

(No Model.)

3 Sheets—Sheet 1.

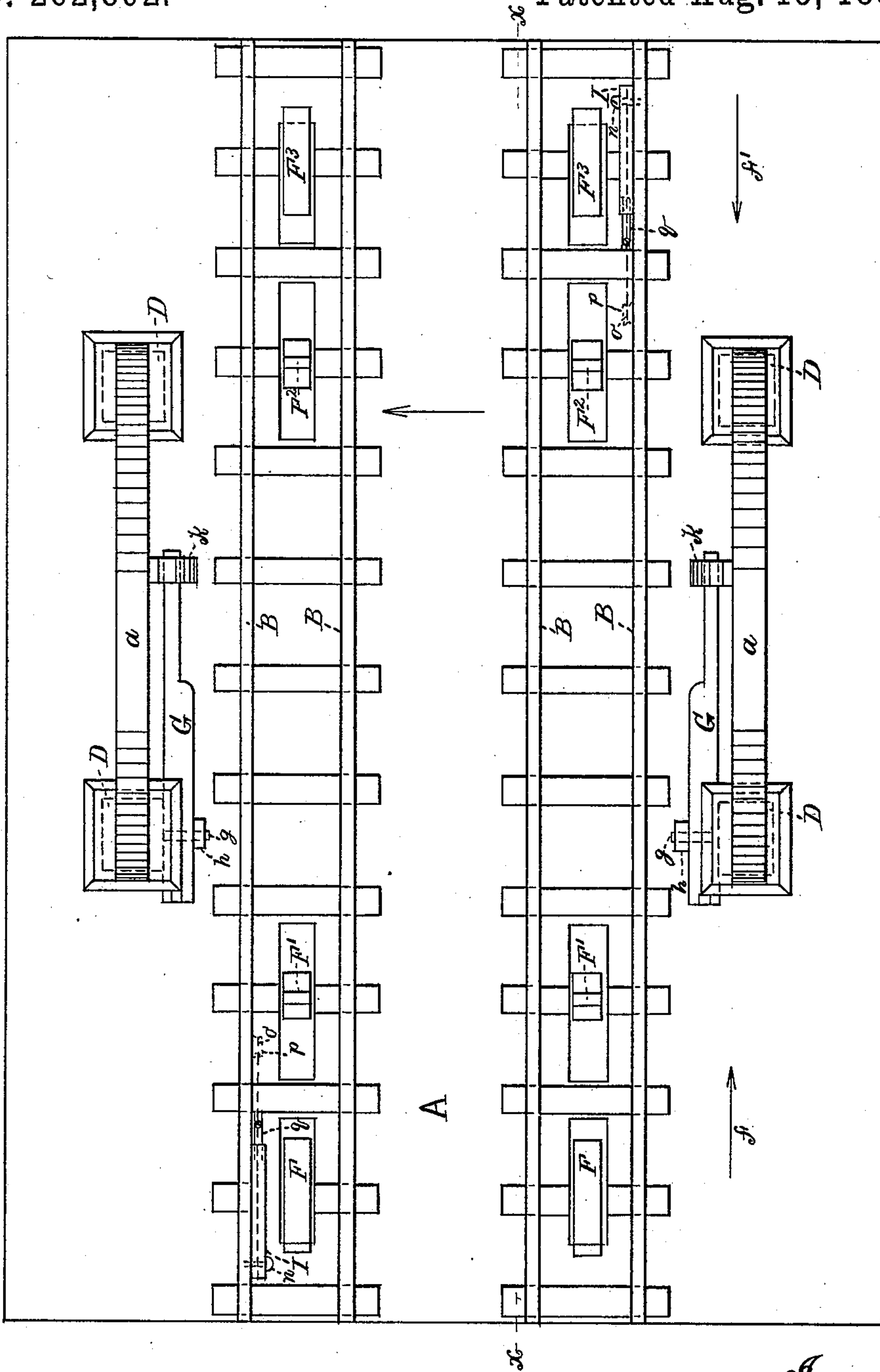
R. W. MAFFITT & J. BRANNAN.

RAILROAD GATE.

No. 262,802.

Patented Aug. 15, 1882.

FIG. 1



Witnesses.

Thomas J. Bewley.

C. B. McLeon.

Inventors.

Richard W. Maffitt.

John Brannan.

per. Stephen Ustick atty.

(No Model.)

3 Sheets—Sheet 2.

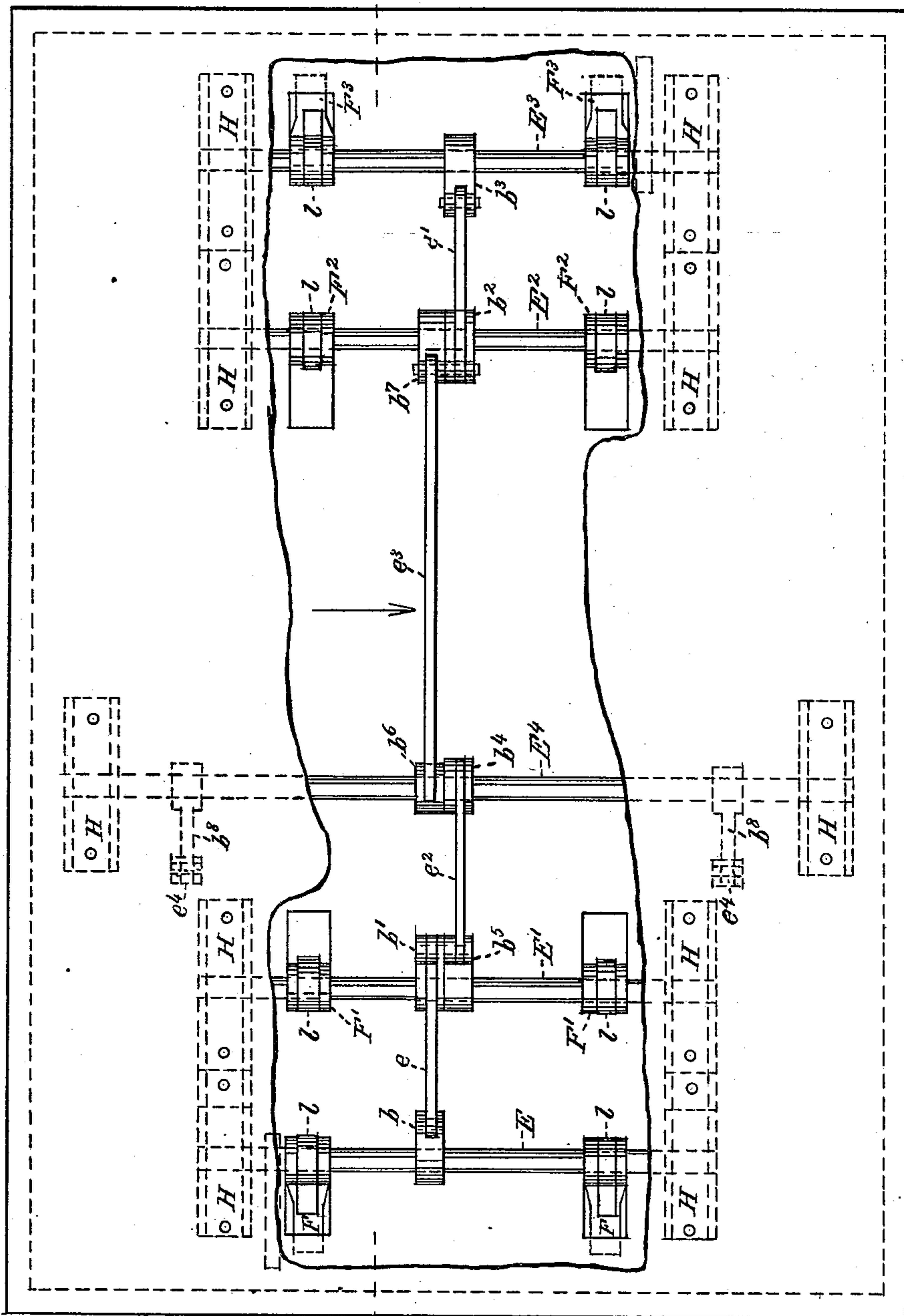
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FIG. 2



Witnesses

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(No Model.)

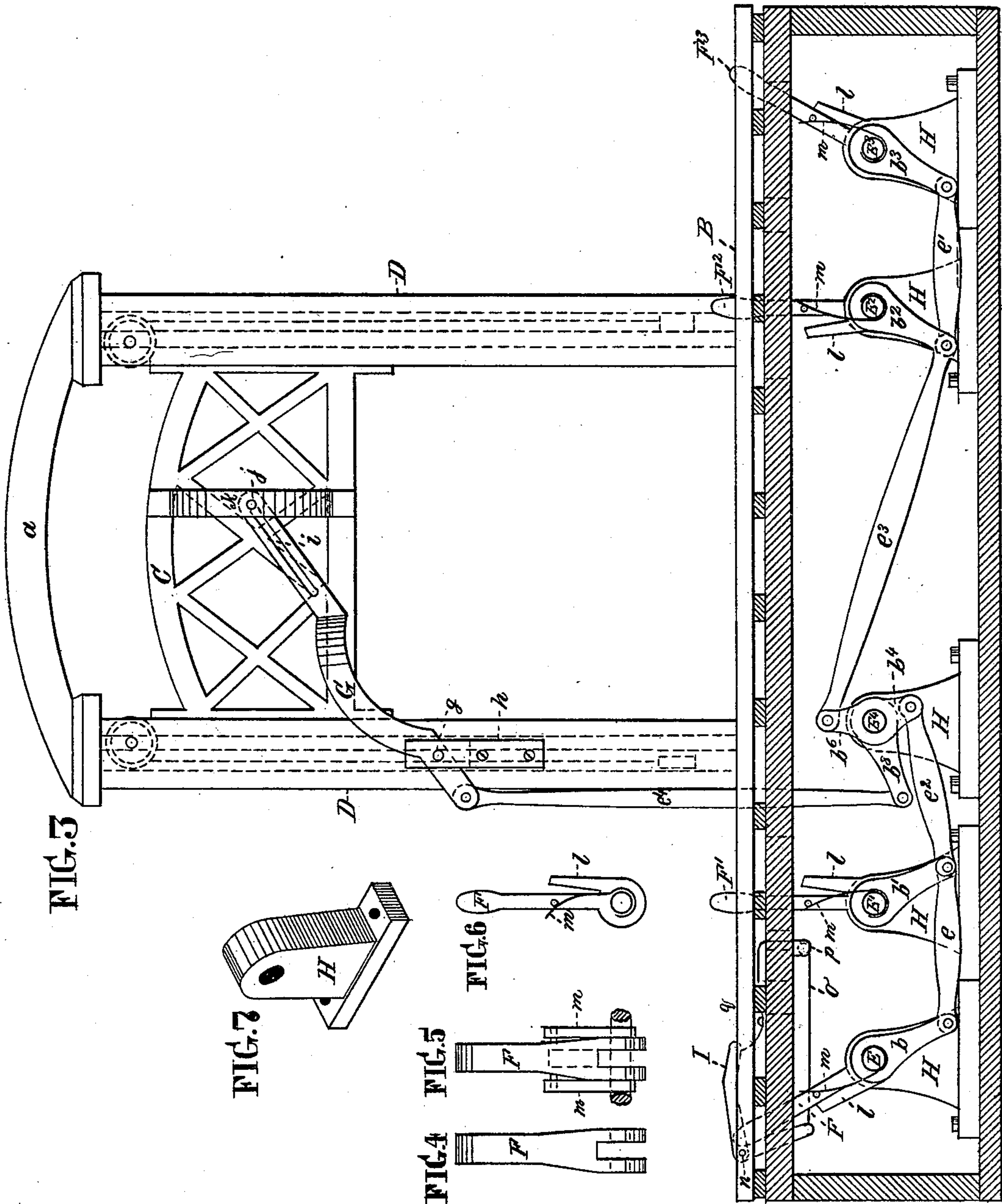
3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

RICHARD W. MAFFITT AND JOHN BRANNAN, OF PHILADELPHIA, PA.

RAILROAD-GATE.

SPECIFICATION forming part of Letters Patent No. 262,802, dated August 15, 1882.

Application filed August 31, 1881. (No model.)

To all whom it may concern:

Be it known that we, RICHARD W. MAFFITT and JOHN BRANNAN, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Railroad Safety Gates or Poles, of which the following is a specification.

The nature of our invention consists in the combination of two series of levers with any number of parallel and contiguous railroad-tracks, and with rock-shafts and connecting-rods for giving the downward and upward movements to the gates or poles at a railroad-crossing. Each series of levers is so located at such a distance from the crossing as to provide for the gates being lowered before the locomotive reaches them and raised after the last car of a train has passed. The levers of each section are in two sets, so constructed and combined that one set of each section is raised while the other is lowered, whereby trains may pass each way over any of the tracks without deranging the gates or injuring the machinery, as hereinafter fully described.

In the accompanying drawings, which make a part of this specification, Figure 1 is a plan view of our improvement in automatic railroad gates or poles. Fig. 2, Sheet No. 2, is a bottom view of the same. Fig. 3, Sheet No. 3, is a side elevation, partly in section, at the broken line *x x* of Figs. 1 and 2. Fig. 4 is a side elevation of one of the levers *F* detached from a rock-shaft, *E*. Fig. 5 is a like view of a lever *F* in connection with a rock-shaft, *E*, and the arm *b* of the shaft. Fig. 6 is an edge view of the same. Fig. 7 is an isometrical view of one of the pedestals *H*.

Like letters of reference in all the figures indicate the same parts.

A represents a portion of the road, having rails *B B* and *B B* of two parallel tracks, and gates *C C* at a crossing. The gates have their movements in vertical grooves of the posts *D D*, and are balanced by means of cords and weights over pulleys in the usual manner. The pairs of posts are provided with arch-braces *a a*.

E is a rocking shaft, having upright levers *F F* and a downwardly-projecting arm, *b*, and *E'* a like shaft, having levers *F' F'* and an arm, *b'*. The arms *b* and *b'* are connected to-

gether by means of the rod *e*. The rocking shafts are located at any suitable distance from the crossing for an automatic lowering of the gates before a locomotive, when running in the direction of the arrow *f*, reaches the crossing, or for the raising of the gates after the last car of a train running in the opposite direction (indicated by the arrow *f'*) has passed the crossing. For operating the gates on the approach of a train running in this direction there are levers *F² F²* and *F³ F³*, connected with the rock-shafts *E²* and *E³*, having arms *b²* and *b³*, which are connected together by means of the rod *e'*. These rock-shafts and levers are located a like distance from the crossing to that of the section above described, and for the same purpose.

E⁴ is an intermediate rock-shaft, having an arm, *b⁴*, which is connected with the arm *b⁵* of the rock-shaft *E'* by means of the rod *e²*, and it has an arm, *b⁶*, which is connected with the arm *b⁷* of the rock-shaft *E²* by means of the rod *e³*. This rock-shaft *E⁴* has arms *b⁸ b⁸* at its ends, which are connected with the lower ends of the connecting-rods *e⁴ e⁴*, the upper ends of which are jointed to the levers *G G*, which are hung on fulcrum-pins *g g*, held by the gate-posts *D D* and brackets *h h*. The free ends of the levers have slots *i i*, which connect with pins *j j*, held by the slotted brackets *k* on the gates *C C*.

The rocking shafts *E* to *E⁴*, inclusive, have their bearings in pedestals *H*, one of which is represented in Fig. 7 of the drawings.

The levers *F* to *F³*, inclusive, have slots in their lower ends, as seen in Fig. 4, to connect with the arms *l* of the rock-shafts *E'* to *E³*, inclusive, the levers being allowed to turn freely on the shafts to admit of being pressed upon the arms by the springs *m*, as represented, in their upright position, that they may have a yielding resistance, so that if two locomotives are running in opposite directions and one of them has lowered the gates *C C* the other one in approaching them will turn the levers down out of the way without injuring them, and when the stop of the locomotive has passed over them the springs will force them back to their upright position in which they had been previously set.

The operation is as follows: As a train is running on either track in the direction of the

arrow *f* toward the crossing having gates C C a stop projecting downward from the locomotive in striking one of the levers *F'* bears it downward into the reversed position which the lever *F* assumes in the drawings, and by means of the connection of the rock-shaft *E'* with the rock-shafts *E*, *E*², and *E*³, as above described, the levers *F*² are also borne downward, and the levers *F* and *F*³ are raised, and by means of the connection of the rock-shaft *E'* (with which the levers *F'* are connected) with the rock-shaft *E*⁴ its arms *b*³ are turned upward, giving an upward movement to the upright rods *e*⁴, whereby the gates C C are lowered to close the crossing until the locomotive reaches the levers *F*³ of the other series, which is so far distant (in practice) from the crossing that the last car of the train has passed it when the stop of the locomotive comes against the levers *F*³, then in their elevated position, and bears them down into the position they assume in the drawings, whereby the gates are raised to their elevated position out of the way. A like operation is produced when a train is running on either track in the direction indicated by the arrow *f'*, whereby the gates are brought to their lower position as the train approaches them and to their elevated position (seen in the drawings) when it has passed them.

When desired poles may be used instead of the gates, the poles being hung on the fulcrum-pins *g g*, which are used in the present instance for hanging the levers G G.

For the purpose of giving an alarm on the approach of a train there are bell-crank levers hung on fulcrum-pins *n n*, which project from rails B B of each track. To the lower end of each lever a wire, *o*, is connected, (one of which is shown in Fig. 3,) which passes around a pulley, *p*, and extends to a gong located at any convenient place, so that by the passage of the wheels of a locomotive or of the cars the levers, by being borne down, pull the wires, and thereby give movement to the hammers of the gongs and strike the alarms. After the wheels pass over the levers I springs *q* return them to their normal position.

We claim as our invention—

1. The combination of the rocking shaft *E*⁴, having arms *b*³ *b*³, rods *e*⁴ *e*⁴, levers G G, and gates C C, and mechanism, substantially as described, for operating the same, all as and for the purpose set forth.

2. The combination of the rocking shafts *E* and *E'*, having arms *b* and *b'*, connected together by means of the rod *e*, with the rocking shaft *E*⁴, having arms *b*³ *b*³, provided with upright rods *e*⁴ *e*⁴, respectively, the shafts *E'* and *E*⁴ having arms *b*⁵ and *b*⁴, respectively connected together by means of the rod *e*² for lowering and raising the gates C C by means of the levers G G or other suitable device, substantially as described.

3. The combination of the rocking shafts *E*², *E*³, and *E*⁴, having arms *b*², *b*³, *b*⁷, and *b*⁶, respectively connected by means of the rods *e'* and *e*³, whereby to impart simultaneous movements between the rocking shafts *E*, *E'*, *E*², and *E*³ to lower the levers *F'* and *F*² and raise the levers *F* and *F*³ simultaneously, and, vice versa, to provide for trains running in reverse directions over the tracks at the same time, substantially as above described.

4. In combination with the rock-shafts *E*, *E'*, *E*², and *E*³, each having a stationary arm, *l*, the slotted levers *F*, *F'*, *F*², and *F*³, fitting loosely on the rock-shafts, respectively, and the springs *m*, constructed and arranged as described, whereby the springs press the levers upon the arms when in their normal position to operate the rock-shafts when a train is running in a certain direction, and yield to the action of a locomotive to admit of their being turned down out of the way when two trains are running toward each other, and one of them has lowered the gates or poles, substantially as described.

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Witnesses:

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