

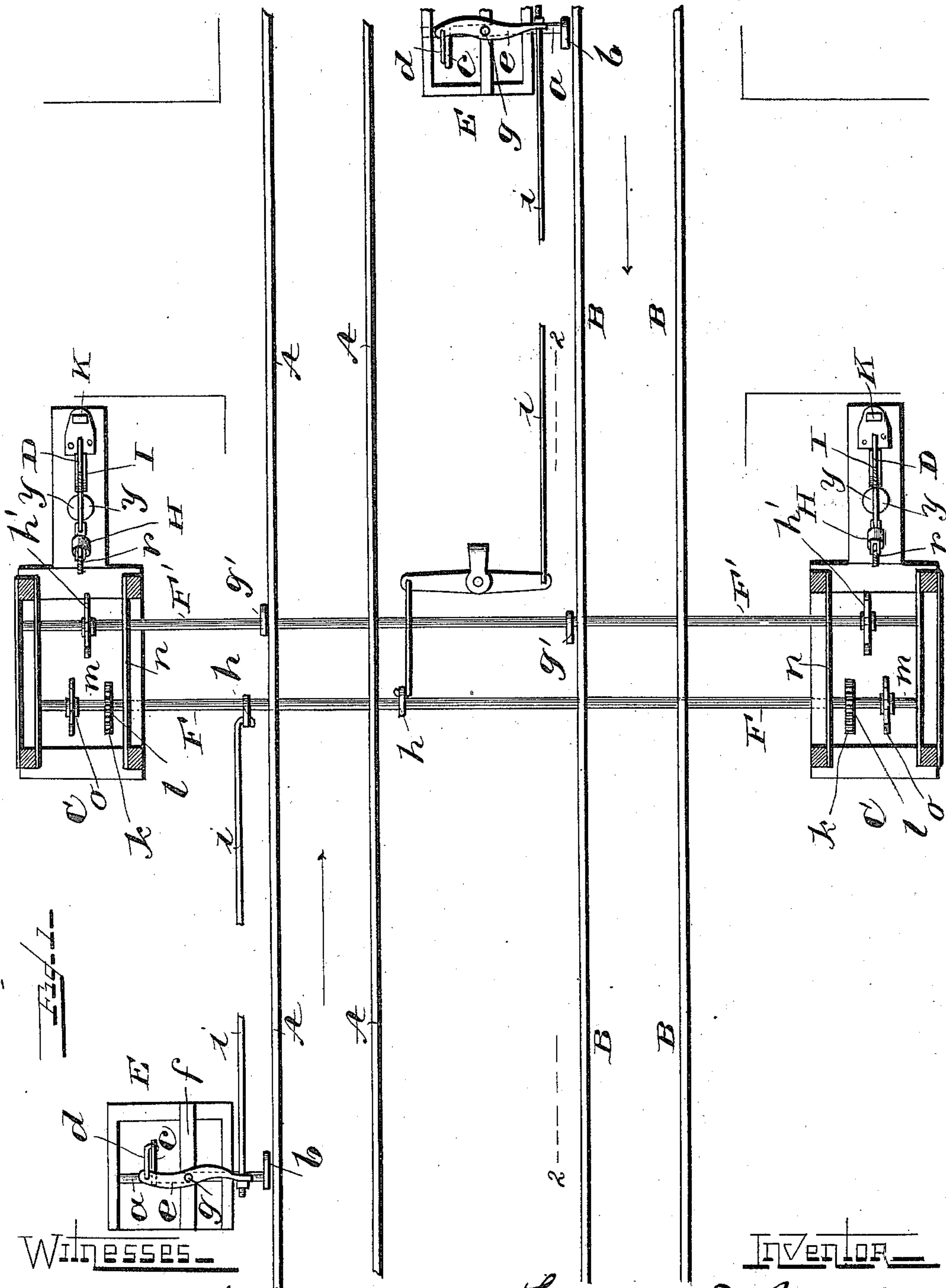
(No Model.)

2 Sheets—Sheet 1.

L. D. RALSTON.  
RAILROAD GATE.

No. 600,932.

Patented Mar. 22, 1898.



WITNESSES.

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INVENTOR.

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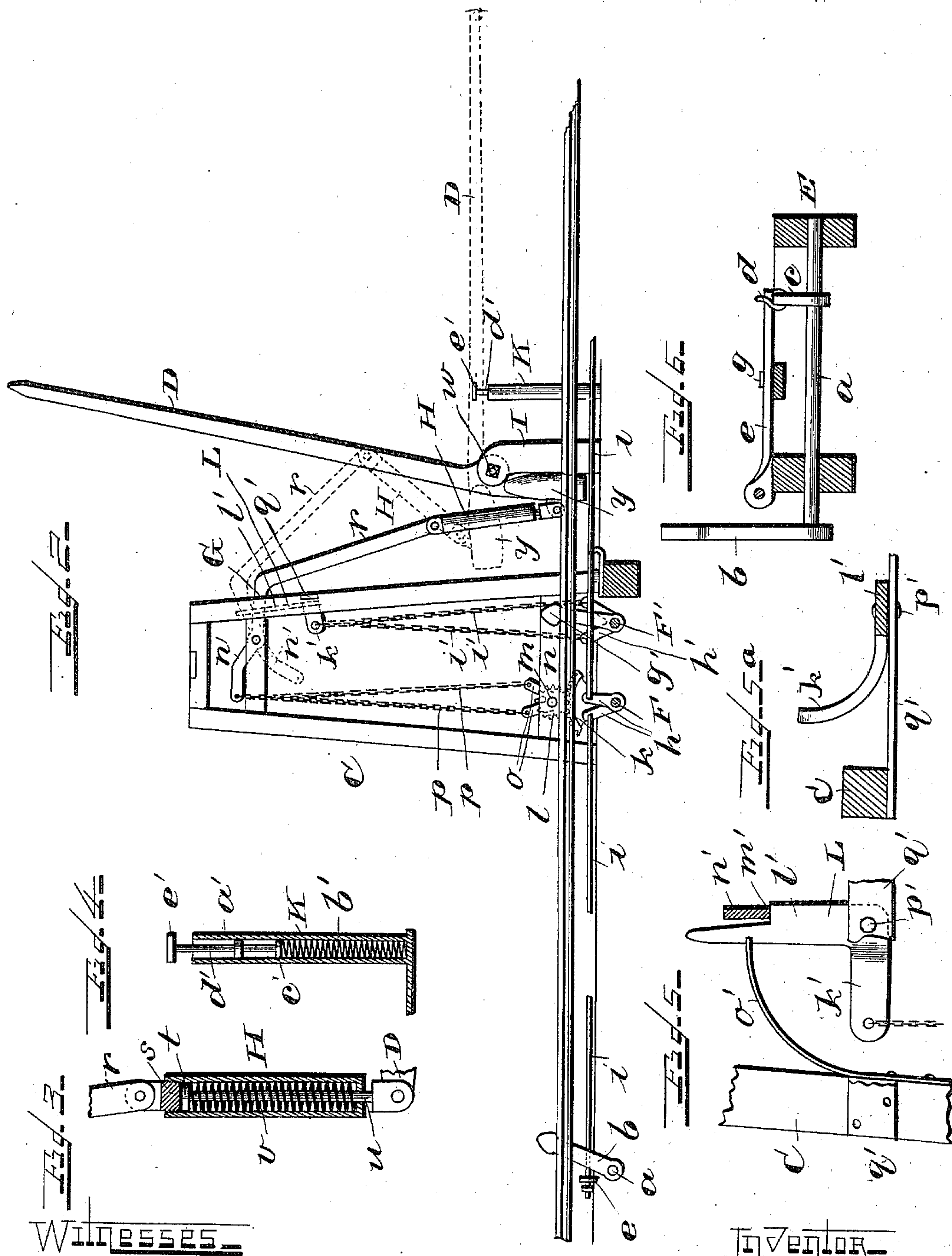
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# UNITED STATES PATENT OFFICE.

LEANDER D. RALSTON, OF LAWRENCE, OHIO.

## RAILROAD-GATE.

SPECIFICATION forming part of Letters Patent No. 600,932, dated March 22, 1898.

Application filed September 18, 1897. Serial No. 652,165. (No model.)

*To all whom it may concern:*

Be it known that I, LEANDER D. RALSTON, a citizen of the United States, residing at North Lawrence, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Railroad-Gates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to railroad-gates, has for its object a gate that shall be operated automatically by an approaching engine or train of cars, and consists in certain improvements in construction, which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 presents a top plan view of my improved gate and its operating mechanism; Fig. 2, a side elevation showing the gate, the tower, and the operating mechanism; Fig. 3, a vertical section of the spring-cylinder connected to the gate on an enlarged scale; Fig. 4, a like view of the spring-actuated cushion on which the gate falls; Fig. 5, an end view of the locking mechanism for securing the gate in closed position; Fig. 5<sup>a</sup>, a top plan view of the same, and Fig. 6 an end view of the actuating mechanism operated by a passing engine or train.

Reference being had to the drawings and the letters thereon, A indicates the rails of one track, and B the rails of another parallel track; C, a tower which is placed on one side of the track, and D the gate.

In a suitable frame E a shaft *a* is supported, and to one end of the shaft is connected a vertical lever *b*, arranged in close proximity to the rail of the track to be struck by a wheel or a projection from an engine or car, and at the opposite end of said shaft is an arm *c*, connected at its upper end by a link *d* to a horizontal lever *e*, pivoted to a bar *f* at *g*, and the opposite or long end of said lever or crank-arm *e* is connected to the arm *h* by a rod *i*.

The arm *h* is secured to a shaft *F*, which extends across the track or tracks and underneath the tower C, and on said shaft is a sector-shaped gear-wheel *k*, which is engaged by a pinion *l* on shaft *m*, supported at its ends in supports *n n*, attached to the posts of the

tower. On the shaft *m* is a lever or crank-arm, to which are attached chains *p p*, which at their opposite ends are attached to the inner end of the gate-lever *G*, which is supported at its ends in bars *q q*, also secured to the posts of the tower near the upper ends thereof.

The gate-lever *G* is angular, and the lower end of its long arm *r* is pivotally connected to the upper end of a cylinder *H*, in which is a detachable head *s* to close its upper end, to which head arm *r* is attached, a piston *t*, whose rod *u* is connected to the inner end of the gate *D* and surrounding the rod *u*, a coiled spring *v*, the function of the piston and spring being to take up or cushion the blow of a passing engine imparted to the operating mechanism before it reaches the gate and produces vibration thereof.

The gate *D* is pivotally supported in a post *I* by a bolt *w* and is provided with a weight *y* at its inner end to counterbalance the long arm of the gate, which extends across the street it is designed to guard and is supported upon a rest *K*, consisting of a cylinder *a'*, a coiled spring *b'*, and a piston *c'*, having a rod *d'*, provided at its outer end with a head *e'*, on which the gate rests when the gate is closed.

The gate *D* having been closed motion of the lever or crank-arm *b* in the opposite direction will not affect the gate, for the reason that the long arm of the lever *e* will slide upon the end of rod *i* without moving the rod.

To raise or open the gate, a simple mechanism is provided. On a shaft *F'* is secured a vertical lever or crank-arm *g'* in line with the lever or crank-arm *b*, and on said shaft under the tower is another lever or crank-arm *h'*, to which are connected chains *i' i'*, which are connected to the outwardly-bent arm *k'* of a locking-lever *L*, on whose vertical arm *l'* is formed a seat *m'*, which engages the outer end of the arm *n'* of the gate-lever *G*, as shown in Fig. 5, the lever being pushed under the arm *n'* by spring *o'*. The locking-lever *L* is pivotally secured at *p'* to a bar *q'*, attached to the posts of the tower. As an engine or train approaches and strikes the lever or crank-arm *g'* the arm *k'* of the lever *L* is drawn down, the arm *l'* moved laterally from beneath the arm *n'* of the gate-lever



and against the tension of the spring  $o'$ , when the gate D will rise automatically by the weight of the arm  $r$  of the gate-lever and the cylinder H being brought to bear upon the inner end of the gate.

The frame E, with its levers  $b$  and  $e$ , is set at a suitable distance from the street or road to be guarded, so that the gate will be lowered or closed as the engine or train approaches and will remain closed until the lever  $g'$ , in close proximity to the street or road, is struck by the engine or train, which is then in full view of persons on the street, and the locking-lever L released, when the gate will rise or open slowly.

Having thus fully described my invention, what I claim is—

1. A railroad-gate pivotally supported near its end, a gate-operating lever, a cylinder connected at one end to one arm of said lever, a spring and a piston within said cylinder and the piston connected to the inner end of said gate, in combination with mechanism operated by an engine or train for actuating the lever.

2. A railroad-gate pivotally supported near its inner end, a tower, a lever supported on said tower and having one arm thereof connected to a cylinder, a piston and a spring within said cylinder and the piston connected to the gate, in combination with mechanism connected to the opposite arm of said lever and operated by an engine or train for closing and opening the gate.

3. A railroad-gate, a tower, a gate-operating lever supported on said tower, and a vibratory locking-lever secured to a bar on the tower and engaging one arm of said lever, means for automatically throwing the lock-

ing-lever into engagement with said arm and means operated by an engine or train for releasing the arm, in combination with separate means operated by an engine or train for actuating the gate-operating lever.

4. A railroad-gate, a tower and a gate-operating lever supported on said tower and having one arm connected to said gate, a shaft provided with a lever or crank-arm connected to the opposite arm of said gate-operating lever, and a pinion on said shaft, in combination with a second shaft, means on said second shaft for transmitting motion to the former shaft and means operated by an engine or train for transmitting motion to the latter shaft.

5. A railroad-gate, a lever having a resilient section connected to the gate, a vibratory locking-lever therefor and a spring for moving said locking-lever in one direction, in combination with a shaft and a lever or crank-arm for closing the gate and a separate shaft and a lever or crank-arm for releasing the gate.

6. A railroad-gate, a gate-operating lever, a shaft, a sector-shaped gear-wheel on said shaft, a pinion supported on another shaft and a lever or crank-arm on the same shaft, and connections between said lever or crank-arm and the gate-operating lever, in combination with means for positively operating the sector-shaped gear-wheel.

In testimony whereof I affix my signature in presence of two witnesses.

LEANDER D. RALSTON.

Witnesses:

WM. BUTTERMORE,  
JOSEPH ELLIS.