

F. Livings,

Gale.

No. 108368.

Patented Oct. 18. 1870.

Fig. 2.

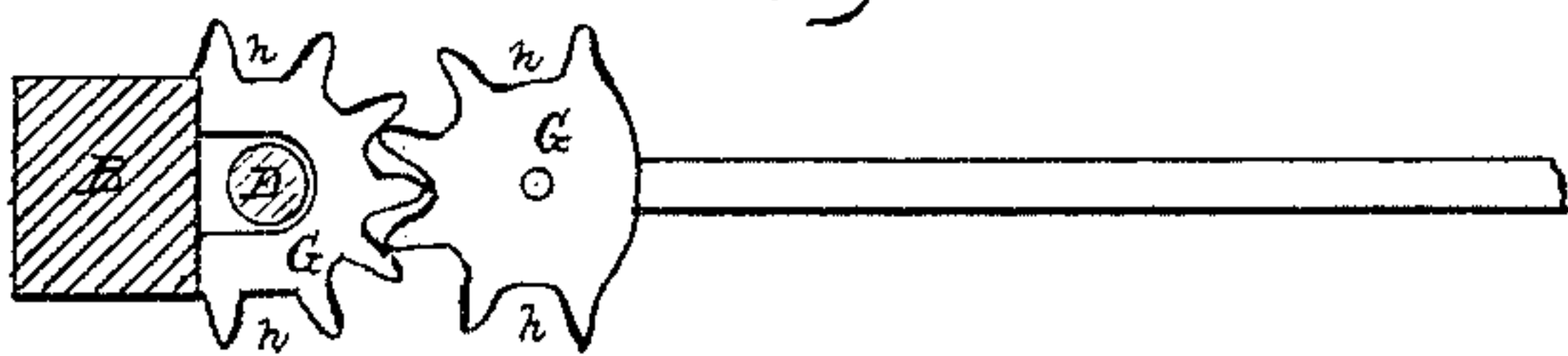


Fig. 1.

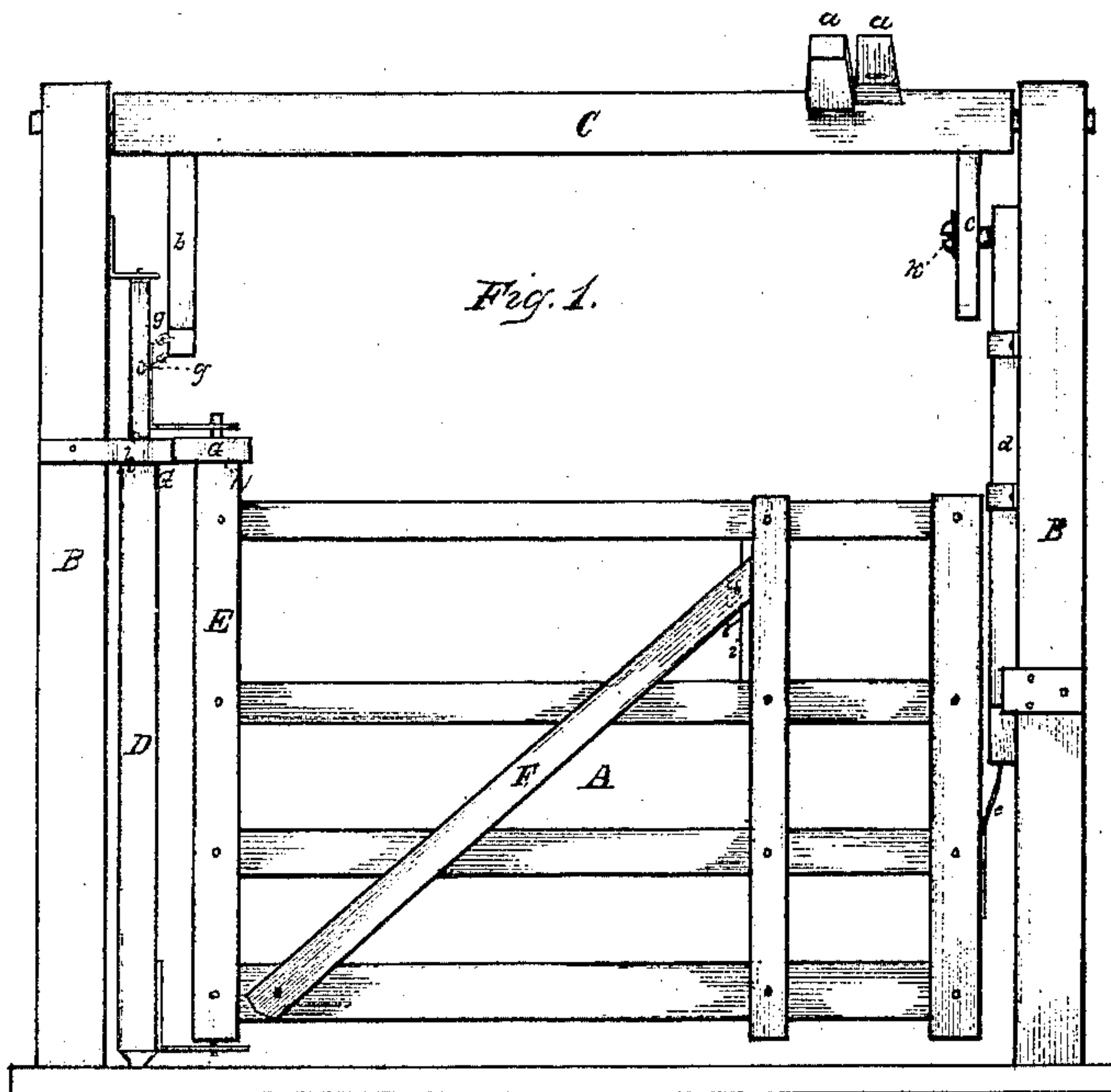
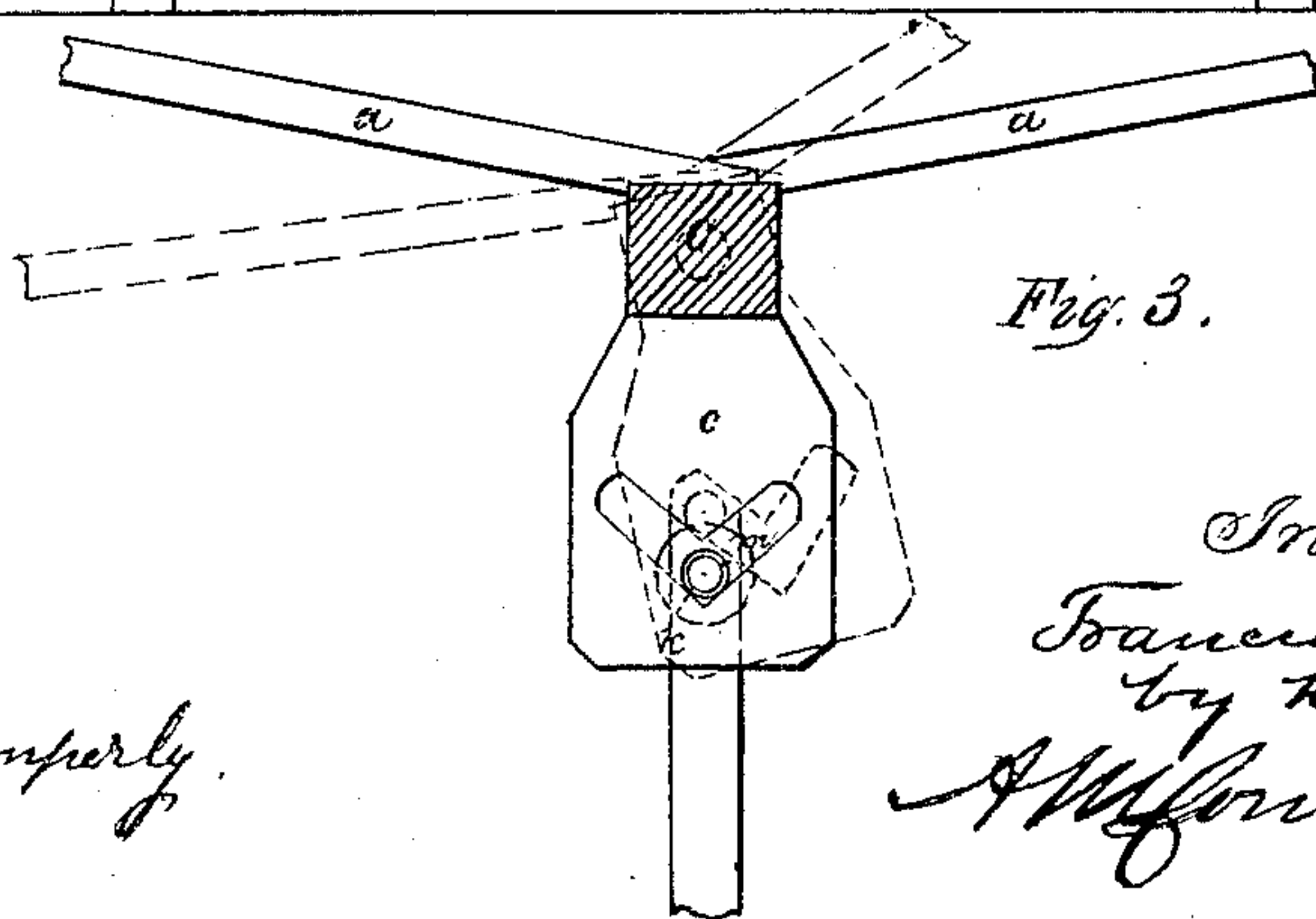


Fig. 3.



Attest.
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Francis Livings
by his Atty.
A. M. Fournelle & Co.

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2. Sheets. Sheet. 2.

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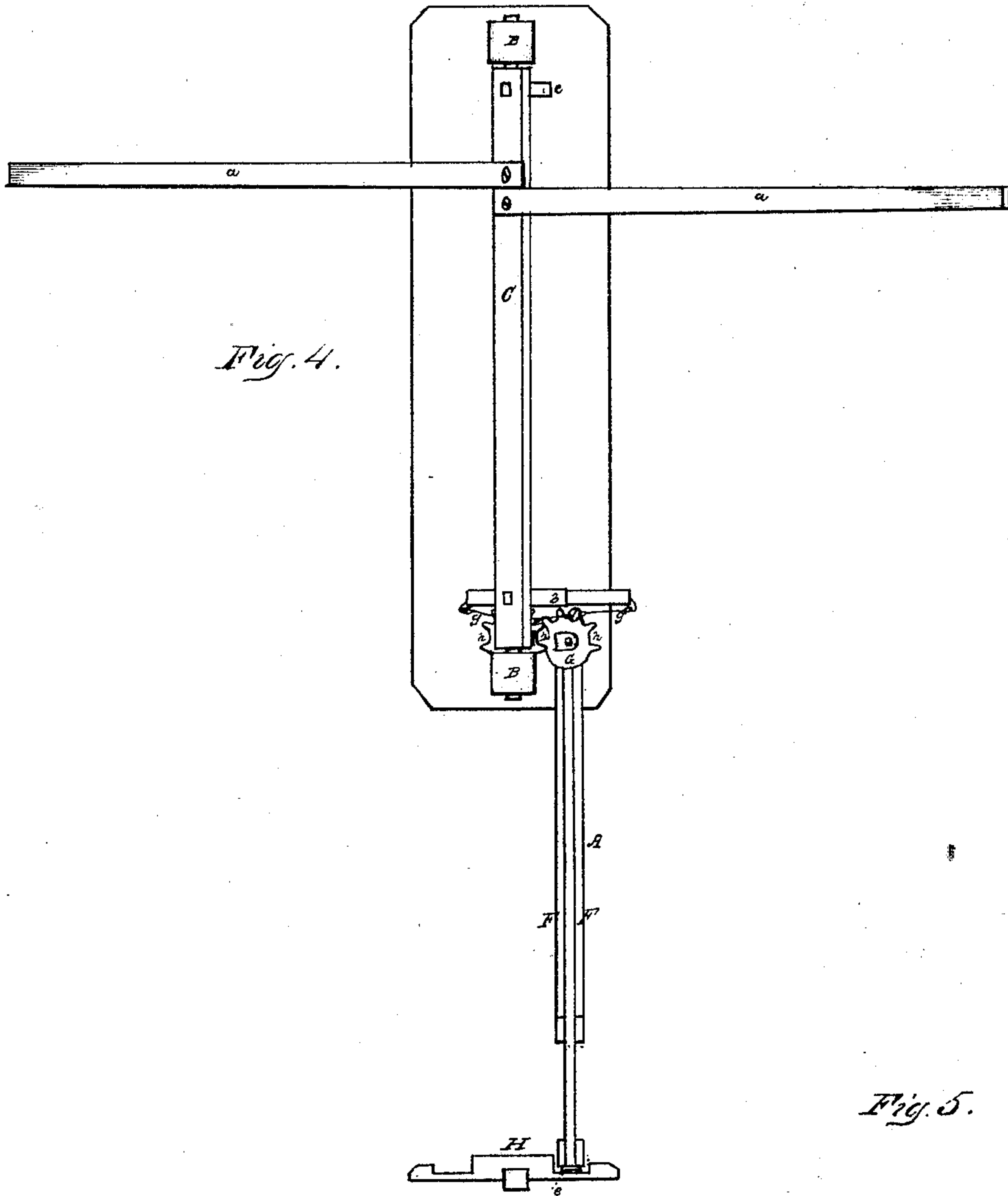


Fig. 4.

Fig. 5.

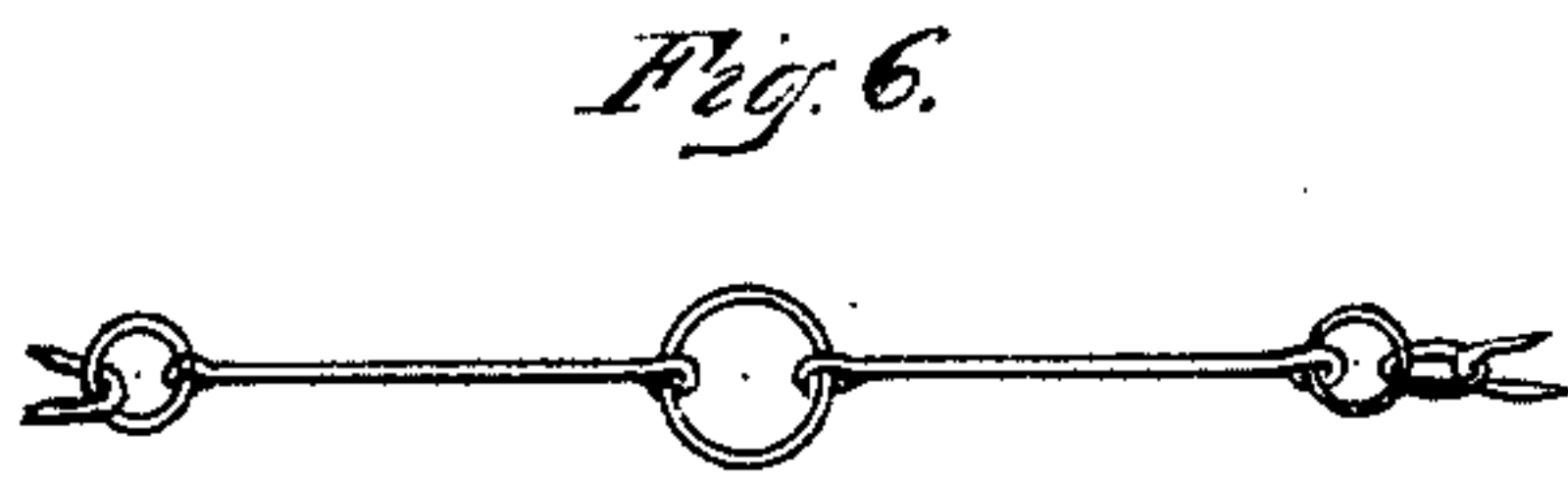
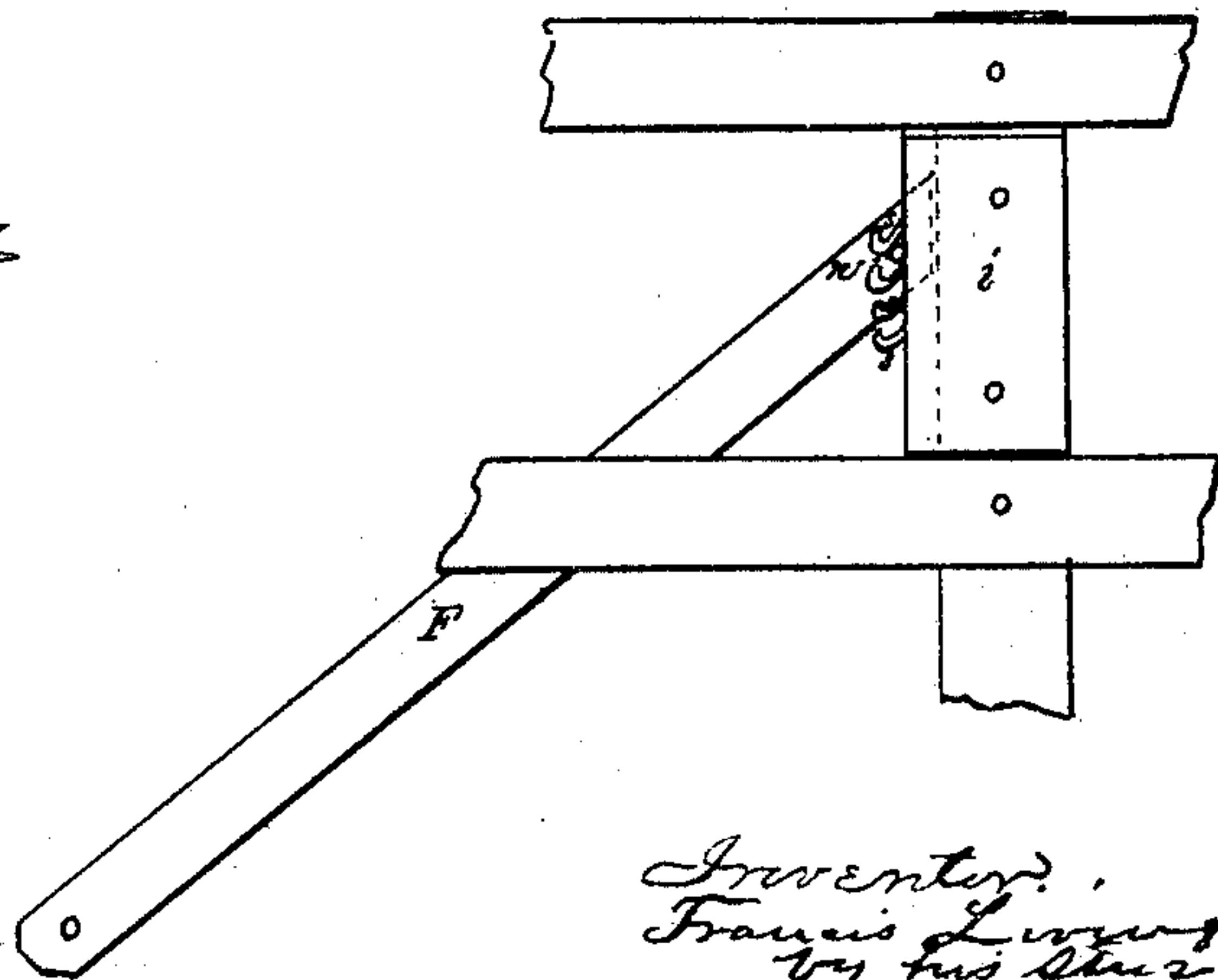


Fig. 6.

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United States Patent Office.

FRANCIS LIVINGS, OF EAST ENTERPRISE, ASSIGNOR TO HIMSELF AND
PETER WYCOFF, OF CROSS PLAINS, INDIANA.

Letters Patent No. 108,368, dated October 18, 1870.

IMPROVEMENT IN GATES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FRANCIS LIVINGS, of East Enterprise, in the county of Switzerland and State of Indiana, have invented an Improved Approach-Gate, and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing making part of this specification.

Figure 1 being a side view of the gate, closed.

Figure 2 being an enlarged view of the toothed segments.

Figure 3 being an enlarged view of the latching device.

Figure 4 being a plan of the gate, open.

Figure 5 being an enlarged view of the bracing device.

Figure 6 being a view of the linked rods, enlarged.

Like letters of reference designate corresponding parts in all the figures.

My invention relates to that class of gates which may be opened or closed by persons without dismounting, the entire operation being positive, no dependence being placed on the operation of gravity.

One important feature of my invention consists in the use of a rocking-bar placed horizontally over the gateway, from post to post, and provided with suitable mechanism and levers for operating the gate.

Another important feature of my invention consists in a peculiar device for releasing the spring-latch from its catch.

Another important feature of my invention consists in the peculiar form of toothed segments used, and the operation of the same.

Another important feature of my invention consists in the peculiar form of linked rods employed to operate the gate.

Another important feature of my invention consists in the use of a pin and hooks, in lieu of notches, for bracing the gate, so as to prevent sagging.

In the drawing—

A represents the gate, and B B the posts between which it is hung.

C is a rocking bar, journaled in the said posts at the top, they being of sufficient length to allow loaded vehicles to pass under. This bar has a piece, *c*, projecting from its under side, provided with a V-shaped slot, *m*. (See fig. 3.) A forked bar, *d*, passes through guides on the inner side of the outer gate-post, and is provided with a roller, *k*, at the upper end, which engages with the slot *m*, as shown. A bent spring-latch, *e*, is secured to the front stile of the gate, which engages with the fork in the lower end of the bar *d*. This constitutes the securing device.

The rocking-bar is also furnished with a T-shaped piece, *b*, which projects downward over the hanging-

stile E of the gate, the ends of the T-piece being connected by linked rods *g g*, (see enlarged fig. 6,) to a supplementary stile, D. This device is for opening and closing the gate.

The supplementary stile D is pivoted above and below in the usual manner, and turns in a toothed segment, G, which is secured to the back gate-post. Another segment is secured to the top of the hanging stile E, the two meshing together.

The hanging stile has pintles, which are journaled in plates secured to and projecting from the supplementary stile, above and below. These cogged or toothed segments require especial description.

By the use of the said cogged segments, in the arrangements shown, the stile E receives an independent rotary motion on its axis, distinct from its motion around the axis of the stile D, the latter motion resulting from the fact that the pintles of the stile E are journaled in plates projecting from, and rigidly secured to, the stile D, as before stated. The combined effect produced by the two rotary motions given the stile E is, that when the stile D is rotated through one-fourth of a revolution, the stile E makes a quarter revolution on the axis of the stile D, and an additional quarter revolution on its own axis, through the operation of the cogged segments, which swings the gate open until it rests at right angles with the axis of the roadway.

Fig. 6 shows the manner of forming the linked rods by connecting them with a ring of large size in the middle, and having coupled rings of smaller size at the ends secured to the stile D, and a single ring at the other. This device is not so liable to become kinked or twisted as a chain, and is cheaper.

The diagonal bars F F are pivoted to the lower rail of the gate, and are provided with a pin, *n*, (see fig. 5,) at the other end. A piece, *i*, secured to the gate substantially in the manner shown, forms a tongue or guide-piece for the ends of the diagonals, and is furnished with hooks, *s s*, placed in a row up and down its edge, and projecting obliquely downward. Now, as the gate is loosely jointed, the "sag" of the front stile may be taken up by lifting it up and inserting the pin *n* under the proper hook; but when an animal attempts to raise the gate and pass under, the hook beneath the pin catches it and will not allow the gate to be raised. I claim in this an improvement over simple notches, which have been used for this purpose, as gates so constructed can be raised by animals, and will remain up.

Hand levers *a a*, projecting parallel with the axis of the roadway, are secured to the rocking-bar C.

Operation.

The operator pulls down on the hand-lever *a* on his

side of the gate, which rotates the bar C. The first motion is communicated to the forked bar *d*, through the slotted piece *c* and roller-pin *k*, and raises the fork in the bar *d* (see fine lines fig. 3) clear of the spring-latch *e*. The T-shaped lever *b* then operates, through the medium of the linked rods *g g*, to rotate the stile D. This communicates a rotary velocity to the hanging stile E. The gate swings open and is caught and held by the notched stop-piece H. The rider passes through and pulls down on the other lever. The first motion, owing to the extra width of the spaces *h h* in the segments, now engaged, draws the gate forward a sufficient distance to release the latch *e* from the notch in the stop-piece H, and the gate swings shut.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The rocking-bar C, provided with hand-levers *a a*, T-piece *b*, and slotted piece *c*, when used in the manner substantially as shown and for the purposes set forth.

2. The device for securing the gate to the post when closed, consisting of the slotted piece *c*, vertical, forked sliding bar *d*, pin and roller *k*, and spring-catch *e*, when arranged to operate together in the manner substantially as shown, and for the purpose specified.

3. The toothed segment G G, when arranged to operate in connection with a supplementary stile, D, substantially in the manner as shown and, for the purposes set forth.

4. In combination with the rocking-bar C and its levers, hanging stile E, linked rods *g g*, and segments G G, the supplementary stile D, when arranged to operate in the manner substantially as shown.

Witness my hand this 29th day of March, 1870.

FRANCIS LIVINGS.

Witnesses:

O. V. FLORA,
PETER WYCOFF.