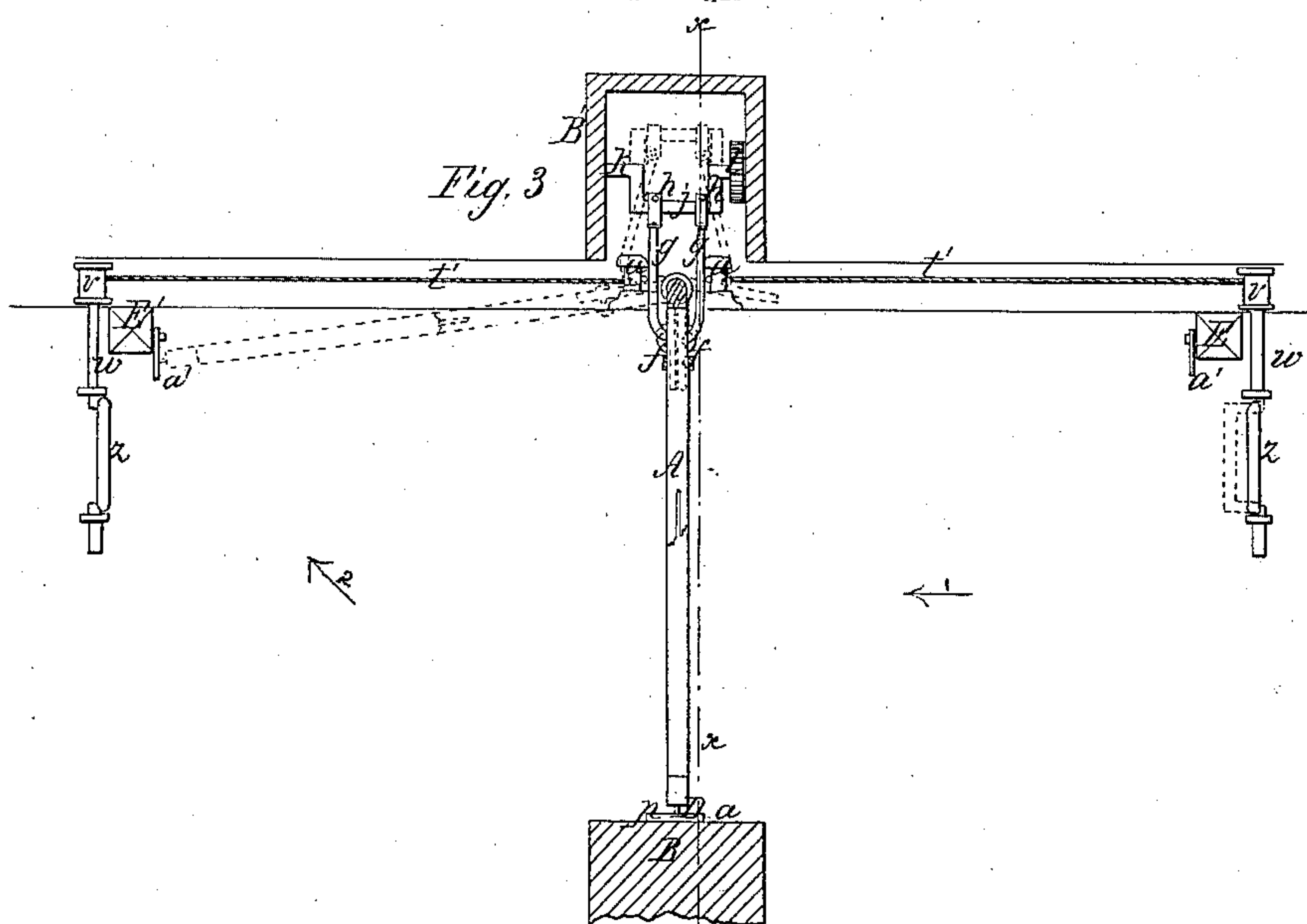
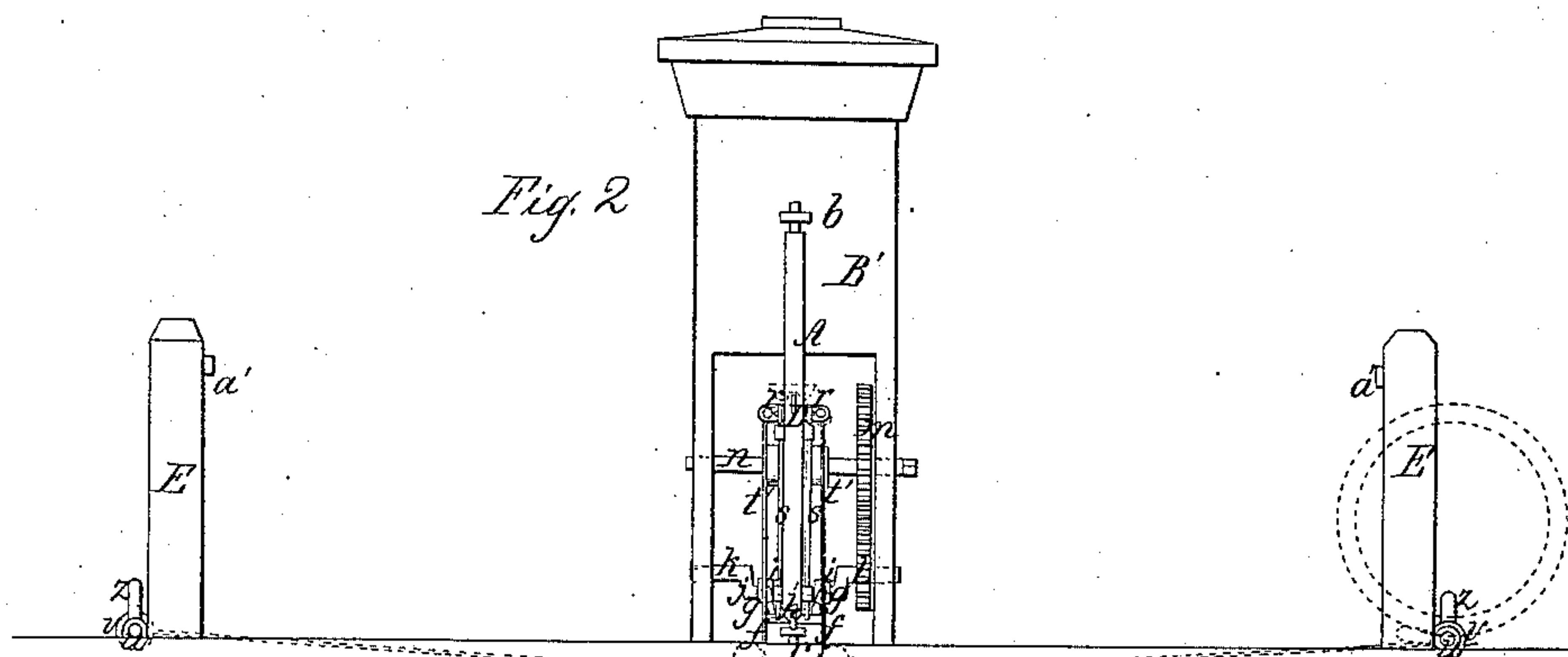
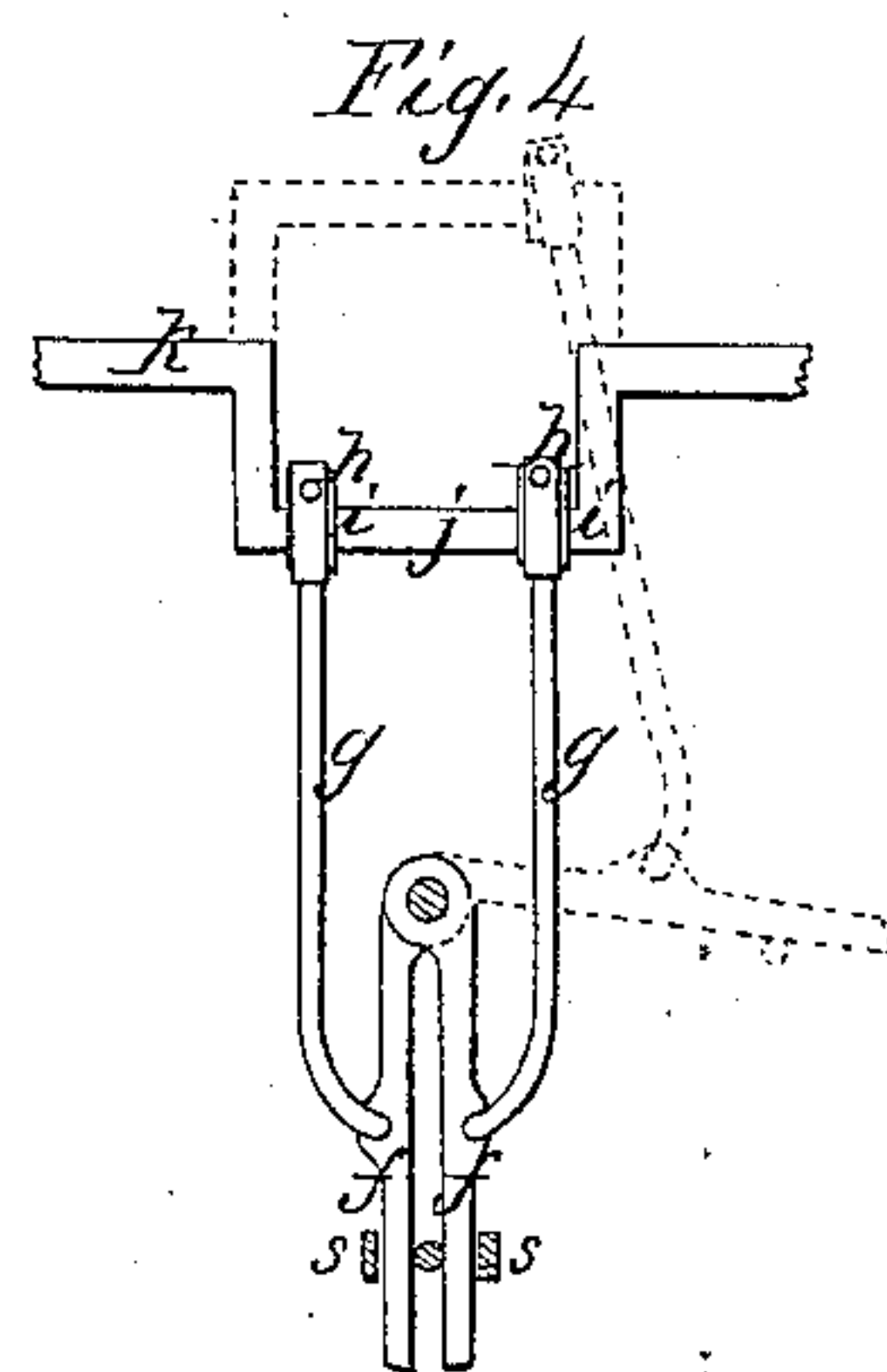
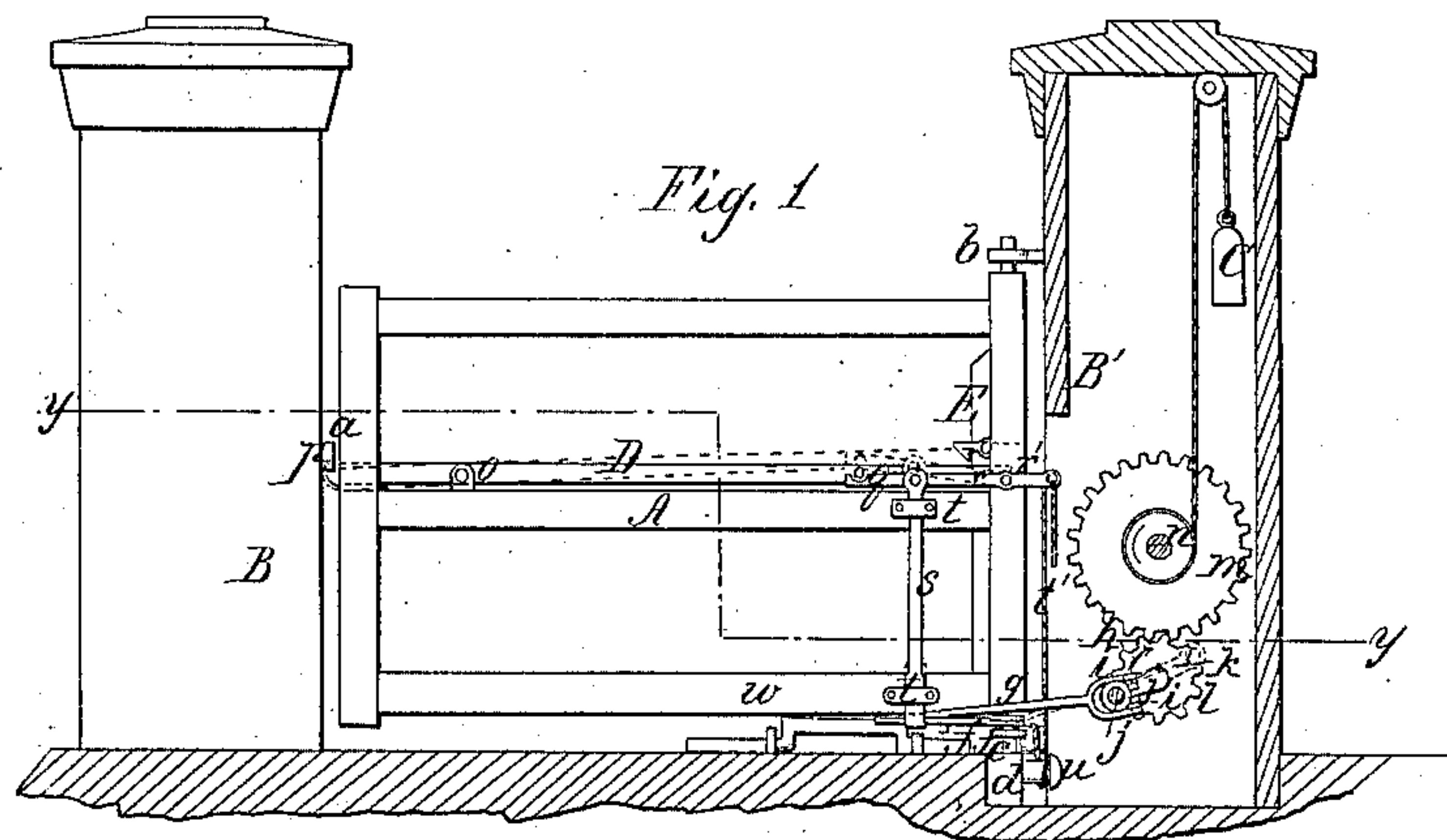


C. A. Howard,
Automatic Gate,

N^o 18,283.

Patented Sep. 29. 1857.



UNITED STATES PATENT OFFICE.

CHARLES A. HOWARD, OF PONTIAC, MICHIGAN.

APPROACH-OPENING GATE.

Specification of Letters Patent No. 18,283, dated September 29, 1857.

To all whom it may concern:

Be it known that I, C. A. HOWARD, of Pontiac, in the county of Oakland and State of Michigan, have invented a new and Improved Self-Acting or Automatic Gate; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification in which—

Figure 1 is a side view of a gate with my improvement applied to it and bisected as indicated by the line (*x*) (*x*) Fig. 3. Fig. 2 is an end view of ditto. Fig. 3 is a horizontal section of ditto, taken in the line (*y*) (*y*) Fig. 1. Fig. 4, is detached enlarged view of the device by which the power is applied to the gate.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improvement in that class of self acting or automatic gates in which a spring or weight, is, through the medium of suitable mechanism, set free to actuate the gate by means of the vehicle as it approaches the gate and after it has passed through it.

The invention consists in the peculiar arrangement of means employed for applying the power to the gate, said means being so connected with the parts for operating the latch or catch that as the latter is actuated and the gate set free, when in a closed state, the weight or spring is simultaneously set free and consequently allowed to operate the gate.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a gate which may be constructed in the usual or any proper manner and B, B', are the two posts, one of which B, has the nosing (*a*) of the latch attached to it, and the other B' has the gate hinged to it. The upper part of the gate is only hinged to the post B', as shown at (*b*), the lower end has a journal or rod (*c*) fitted vertically in it, said rod or journal being fitted in a step (*d*). On the journal (*e*) two arms (*f*) (*f*) are placed loosely, that is, said arms are allowed to turn freely on the journal. Each arm (*f*) has one end of a rod (*g*) attached to it near its outer end and the opposite ends of these rods are forked and are connected by a pivot (*h*) to a strap (*i*) said straps being fitted loosely on the

crank (*j*) of a shaft (*k*). The shaft (*k*) is placed within the post B' which is hollow and a pinion (*l*) is placed on one end of shaft (*k*), said pinion gearing into a wheel (*m*) which is placed on a shaft (*n*) also placed within the post B'. To the shaft (*n*) a spring or weight is applied in any proper way so as to actuate or rotate said shaft when set free or permitted to do so. In Fig. 1 a weight C is represented as being applied to the shaft (*n*).

D represents the latch of the gate. This latch is simply a bar which is pivoted to the gate as shown at (*o*). The outer end of this bar fits in a nosing (*p*) which is attached to the post B, said nosing being formed by having a notch made in the under side of a metal bar. The bar D near its inner end has a pin (*q*) passing transversely through it, and said pin rests on two levers (*r*) (*r*) which are pivoted to the gate at its hinged end as shown at (*r'*), see Fig. 1. To each lever (*r*) the upper end of a vertical bar (*s*) is pivoted. These bars are fitted and work in guides (*t*) attached to the gate, and their lower ends project a short distance below the lower edge of the lowest bar (*a*) of the gate. The arms (*f*) (*f*) at their outer ends are beveled and when they are both moved inward or toward each other their full distance they are caught behind the lower ends of their respective bars (*s*), said arms owing to their beveled terminations raising the bars in order that they may pass underneath them.

To the outer end of each bar (*s*) a cord or chain (*t'*) is attached. These cords or chains pass downward and around pulleys (*u*) which are secured properly a short distance below the surface of the ground. The cords or chains passing along horizontally a requisite distance and attached to pulleys (*v*) which are placed on crank shafts (*w*) (*w*), the cranks (*z*) of which are in line with the wheel tracks of vehicles. Near each pulley (*v*) a vertical post is attached said posts having each a catch (*a'*) attached. These posts are designated by E, E'.

The operation is as follows:—Suppose a vehicle to be approaching the gate A in the direction indicated by the arrow (1) see Fig. 3.—The crank (*z*) of the shaft (*w*) would of course be depressed in consequence of the wheels of the vehicle passing over it, and the outer end of the lever (*r*) at the side of the gate to which the vehicle is approaching is

depressed and the inner end of said lever will elevate the inner end of the bar D the outer end being consequently depressed and freed from the nosing (a).—As the outer end of the lever (r) is depressed its bar (s) is raised and the arm (F) which was retained by it is set free and consequently the weight C is allowed to turn the shaft (k) and the rod (g) of the unloosened arm (F) will through the medium of said arm throw open the gate in the direction indicated by arrow (2) and the gate will be retained in an open state until after the vehicle has passed through by the catch (a') of the bar E', and when the carriage depresses the other crank (z) the gate will be closed in consequence of the other arm (F) being pressed against a pin (b'') in the under side of the gate. The arms (F) both press against the pin when the gate is to be closed but bear against the lower ends of the bars (s) when it is thrown open. The crank of course drawing the outer ends of the arms (F) inward or toward the shaft (K) when the gate is thrown open and forced out from said shaft as the gate is closed.

It will be understood that when the gate is in a closed state, both arms (F) are locked by the bars (s) and when the gate is open it

is retained by either catch (a') which of course are actuated to release the gate by their respective cords.

The connection of the bars (g) to the crank (j) of the shaft (k) as shown forms a universal joint which permits the bars (g) to work or move obliquely in either direction and thereby perform their proper function as the shaft (k) rotates.

I do not claim broadly the operating of the latch or catch by means of the weight of the vehicle as it approaches the gate and also after it has passed through it. Neither do I claim broadly the operating of the gate by means of a weight or spring; but,

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

Applying the power of a weight or spring to the gate through the medium of the crank shaft (k) connecting rods (g) (g) and (F) (F) in combination with the latch or catch D arranged with the levers (r) (r) and bars (s) (s) so as to operate conjointly as and for the purpose specified.

CHARLES A. HOWARD.

Witnesses:

JOSEPH R. BROUMAU, Wm. W. NORTON.