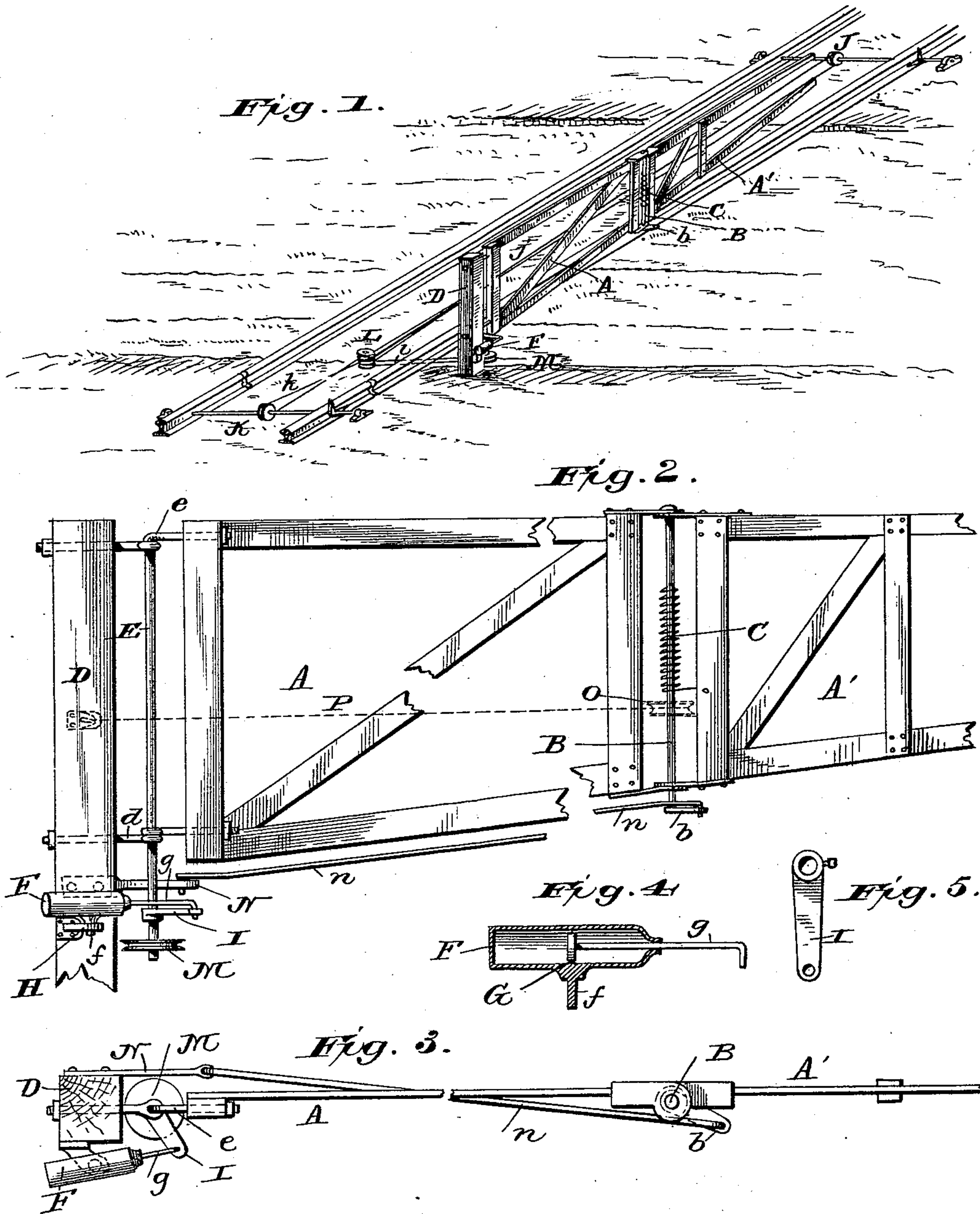


(No Model.)

O. W. JOHNSON.
RAILWAY GATE.

No. 454,955.

Patented June 30, 1891.



WITNESSES
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UNITED STATES PATENT OFFICE.

OLIVER WARREN JOHNSON, OF BUCYRUS, OHIO.

RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 454,955, dated June 30, 1891.

Application filed September 19, 1890. Serial No. 365,527. (No model.)

To all whom it may concern:

Be it known that I, OLIVER WARREN JOHNSON, a citizen of the United States, residing at Bucyrus, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in Railway-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.

This invention relates to railway-gates of that class which are constructed to swing laterally in operation, and which are projected across the roadway or crossing by the approaching train and opened by the train after it has passed a proper distance beyond the said roadway or crossing.

The purpose of the invention is to have the gate occupy as little space as possible; and to this end it is composed of a series of sections which are hinged together and which fold when the gate is open into a compact form.

A further purpose of the invention is to prevent the wedging or binding of a vehicle at the end of a gate or between the ends of two gates, when two are provided for a crossing in the usual way, in the event of the same closing at the moment the vehicle is passing between them, the gates being constructed so that their ends or outer portions will yield each way to permit the passage of the said vehicle in either direction and will return to a normal position after the vehicle has passed.

A further purpose of the invention is to improve the general construction of this class of gates, and provide means for controlling their speed, all of which is hereinafter more fully described and claimed, and shown in the annexed drawings, in which—

Figure 1 is a perspective view of a gate embodying my invention, showing the connection between it and the trip devices, whereby the gate is opened or closed from the passing train, parts being broken away. Fig. 2 is an enlarged broken view of the gate, showing it projected. Fig. 3 is a top plan view, parts being broken away. Fig. 4 is a detail view of the air-cylinder. Fig. 5 is a top plan view of the arm with which the piston-rod is connected.

The gate is composed of a series of sections A A', which have a hinge or pivotal connection between them, which hinge connection is formed by rod B, passing through plates that are extended from the opposing ends of the sections which comprise the gate, as shown. A crank *b* is provided at any suitable point on the rod B, preferably at the end, as shown, to facilitate the turning of the said rod on its axis to effect a folding or unfolding of the outer sections of the gate as it is opened or closed, in the manner which will be more fully disclosed hereinafter. A spring C is interposed between the rod B and the outer section of the gate, one end of the spring being fastened to the rod B and the other end to the outer section of the gate. The purpose of this spring is to form a yielding connection between the rod B and the outer section A', whereby the said section A' can be turned either to the right or the left, as required, and which will return the said section to a normal position after it is released. Any form of spring that will subserve the purpose can be employed, the spiral form being preferred in that it can be mounted on the rod B, and will admit of a great degree of movement of the said outer section of the gate. The gate proper is hinged to the gate-post D by rod E, which passes through suitable eyebolts *d* on the gate-post and on the end batten of the gate, as shown. The upper end *e* of the rod E is bent at right angles and secured to the end batten of the gate, so that the rod E and the gate will turn together.

The speed of the gate when opening or closing is controlled by a governor, which, as shown, comprises a cylinder F, having pivot *f*, by which the cylinder is journaled on bracket H, that is fastened on the post D, piston G, working loosely in the cylinder, piston-rod *g*, and the arm I, secured on the rod E and having the piston-rod *g* pivotally connected with its outer end. The cylinder F is practically tight, and the piston G is slightly smaller than the bore of the cylinder, so that in the travel of the piston the air on one side thereof will pass slowly to the other side, thereby controlling the motion of the gate.

The operation of the invention is as follows:

The rod E, being turned in any well-known manner from the approaching train by any suitable mechanism, as trip J, cable *j*, sheave L, cable *l*, and pulley M, swings or projects the gate across the roadway or crossing, and after the train has passed the said crossing it opens the said gate through the trip K, cable *k*, sheave L, cable *l*, and pulley M, as will be readily understood. The trip devices J and K and the connections between them and the rod E are, for the purposes of this application, of ordinary construction and are shown to illustrate the invention in operative relation with the other devices. The crank *b* on the rod B is connected with the arm N on the gate-post by the rod *n*, the parts being so proportioned and disposed that a swinging of the gate in one direction will effect an unfolding of the sections, and an opposite swinging of the said gate will cause the said sections thereof to fold. This result is effected by having the pivotal connections between the ends of the rod *n* and the crank *b* and arm N, respectively, out of line with the axis about which the gate and the sections of the gate turn, as will be readily understood. Instead of the connections *b n N* between the rod B and the post D, other connections may be employed to accomplish the same results, as sheave O on rod B and cable P, the latter passing around sheave O and secured at its ends to the gate-post D. (See dotted lines in Fig. 2.)

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. The combination of post D, the gate hinged thereto and composed of the sections A and A', the rod B, pivotally connecting the sections A and A', crank *b* and rod *n*, connecting the rod B with the post D, the spring secured at one end to rod B and at its other end to the outer section A', to hold the sections in alignment and permit the outer section to yield in either direction, the trip to be operated by the passing train, and connections, substantially as described, between the trip and the gate, as and for the purpose described.

2. In a railway-gate, the combination of the following instrumentalities: post D, the gate hinged to the post and composed of a series of sections, the rod B, pivotally connecting the sections A and A' of the gate, the spring C, having one end secured to the rod B and its other end fastened to the section A', crank *b* and rod *n*, connecting the rod B with the post D, and the air-cylinder F, pivoted on the post D, the piston in the cylinder having its rod connected with arm I on the rod E, which forms the hinge connection between the gate and the post D, substantially as set forth.

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

OLIVER WARREN JOHNSON.

Witnesses:

S. A. TERRY,

GEORGE E. TERRY.