

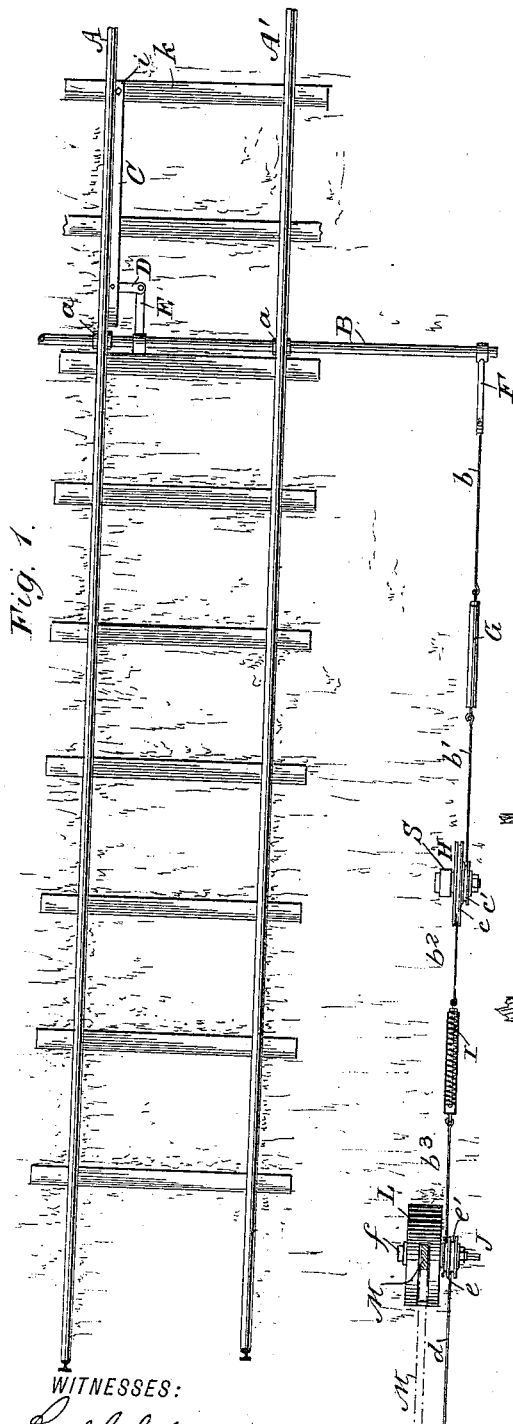
(No Model.)

A. B. ANTHONY.

AUTOMATIC GATE FOR RAILWAY CROSSINGS.

No. 419,305.

Patented Jan. 14, 1890.



WITNESSES:

Paul John  
C. Sedgwick



Fig. 2.

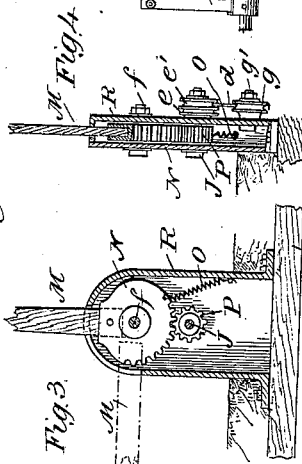


Fig. 3.

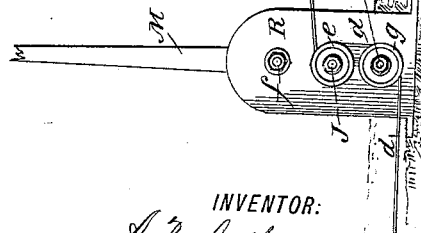


Fig. 5.

**INVENTOR:**

INVENTOR:  
A. B. Anthony  
BY:

**BY**

Minn H  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

ABRAM B. ANTHONY, OF SCHENECTADY, NEW YORK.

## AUTOMATIC GATE FOR RAILWAY-CROSSINGS.

SPECIFICATION forming part of Letters Patent No. 419,305, dated January 14, 1890.

Application filed July 20, 1889. Serial No. 318,157. (No model.)

*To all whom it may concern:*

Be it known that I, ABRAM B. ANTHONY, of Schenectady, in the county of Schenectady and State of New York, have invented a new and useful Improvement in Automatic Gates for Railway-Crossings, of which the following is a full, clear, and exact description.

The object to be attained is the production of a simple, substantial, and cheaply-constructed device, which will be operated by the approaching locomotive and train of cars, so as to depress the gate placed over a road-crossing, and thus prevent travel over the same in time to avert an accident.

With these objects in view my invention consists in certain features of mechanical construction and combinations of parts, that will be hereinafter described, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a railroad-track with my improved gate in position. Fig. 2 is an enlarged detached view of one of the parts of the gate mechanism. Fig. 3 is a sectional side elevation of the gear-casing of the gate. Fig. 4 is a cross-section of the gear-casing, showing the gearing within the same and grooved pulleys on the outside of the casing; and Fig. 5 is a side elevation of the complete device.

A A' are parallel rails of a railroad-track. At a proper distance from a road-crossing which is to be protected by the automatic gate a transverse shaft B is journaled in bearings *a*, which are clipped to the base-flanges of the two rails A A', so as to support the shaft revolubly below the rails and permit it to rotate freely. Between the rails of the track and near to the rail A an arm E is secured, the outer end of which is pivoted to a forked link D, which is loosely connected at its other end to a treadle-lever C, rigidly fastened at *i* to one of the cross-ties *k* of the track. The treadle-lever is preferably made of steel plate, and has sufficient elasticity to be normally retained above the face of the rail near which it is placed, and to yield when engaged by the flanges of locomotive or car

wheels, that run over it when they pass this point of the road.

One track only is shown in the drawings; but it is intended that the shaft B shall be of sufficient length to extend across any number of parallel tracks it may be necessary to guard at a road-crossing. Upon one extremity of the shaft B a rock-arm F is secured, projecting in an inclined position opposite to the position of the arm E, as shown in Fig. 1.

On the end of the rock-arm F a rod or other similar connection *b* is pivoted, which rod extends forward toward the road-crossing and is attached to one end of a spring shock-absorber G, to the other end of which is attached the end of a chain or wire rope *b'*, which is adapted to wrap around a grooved pulley *c'*, mounted on a shaft H, journaled in a post or standard S, located at one side of the rail A' of the track, the end of said chain or rope being attached to said pulley within its groove. A similar rope or chain *b''* is secured by one end in similar manner to the larger grooved pulley *c* on the shaft H, and extends forward to an attachment at its opposite end to the adjacent end of a spring shock-arrester I. Another chain or rope *b'''* is attached to the other end of said shock-arrester, the end of said chain or rope being secured in the groove of the inner pulley *e* of a pair of pulleys *e e'*, mounted on the outer end of a shaft J, journaled transversely in the gear-casing of the gate. Shaft J is projected beyond the casing and squared to receive a crank used to move the gate by hand.

The gear-casing R, which is preferably constructed of metal, is designed to support the gate M upon a shaft *f*, which is journaled in the side walls of the casing and held in place by a nut or other proper means. Said gate is bolted fast to a toothed segment N, through which the supporting-shaft *f* passes, and thus affords a rocking support for the gate. Between the walls of the casing R a pinion P is mounted upon and secured to the same shaft J on which the two grooved pulleys *e e'* are attached, said pinion meshing with the segment N. A spiral spring O is attached by one end to the side of the segment N and to the casing at its opposite end, the strength of the spring's contractile force being sufficient to return the

gate to an upright position, or to open travel across the tracks of the railroad. At a point below the pulley *e'* on the shaft J a similar grooved pulley *g* is mounted to rotate on a stud *g'*, which is fastened to and projects outside the casing R. A flexible connection *d*, either a cord, chain, or wire rope, is secured by one end in the groove *e'* of said pulley, the main portion of said rope or chain being extended round pulley *g* to a proper point beyond the gate-bar in the direction shown in Figs. 1 and 5, and is adapted to be there attached to a device similar to that already described, whereby a train from an oppositedirection will close the gate.

The shock-arresters I G are of service to take up all jars of a train moving over the treadle-lever, and, while they will not prevent a moderate vibration of the gate-bar, will measurably absorb any objectionable shock and prevent it from doing injury to the gearing of the device.

In operation the wheels of the train of cars will depress the treadle-lever C, which, through its connections D and E with the shaft B, will cause the latter to rotate and draw, by its arm F, upon the connections *b b'* to cause the pulleys *c c'* on the shaft H to revolve, and the latter, drawing on the connections *b<sup>2</sup> b<sup>3</sup>*, will in turn cause the pulleys *e e'* and shaft J to rotate; and as the pinion P on said shaft turns the gate M will be lowered against the tension of the spring O to the closed position indicated in dotted lines in Fig. 3 of the drawings. As soon as the wheels of the train have passed from the treadle-lever the spring O reacts and restores the gate to the vertical position shown in full lines in Fig. 3.

A bell may be secured upon the free end of the gate, which, being sounded by the action of the wheels of the train on the mechanism of the gate, will give warning to approaching vehicles or pedestrians that a train is near and call attention to the closed gate before it is reached.

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

1. The combination, with a railway-track, a transverse shaft journaled beneath the track-rails, and a treadle-lever pivotally connected with said shaft, of a gate mounted to rock in a casing at one side of the track, a segmental gear on the gate-shaft, a pinion meshing with said gear, a grooved pulley on the pinion-shaft, and flexible connections between said pulley and the shaft beneath the track, subsequently as shown and described.

2. The combination, with a railway-track, a transverse shaft journaled beneath the track-rails, and a treadle-lever pivotally connected with said shaft, of a gate mounted to rock in a casing at one side of the track, a segmental gear on the gate-shaft, a pinion meshing with said gear, a grooved pulley on the pinion-shaft, two grooved pulleys supported to revolve on a standard between the casing and the shaft beneath the track, flexible connections between said pulleys, the pulley on the casing, and the shaft beneath the track, and springs intervening between the ends of said connections, substantially as shown and described.

ABRAM B. ANTHONY.

Witnesses:

HORATIO G. GLEN,  
FREDRICK EISENMENGER.