

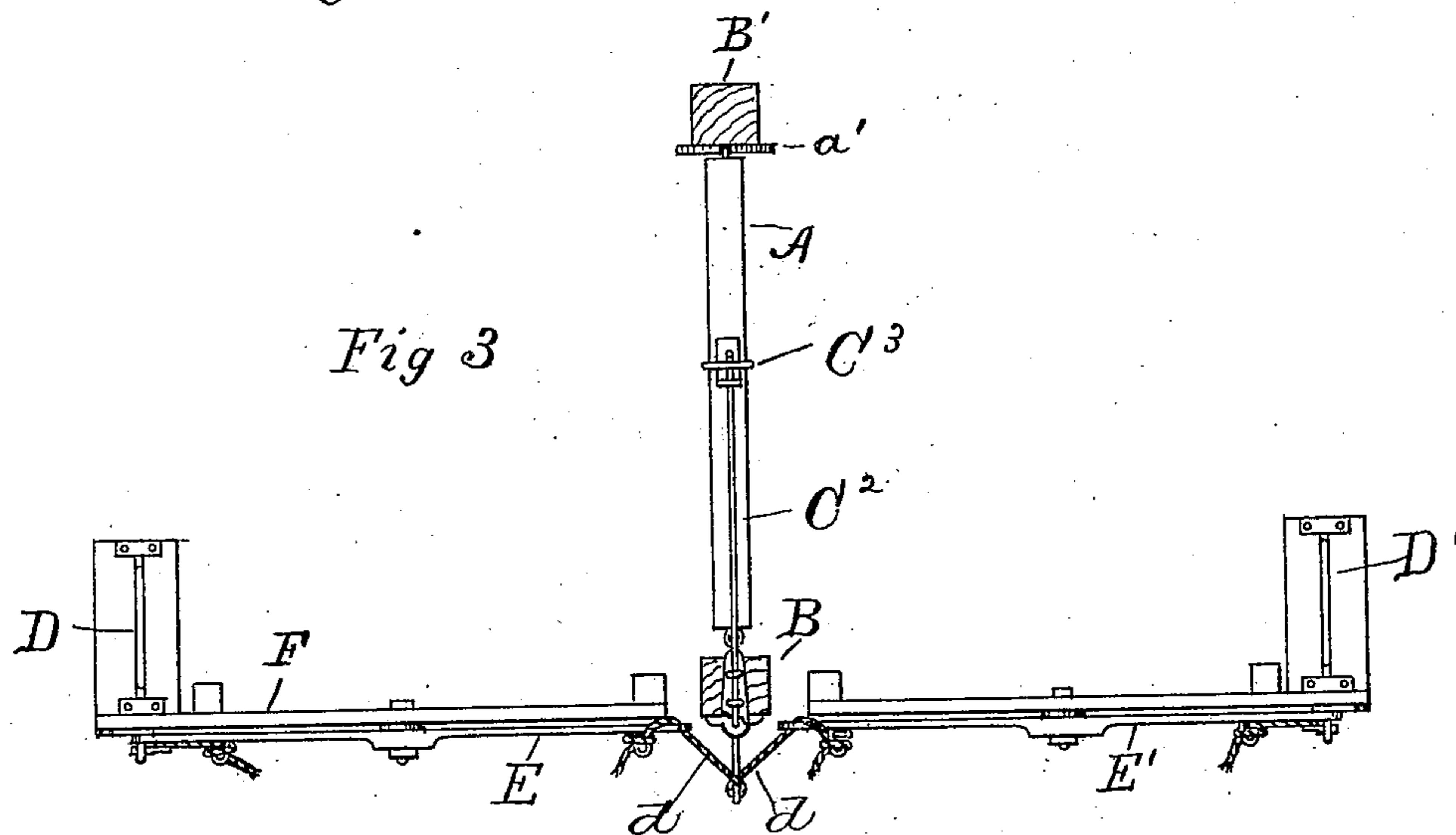
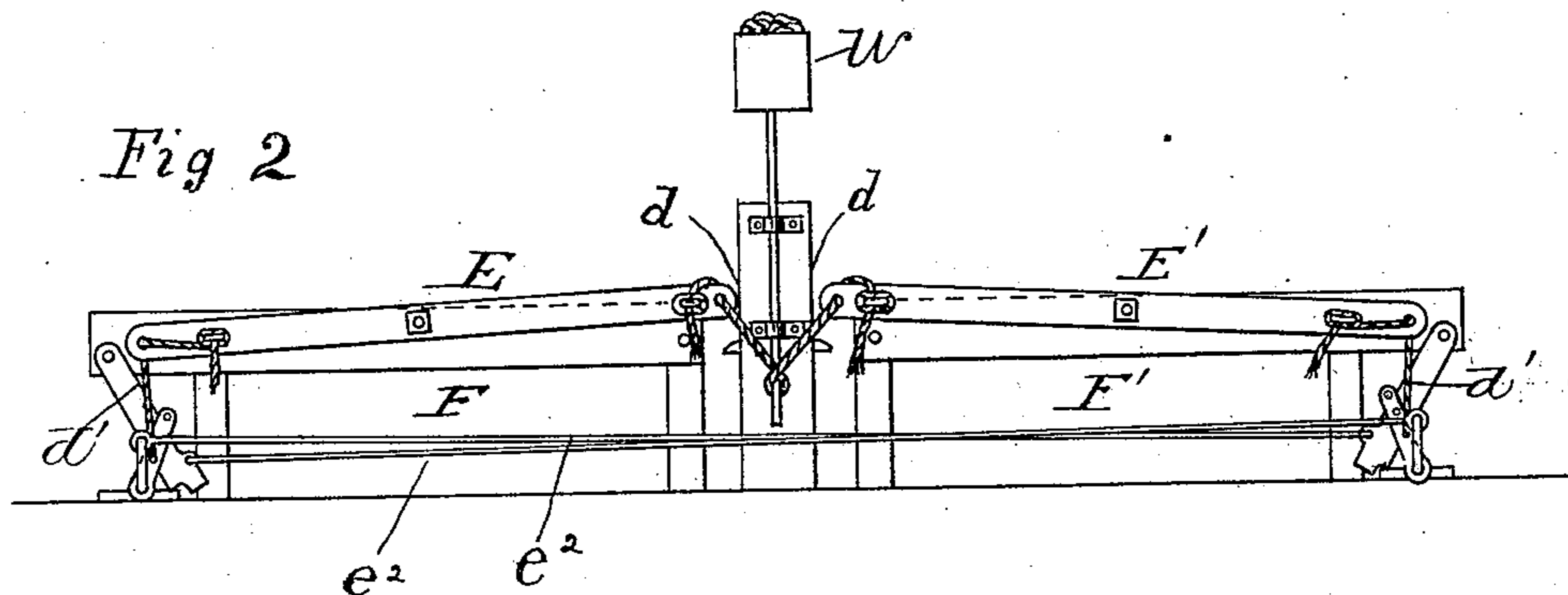
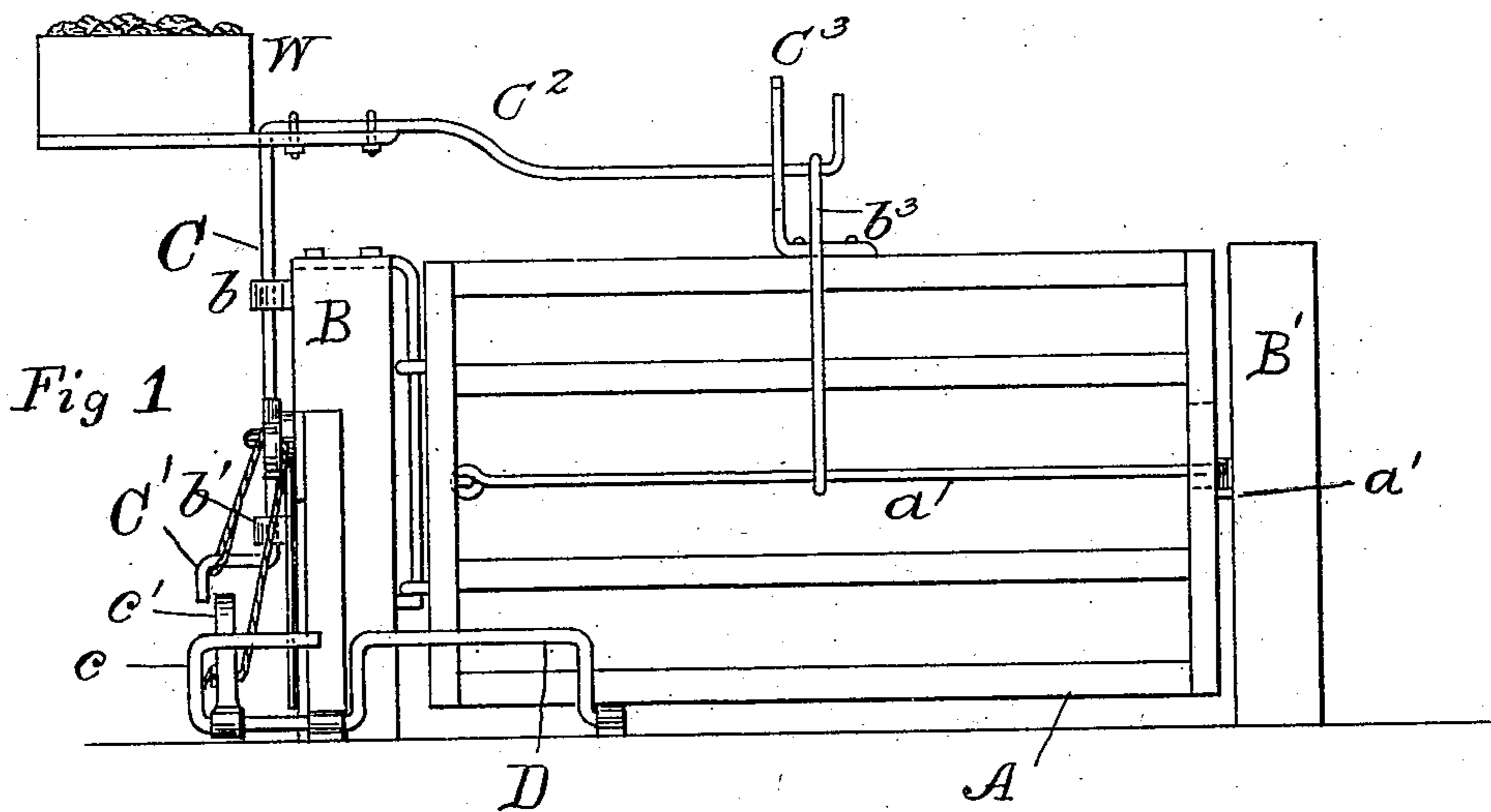
(No Model.)

2 Sheets—Sheet 1.

W. H. MILLER.
AUTOMATIC GATE.

No. 400,935.

Patented Apr. 9, 1889.



Witnesses.
Isaiah Richards
Chas. Welch.

Inventors
William H. Miller
By *Amos A. Miller*

(No Model.)

2 Sheets—Sheet 2.

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Fig. 6.

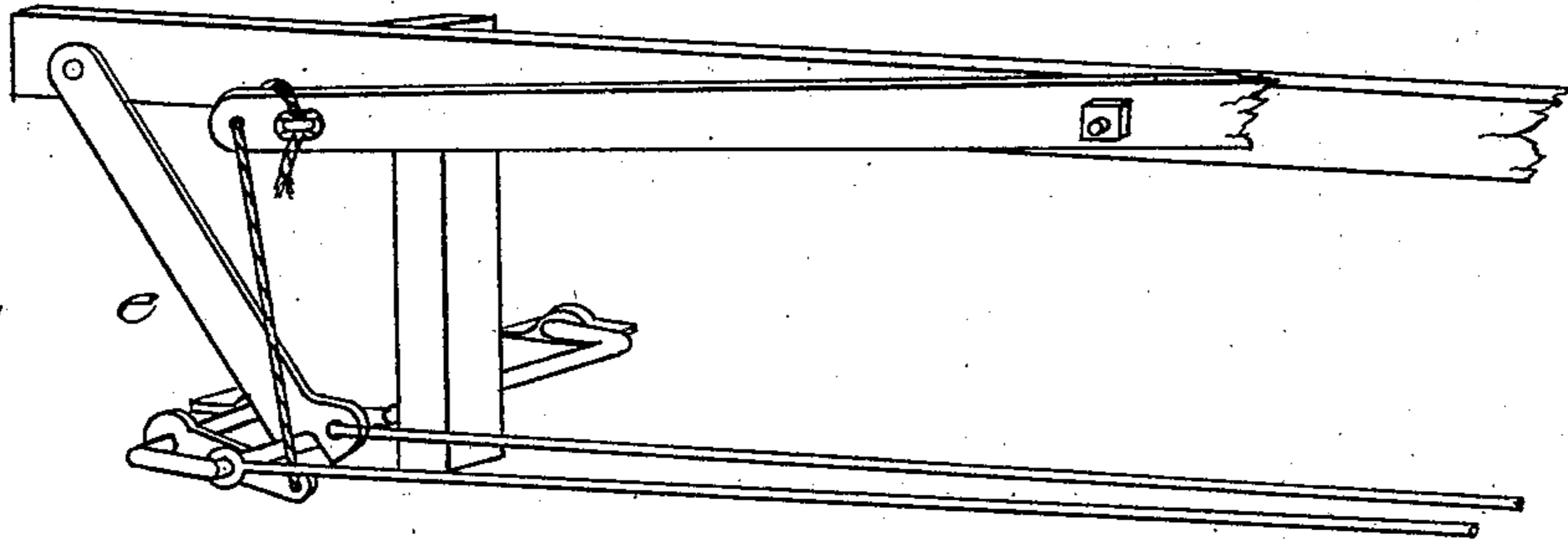


Fig. 5.

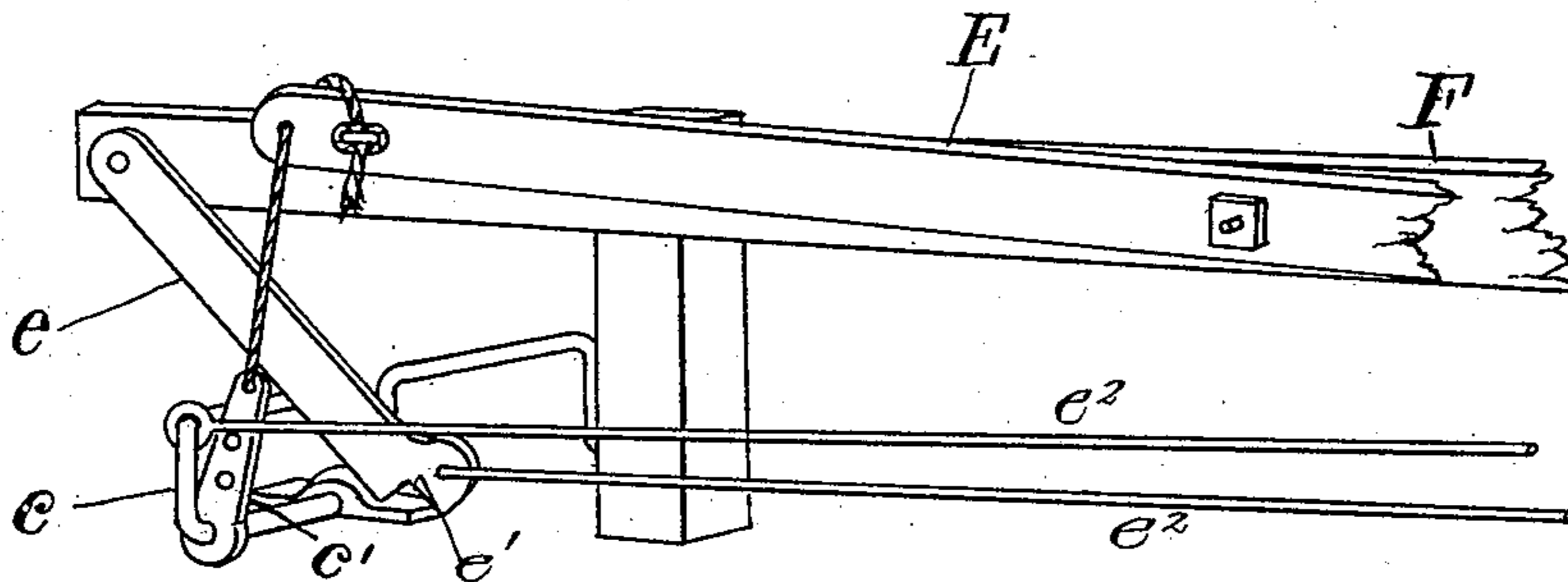
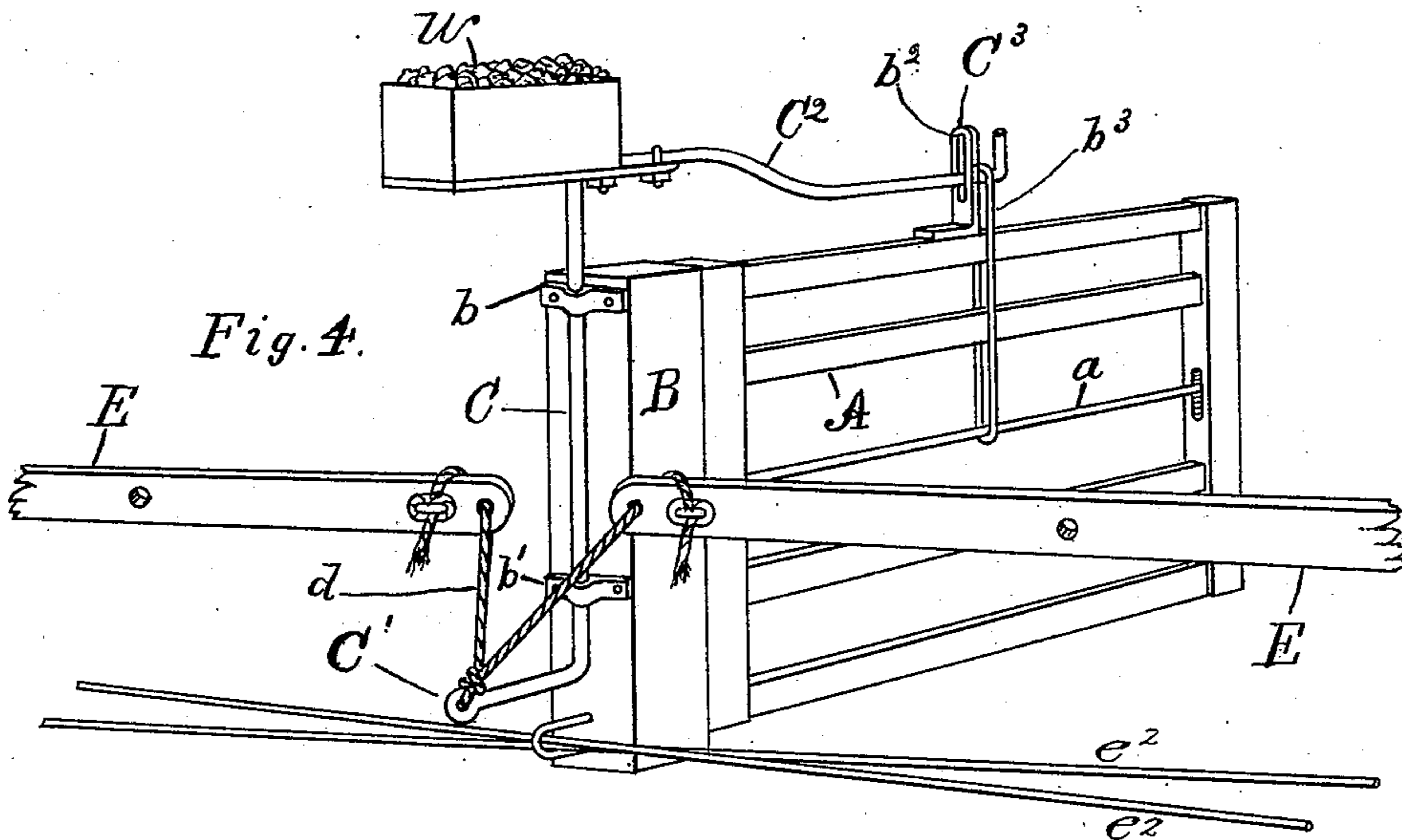


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM H. MILLER, OF ENON, OHIO.

AUTOMATIC GATE.

SPECIFICATION forming part of Letters Patent No. 400,935, dated April 9, 1889.

Application filed November 23, 1888. Serial No. 291,712. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MILLER, a citizen of the United States, residing at Enon, in the county of Clark and State of Ohio, have
5 invented certain new and useful Improvements in Automatic Gates, of which the following is a specification.

My invention relates to improvements in automatic gates; and it particularly relates
10 in its nature to improvements adapted to be applied to gates of ordinary construction, which may be already in use, in order to make their action automatic.

My invention consists in the various constructions and combinations of parts herein-
15 after described, and pointed out in the claims.

In the drawings, Figure 1 is a front or side elevation view of a gate to which my invention has been applied. Fig. 2 is an end elevation view of the same, showing the operating-levers and their connections. Fig. 3 is a
20 top or plan view of the same, with some of the parts shown in section, to more clearly disclose the operating parts. Fig. 4 is a detailed view of the gate and some of the operating mechanism shown in perspective. Figs. 5 and 6 are detailed views in perspective showing the arrangement of the wheel-irons in
25 different positions of operation.

30 Like parts are indicated by similar letters of reference throughout the several views.

In the said drawings, A represents the gate proper, which is located, in the ordinary manner, between two posts, B B', to one of which
35 it is hinged in a suitable manner and to the other connected by a suitable latch, *a*, adapted to engage in a catch, *a'*, on the said post.

Located at the back of the post B is an upright shaft, C, adapted to turn in suitable
40 bearings, *b b'*, on said post. This shaft is provided at the lower end with a projecting arm, C', extending, when in a normal position, backwardly in the same plane with the gate A, there being at the top of said shaft
45 an inwardly-projecting arm, C², extending over the top of the said gate and in the same plane therewith, preferably to a point beyond the center of the gate. On the top of the gate, and secured thereto, is a loop or connecting-piece, C³, having a slotted opening,
50 *b*², through which the arm C² projects, and which serves to connect the said arm to the

gate, so that a lateral movement of the arm will be communicated to the gate, the arm being at the same time permitted to move
55 vertically with reference to said gate in the slotted opening *b*². A cord or other suitable connection, *b*³, serves to connect the arm C² to the latch *a*, so that a vertical movement of the said arm will be communicated to the
60 latch and raise the same.

Located at either side of the gate, and at a suitable distance therefrom, are the wheel-irons D D', which may be pivoted or journaled to suitable frame-work planted in the
65 ground in a well-known manner. These wheel-irons are each provided with a crank portion, *c*, bent upwardly and inwardly, as shown more clearly in Fig. 1. Journaled loosely on each of the wheel-irons, beyond
70 and in a line with the bearings thereof, is a projecting finger, *c'*, adapted as the wheel-iron is turned down in a direction toward the gate to come in contact with the crank portion *c* and be moved thereby.
75

In order to provide for moving the upright shaft C and its projecting arms, both in a vertical direction and in a circle about its axis, I supply a connection from each of the projecting fingers *c'* to the backwardly-pro-
80 jecting arm C' on the said shaft and attach the said connection to the arm in such a position that a downward movement of the finger tends to draw the arm both vertically and in a direction toward the said finger. I preferably ac-
85 complish this by means of pivoted operating-levers E E', attached to suitable supporting-frames, F F'. These operating-levers are so arranged that their inner ends stand above and on either side of the projecting arm C',
90 to which they are attached by a cord or other suitable connection, *d*, a single connection being preferably used in the nature of a cord or cable attached at its center to the arm and at each end to the respective levers. A similar connection, *d'*, is used at the outer ends
95 of the respective levers to attach them to the fingers *c'*.

Pivoted to the supporting-frame F, above the respective wheel-irons, are stop-braces *e*,
100 each provided with a notch, *e'*, adapted to drop down over the crank portion *c* of the wheel-iron when the same is turned down in the direction of the gate, as shown in Fig. 6.

Each of the stop-levers e is attached, by means of a wire or other suitable connection, e^2 , to the crank portion c of the wheel-iron D, located on the opposite side of the gate therefrom, so that when the said wheel-iron is turned down in a direction from the gate the said stop-lever is withdrawn from engagement with the other wheel-iron, thus permitting the same to rise to its normal position.

10 The upright shaft C is provided at the top and slightly to the rear with a weight, W, located so as to counterbalance the operating-arm C^2 and also assist in the operation of the gate, as will hereinafter more fully appear.

15 The operation of the mechanism as thus described is as follows: A vehicle approaching the gate from either direction passes over the wheel-iron on the side of the gate from which it approaches and forces it down in a direction toward the gate. The crank portion of the wheel-iron is thus brought into contact with the finger c' , carrying it down in the same direction. The operating-lever E attached to said finger is also drawn down at the outer end and raised at the inner end, thus raising and at the same time drawing laterally on the arm C' . This raises the operating-arm C^2 , and at the same time forces it laterally against the loop C^3 in the opposite direction from the wheel-iron depressed.

30 When the arm C^2 has risen sufficiently to disengage the latch a' , which is connected thereto, the gate will be released, and the pressure of the operating-arm C^2 against the loop C^3 will swing the gate outwardly in a direction away from the wheel-iron which was depressed. When the wheel-iron is turned down, as above described, the stop-lever e drops over the same, and thus holds the gate in an open position by reason of the lateral strain on the arm C' from the connection d and its operating-lever. As the vehicle passes through the gateway and comes into contact with the wheel-iron on the opposite side thereof, the said wheel-iron is turned down in a direction away from the gate, thus withdrawing the stop-lever from engagement with the previously-depressed wheel-iron, allowing it to rise to its normal position, which it will be forced to do by reason of the weight W bearing down on the inner end of the operating-lever previously raised. As the operating-lever returns to its normal position, the gate will also be forced shut by reason of the weight W bearing down on the connection d , thus equalizing the position of the arm C' between the inner ends of the respective operating-levers.

It is obvious that other forms of connection than the operating-levers E may be used between the extending arm C' and the wheel-irons. Cords, chains, or other equivalents, passing over suitable pulleys or bearings in a well-known manner, may be used with good results. Other modifications of the construction described herein—such as will readily suggest themselves to the mind of an ordinary

mechanic—may be used without departing from the spirit of my invention.

Having thus described my invention, I claim—

1. The combination, with a gate, of an upright shaft supported in a bearing in which it is adapted to turn and also move in a vertical direction, arms extending in opposite directions from said shaft in the same plane with the gate, a weight on said shaft, wheel-irons on either side of said gate, connections, substantially as described, from said wheel-irons to the rear extending arm, said connections having a flexible portion which extends downwardly and rearwardly to connect with the said arm, and a connection from the forwardly-extending arm to said gate, substantially as specified.

2. The combination, with the gate, of an upright shaft having oppositely-extending arms connected, respectively, to the said gate and to pivoted fingers on opposite sides thereof, as described, and the wheel-irons adapted to engage and move said fingers when turned toward the gate and to be disengaged from said fingers when turned from the gate, substantially as specified.

3. The combination, with the gate and the loop-connecting piece attached thereto, of the upright shaft having the forwardly-extending arm extending through said loop, the latch on the said gate connected to said arm, and wheel-irons on either side of said gate connected to said upright shaft, substantially as described, so that an inward movement of either of said wheel-irons will cause the said shaft to turn upon its axis and move vertically in its bearings, substantially as and for the purpose set forth.

4. The combination, with the gate, the upright shaft and its oppositely-extending arms, as described, of the wheel-irons, each having a finger adapted to be moved by it connected to the said upright shaft, the pivoted stops to engage said wheel-irons when turned toward said gate, and connections from the respective wheel-irons to the stops of the other wheel-irons, substantially as and for the purpose set forth.

5. The combination, with the gate having the loop-connecting piece attached thereto, of the upright shaft journaled in suitable bearings, in which it is adapted to move longitudinally, provided with oppositely-extending arms, one of which passes through said loop connection and is connected to the latch on said gate, the pivoted operating-levers forming the connection between wheel-irons on the opposite sides of the said gate and the other extended arm, and means, substantially as described, for holding each of said wheel-irons in a downward position when turned toward said gate until the opposite wheel-iron is turned in the opposite direction, substantially as specified.

6. The combination, with the gate, of the vertical shaft having the oppositely-extended

arms, the loop-connection and latch on the
said gate connected to one of said arms, and
the pivoted levers connected to the other of
said arms, the wheel-irons having fingers con-
5 nected to said operating-levers, pivoted stops
adapted to engage said wheel-irons and con-
nections from each of said wheel-irons to the
pivoted stop of the other wheel-iron, substan-
tially as and for the purpose set forth.
10 7. The combination, with the gate, of the
upright shaft having the oppositely-extended
arms, a connection from one of said arms to
the gate and also to the latch of said gate,
supporting-frames on each side of said gate

having operating-levers pivoted thereto, 15
wheel-irons having pivoted fingers connected
to said operating-levers, pivoted stops on the
said supporting-frames to engage said wheel-
irons, and connections, substantially as de-
scribed, from each wheel-iron to the pivoted 20
stop of the other wheel-iron, substantially as
specified.

In testimony whereof I have hereunto set
my hand this 9th day of November, A. D. 1888.

WILLIAM H. MILLER.

Witnesses:

F. EBERHART,
PAUL A. STALEY.