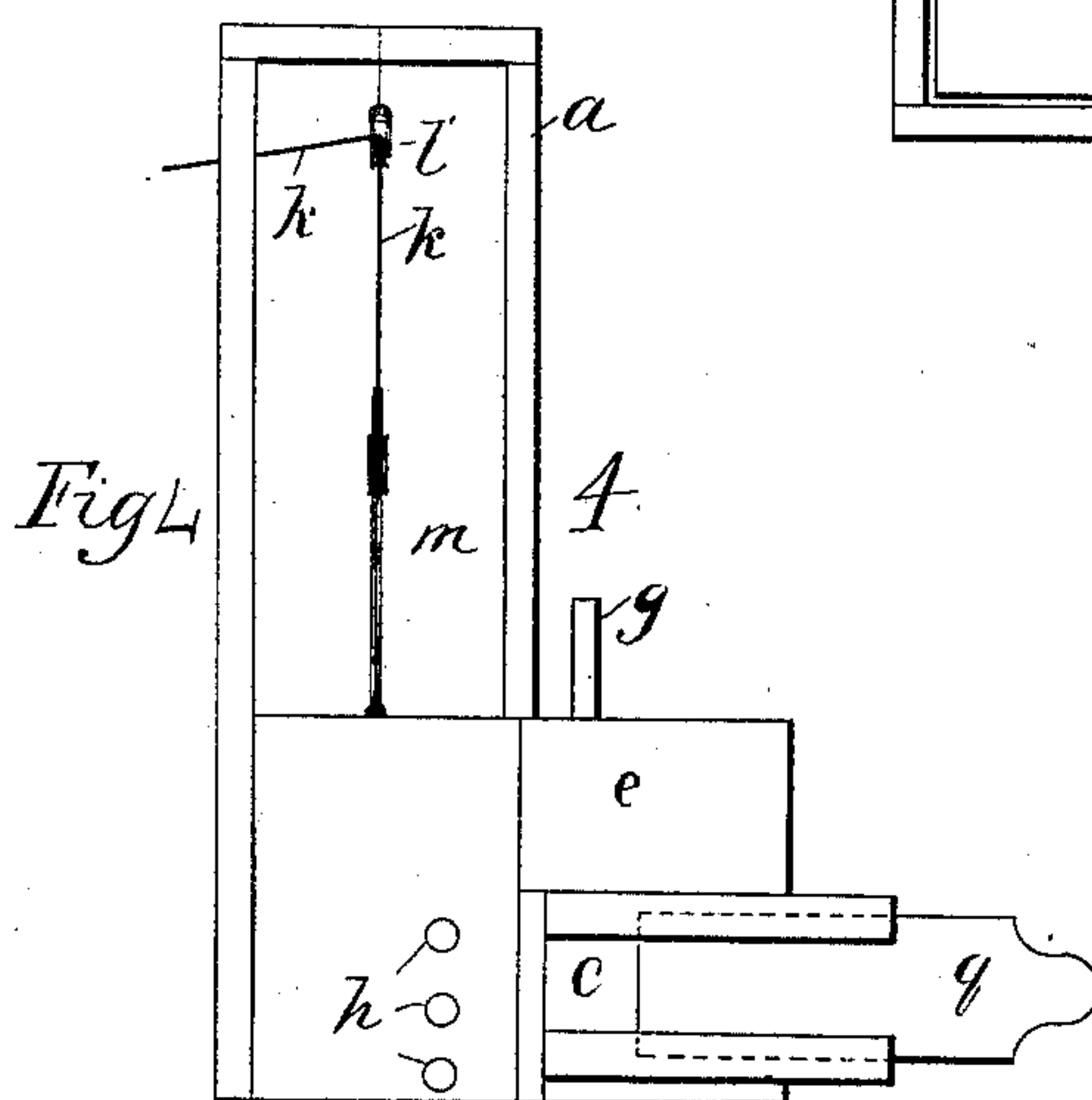
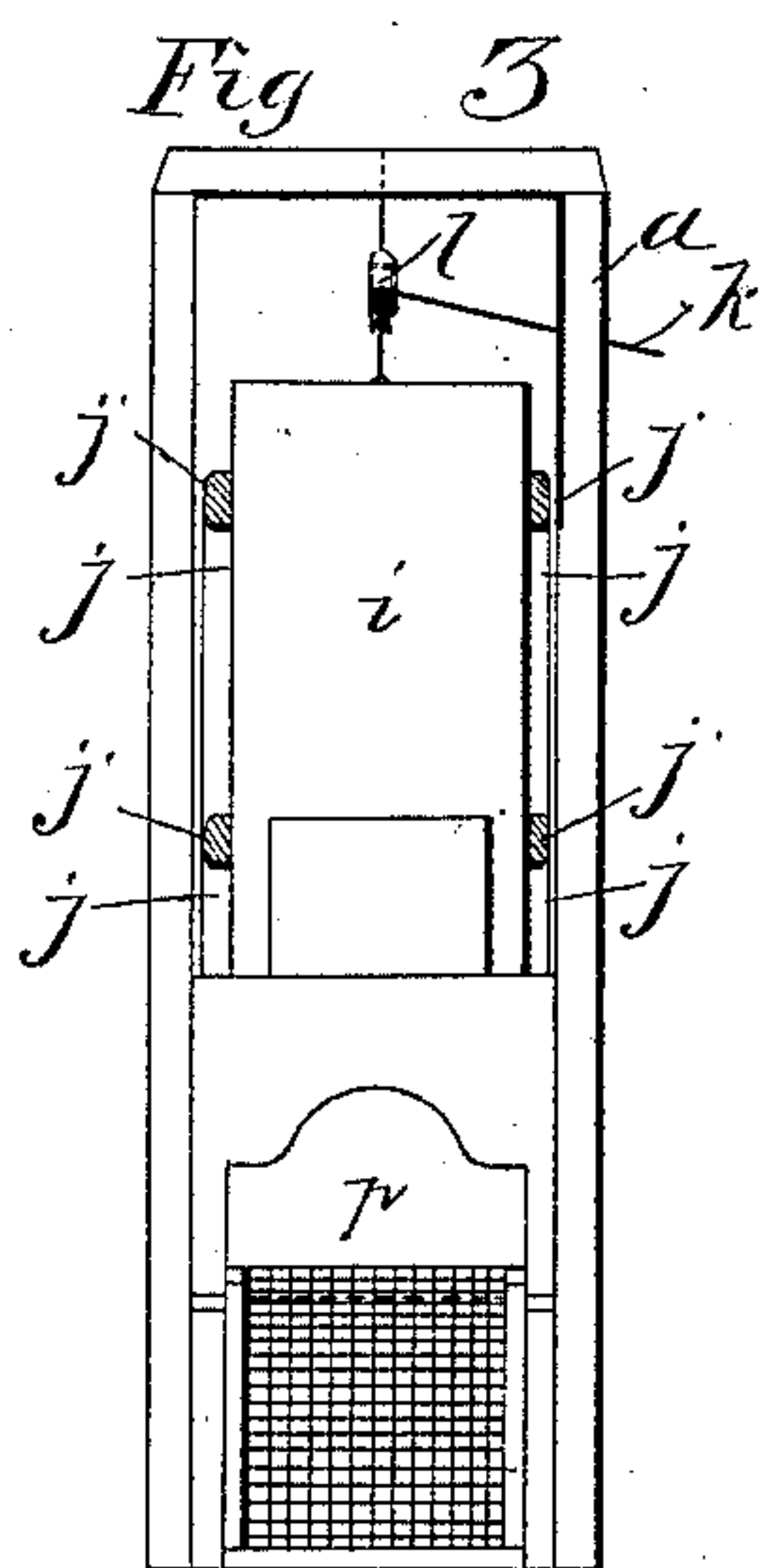
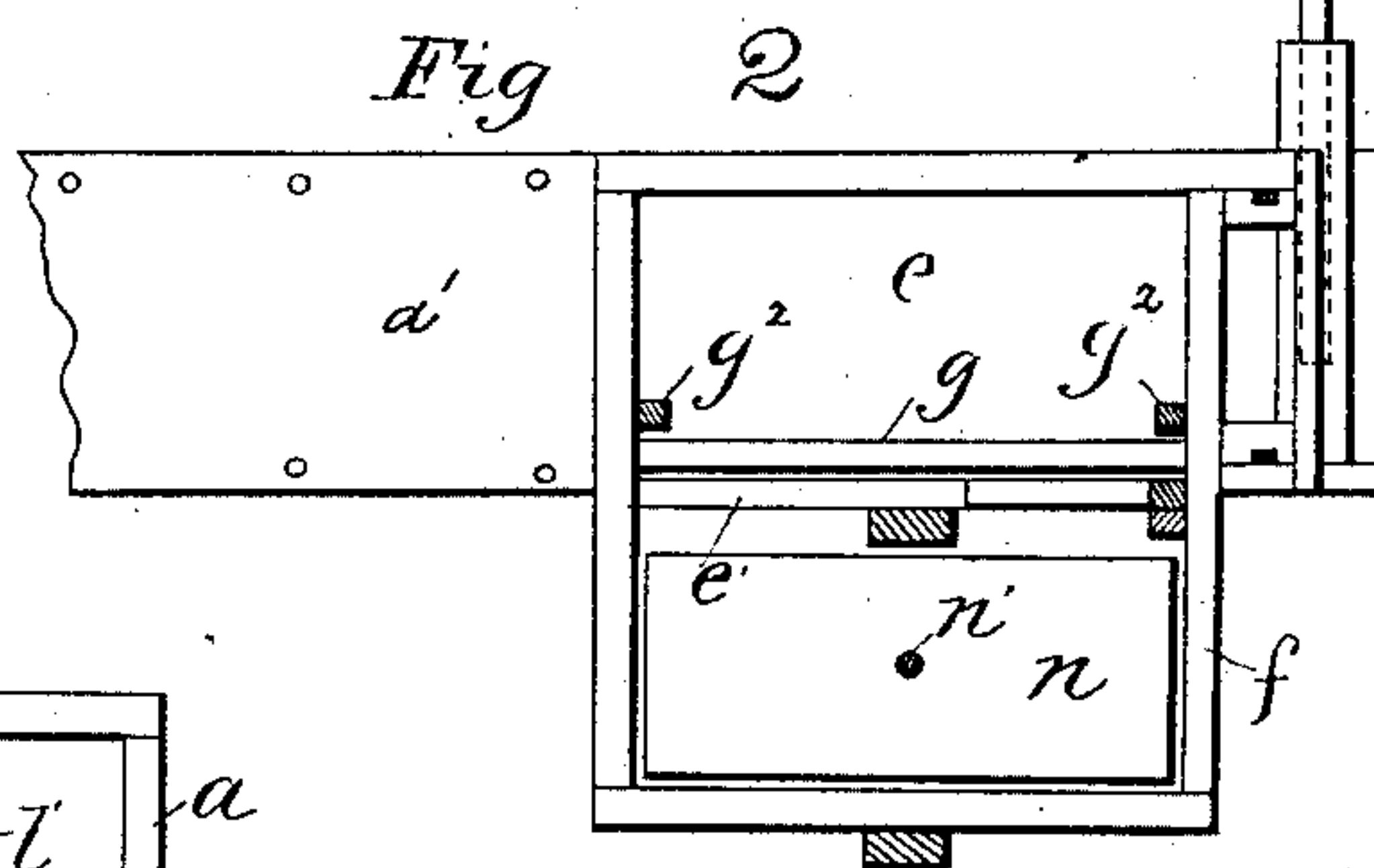
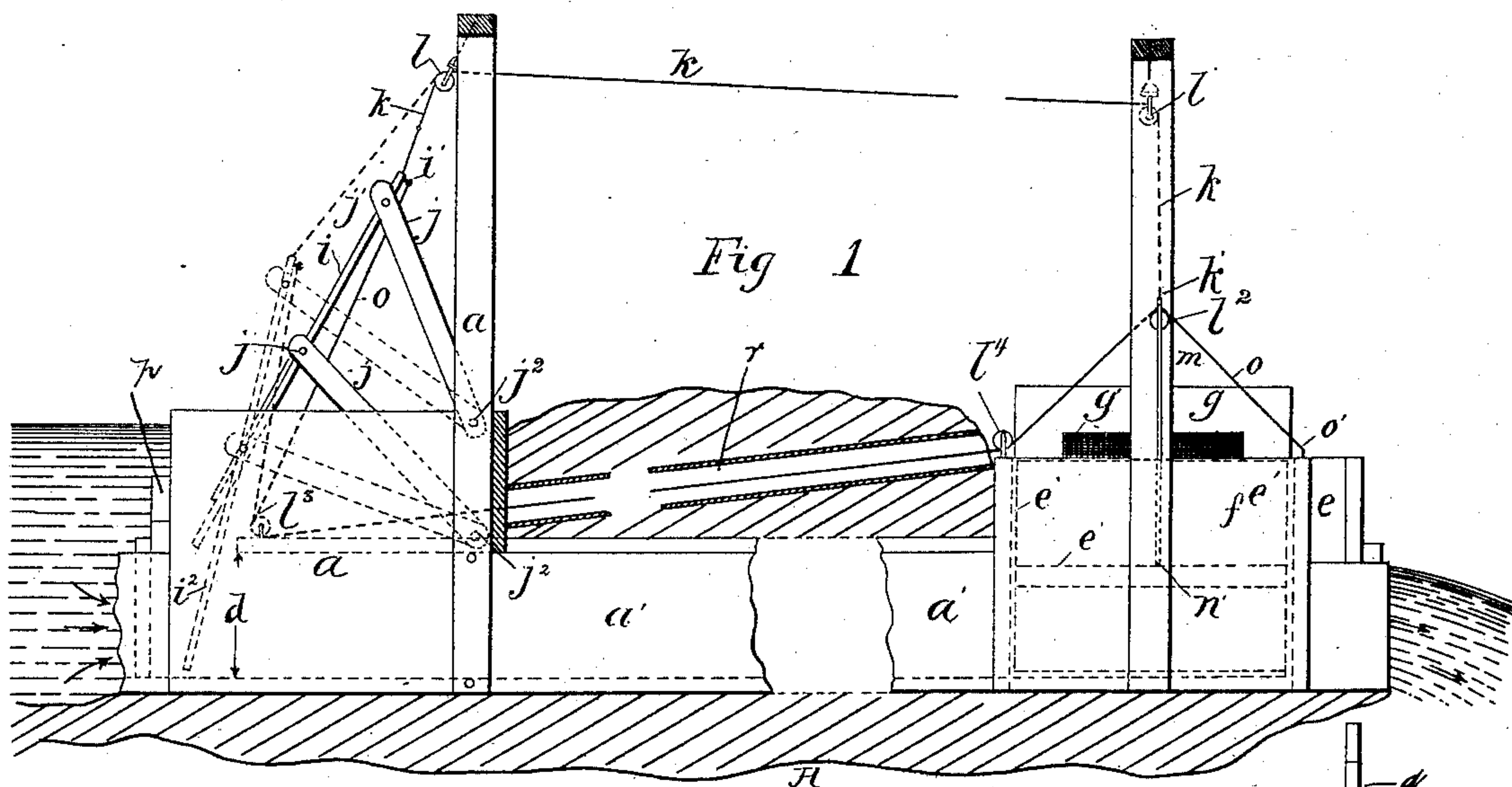


(No Model.)

J. STICKLE.  
SELF ADJUSTING HEAD GATE.

No. 367,459.

Patented Aug. 2, 1887.



WITNESSES:  
*Frank L. Paul*  
*J. H. Matsudaira*

INVENTOR  
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his  
ATTORNEY



# UNITED STATES PATENT OFFICE.

JAMES STICKLE, OF DENVER, COLORADO.

## SELF-ADJUSTING HEAD-GATE.

SPECIFICATION forming part of Letters Patent No. 367,459, dated August 2, 1887.

Application filed November 1, 1886. Serial No. 217,762. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES STICKLE, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Self-Adjusting Head-Gates; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to self-adjusting head-gates for regulating the flow of water from irrigating-ditches; and the object of my improvements is to provide a cheap and effective self-adjusting device which will at all times deliver the same amount of water during a given period of time, regardless of the head in the ditch. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the entire device; Fig. 2, a top view of the float-box and tail-gate; Fig. 3, an end view of the head-gate and its attachments; Fig. 4, an end view of the tail-gate and its attachments and the float-box.

Similar letters refer to similar parts throughout the several views.

*a* is the frame of the device.

*a'* is a spout which carries the water from the ditch through embankment *A* and delivers it through the outlet on the right of Fig. 1, as shown by the arrows. This outlet *c* is made of a proper size to deliver a given amount of water in a given time under a certain pressure or head. The opening *d* in the ditch or stream, being much larger, admits enough water to raise the level in box *e*, so that it will overflow from its top, which is open. The side of *e*, which also forms a partition between itself and float-box *f*, is cut away, so that when the water reaches a certain point in *e* it will run over the partition *e'* into the float-box *f*. Sliding screen *g* has a wide frame, with wire-netting covering the central square opening, *g'*, and is placed in slides *g<sup>2</sup> g<sup>2</sup>*, next the partition *e'*. The netting *g'* is to prevent floating sticks and the like from entering the float-box, and the wide frame operates as a gate, which, to-

gether with the partition, varies the height to which the water must rise in box *e* before it can flow into the float-box *f*. In the lower portion of the float-box are holes *h*, Fig. 4, from which the water is continually flowing when there is any in the box *f*. The head-gate *i* is formed of any suitable material and held in position by arms *j*, the outer ends of which are pivoted to the gate *i* at *j'*, and the inner ends pivoted to the frame at *j<sup>2</sup>*. To the upper end of the head-gate *i* is fastened a cord, *k*, at *k'*. The cord *k* is then passed over the pulley-wheels *l* and *l'* and fastened at *k'* to the top of the standard *m*, the lower end of which is securely fastened to the float *n* at *n'*. In the top of the standard, a little below the end, is placed a pulley-wheel, *l<sup>2</sup>*. At *l'* is attached to the head-gate a cord, *o*, which is passed under the wheel *l<sup>2</sup>* and *l'*, over *l<sup>2</sup>*, and one end fastened at *o'* to the frame. *p* and *q* are slides used to shut off the passage of water through the device. *r* is a box to guard the cord *o* from the embankment. In operating, a sufficient amount of water, by the slide *p*, is turned on to raise the surface above the outlet *c*, until the desired pressure is obtained, when the cord *k* is adjusted in such a manner that when the float *n* is at the top of the float-box *f*, as shown by dotted lines *e'*, the head-gate *i* is in the position shown by dotted lines *i<sup>2</sup>*, and as the surface of the water lowers in the float-box *f* the head-gate *i* is raised in proportion to the lowering of the float, and, as the float is raised by the action of the water in *f*, it also raises the standard *m*, which pulls the cord *o*, which in turn pulls down the gate *i*, which shuts off the water as it descends. When from any cause the water surface is lowered in the stream or ditch, so that the water ceases to flow into the float-box, the water in the float-box runs out of the holes *h* and lets the float *n* down, which opens the gate *i*, and as soon as the water in the ditch rises and sufficient runs in to raise the surface so that it will run over the partition *e'*, the float will raise and lower the gate *i*. Thus it will be seen that the pressure in *e* will be kept uniform regardless of the height of water above the opening *d*, and, as the flow through the outlet *c* is regulated by the pressure or head of water in *e*, it will be uniform and always discharge a given amount of water during a given space of time. I do not confine

myself to this exact hanging and directing the cords *k* and *o*; but

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

- 5 1. In combination with a spout or water-way, *a'*, a gate, *i*, arranged to be moved to open and close the inlet to said spout or way, a box having an outlet arranged to receive water from said spout, a float in said box, a cord,  
10 *o*, connected with the gate *i* and to a suitable point near the float *n*, suitable pulleys over which this cord is passed, and the cord *k*, also connected with the gate *i* and with the float *n*,  
and suitable pulleys over which this cord is  
15 passed, whereby when the water rises and falls in the float-box the gate *i* will be oper-

ated, in the manner and for the purpose set forth.

2. The combination, with the spout or water-way and the float-box *f*, having an inlet 20 from said spout or water-way into said box, of a sliding frame, *g*, having an opening provided with a screen interposed between the inlet to the box and the spout or way, substantially as described, and for the purpose 25 set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES STICKLE.

Witnesses:

D. B. REYNOLDS,  
T. A. MATSDAIRA.