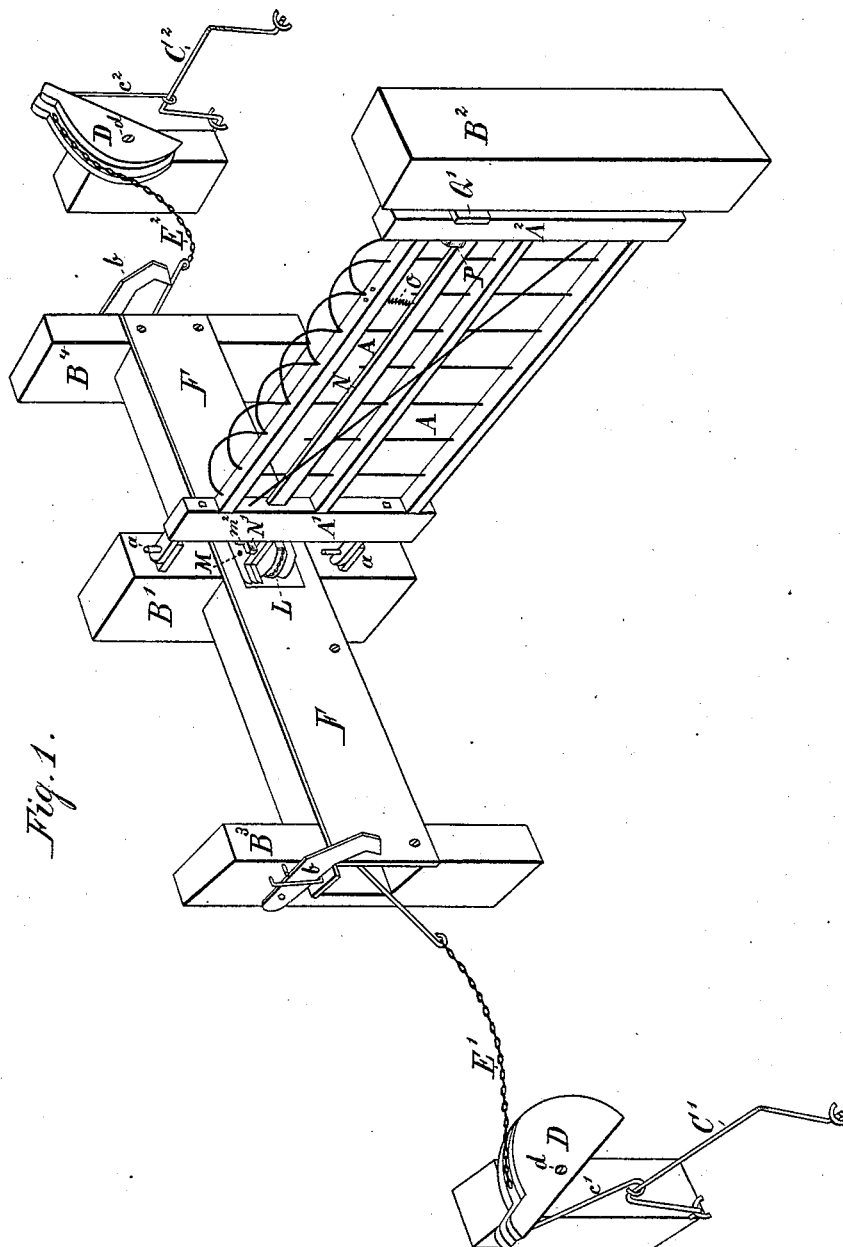


T. R. COOK.
Automatic-Gate.

No. 217,680.

Patented July 22, 1879.



WITNESSES.

James B. Lizzie
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INVENTOR.

Thomas R. Cook,

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Fig. 7.

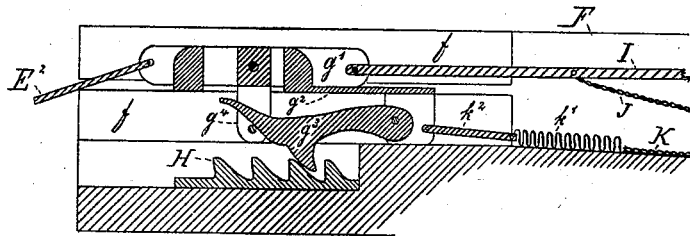
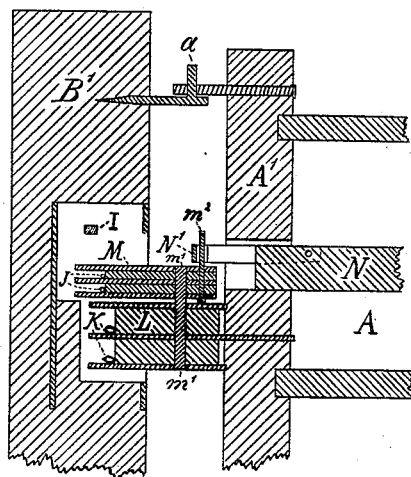


Fig. 8.



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UNITED STATES PATENT OFFICE

THOMAS R. COOK, OF MOORESVILLE, INDIANA.

IMPROVEMENT IN AUTOMATIC GATES.

Specification forming part of Letters Patent No. **217,680**, dated July 22, 1879; application filed March 20, 1879.

To all whom it may concern:

Be it known that I, THOMAS R. COOK, of the town of Mooresville, county of Morgan, and State of Indiana, have invented certain new and useful Improvements in Automatic Gates, of which the following is a specification, reference being had to the accompanying drawings, which are made part hereof, and on which similar letters of reference indicate similar parts.

Figure 1 is a perspective view of a gate embodying my invention. Fig. 2 is a top or plan view of the mechanism in the box F and in proximity thereto. Fig. 3 is an elevation of substantially the same mechanism shown in Fig. 2, as seen when looking from the side of the box next the posts toward the gate. Fig. 4 is a side elevation of the mechanism attached directly to the gate. Fig. 5 is an inside view of the catch Q on the post B², which holds the latch. Fig. 6 is a transverse vertical section of the latch N, looking toward the eccentric P from the dotted line *x x*. Fig. 7 is a vertical section of one of the draw-heads and parts connected therewith. Fig. 8 is a vertical section of the gate-post B¹, the gate-upright A¹, and the mechanism connected directly thereto.

The object of my said invention is to produce an automatic gate which shall always open from the team as it approaches in either direction, instead of always swinging in the same direction, as such gates ordinarily do, which object I accomplish as herein specified.

In the drawings the several parts are indicated by letters of reference, as specified in the following description.

A is the gate, which is constructed in any suitable manner, and is hung on hinges *a a*. B¹ is the post to which the gate is hung. B² is the post upon which is the catch that holds the gate shut. B³ and B⁴ are the posts against which the gate rests when open, and upon which are catches *b b*. C¹ and C² are bail-like rods, over which the wheels or runners of the vehicles pass, thus furnishing the motive power to operate the gate. D D are segmental wheels, to which the rods C¹ C² are connected by the chains or rods *c c*, and which are made heaviest on the side opposite the point of attachment thereto, or some equivalent means employed, so that the bail-like rods may always be kept

in an upright position, except when being operated upon.

The pivots *d d* of the wheels D D are placed at a distance so much nearer the gate than are the fastenings of the rods C¹ C² as is equal to one-half the height of said rods from the ground. This arrangement enables the rods when thrown toward the gate to open it, and when thrown from the gate to shut it.

E¹ E² are chains attached to the wheels D D at or near the points where the chains or rods *c c* are attached, and which connect said wheels to the mechanism by which the peculiar operation of this gate is secured. A box, F, is constructed to contain this mechanism. It is secured to the post B¹, and projects on each side therefrom. It may be supported at its ends by posts, as shown in the drawings, or otherwise; but usually such supports are dispensed with. This box, as well as all the mechanism, is proportionally much larger in the drawings than in actual use, in which the posts B³ B⁴ are too far off to support the box.

G G are draw-heads, to which the chains E¹ E² are attached, and each of which is composed of two parts. The larger or main part, *g*², moves in slides *f f*, attached to the sides of the box F. A pawl, *g*³, is attached thereto, and engages in the rack-bar H as the draw-head is pulled toward the wheel D. The upper parts, *g*¹, are connected together by a bar or rod, I, and are mounted loosely on the lower parts, *g*², along which they slide a short distance before they operate to move said parts *g*² and the parts connected therewith.

Attached to the top portion, *g*¹, or to the bar I, are the chains J J, which are connected with the cam-faced device M, which operates the latch of the gate; and to the lower ones, *g*², the chains K K are attached, which operate the gate itself. These chains K K are attached to coiled springs *k*¹ *k*¹, which form a part of their length, thus allowing them to stretch, in order that the chains J J may be allowed to operate the latch without starting the gate simultaneously therewith.

The hooks *k*² *k*², which connect the springs to the draw-heads, are so constructed that when the mechanism is operated from one side the hook on the opposite side will slide into

the spring until the gate itself starts, instead of pushing said spring out of its place, as it would otherwise do.

Projecting downwardly from the part g^1 is a yoke, g^4 , through which a point on the pawl g^3 extends. This point is of such a form that when the part g^1 is drawn back by the mechanism at the opposite end of the rod I the yoke raises the pawl, and thus releases the draw-head from the ratchet, and allows the same to move backward and permit the gate to be operated. The object of this pawl and the rack H is to secure the draw-head in the position farthest forward of any which it attains, and allow the spring full time to pull the gate fully open or shut, instead of running the risk of having the draw-head pulled partly backward and allowing the gate to remain only partly operated, which might happen when the vehicle passes quickly over the rods C^1 and C^2 , unless this or a similar device were used.

Rigidly attached to the upright A^1 of the gate A are two circular disks, L L, to which the chains K K are attached, and upon which they operate in imparting motion to the gate. Said chains pass around said disks in opposite directions, so that the operation required by the specified object of this invention may be secured.

Upon the upright pivot m^1 in the top of the disks L is a cam-faced device, M, which has two cam-faces, (which are shown by dotted lines in Fig. 2,) around which the chains J J pass, also in opposite directions, and an arm having a vertical pin, m^2 , which engages with the slot n in the device N' upon the end of the latch N, and which operates to drive said latch backward and forward. When either of the draw-heads are pulled by the action of the connecting series of devices through which the vehicle operates, this cam-faced device M is pulled around, and operates to draw the latch backward and release the gate, so that it may swing open or shut, as the case may be.

N is the latch of the gate, which consists simply of a straight bar passing loosely through mortises in the uprights A^1 and A^2 , and having a device, N' , on its rear end, containing a slot running transversely across the end of the latch, in which the pin m^2 works. It is also preferably supported at its forward end by a spring, O, in order that a person on foot may unlatch the gate and pass through without operating the mechanism. A small eccentrically-set wheel, P, upon the upright A^2 may also be employed to regulate the height to which the latch shall be raised by the spring, and also to so adjust the latch that it shall always be in exactly the proper relative position to the catch.

Q is the catch, which consists of two duplicate parts, $q q$, pivoted in a suitable manner to a housing or frame-work, Q' . As the gate shuts, the latch N strikes one of the parts upon the outer or slanting side and raises it up, allowing the said latch to pass under it without being depressed, and so, therefore, to

be in no danger of passing the other part, which it might otherwise do if the gate were moving rapidly. The part passed, being loosely pivoted, of course falls immediately into position behind the latch, and thus fastens it securely. The operation of this latch is the same from one side as the other.

The operation of this gate may be briefly recapitulated as follows: In approaching in one direction the wheel of the vehicle strikes the rod C^1 , and so operates the mechanism that the gate opens toward the post B^4 . When the vehicle has passed through the gate it strikes the rod C^2 , and as it is going from the gate operates to shut the same. When the vehicle approaches from the opposite direction and strikes the rod C^2 first, the gate opens toward the post B^3 , and as the vehicle passes on it strikes the rod C^1 , which, in this case, operates to close the gate.

It will be observed that the gate thus always opens in the direction in which the team is traveling, no matter from which side approached, and closes reversely.

The bent rods $C^1 C^2$ can thus be placed much nearer to the gate than if this were not the case, and the gate can therefore be placed in situations in which it would be impracticable to place others not possessing this feature.

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

1. The combination, with the draw-head mechanism G H, which is actuated by the passage of the vehicle-wheels, of the gate A, having two disks, L L, attached thereto, around each of which a chain, K, connected to said mechanism passes in the opposite direction to the one upon the other, thus operating to open the gate always in the direction in which the team is traveling, substantially as herein shown and specified.

2. In combination with the bar I, connecting the two draw-heads together, the chains J J, connecting said bar or said draw-heads to the cam-faced device M, which operates the latch N, by means of the pin m^2 and the attachment N' , substantially as shown and specified.

3. The combination of the draw-head, composed of the parts g^1 , having the yoke g^4 depending therefrom, and g^2 , having the pawl g^3 attached thereto, with the rack-bar H, substantially as shown and specified.

4. The combination of the cam-faced device M, pivoted at m^1 , and having the pin m^2 , with the latch N, having slotted device N' , substantially as shown and specified.

5. The combination of the bail-like rods C^1 , the connecting-rod c^1 , and the pivoted weighted segmental wheel D, substantially as described.

6. The combination of the bail-like rods $C^1 C^2$, rods or chains $c^1 c^2$, wheels D, chains $E^1 E^2$, draw-heads G G, chains K K, disks L, and gate A, substantially as shown and specified.

7. The combination, with the latch N, supported at its front end by the spring O, of

the eccentric P, substantially as and for the purpose specified.

8. The combination of the bail-like rods, the segmental wheels D, and the chains or rods connecting them together, said wheels being pivoted at a distance so much nearer the gate than the fastenings of said rods as is equal or about equal to one-half the height of said rods from the ground, substantially as shown and specified.

9. In an automatic gate, the combination,

with the draw-head G, having pawl g^2 , of the rack-bar H, substantially as and for the purpose specified.

In witness whereof I have hereunto set my hand and seal at Indianapolis, Indiana, this 17th day of March, A. D. 1879.

THOMAS R. COOK. [L. S.]

In presence of—

C. BRADFORD,

I. S. LONG.