

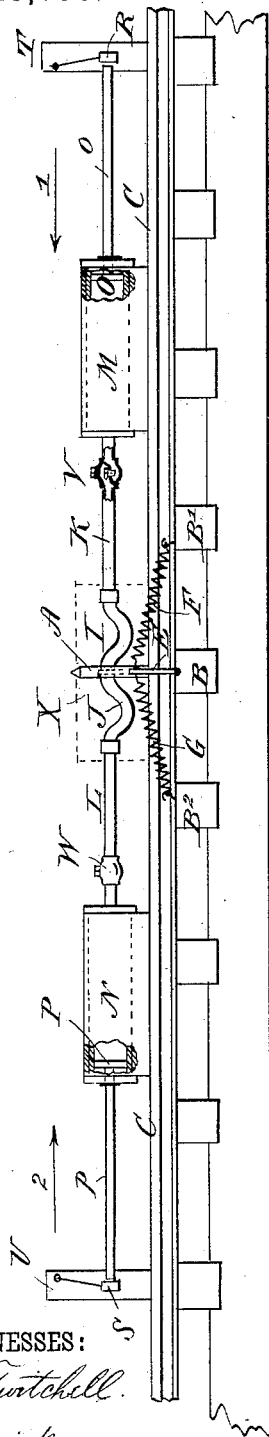
(No Model.)

N. HARRIS.  
RAILROAD GATE.

No. 345,896.

Patented July 20, 1886.

Fig. 1.



WITNESSES:  
*Down Twitchell.*  
*C. Sedgwick*

Fig. 3.

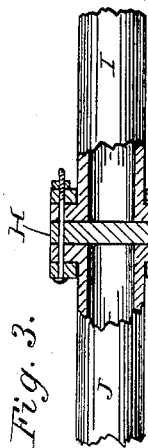
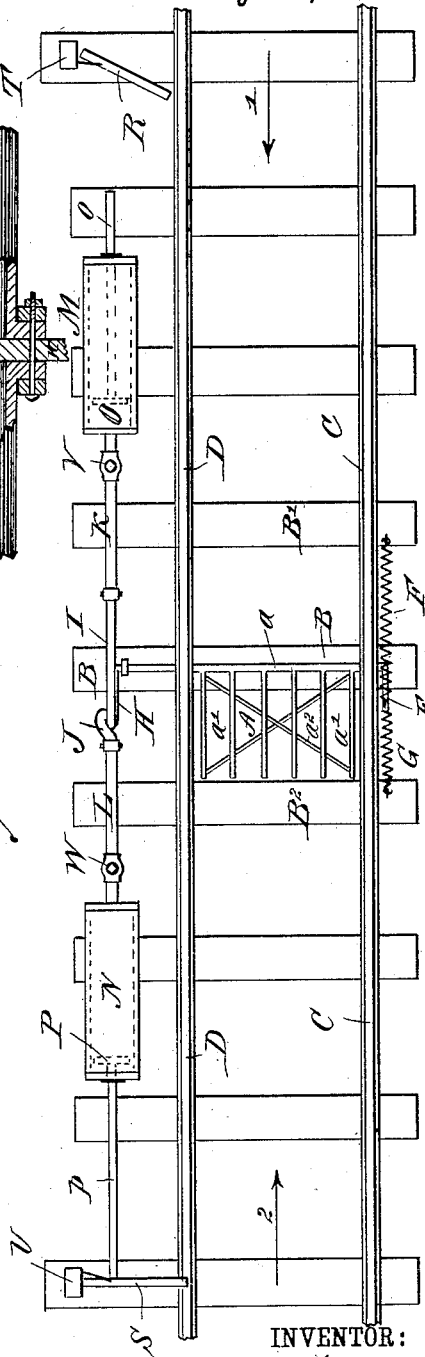


Fig. 2.



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# UNITED STATES PATENT OFFICE.

NATHAN HARRIS, OF WABASH, INDIANA.

## RAILROAD-GATE.

SPECIFICATION forming part of Letters Patent No. 345,896, dated July 20, 1886.

Application filed January 15, 1886. Serial No. 188,649. (No model.)

*To all whom it may concern:*

Be it known that I, NATHAN HARRIS, of Wabash, in the county of Wabash and State of Indiana, have invented a new and Improved Railroad-Gate, of which the following is a full, clear, and exact description.

My invention relates to gates adapted to serve as guards to exclude roving animals from railway-tracks, at roads crossing the tracks, and has for its object to provide a simple, inexpensive, and effective gate of this character which will be lowered or opened automatically by an approaching train, and will adjust itself to a normal raised or closed position across the track after the train has passed.

The invention consists in certain novel features of construction and combinations of parts, all as hereinafter fully set forth.

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

Figure 1 is a side elevation of a railroad-gate as arranged for use on a single-track railway, and with the gate raised, or in normal position, and the cylinders partly broken away and in section. Fig. 2 is a plan view thereof, with the gate lowered to permit passage of a train; and Fig. 3 is a longitudinal section taken through the crank-arm of the gate-shaft and the ends of the flexible pipes connected thereto, the remaining portions of said pipes being shown broken away, disclosing the method of connecting the said ends of pipes to said crank-arm.

The gate A, which may have any suitable construction, is shown made with a horizontal bottom bar or shaft, *a*, to which are connected the pickets or uprights *a'*, which are braced to each other by the crossed diagonal braces *a''*. The gate-shaft *a* is journaled in suitable bearings fixed to one of the ties, B, on which the railway-rails CD are laid, and so that the gate A crosses the road-bed between the rails, as clearly shown in Fig. 2.

At one end, next the rail C, the gate-shaft is provided with a crank-arm, E, to the outer end of which are attached the one ends of opposite springs, F G, the other ends of which are attached to the ties B' B'', at opposite sides of the tie B, whereby the tension of the springs normally holds the gate A in vertical posi-

tion, or so as to form a barrier across the tracks, as represented in Fig. 1 of the drawings. At the other end of the gate-shaft *a* is fixed a crank-arm, H, to the upper end of which, at opposite sides, are connected the flexible pipes I J, the other ends of which are connected to the pipes K L, respectively, the other ends of which latter pipes are connected with and open into the cylinders M N, supported in alignment at one side of the track.

The connection between the crank-arm H and the flexible pipes I J can be effected by spreading and placing the ends of the pipes against the sides, as above stated, of the crank-arm, and placing washers upon the thus spread ends of the pipes and jointly bolting the same to said arms.

In the cylinders M M are fitted the pistons O P, respectively, the rods *o p* of which extend through stuffing-boxes at the outer ends of the cylinders toward the arms RS, respectively, which are hung from posts T U, respectively, at the side of the track, and extend thereto, or so as to be struck by the engine of an approaching train for forcing the piston ahead in the cylinders, as presently described.

In the pipes K L are fitted the check-valves V W, respectively, which are arranged to open freely to pass air when the pistons of the adjacent cylinders are forced forward by the engine, and each of the check-valves has a small aperture through which the air may pass backward slowly into the cylinder.

A casing of any approved material may be built around the flexible pipes I J, to protect them from the weather, and as indicated in dotted lines at X in Fig. 1.

The operation is as follows: We will suppose a train approaching the gate in direction of the arrows I, and the gate raised, as in Fig. 1. The engine will strike the arm R, and thereby force the piston O forward in the cylinder M, and compress the air therein and force it through the valve V into the flexible pipe I, and thereby force the crank-arm H forward and downward, and carry the gate A down to horizontal position against the tension of the spring F, and as shown in Fig. 2, to allow the train to pass over the gate. The aperture in valve V will allow the compressed air to pass back from the pipes K I into the cylinder M only fast enough to prevent the rais-

ing of the gate A to vertical position again by the spring F when or after the longest train shall have passed the gate. A train approaching the other way, or in direction of arrows 2, will operate arm S and piston P to lower the gate against the tension of spring G, the valve W then operating like valve V, and when the longest train shall have passed, the spring G will raise the gate, substantially as above described.

For double-track roads, on which all the trains on the same track run in the same direction, there will be a crank-arm, H, at each end of the shaft a of gate A, and one cylinder and piston with valved pipes and an operating-arm will be arranged outside of each of the double tracks, as will readily be understood.

Any suitable fence-barriers (not shown) will be erected each way from the railroad tracks to the sides of the railway property, and a gate, A, will be arranged at each side of the roadway crossing the railroad-tracks, whereby roving animals will be excluded from the tracks and the safety of travel will be promoted.

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

1. A railroad-gate comprising a gate, A, supported normally and pivotally in vertical position to form a barrier across the track, and provided with a crank-arm, H, a flexible pipe, I, connected to arm H, a cylinder, as at M, connected to pipe I, and a piston, O, fitted in cylinder M, and adapted for operation therein by a passing train, substantially as herein shown and described, and for the purposes set forth.

2. A railroad-gate comprising a gate, A, supported normally and pivotally in vertical position to form a barrier across the track, and provided with a crank-arm, H, a flexible pipe, as at I, connected to said arm H, a cylinder, as at M, connected to pipe I, a perforated valve, as at V, fitted between cylinder M and pipe I, and a piston, as at O, fitted in cylinder M, and adapted for operation therein by a passing

train, substantially as and for the purposes set forth.

3. The combination, in a railroad-gate, of a gate, A, forming a barrier, pivoted across the track, and provided with a crank-arm, E, springs F G, connected to said arm and acting to hold the gate raised, a crank-arm, H, connected to the gate, a flexible pipe, I, connected to arm H, a cylinder, as at M, connected to pipe I, a perforated valve, V, fitted between the cylinder and pipe I, and a piston, O, fitted in said cylinder, and adapted for operation therein by a passing train, substantially as and for the purposes set forth.

4. The combination, in a railroad-gate, of a gate, A, forming a barrier, pivoted across the track, and provided with a crank-arm, E, springs F G, connected to said crank-arm and acting to hold the gate raised, a crank-arm, H, connected to the gate-shaft, a flexible pipe, I, connected to arm H, a cylinder, as at M, connected to pipe I, a perforated valve, V, fitted between the cylinder and pipe I, a piston, O, fitted in said cylinder, and an arm, as at R, hung at the side of the track, and adapted to be struck by a passing train and to operate the piston O in cylinder M, substantially as herein set forth.

5. The combination, in a railroad-gate, of a gate, A, supported normally and pivotally across the track, and provided with crank-arms E H, springs F G, connected to said arm E, and acting to hold the gate raised, opposite flexible pipes I J, connected to arm H, opposite cylinders M N, pistons O P, fitted therein, and perforated valves V W, fitted between the cylinders M N and pipes I J, and said pistons adapted for operation, respectively, by trains passing over the track in opposite directions, substantially as and for the purposes herein set forth.

NATHAN HARRIS.

Witnesses:

WILLIAM A. BRANYAW,  
MICHAEL W. MOORE.