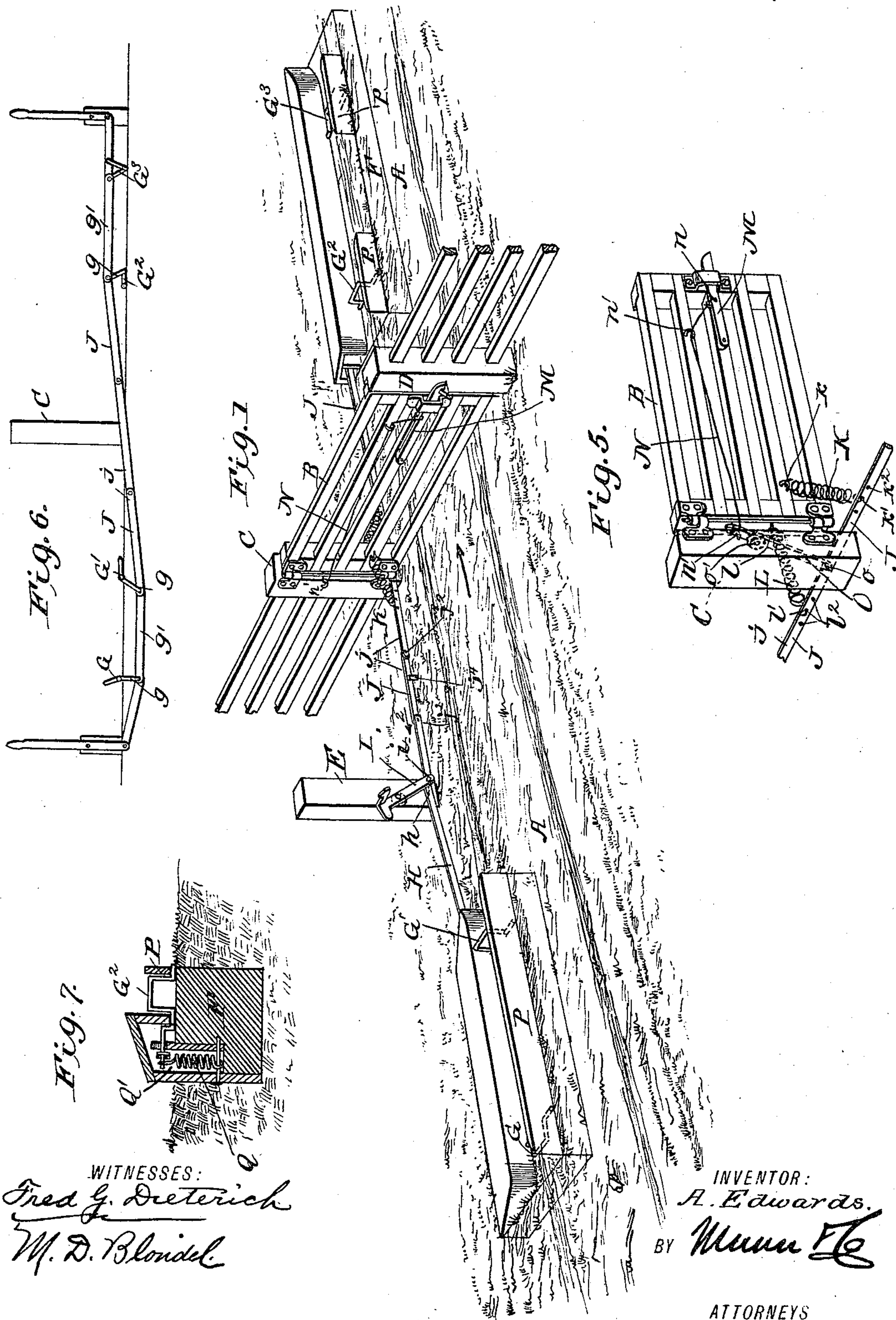


2 Sheets—Sheet 1.

No. 440,996.

Patented Nov. 18, 1890.



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(No Model.)

2 Sheets—Sheet 2.

A. EDWARDS.
AUTOMATIC GATE.

No. 440,996.

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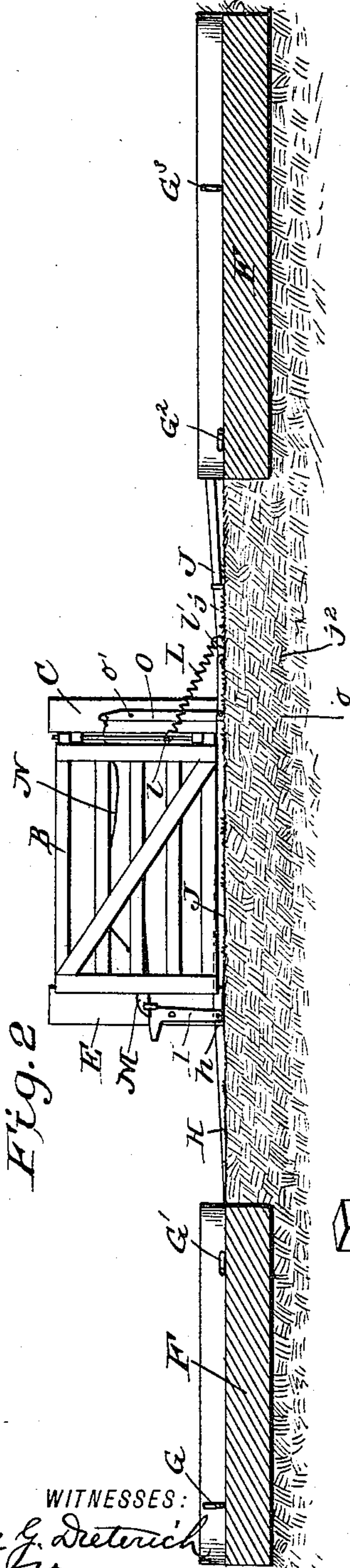


Fig. 2.

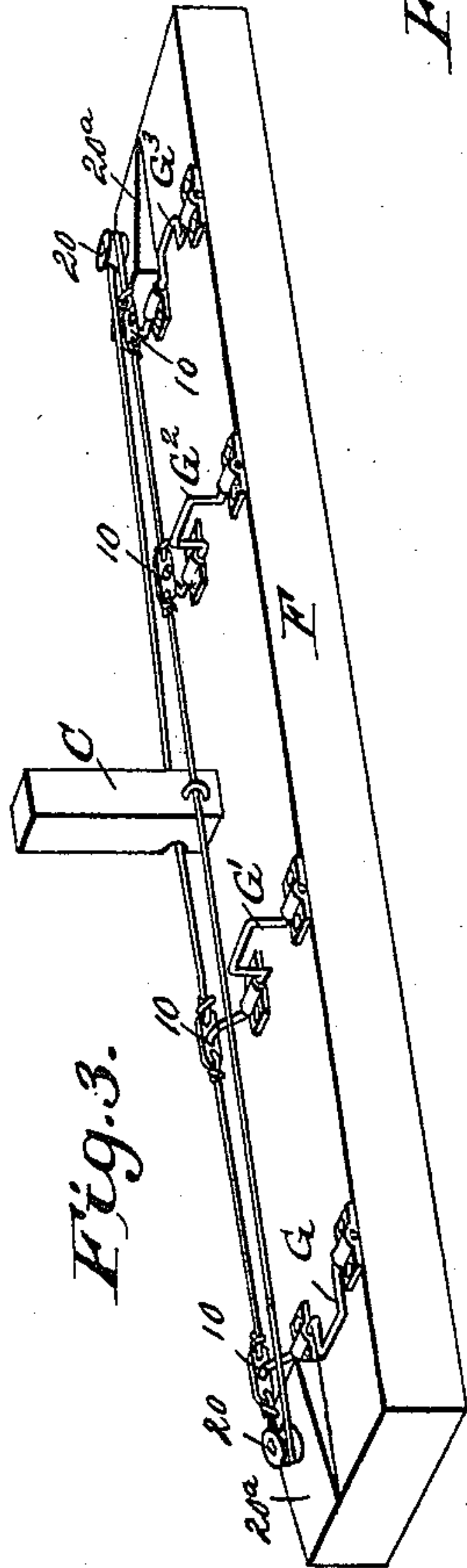


Fig. 3.

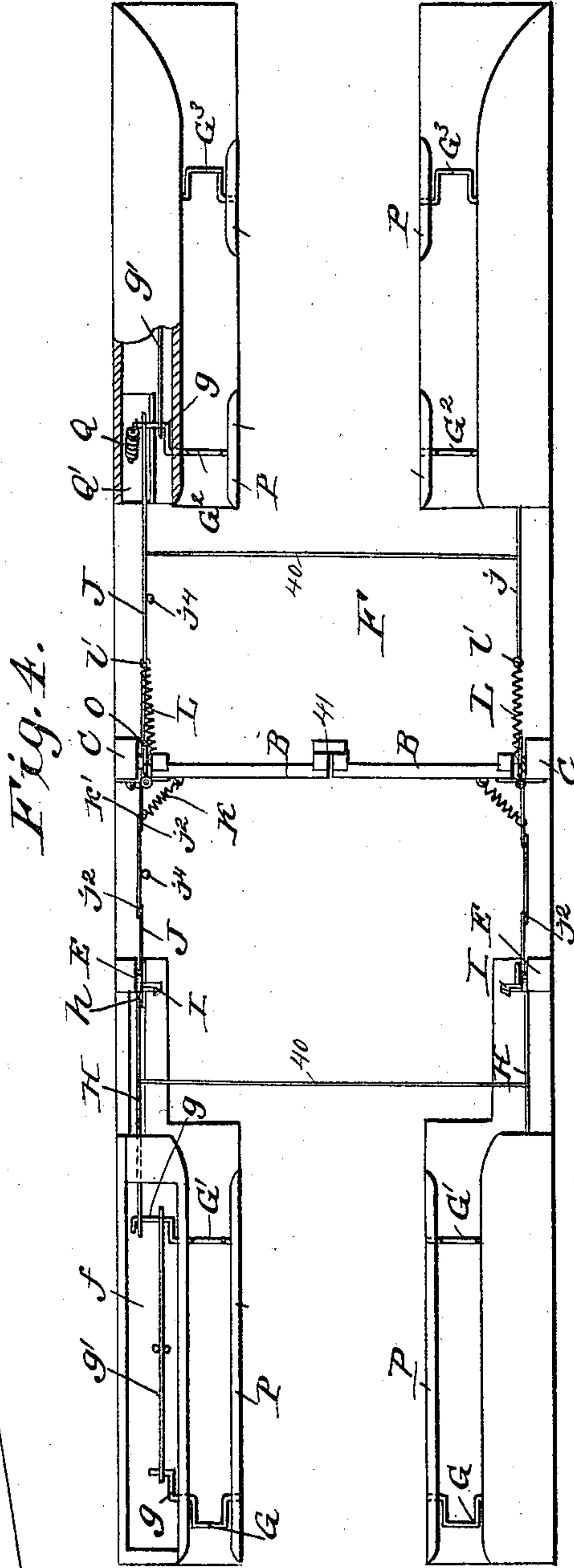


Fig. 4.

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UNITED STATES PATENT OFFICE.

ALIBERT EDWARDS, OF LANESVILLE, VIRGINIA.

AUTOMATIC GATE.

SPECIFICATION forming part of Letters Patent No. 440,996, dated November 18, 1890.

Application filed July 23, 1890. Serial No. 359,697. (No model.)

To all whom it may concern:

Be it known that I, ALIBERT EDWARDS, residing at Lanesville, in the county of King William and State of Virginia, have invented certain new and useful Improvements in Automatic Gates, of which the following is a specification.

My invention relates more particularly to roadway-gates; and it has for its object to provide a gate of this character which will be simple and cheap as to construction, one which can be easily operated by a passing vehicle or by a person riding horseback, and which will effectually serve for the purpose intended without the danger of getting out of order.

To this end my invention consists in the peculiar combination and novel arrangement of parts, all of which will be hereinafter fully described in the annexed specification, and be particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved gate. Fig. 2 is a front elevation partly in section of the operating devices, showing the gate in its open position. Fig. 3 is a view illustrating a modification hereinafter referred to. Fig. 4 is a view illustrating the devices as adjusted for use with a double gate; and Fig. 5 is a detail view of the gate-post, the gate, and its connection with the operating-bar. Fig. 6 is a detail view of another modification, hereinafter referred to, and Fig. 7 is a detail view of the supplemental spring Q.

In the accompanying drawings, in which the same letters of reference indicate like parts in all the figures, A denotes the road-bed; B, the gate; C, the hinge-post; D, the latch-post arranged on opposite sides of the road-bed A, and E the supplemental latch-post, which is arranged at one side of the gate, as shown.

F denotes sills located in the road-bed at each side of the gate and at a suitable distance therefrom, which are sunk into the ground, so as to leave their upper faces slightly projected, the ends thereof being beveled to prevent accumulation of the dirt thereon. These sills, which are located so as to be in the wheel-track and on that side of the road on

which the hinge-post is placed, are formed with inner chambers *f*, in which the inner crank ends *g* of the operating-triggers *G G'* *G*² *G*³ are located. These triggers are located so that a passing vehicle will engage the same to open and close the gate in a manner presently described.

The ends of the cranks *g* are joined by a link or rod *g'*, and the innermost triggers *G' G*² have their crank-arms connected with the gate B and the latch-releasing devices in a manner most clearly shown in Figs. 1 and 4 of the drawings, by reference to which it will be seen that the crank *g* on the trigger *G'* is connected to one end of a rod *H*, the inner end *h* of which is connected to the long arm *i* of a latch-lever *I*, pivoted upon the supplemental latch-post *E*, said arm *i* being also connected to one end of a main lever or bar *J*, formed of a number of sections *j*, pivotally connected at *j*², the opposite end of said bar being secured to the crank *g* of the trigger *G*², said bar being held in position by means of the guides *j*⁴ *j*⁴, as shown.

By reference to the drawings it will be seen that said bar *J* passes between the hinged end of the gate and the hinge-post, said bar serving as the gate releasing and closing lever.

The gate B, which may be of the usual construction, is hinged to the post D, as shown, and has connected to its hinged end the inner ends *k l* of springs *K L*, extending in opposite directions, the outer ends *k' l'* of which are connected to the bar *J*, being hooked to one of a series of apertures *k*² *l*², whereby the tension of said springs can be readily regulated. Upon the outer face of the gate is located the pivoted latch-lever *M*, to which is connected the end *n* of the latch-operating wire *N*, which passes over a suitable guide *n'* on the hinge-post and is connected to the upper end of a lever *O*, projected inward and connected at *o* to the bar *J*, being pivoted near its upper end at *o'* to the hinge-post, as shown.

P denotes cattle-guards arranged to project up along the triggers, so as to prevent cattle accidentally treading thereon and operating the gate, said guards being preferably flared at their outer ends, as shown, so as to readily admit of driving the wheel of the vehicle be-

tween it and the sill F, said guards extending along the entire length of said sill, as shown at the left in Fig. 1, or in front of each trigger, as shown at the right, same figure.

5 The operation of my gate is as follows: When the gate is closed, as shown in Fig. 1, the inner triggers G' and G^2 will be in a vertical position, while the outer triggers G G^3 will lie flat on the sills. Now, when a vehicle
10 approaches in the direction indicated by the arrow, it will engage the trigger G' and force it downward, which trigger in its movement will cause its crank-arm g to pull the bar J in the direction indicated by arrow 2, said
15 movement also serving to depress the trigger G^2 and raise the triggers G G^3 . Bar J in the first part of its movement will swing the lever O so as to cause its upper end to pull upon the latch-wire N and raise the latch M. At
20 this time the spring L traveling forward with the bar, its tension will be decreased and allows the spring K to pull the gate B outward against the latch-post E. The same movement of the bar J also brings the latch-bar I in
25 place, so that the latch M can engage therewith to hold the gate in an open position. Now, when the vehicle has passed through the gate and engages with the trigger G^3 , the bar J will be pulled in a reverse direction, and in its
30 movement will act upon the latch I and pull it from engagement with the latch M on the gate, and as the said bar continues in its movement the full tension of the spring L will act on the gate and pull it into a closed position, it being
35 understood that as the trigger G^3 is pushed down it will, through the medium of the bar J and its adjuncts, cause the trigger G to turn down and the triggers G' G^2 to rise again to their normal vertical position. It is also ob-
40 vious that the operation of the gate is precisely the same, no matter from which direction the vehicle approaches. As an additional means for applying tensional strain upon the bar J in either direction, I employ
45 the spring Q, held to swing in a socket Q' in one of the sills F, its upper end being connected to the inner end of the crank g of the trigger G^2 . As said crank when the trigger is in either its vertical or horizontal position will be
50 at one side of the vertical axis of said spring, it will be seen that should the trigger G^2 be down when said trigger is being moved to its vertical position the crank after it passes the center will be pulled down by the tension of
55 said spring, thereby relieving the gate-springs from part of the strain of operating the gate and the triggers. It will be understood, however, that the spring Q may be dispensed with entirely or a spring Q used with each
60 crank g , if desired.

By the aforesaid construction it will be seen that when the gate is opened it will be held open by means of the safety-latch I on the post E, thereby allowing a vehicle to pass
65 through at leisure, and even should the latch I not work the gate would be held open by the spring K.

In Fig. 3 I have illustrated a simplified construction which can be put up at a very small cost, said construction consisting in providing to take the place of the bar J an end-
70 less-wire cable, which is formed with a series of apertured plates 10 10, into which the crank-arms g fit, said wire cable being passed over guide-pulleys 20 20, mounted on inclined
75 posts 20^a on the ends of the supports or sills F. If desired, the wire cable may be guided in suitable supports on the hinged post D. The manner of connecting the spring and
80 latch-levers to such a cable will be readily understood by reference to the drawings.

In Fig. 6 I have shown means whereby the gate-opening devices can be readily operated by a horseback rider, the construction and operation of which will be clearly understood
85 by reference to said figure.

In Fig. 4 I have shown a double gate and a double set of operating devices which may be operated independently; or, when desired, the gate may be locked to a stub-post 41 and both
90 sets of operating devices connected by the transverse rods 40, so that the vehicle when engaging either set of trigger devices will serve to cause both of the gates to open and close in a manner clearly understood by ref-
95 erence to the aforesaid Fig. 4 of the drawings.

Various modifications in the details can be made without departing from my invention, and I desire it understood that I do not limit myself to the exact constructions shown.
100

My improved devices can also be employed for use with railroad-gates by placing the triggers adjacent to the railroad-track and allowing the car-wheels to operate thereon.

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

1. The combination, in an automatic gate, of the hinged gate provided with a pivoted latch-bar, the crank-triggers G G' G^2 G^3 , ar-
110 ranged as shown, a connection J between said triggers, adapted to be reciprocated by the movement of said triggers, a supplemental post E, a latch-lever I, pivoted thereto and connected to said connection J, said lever adapt-
115 ed to be swung into and out of operative position by the movement of said connection J and adapted to engage with the latch M when the gate is swung open, and the springs K L, secured to the gate and the connection J, sub-
120 stantially as and for the purpose described.

2. In an automatic gate, the combination of the gate B, the supplemental post E, the crank-triggers G G' G^2 G^3 , and the cattle-guards, ar-
125 ranged as shown, the intermediate bar J, connecting said crank-triggers, said gate provided with a locking-latch M, a lever O, pivoted to the hinged post C, its lower end connected to the bar J, a cord or chain connection between the free end of said lever and the latch M, and
130 a lever I, pivoted to the post E, its lower end connected with the bar J, its upper end formed with a locking-lip adapted to engage the latch M when the gate is opened, said levers I O

adapted to release the gate from its detents when the bar J is moved in one direction of its movement, substantially as described.

3. In an automatic gate, the combination of the hinged gate provided with a latch-bar M, the crank-triggers G G' G² G³, connections between said triggers and gate adapted to be reciprocated by the movement of said triggers, the supplemental gate-post E, and a latch-lever I, pivoted thereto and to the said con-

nections, said latch-lever adapted to swing into and out of operative position by the movement of the said connection J and adapted to engage with the latch M when the gate is swung open, substantially as and for the purpose described.

ALIBERT EDWARDS.

Witnesses:

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H. A. MYER.