M. FULCOMER.

RAILROAD GATE.

No. 181,163. Patented Aug. 15, 1876.

Fig. 1

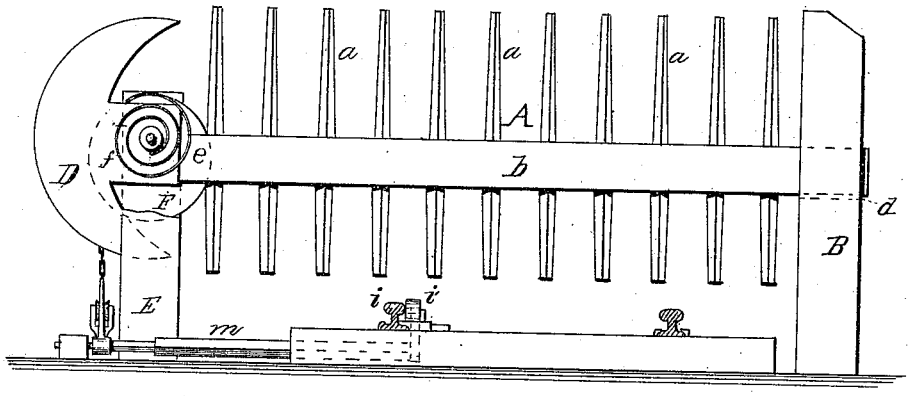


Fig. 2.

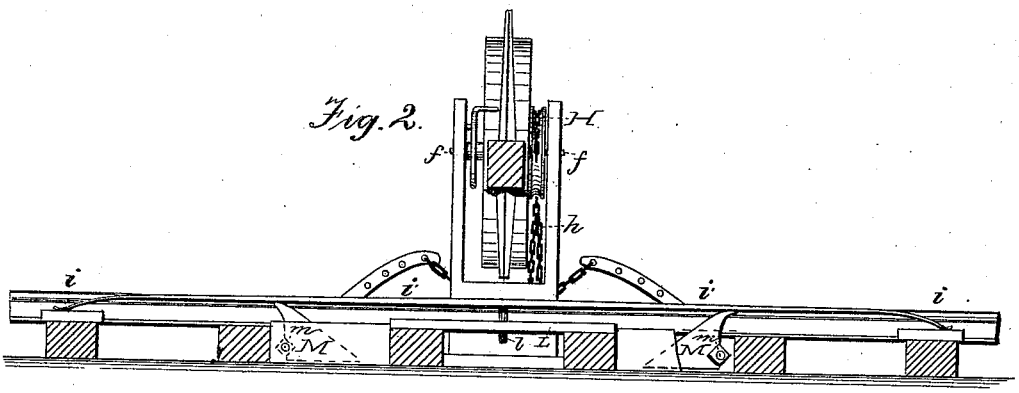
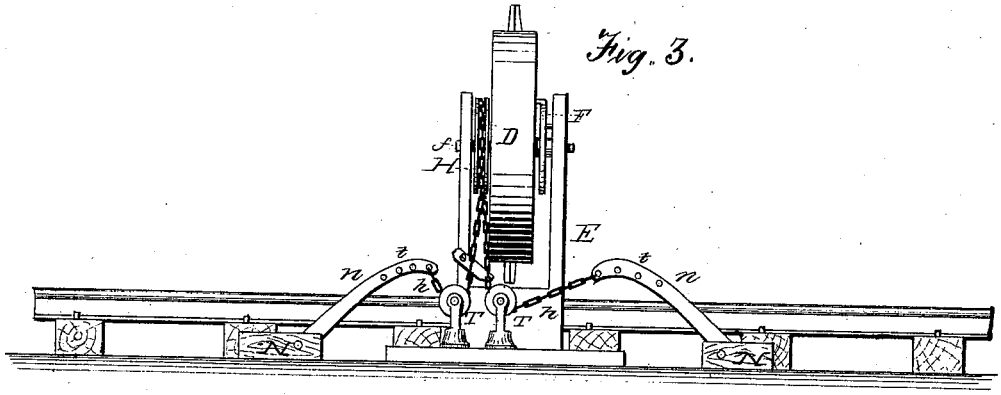


Fig. 3.



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UNITED STATES PATENT OFFICE.

MICHAEL FULCOMER, OF ALBION, IOWA.

IMPROVEMENT IN RAILROAD-GATES.

Specification forming part of Letters Patent No. **181,163**, dated August 15, 1876; application filed August 1, 1876.

To all whom it may concern:

Be it known that I, MICHAEL FULCOMER, of Albion, in the county of Marshall and State of Iowa, have invented a new and useful Improvement in Railroad-Gates, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improvement in railroad-gates; and consists in the mechanism hereinafter described, its object being to provide a suitable gate which will operate automatically, and with enhanced results.

Figure 1 is a front elevation of a device embodying the elements of the invention. Fig. 2 is a central longitudinal section of same. Fig. 3 is a rear view of same.

In the accompanying drawings, A represents a gate, which may be of any desirable dimensions, it being, in the present instance, constructed of the vertical standards *a*, connected and secured by the horizontal bar *b*, one end of which is left free to move in the slot *d*, formed in the standard B, the other end being secured in any convenient and safe manner at the horizontal center of the weight D. This weight is preferably constructed in the form of a crescent, having the lug or projection *e* extending outward from the center of its concavity. The weight D is secured in the fork of the standard E by means of the pivot *f* passing through the projection or lug *e*, so that the center of gravity of the weight preponderates outward beyond the standard E, thereby balancing the weight of the entire gate, and forming a lever of the first order, the pivot *f* being designated as the fulcrum. Upon the inner side of the standard E, encircling one end of the pivot *f*, is secured the coiled spring F, having its outer end so adjusted as to form an elastic buffer for the gate, which, when brought to its vertical position, will come in contact with said buffer, and thus be gradually arrested in its rotary motion. The reel H is also secured upon the pivot *f*, and is employed to receive the chain *h* as it is wound or released by the movement of the gate. The rail near the standard E, is provided on its inner edge with the elongated spring *i*, which is retained in position, in the present instance, by the bolt *l* passing through an aperture or slot in the plate L, and provided with a nut to prevent the bolt from becoming detached. Thus the spring is allowed a free vertical movement as the flange of the wheel of the car passing over the rails comes in contact with it.

Immediately beneath the spring *i*, at suitable distances on opposite sides of the gate, are provided the spurs M, standing at an angle of about forty-five degrees, (45°), their points impinging the lower side of the spring, and their opposite ends operating as counterbalances when at rest, and as checks when their points are depressed by the action of the spring yielding under the pressure of the flange of the car-wheel.

The spurs M are rigidly secured to the inner ends of the rocking bars *m*, mounted in the blocks or bearings M, wherein they have a rotary movement. The rocking bars *m* are placed a convenient distance apart, one being on each side of the standard E, and provided near their outer ends with the arms *n*, which extend toward the standard, and are furnished with the apertures *t*, in which the free ends of the half-double chain *h* are secured. These ends pass from the arms *n*, beneath their respective pulleys T; thence they extend upward a short distance and unite, forming above that point a single chain, which continues to extend upward, and is attached to the pulley H, which either tightens or releases the chain as the gate is raised or lowered.

It is obvious that the flange of the wheel of an engine or car passing over the rails would depress the elongated spring *i*, which, coming in contact with the spurs M, depresses them. This causes the rocking bars *m* to rotate, carrying the ends of the arms *n* away from the standard E. Thus, as the ends of the half-double chain *h* are secured to the arms *n*, they are also drawn outward. This movement draws upon the pulley H, and compels it to revolve in the direction in which the power moving it is exerted, which direction is always rearward. The pulley H, being rigidly attached to the axis of the gate, causes it also to revolve, or rather have an oscillatory movement, one end of the said gate turning upon the point *f*, while the other, by this movement, ascends, allowing the engine and cars to pass safely through. After the flange of the rear wheel

of the last car has passed over the spring *i*, the power exerted in drawing the chain is released, and the gate, being nearly on an equilibrium, but slightly preponderating toward the track, descends to its former position gradually and without danger of breakage.

It is also obvious that the within-described gate may be used as a farm-gate, or upon a carriage-roadway, or in any other place desired, with but slight and unimportant changes, if any, in its structure, and I do not, therefore, limit myself to the use of the invention upon railroads especially; but

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

1. As a means of operating a gate, a chain composed of three parts, one of which passes over a fixed pulley, the other two connecting opposite points, whence motion is communicated to the part upon the pulley, substantially as set forth.

2. A vertically-rotating gate, provided with a coiled-spring buffer, the buffer being fixed to the inner side of the post, with its coil circumjacent the pivot of the gate, substantially as set forth.

3. A pair of counterbalanced spurs, having an elastic connection with the flange of a car-wheel, and provided with rocking shafts and arms, which are connected by chains, or a chain, with the pulley on the gate, for the purpose of operating the gate, substantially as set forth.

4. An elongated half-elliptical track-spring, detached at both ends, and held in place by guide-bolts, which move downward in their fixed plates when the spring is depressed by the flange of the wheel, substantially as set forth.

5. The combination of the elongated half-elliptical spring with the counterbalanced spurs, substantially as specified.

6. The gate A, provided with the weight D, elastic buffer F, and pulley H, substantially as described.

7. The combination of the gate A, provided with the weight D, buffer F, reel H, and chain *h*, with the spring *i* and rocking bars *m*, as described.

8. The gate A, provided with the weight D, buffer F, reel H, and chain *h*, in combination with the spring *i*, dogs M, rocking bars *m*, and arms *n*, substantially as specified.

In testimony that I claim the foregoing improvement in railroad-gates, as above described, I have hereunto set my hand.

MICHAEL FULCOMER.

Witnesses:

CHAS. C. GILL,

J. H. HERRON.