

(No Model.)

2 Sheets—Sheet 1.

O. J. SCOTT.
AUTOMATIC GATE.

No. 323,888.

Patented Aug. 4, 1885.

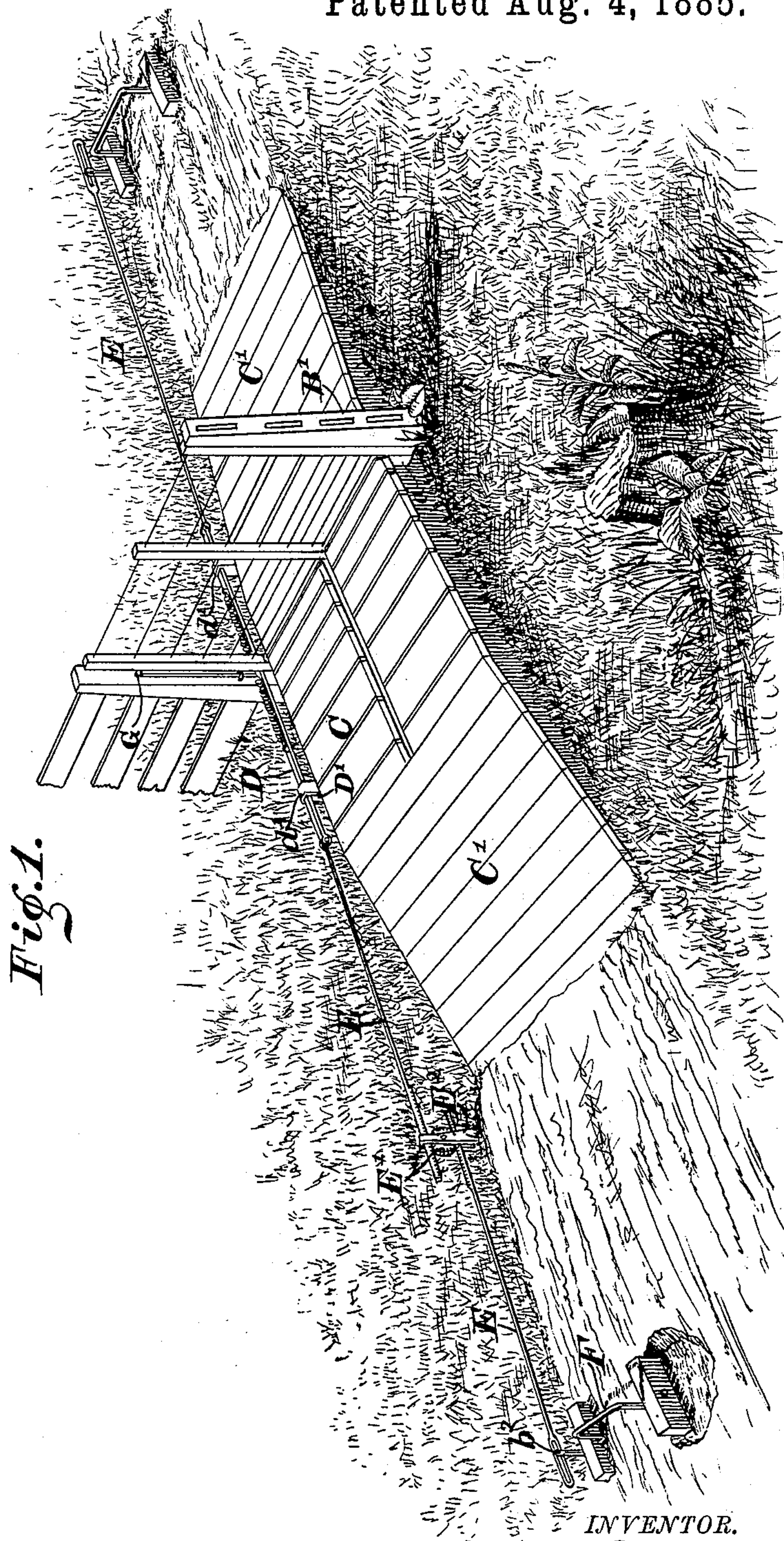


Fig. 1.

WITNESSES.

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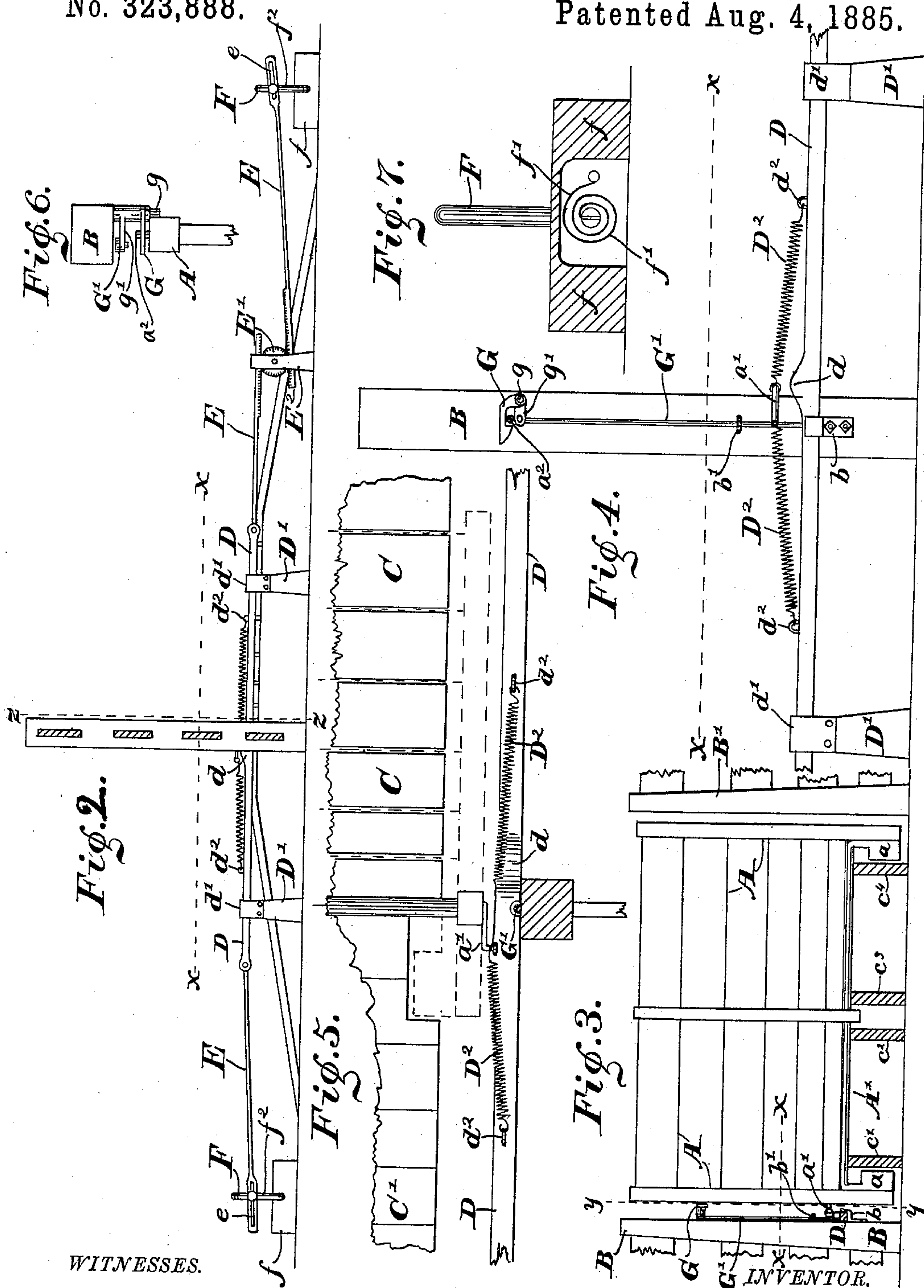
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UNITED STATES PATENT OFFICE.

ORLA J. SCOTT, OF CARTHAGE, INDIANA, ASSIGNOR OF TWO-THIRDS TO
ELWARD SCOTT AND JAMES H. HILL, BOTH OF SAME PLACE.

AUTOMATIC GATE.

SPECIFICATION forming part of Letters Patent No. 323,888, dated August 4, 1885.

Application filed June 13, 1884. (No model.)

To all whom it may concern:

Be it known that I, ORLA J. SCOTT, of the town of Carthage, county of Rush, and State of Indiana, have invented certain new and useful Improvements in Automatic Gates, of which the following is a specification.

My said invention relates to an improved construction of automatic gates, wherein said gate is pivoted or hinged near its bottom between gate-posts provided therefor; and it consists in providing improved mechanism for operating said gate automatically, as will be hereinafter more fully described.

Referring to the accompanying drawings, which are made a 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, a side elevation of the operating mechanism, &c.; Fig. 3, a side elevation of the gate proper, as seen when looking to the left from the dotted line $z z$; Fig. 4, a view looking to the left from the dotted line $y y$ in Fig. 3, showing the catch and devices for operating the same in elevation; Fig. 5, a detail sectional view looking downwardly from the dotted line $x x$, the down or open position of the gate being indicated by dotted lines; Fig. 6, a detail view of the latch and catch; and Fig. 7 a detail section through one of the blocks in which the trip-rods are mounted, showing the spring which holds said trip-rods in position.

In said drawings, the portions marked A represent the gate; B, the post upon which the latch and its mechanism are mounted; B', the other gate-post; C, the bed or platform; D, the push-bar; E, rods connecting said push-bar to the trip-rods; F, said trip-rods, and G the catch for the gate-latch. The gate A is of suitable proportions to properly occupy the opening it is designed to fill. It is preferably formed with wire rails, as shown, and the grooves in the bed to receive them may therefore be made smaller than they otherwise could be. A rod or pivot-bar, A', extends across between the end pieces near the bottom of the gate, being secured in any suitable manner to the end pieces, (and to the middle piece, where one is employed,) to secure the desired strength and rigidity. Said rod is journaled in suitable bearings upon the

sills of the bed or platform, and the gate is thus adapted to be turned up or down. Weights a are provided on the lower ends of each end piece for the purpose of balancing the top of the gate, the part above the pivot-rod being in itself much heavier than the part below said pivot-rod. The post B is any suitable post, and preferably has a bracket, b , secured on its inside face near its lower end, in which the push-bar slides. The catch and the rod whereby said catch is operated are also mounted thereon, as will be presently more fully described. The post B' is similar to the post B, except that ordinarily it has no mechanism connected thereto. The bed C is constructed of substantially the same width as the gate, the end pieces of the gate being adapted to turn down alongside the ends of said bed. Where the gate is constructed with a center piece the bed is constructed upon four sills, $c^1 c^2 c^3 c^4$, arranged transversely to the gate, in order to allow an open space in the center for said center piece to drop into when the gate is turned down or opened. The planks or boards of the bed are arranged so that open spaces will be formed between them at the proper points to receive the wires or bars of the gate when said gate is opened or turned down. Said bed may be set into the ground until its top surface is nearly level with the roadbed, or the sills may be set upon the surface and platforms C' constructed at each end of the bed leading therefrom, as shown. The push-bar D is mounted in the center in the bracket b upon the post B and rests near its ends in suitable guides, d' , upon the posts D'. Near its center it is provided on its top face with a cam-lug, d , said cam-lug being highest in its center and inclined from said point each way to the straight surface of the bar. It is arranged to pass under the end of a vertical rod attached to the catch of the gate-latch and thus operate said latch by raising and lowering said rod as said push-bar is moved back and forth, as will be presently described. It is connected to a crank-arm, a' , upon the end piece of the gate by the springs D². Said springs are of substantially equal length and are attached at one end to the staples d^2 , which are provided in said push-bar on each side of its central portion, and their other ends are

connected to the end of said crank-arm a' upon the end post of the gate. The crank-arm a' is secured rigidly in the end piece of the gate a short distance above the point at which said gate is pivoted. It extends out a short distance on the side which is the top side of the gate when said gate is turned down or opened, and it therefore stands vertical when the gate is horizontal and affords the leverage by which the gate is raised. Its end is bent around at right angles with the extended portion in order to form a suitable wrist-pin to which the springs may be attached. The connecting-rods E are pivoted at one end to the ends of the push-bar and at their other ends are connected to a crank-arm upon one end of the trip-rods F. The rod upon that end of the bar toward which the gate falls is somewhat longer than that upon the other end, as the gate falls toward the team when approaching from this side, and away from the team when approaching from the other side. The long rod is divided near its center and a joint formed therein. Said joint is formed by pivoting a ratchet-wheel, E' , at its center in the top of a standard, E^2 , and connecting the parts of the rod E thereto by means of rack-bars formed on the ends thereof, as shown. A reverse movement of the push-bar is thus effected, and the same operation upon the mechanism operating the gate is obtained by the team approaching from one side as that by a team approaching from the other, the gate being designed to open or turn down in the same direction at all times. The same effect would of course be produced by reversing the direction of the crank-arms on the trip-rods. The bail-like trip-rods F are journaled in bearings in the blocks f , which are secured in the ground at the proper points. One end of each, preferably the outside, extends through its block and is turned up to form a crank-arm to which the ends of the rods E are attached. The other end of the trip-rod is connected to a coiled spring, f' , which is mounted in its block, as shown, (see Fig. 7,) and serves to keep said trip in a vertical position at all times, except when forcibly borne down. This is permitted by longitudinal slots e being formed in the ends of the rods E, in which the ends of the crank-arms b^2 on the end of the trip rods are mounted. Thus when the vehicle passes over the trip-rod and bears it down, it operates to push the rod E forward, and after said trip-rod is relieved the spring f' operates to throw it back again into a vertical position, the slot allowing the crank-arm end to slide back without moving the rod, and thus disturbing the position of the gate. The same construction is employed on each side of the gate, and thus the trip-rods are always in position to be operated effectually. The catch G is pivoted on the inside face of the post B on the pivot g . The shank through which said pivot passes is preferably made long enough to bring the latch out nearly to the end piece of the gate, which is provided with a latch, a^2 , with which

the catch engages. An arm, g' , extends out from the end of the shank next the post to the middle of said post, where it is connected to a vertical rod, G' . Said rod G' is mounted in a guide b' , upon the post B, as shown, and is adapted to slide vertically therein. Its lower end rests upon the top surface of the push-bar D, and is operated by the cam-lug d , before described, which passes under it as said push-bar is operated back and forth. As said cam-lug passes under said rod it operates to raise it, and through it to raise and disengage the catch from its engagement with the latch upon the gate, as will be readily understood.

The operation of my said invention is as follows: The gate and the operating mechanism being in operative position, the vehicle is, for example, driven on to the trip-rod on that side toward which the gate falls, which pushes down said trip-rod, and through the jointed push-rod E draws the push-bar D forward, together with the push-rod E upon its other end, the slot in said end permitting this movement of the push-rod without disturbing the vertical position of this trip rod. The drawing forward of the push-bar D draws out the spring D^2 , on the side from which the vehicle is approaching, and at the same time relaxes the tension of the spring on the other side, as will be readily understood. As the push-bar is drawn forward the cam-lug d thereon passes under the lower end of the vertical rod G' and operates to unlatch the gate, as has been before described. The gate being thus released from the catch, the spring, which has been drawn out by the same operation of the mechanism, operates to turn the gate upon its pivot-bar, the wires and several parts of the gate falling into the grooves and openings below the surface of the bed, as before described, and thus providing a free passage for the vehicle. In passing over the other trip-rod, after the vehicle has passed through the gate, the push-bar is thereby pulled in the opposite direction, the operation reversed, and through the other spring and the crank-arm a' the gate is drawn up into place and latched, as will be readily understood.

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

1. In an automatic gate, the combination of the gate A, pivoted near its bottom, the posts B and B' , between which said gate is mounted, the push-bar D, connected to the trip-rods F by the connecting-rods E, and the springs D^2 , connected at one end to the push-bar and at their other ends to the gate just above its pivot-point, substantially as described, and for the purposes specified.

2. The combination, in an automatic gate, of the pivoted gate A, the post B, the push-bar D, mounted in a bracket on the inside face of said post and adapted to slide therein, the connecting-rods E, connecting the ends of said push-bar to the trip-rods, one of said connect-

ing-rods being divided and a ratchet-wheel, E, interposed, one end of each part of said divided connecting-rod being connected to said ratchet-wheel, said wheel being pivoted at its center in the standard E², the trip-rods F, to which the ends of the connecting-rods are attached, and the springs D², secured at one end to the push-bar D on each side of the gate and at their other ends to said gate, substantially as set forth.

3. In an automatic gate, the combination of the gate A, post B, push-bar D, mounted in a bracket on said post and provided with a cam-lug, *d*, on that portion which passes the post as said bar is operated, the rods E, the trips F, the catch G, pivoted on the post B and adapted to engage with a latch, *a*², upon the gate, said catch being provided with an arm, *g*', and the vertical rod G', mounted on the post B and connected at its top end to said arm *g*' and adapted to engage at its lower end with the trip *d* upon said push-bar, substantially as set forth.

4. The combination, in an automatic gate, of the gate A, horizontally pivoted near its bottom on appropriate frame-work and provided at one end with a crank-arm, *a*', the push-bar D and its operating mechanism, and the springs D², one end of each being attached to said push-bar and the other end of each being attached to said crank-arm *a*', substantially as described, and for the purposes specified.

5. The combination, in an automatic gate, of the horizontally-pivoted gate A, push-bar

D, adapted to slide in suitable bearings at one end thereof and connected thereto, trip-rods F, and the connecting-rods E, connecting the ends of said push-bar to said trip-rods, their outer ends being provided with slots *e*, by which they are connected to the trip-rods, whereby said trip-rods are permitted to stand in a vertical position regardless of the position of the push-bar, except when operated, substantially as set forth.

6. In an automatic gate, the combination of the gate A, horizontally pivoted near its bottom on appropriate frame-work, the push-bar D, connected thereto, the trip-rods F, journaled in bearings in the blocks *f*, one block being provided with a spring, *f*', which is connected to said trip-rod, and the connecting-rods E, connecting the ends of said push-bar to said trip-rods, all arranged and operating substantially as set forth.

7. The combination of a horizontally-pivoted gate, A, the sides of which extend beyond the pivots, the weights *a*, rigidly secured to said extended sides and thus serving to counter-balance said gate, a push-rod, D, springs connecting said rod and said gate, a latch, and a cam-lug, *d*, on said rod for operating said latch.

In witness whereof I have hereunto set my hand and seal at Carthage, Indiana, this 7th day of June, A. D. 1884.

ORLA J. SCOTT. [L. S.]

In presence of—

WILLIAM S. JOHNSON,
CHARLES O. NIXON.