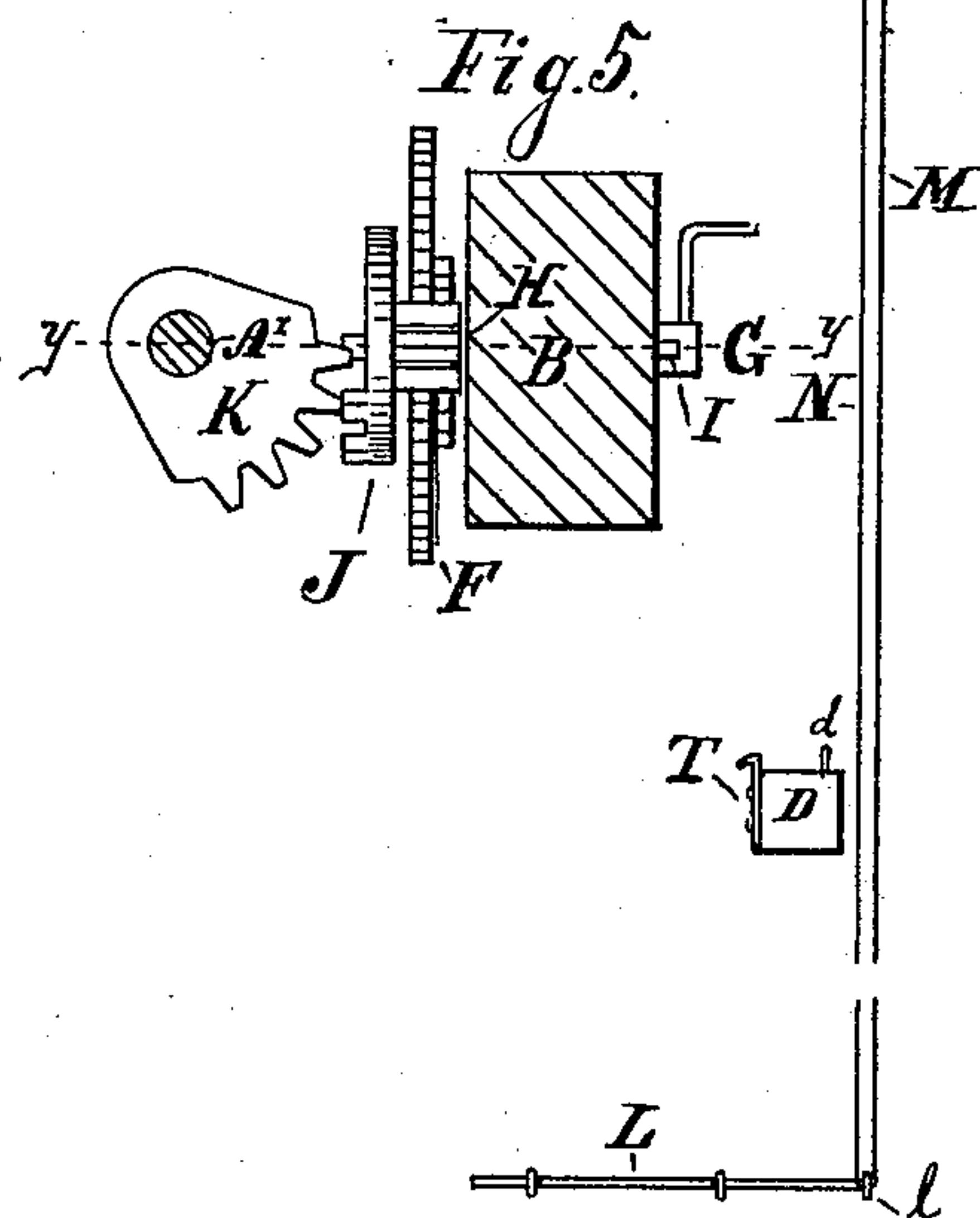
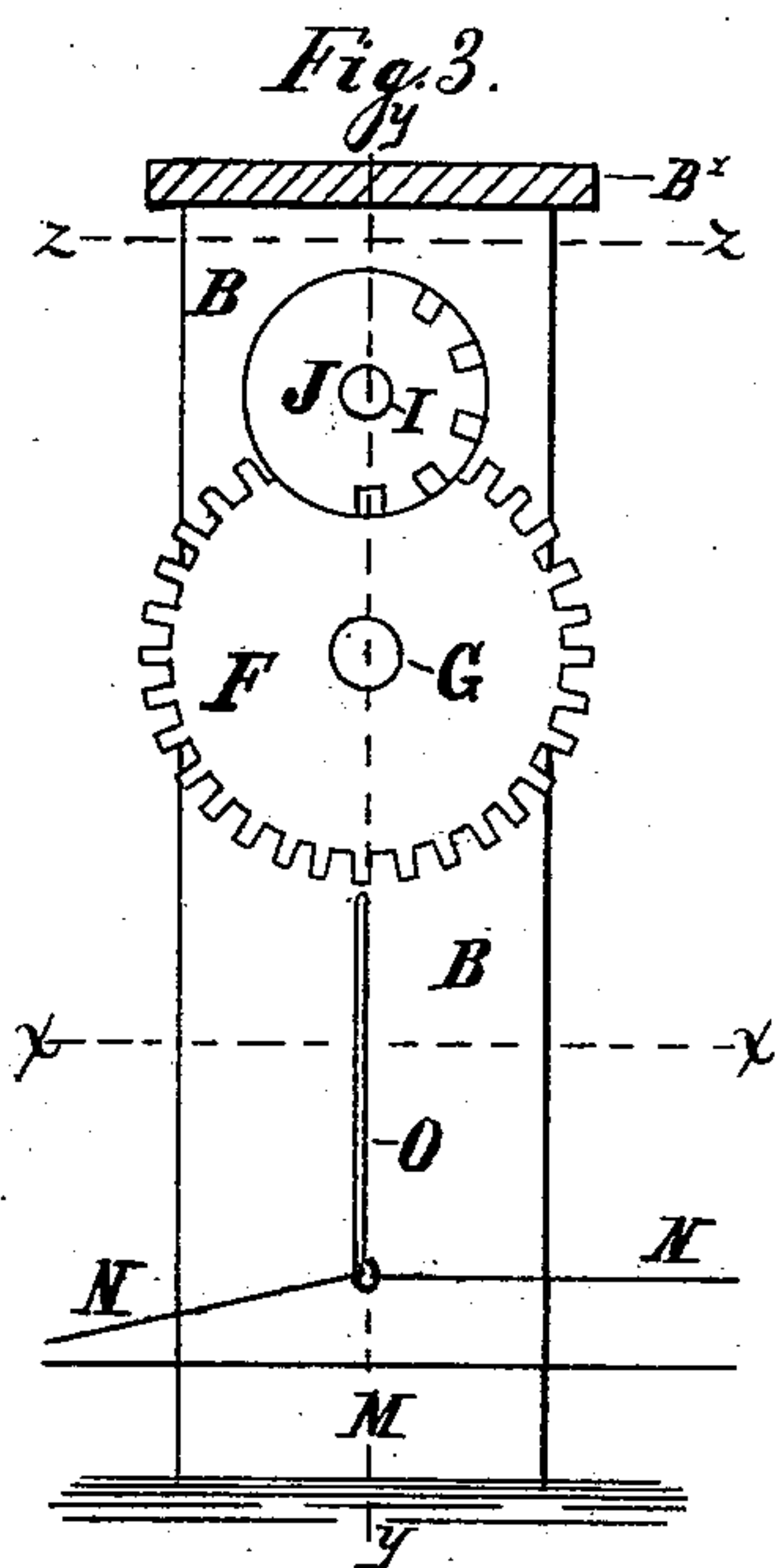
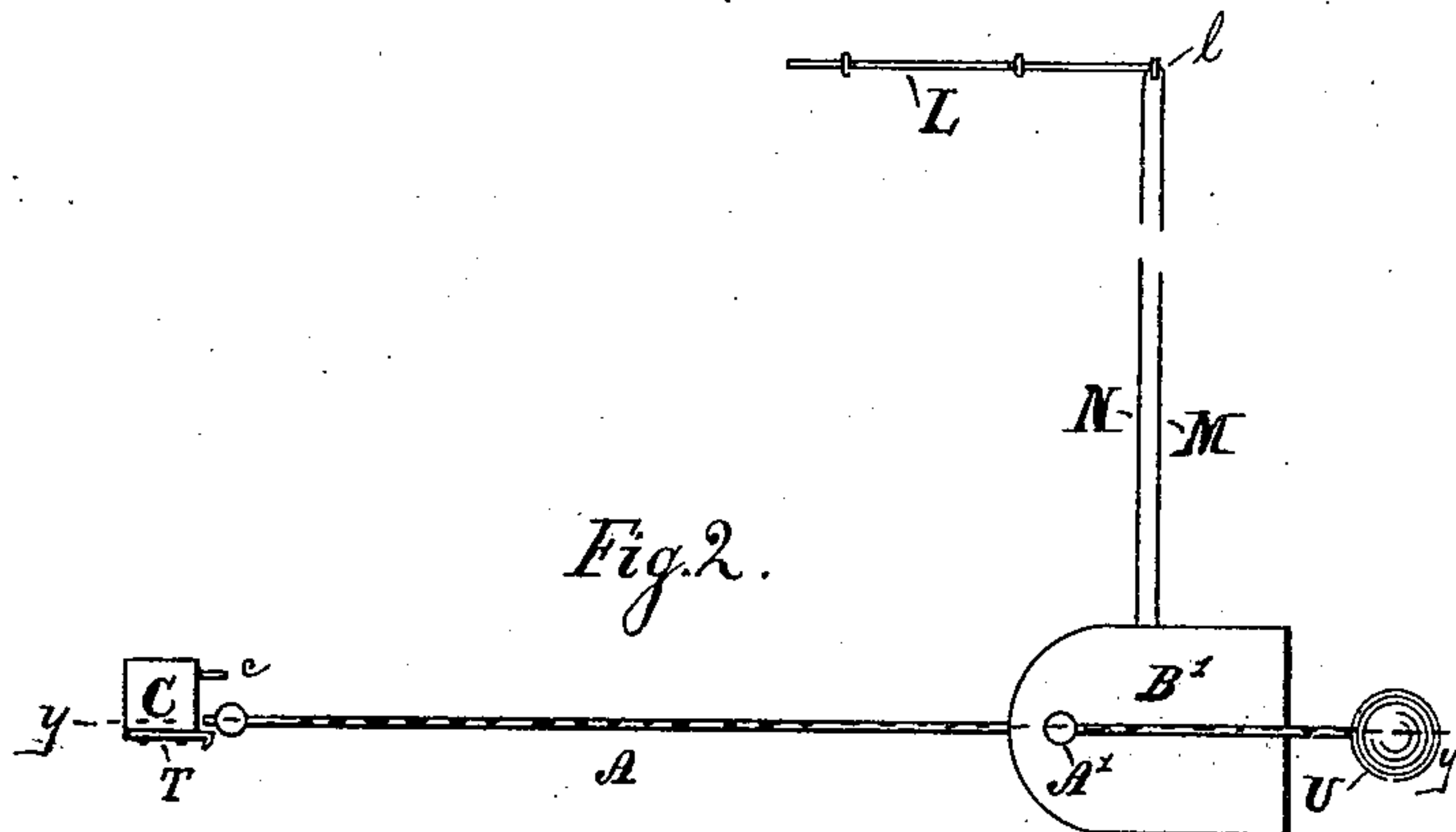
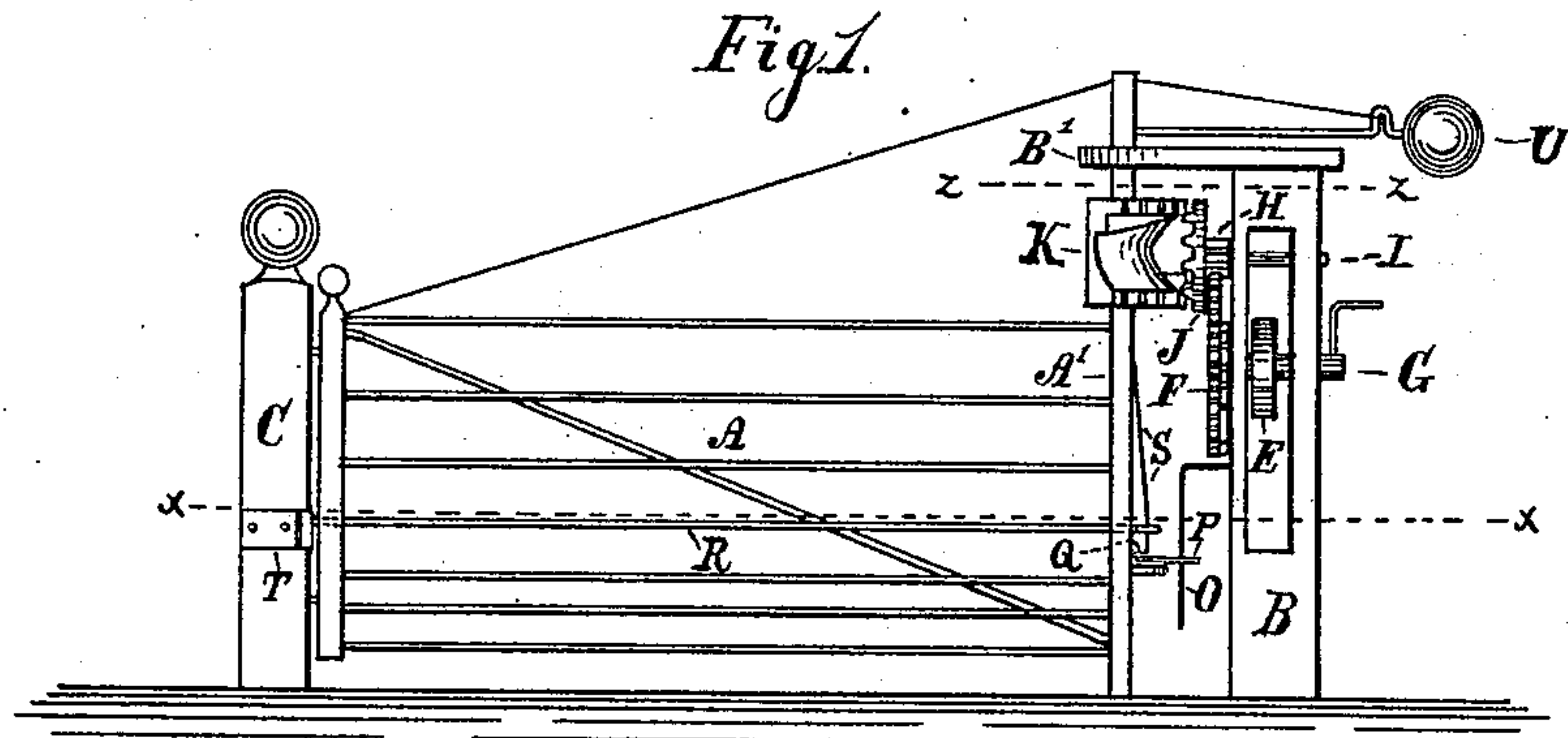


J. P. KELSO.
Automatic Gate.

No. 226,522.

Patented April 13, 1880.



WITNESSES.

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Wm. J. Millner.

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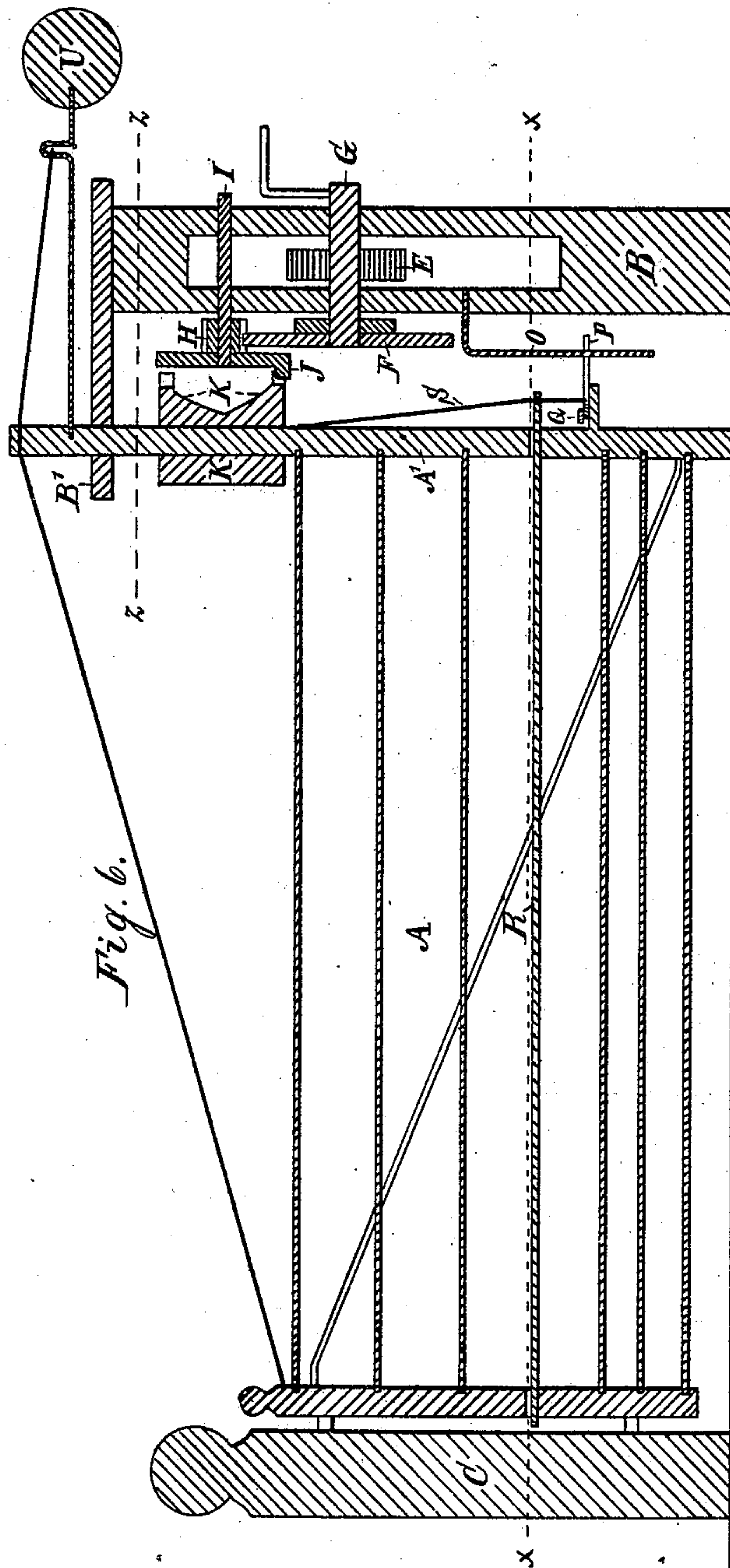


Fig. 6.

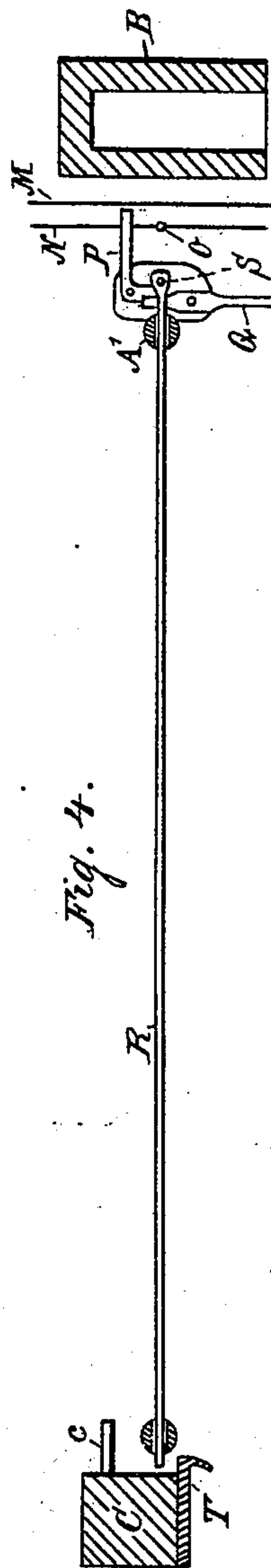


Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES P. KELSO, OF MORGANTOWN, INDIANA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO JAMES HICKEY, OF SAME PLACE.

AUTOMATIC GATE.

SPECIFICATION forming part of Letters Patent No. 226,522, dated April 13, 1880.

Application filed December 26, 1879.

To all whom it may concern:

Be it known that I, JAMES P. KELSO, of the town of Morgantown, county of Morgan, and State of Indiana, have invented certain
5 new and useful Improvements in Automatic Gates, of which the following is a specification, reference being had to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate sim-
10 ilar parts.

Figure 1 is a side elevation of a gate embodying my invention. Fig. 2 is a top or plan view thereof. Fig. 3 is an elevation of the post B and mechanism thereon, the gate being re-
15 moved. Fig. 4 is a top or plan view of the latch mechanism, as seen looking downwardly from the dotted line *x x*. Fig. 5 is a top or plan view of the gears, as seen looking downwardly from the dotted line *z z*. Fig. 6 is a
20 longitudinal vertical section of the entire gate on the dotted line *y y*.

The object of my invention is to produce an automatic gate which shall be opened and closed by mechanical power, and which, in
25 operation, shall require the application of no more force than sufficient to uncatch the latch.

The following is a description of a gate which answers these conditions, the several parts being designated therein by letters of refer-
30 ence corresponding to those used in the drawings:

A gate, A, having a vertical pivot-post, A', is connected, in the manner shown, to the post B, which carries the operating mechanism. A second post, C, is provided, against
35 which the gate shuts, and a third, D, against which it opens. A spring, E, is suitably mounted upon a shaft, G, which passes through the post B and supplies the motive power.
40 A train of gears, consisting of the larger one F, mounted on the same shaft as the spring, and a smaller one, H, mounted upon a second shaft, I, transmits the power of the spring to the face-gear J, also upon the shaft I, and
45 through it to the double segmental rack K, which is rigidly attached to the pivot-post A' of the gate.

The peculiar operation of this gate is due to the construction and arrangement of the
50 gear-wheel J and the double rack K. The

wheel is only provided with enough cogs to engage with one portion of the rack at a time, and, being arranged in proper relative position, the upper and lower series of cogs on the rack are brought alternately in mesh there-
55 with as the wheel revolves, which has the effect to drive the pivot-post first in one direction and then in the other, and thus swing the gate first open and then shut, the wheels and motive power all operating continuously in one direc-
60 tion notwithstanding.

Bails or bail-like rods L are provided, over which vehicle-wheels may pass in the usual manner. Small upright bars *l* are attached to the ends of these rods, to which the ends of
65 wires M N, which run from one to the other, are attached, and said rods thus kept at all times in the same relative position to each other. One of these wires, N, is connected to the vibrating rod O upon the post B, and which,
70 when moved back and forth, moves the levers P and Q upon the pivot-post A', and through them operates to uncatch the latch R from the catches T. A spring, S, is also attached to the pivot-post A', and operates to force the
75 latch into engagement with the catches when not pulled back by the levers P Q.

In operation the vehicle-wheel passes over the bail L, and, through the rods M N, pulls the rod O against the elbow-lever P, which
80 operates to release the latch R, and allows the described motive power to operate to open the gate. In closing the gate the rod O is pulled, by the same means as before, against the piv-
85 oted lever Q, (which is then in position instead of the lever P,) and the same operation of parts closes the gate that before had opened it.

A counterbalanced gate will swing more easily than one the weight of which rests en-
90 tirely on the hinge-bearings, and therefore I have attached a counterbalancing-weight, U, as shown, to assist in economizing the motive power.

As only sufficient strength is required to operate the latch in the connections between
95 the bails and the gate, I employ for such connections small wire instead of the rods commonly used. Such wires can be conveniently run several hundred feet if required. I have
100 therefore contemplated running said wire a

considerable distance in certain cases, and attaching a hand-lever thereto, instead of the bails L, or in addition thereto, which may be operated by equestrians as well as others.
5 Such an arrangement would also be of value in driving stock, as the driver could remain behind his herd and still operate the gate in season for them to pass through.

The wires may also run along the fences or
10 otherwise from a pasture-gate to the barn if desired, or from a gate in a street or road-fence to a dwelling where the latter is at considerable distance from the former, or along railroad-rails when the gate is used at a railway-
15 crossing.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a spring, weight, or
20 similar power, the partly-cogged face-gear J, the double segmental rack K, and the gate, substantially as and for the purpose specified.

2. In an automatic gate, a latch mechanism consisting of a sliding latch, R, a spring by which said latch is forced forward to engage 25 with the catches on the gate-posts, two levers, P Q, by which the latch is forced backward and relieved from said catches, and a vibrating rod for operating said levers, all substantially as herein set forth. 30

3. The combination of the bails L, rods N, rods O, levers P Q, latch R, having spring S, and gate A, substantially as shown and specified.

In witness whereof I have hereunto set my 35 hand and seal, at Morgantown, Indiana, this 22d day of December, A. D. 1879.

JAMES P. KELSO. [L. S.]

In presence of—

J. K. McILHENNY,
J. M. NEELY.