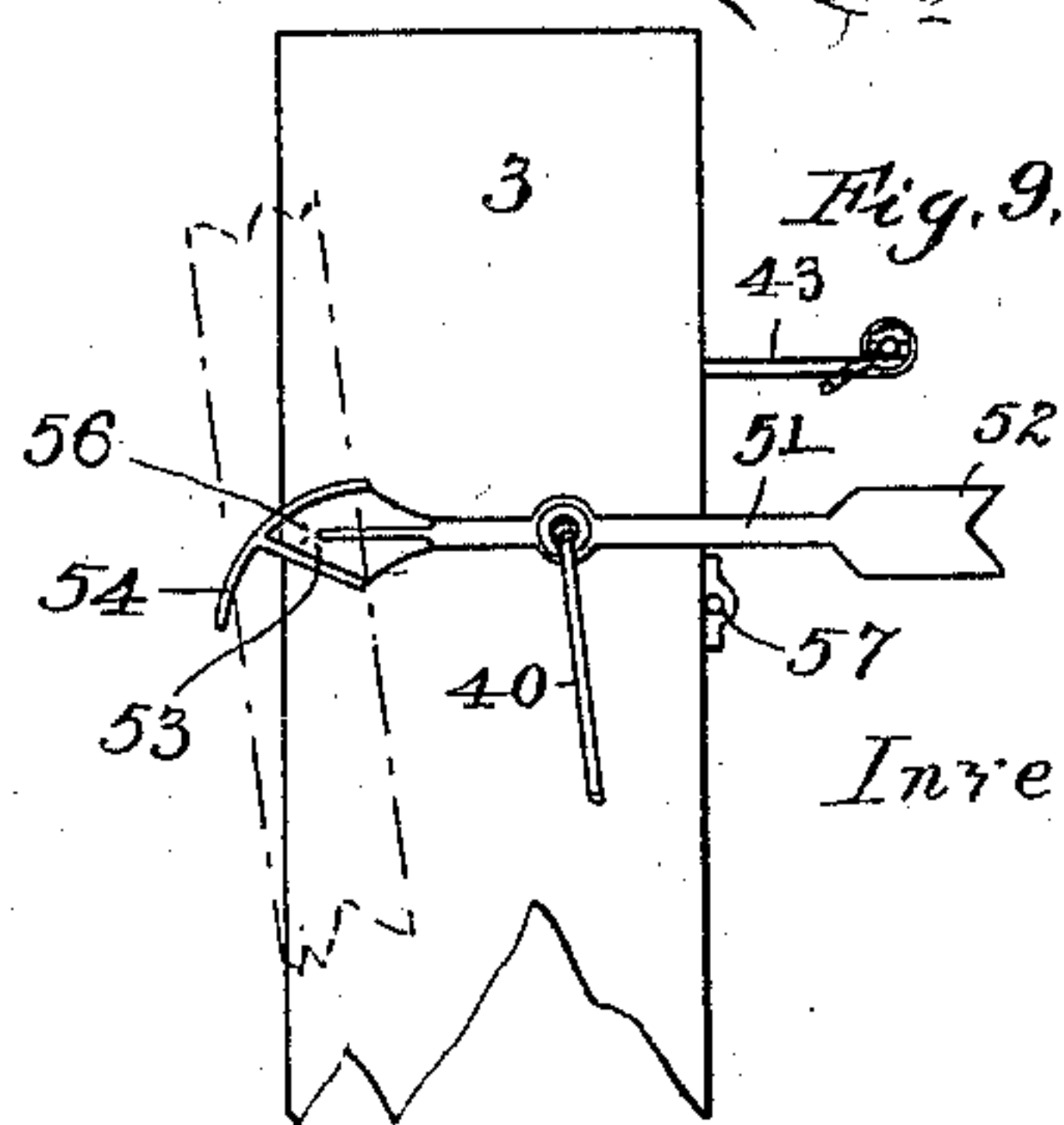


Fig. 9.

Witnesses:
A. N. Damon.
J. E. Styker.

Inventor:
John G. Gunvaldson.
per: F. W. Rodbury
Attorney.

UNITED STATES PATENT OFFICE.

JOHN G. GUNVALDSON, OF CYRUS, MINNESOTA.

FENCE-GATE.

SPECIFICATION forming part of Letters Patent No. 612,456, dated October 18, 1898.

Application filed August 2, 1897. Serial No. 646,815. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. GUNVALDSON, a citizen of the United States, residing at Cyrus, in the county of Pope and State of Minnesota, have invented a new and useful Fence-Gate, of which the following is a specification.

The object and nature of my invention are, first, to obtain a gate that can be opened and closed with ease by the driver of any vehicle or from the top of a hay-load or from any harvesting machinery from the place where he is sitting or standing and that can as well be opened and closed by a pedestrian; second, to obtain a gate that will fold together and be perfectly out of the way when open; third, a gate that will work satisfactorily in winter and summer, which will not be affected by deep snow, and will not cause snow to accumulate in the gateway; and fourth, a gate that will automatically and securely lock itself both when open and closed, thus making it perfectly safe. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my gate, showing portions broken away, thereby exposing its internal workings more clearly to view. Fig. 2 is a detail plan view of the operating mechanism. Fig. 3 is a side elevation of the lock which holds the gate in closed position. Fig. 4 is a side elevation of the lock adapted to hold the gate in raised position. Fig. 5 is an alternate construction of operating mechanism, showing single counterweighted cables for operating the gate. Fig. 6 is a detail perspective view of the gate shown in raised position. Fig. 7 is a detail end elevation of the gate in raised position. Fig. 8 is a detail rear elevation of the gate shown in raised position. Fig. 9 is an enlarged detail view of the lock for holding the gate in raised position, showing the gate-bar in dotted position and the lock in engagement with the end of the bolt mounted on the gate-bar. Fig. 10 is an enlarged detail view of the trigger-lock, showing it in full lines tilted for the purpose of allowing the bolt to engage with it and in dotted lines the position of the parts in the act of disengagement.

Similar letters and figures of reference refer to similar parts throughout the several views.

In the drawings, A represents the pillar-post for supporting the gate and is composed of two uprights 2 and 3, erected in the ground, upon which is mounted by means of bolt 4 the main bar C of the gate B, which is made up of the beams 5 and 6, suitably braced by blocks 7. Upon the ends of the beams 5 and 6 are pivotally mounted upon the bolt 8 the cross-arm 9 and counterweighted lock 10. To the ends of the cross-arm 9 are pivotally connected the rods 11 and 12 and 13 and 14, respectively, which in turn have their opposite ends journaled to the uprights 2 and 3 of the pillar-post A.

The gate B is adapted to swing into an upright position, as shown in Fig. 6, turning on its bearings in the pillar-post A, the cross-arm 9 swinging into adjusted position by means of the stay-rods 11 and 12 and 13 and 14.

When the gate is closed, cross-bar 9 rests vertically between the uprights 15 and 16 of the gate-post D, and the gate-rods 11 and 12 and 13 and 14, which are pivotally fastened thereto and to the uprights 2 and 3 of the post A, rest substantially parallel to the main bar C.

The gate is provided with lock 10, which has counterweight 20, which causes the lock to engage with bolt 17. The lock is provided with lip portion 18, having shoulder 19, which in the descending of the gate engages with bolt 17, and thereby locks the gate. Fastened to lip portion 18 through hole 22 is the cable 21, with its opposite end connected to upright lever-arm 23 of the bell-crank 24, which is journaled on bolt 25, passing through beams 5 and 6 of the gate-arm C. The cable 26 is fastened to the end of arm 24 and branches into the operating-cables 27 and 29, which pass over sheaves 46 and 47 and fasten to the outer edges of semicircular plates 31 and 32. These plates are journaled on posts 33 and 34 and have operating-handles 35 and 36. By moving either of these handles 35 and 36 backward and forward the gate is raised and lowered.

In the alternate construction shown in Fig. 5 I use single cables 48 and 49, which lead from the posts 33 and 34 to the cable 26. These I provide with weights 59 and 60 upon their ends, which take up the slack when in operation.

To simultaneously operate both of the semi-circular plates 31 and 32 and their respective handles 35 and 36, I preferably fasten cables 28 and 30 to the reverse edge of the semi-circular plates to that which cables 27 and 29 are fastened and fasten their ends respectively to the cables 27 and 29 beyond block device E. The sheaves 46 and 47 are journaled in frame portion 45 of the block device E, which in turn is journaled to cross-arm 44, mounted upon supporting-arms 43, which are fastened to the uprights 2 and 3 of the post A. When either of the handles 35 or 36 is operated, their respective cables cause the arm 24 of the bell-crank to be tilted, thus disengaging the shoulder 19 of lock 10 from engagement with the bolt 17.

To lighten the gate for convenience in opening, I preferably provide a counterweight 37, which is mounted upon lever-rod 38, journaled on arm 39 of the bell-crank 24. This lever-rod 38 has fulcrum support upon the lower ends of the swinging rods 40, which are pivotally mounted on the uprights 2 and 3 of the post A. To hold the lever-arm in operating position in case it meets with an obstruction on the ground when in use, I preferably provide a stop 42, which is mounted on arm C, and also the arms 40 with knuckle-joints 41.

To support the gate and hold it open, I provide trigger-lock 51, which is mounted upon the end 50 of the fulcrum-arm 40, and is provided with counterweight 52 and also with the V-shaped engaging socket 53 and guide-finger 54, against which the end 56 of bolt 25 strikes and causes the trigger-lock to be thrown into engagement therewith.

In the operation of my improved gate one of the handles is turned, causing the lever-arm 24 to be tilted toward the post A, thus drawing upon the cable 21 and tilting the lock 10 from engagement with bolt 17 in gate-

post D. The gate then rises until end 56 of bolt 25 contacts with the guide-finger 54, which causes the lock to be depressed and the V-shaped socket to engage with said end 56 upon releasing the handle. To lower the gate, the handle is released after slightly tilting the gate back, causing the bolt to glide up and pass around the lower corner of the V-shaped groove of the trigger-lock in disengaging itself therefrom. The trigger-lock then assumes its normal position and rests upon support 57, which is mounted on upright 3. The gate is then lowered, falling by its own weight into the position shown in Fig. 1, the lock 10 engaging with bolt 17 and holding the gate locked when the handle is released.

Having described my invention, what I desire to secure by Letters Patent is—

In a device of the class described, the combination of the main gate-bar C, journaled on upright support A, having supporting-rods B, parallel on either side thereof and journaled at their either ends, respectively to the upright support A, and a cross-arm, which is journaled to the end of said main gate-bar C, adapting said gate to rise and fall; the locking device for holding the gate in closed position and the means for automatically releasing said lock when opening the gate, consisting of cables attached to said lock, having operating-levers attached thereto, which in their movement are adapted to first release the lock and then raise the gate; and the retaining device for holding said gate in raised position, consisting of a trigger-lock, which is mounted on the upright post A, adapted to engage with said gate and retain it in raised position, substantially as described.

JOHN G. GUNVALDSON.

Witnesses.

J. J. OPTHUN,

M. G. R. S. KAAR.