

(No Model.)

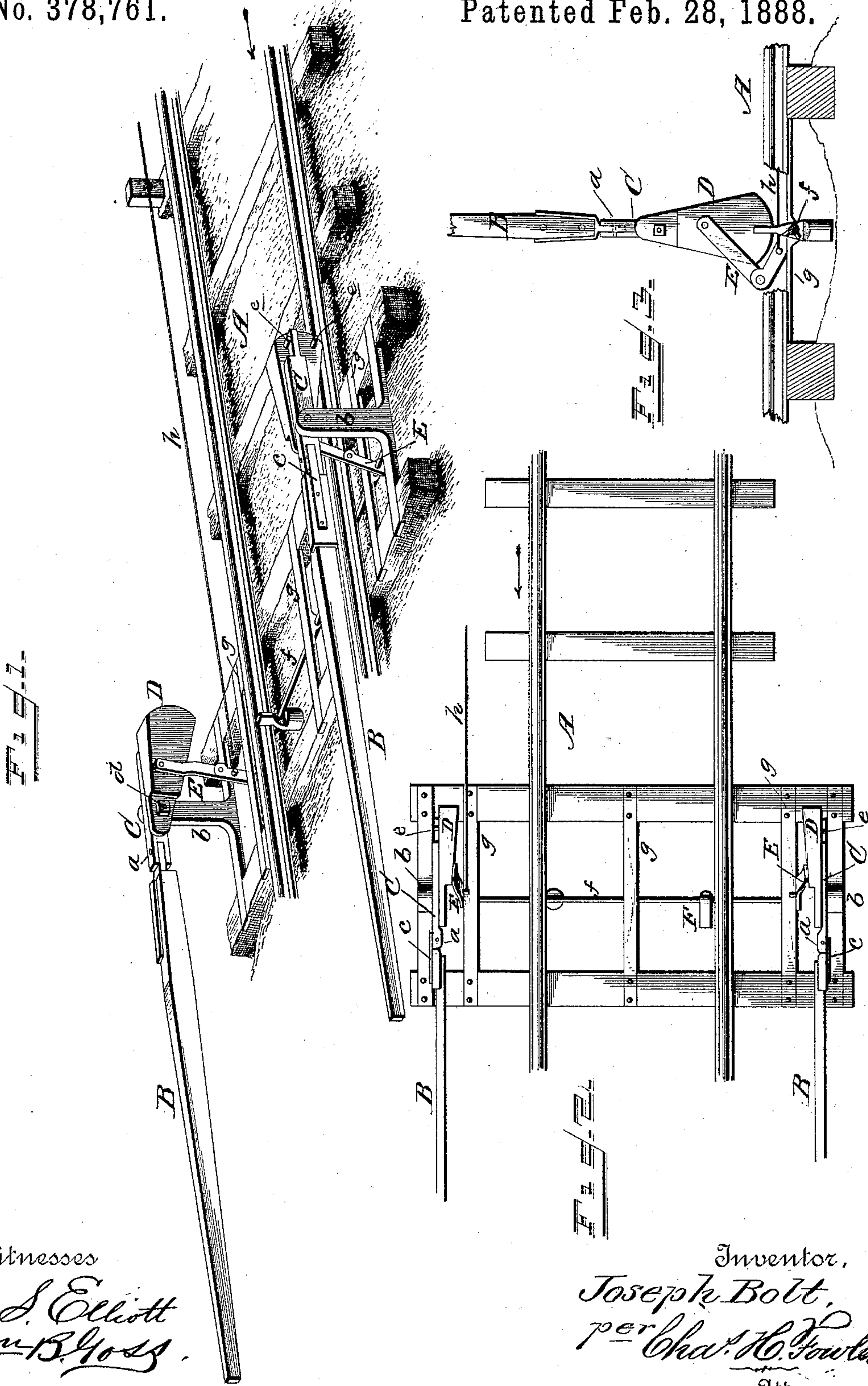
2 Sheets—Sheet 1.

J. BOLT.

RAILWAY GATE.

No. 378,761.

Patented Feb. 28, 1888.



Witnesses

L. S. Elliott
Wm B. Goss.

Inventor,

Joseph Bolt,
per Chas. H. Fowler
Attorney.

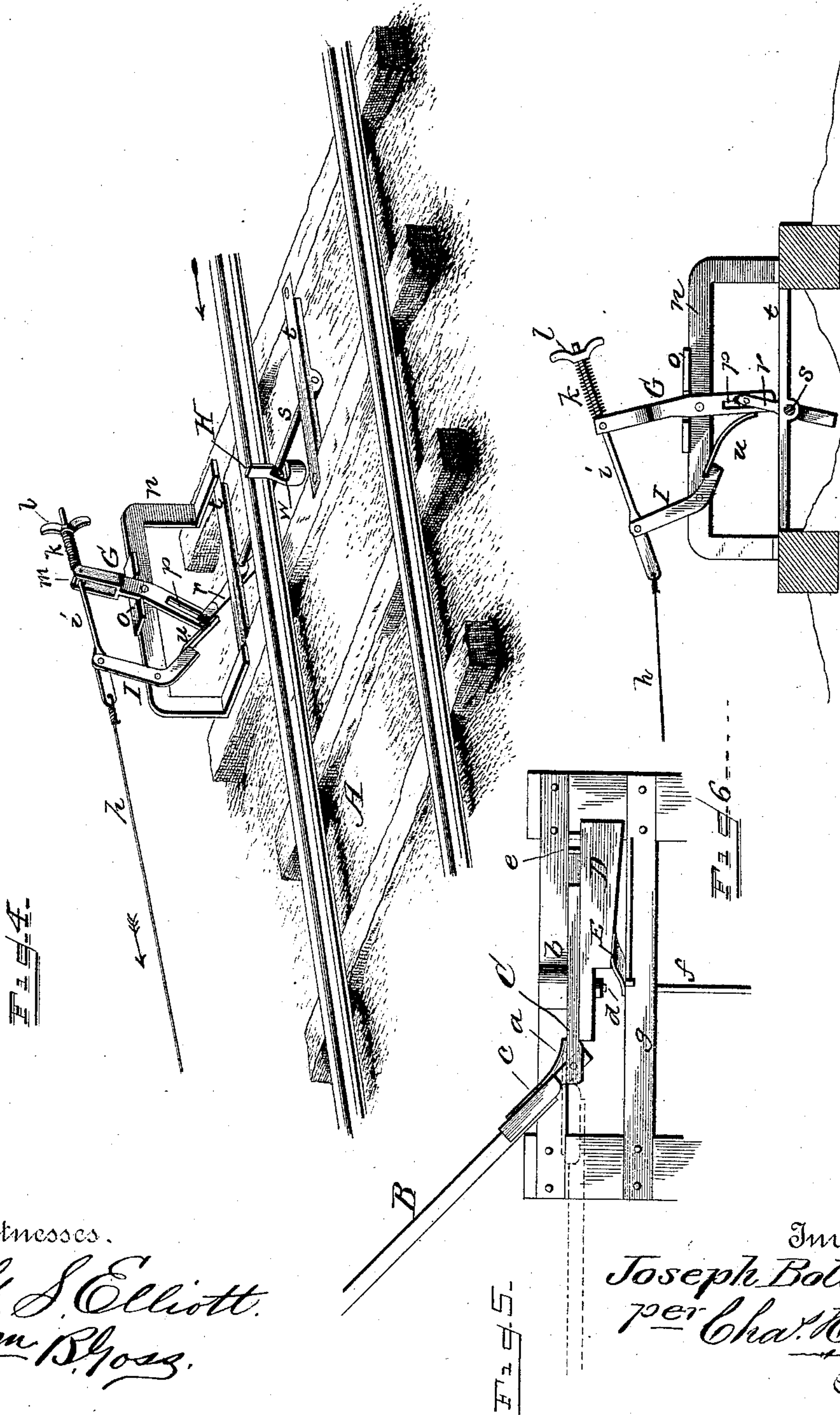
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Wm. B. Ross.

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Attorney.

UNITED STATES PATENT OFFICE.

JOSEPH BOLT, OF SCHUYLKILL HAVEN, PENNSYLVANIA, ASSIGNOR TO
HIMSELF AND JOHN T. DEIBERT, OF SAME PLACE.

RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 378,761, dated February 28, 1888.

Application filed September 30, 1887. Serial No. 251,112. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH BOLT, a citizen of the United States, residing at Schuylkill Haven, in the county of Schuylkill and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Gates; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a perspective view of a portion of a line of railroad, showing my improved gate connected thereto and in a lowered position; Fig. 2, a top plan view thereof; Fig. 3, a side view in detail showing one of the gate-arms in an elevated position; Fig. 4, a perspective view showing the gate-operating mechanism, which is arranged or placed some distance from the gate on the line of track, such mechanism being shown in the position it will assume when the gate is lowered; Fig. 5, a top plan view in detail showing the gate-arm in two positions; Fig. 6, a detail view of the mechanism shown in Fig. 4 and in the position it will assume when the gate is elevated.

The present invention has relation to that class of railway-gates which are operated by the passing train, and is intended more particularly to be used on a line with country cross-roads.

The object of the invention, therefore, is to improve the general construction of the gate and its operating mechanism, whereby the same will be rendered perfect in its action both in raising and lowering the gate by the action of the car-wheel of the passing train upon devices extending above the track, which object I attain by the construction substantially as shown in the drawings, and hereinafter described and claimed.

In the accompanying drawings, A represents the line of railroad-track, and B the gate-arms, of sufficient length to extend across the road to close it to passing vehicles or other moving objects. The gate-arms are constructed in two sections, the section B being the gate-arm proper, while the section C forms the shank of the arm and is pivoted to a bracket, a, connected to the cross-ties of the track. The

two sections of these arms are hinged together, as shown at b, or otherwise connected, so that said arms can swing outward in a horizontal position when any pressure is brought against them on their inner side, and are forced back to their normal position by means of springs c, one end of which is connected to the arm B and the opposite end left free to bear against the arm-section C.

Should a vehicle or other moving object in crossing the track be in position by accident to have the gate-arms lowered upon each side of it, and thereby be hemmed in on line of the track, the gate-arms will yield outwardly to pressure, as shown in Fig. 5, to enable the vehicle or other object to pass out, thus preventing serious accidents.

The stationary pivot d, upon which the arm-section C is mounted, also forms the pivot for a counter-weight, D, the latter, as should be understood, being independent of the arm-section, or, in other words, not connected thereto, each acting independently and on the same pivot. The weights D have pins e extending from their outer sides, between which is located the extremity of the arm-section C of each gate-arm. By having the weight and gate-arm section independent of each other any sudden jar or jerk upon the gate-arm when being lowered will be avoided and the arms lowered with uniform motion, the weights moving a certain distance before the pins strike the extremities of the arm-sections and gradually taking the arms with them.

Connected to the inner side of the weights D are toggle-levers E, which are also connected to the extremities of a transverse rod, f, having its bearings in bars g, secured to the cross-ties of the track and extending longitudinally along it, said rod having connected to it a trip device, H, of any desirable form and construction, which will be acted upon by the wheel of the train when passing in either direction. I do not wish to be understood as confining myself to any special construction of trip device, as any well-known form may be substituted for that shown without departing from the principle of my invention, and any change in the construction that comes within ordinary mechanical skill I reserve the right to make. To one of the toggle-levers E is attached one

end of a wire, *h*, which is of sufficient length to extend some distance back, and its opposite end is suitably connected to a rod, *i*. This rod is pivoted to the bifurcated or forked end of a lever, *G*, and has around one end a spiral spring, *k*, and a nut, *l*, to retain the spring thereon and regulate its tension, if required. The means I prefer employing to pivot the rod *i* to the lever *G* is by means of a nut, *m*, pivoted to the sides of the bifurcation, and through this nut loosely passes the rod *i*, thus forming a swivel-connection.

The lever *G* is pivoted to a bracket, *n*, secured to and extending up from the cross-ties of the track, a stop-plate, *o*, being employed to limit the forward and backward motion of the lever. The lever *G* is slotted, as shown at *p*, and in this slot works a pin projecting from the inner side of an arm, *r*, which arm is rigidly secured to one end of a transverse rod, *s*, having its bearings in bars *t*, connected to the cross-ties and extending longitudinally with the track. The rod *s* has a suitable trip device, *H*, connected thereto and operated by the wheel of the passing train as it comes in contact with it. A bell-crank lever, *I*, is pivoted to the bracket *n*, and is provided at its lower end with a spring-bar, *u*, the rod *i* being pivoted to this lever, as shown at *v*. As the train of cars passes along the track in the direction of the arrow and the rim of the forward wheel strikes or comes in contact with the trip device *H*, the latter will be depressed, and in consequence the rod *s* will be partially turned on its axis, and with it the arm *r*, said arm being forced forward by means of the slot and pin, hereinbefore described, which also forces back the upper end of the lever *G*, as shown in Fig. 4. When in this position, the lever and arm form together an angle that will be self-locking to hold them in position. When the lever *G* is thus acted upon, the back motion of the upper end of the lever will force the nut *m* against the spring *k* and compress it, so as to enable it to yield to any quick and positive pressure caused by a fast-moving train, thereby giving the spring time to draw up the rod *i*, to which the wire *h* is connected, sufficiently to close the gate. The train having passed the mechanism illustrated in Fig. 4 and reached the gate and released the weight, the bell-crank or releasing lever *I* (when the wire *h* is drawn forward in the direction of the arrow in Fig. 4) will lift the lever *G* by means of the spring *u*, which is brought in contact with the lower end of the lever, thus bringing it out of its locking posi-

tion, and thereby setting it for the next coming train. The arm *r* may be slightly beveled at its upper end, so that when it has given to it a quick motion it will be depressed before the spring *u*, and as the spring is brought down it passes over and under the end of the arm. The spring *k* will take up all slack in the wire *h* and keep it in position until it is acted upon.

When pressure is brought on the wire *h* by the mechanism above described and it is drawn back by means of the toggle-levers *E*, hereinbefore described, and rod *f*, to which they are connected, the gate-arms are forced down in a horizontal position across the road to shut off any passing teams or other moving objects. The trip devices are preferably weighted and mounted loosely on their rods, and when pressed down by the rim of the car-wheel will strike a pin, *w*, projecting from the rod, which will turn it, a pin extending from each side of the rod, so that the trip devices can be operated by the cars passing in either direction, and after the device has been acted upon it will assume its normal position by means of its being weighted.

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

1. In a railway-gate, the gate-arms and independently-pivoted counter-weights, in combination with toggle-levers connected to said weights and to a transverse rod, a trip device connected to said rod and weighted, as described, and a returning-wire connecting the toggle-lever with a mechanism operated by the rim of the car-wheel of the passing train, substantially as and for the purpose set forth.

2. The combination, with a railway-gate, of a mechanism for operating the same, consisting of a transverse rod having a suitable trip device operated by the rim of the car-wheel, a slotted and pivoted lever connected to the rod by an arm that carries a pin working in the slot, a bell-crank or releasing lever provided with a spring, a rod pivoted to the bell-crank lever and swiveled to the slotted lever, a spring and adjusting-nut for the same, and a wire connecting the rod to the gate mechanism, substantially as and for the purpose described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOSEPH BOLT.

Witnesses:

JOHN T. DEIBERT,
FRANK LITTLE.