

(No Model.)

J. H. FRAUMANN.  
AUTOMATIC RAILWAY GATE.

No. 561,509.

Patented June 2, 1896.

Fig. 1.

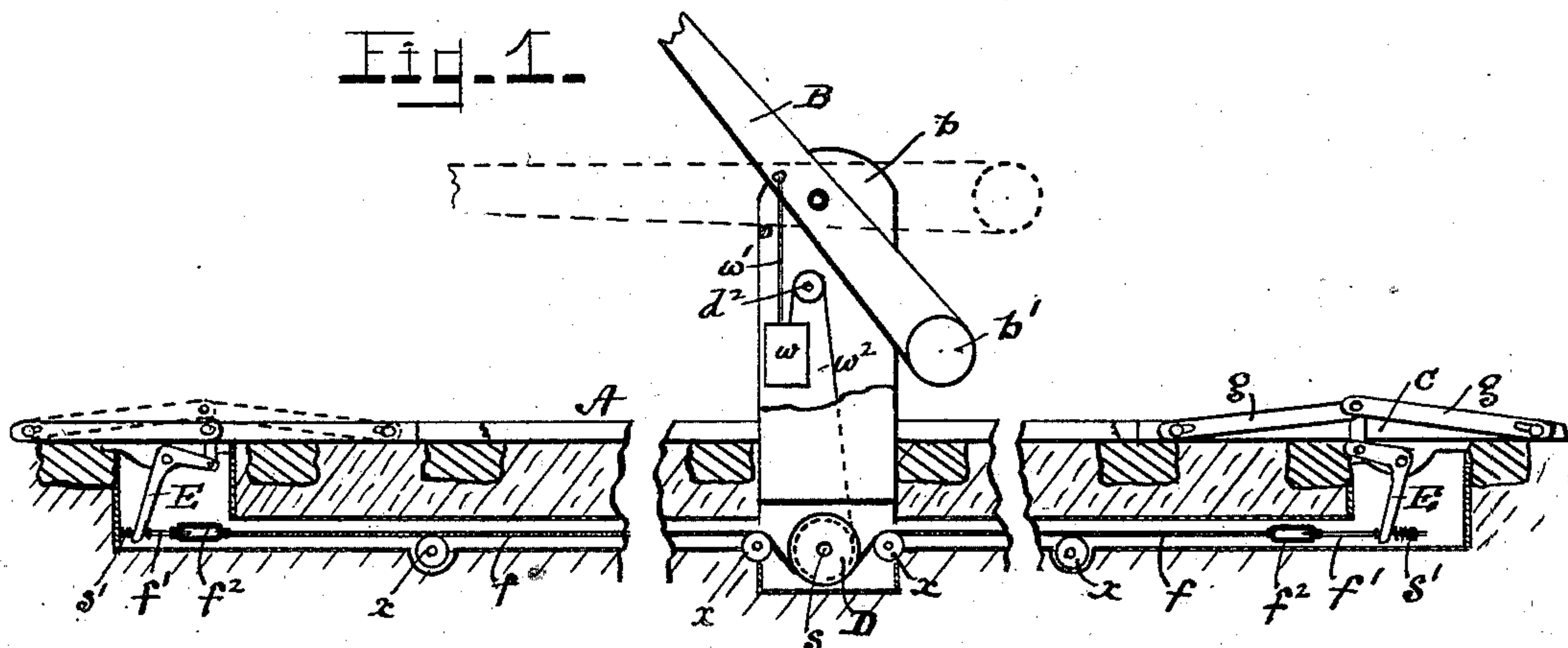


Fig. 2.

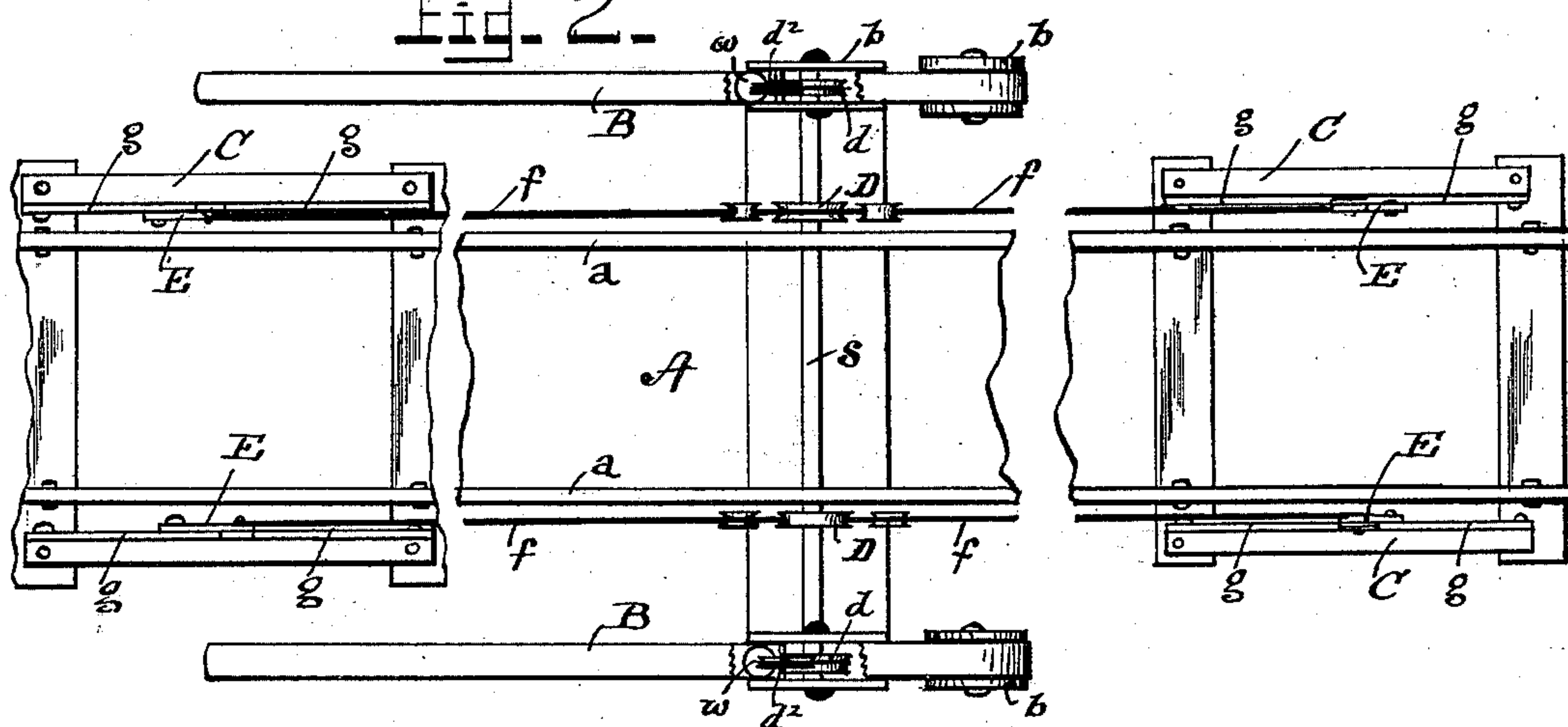
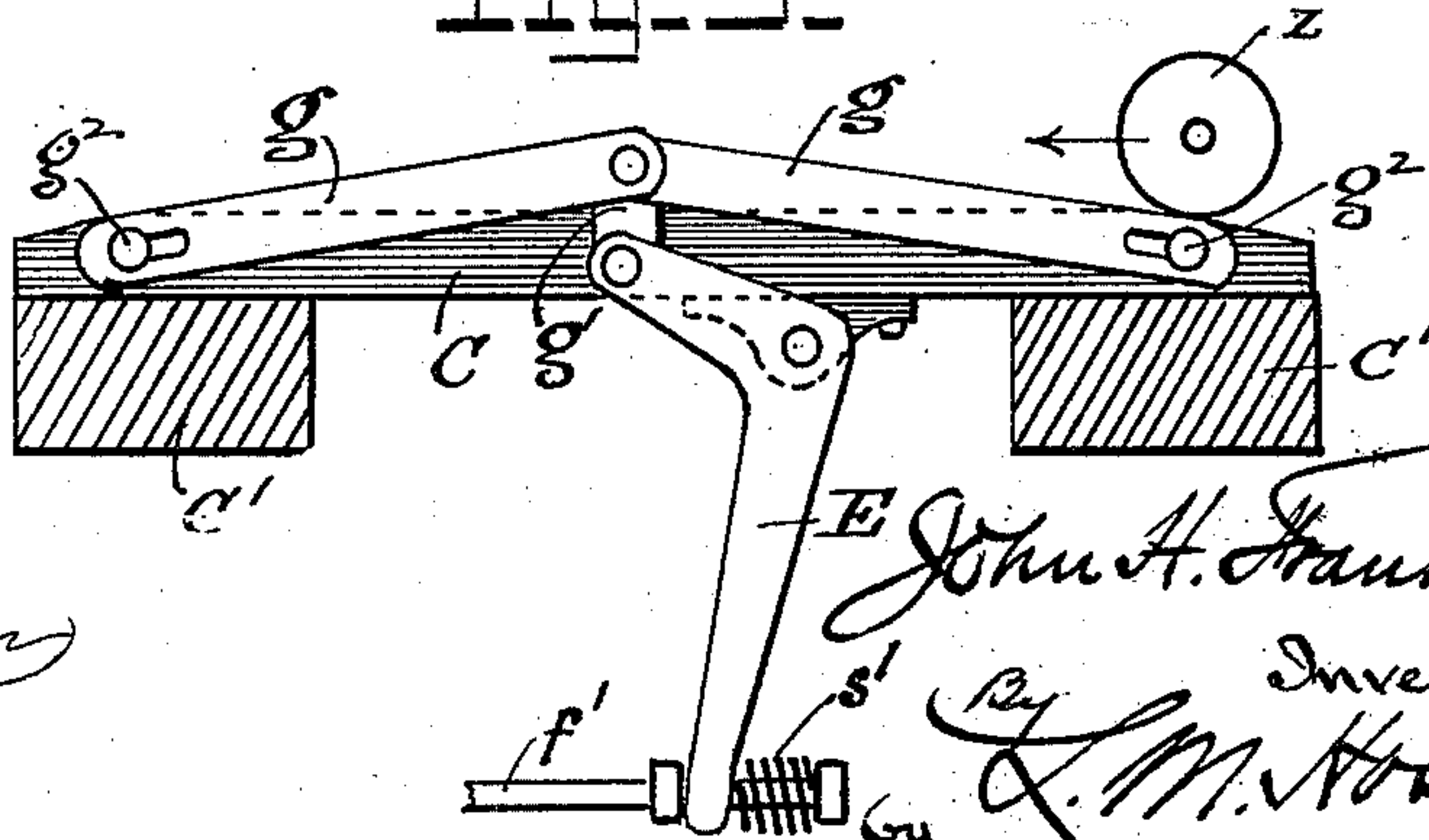


Fig. 3.



Witnesses:

Frank L. Bowman  
D. H. Thrasher

John H. Fraumann  
Inventor,  
By L. M. Horea  
att'y.



# UNITED STATES PATENT OFFICE.

JOHN H. FRAUMANN, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO  
ANDREW J. ENGLISH, OF SAME PLACE.

## AUTOMATIC RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 561,509, dated June 2, 1896.

Application filed October 14, 1895. Serial No. 565,675. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. FRAUMANN, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful  
5 Improvements in Automatic Railway-Gates, of which the following is a specification.

My invention relates to road-crossing gates for railways, its object being to provide such gates with operating mechanism whereby  
10 they will be automatically actuated by the passage of the trains upon the track.

Mechanism embodying my invention is illustrated in the accompanying drawings, in which—

15 Figure 1 is a side elevation of my device as applied to a railway; Fig. 2, a plan view of the same, and Fig. 3 a detail showing construction of the parts immediately actuated by the train.

20 Referring now to the drawings, A designates a railway with rails *a a*, and B B bars or "gates" pivoted on standards *b* to close down in the usual manner at the sides of the railway over a road crossing the railway.

25 The gate-bars are overweighted by weights *b'*, so as to stand normally up and free of the road-crossing, as indicated in Fig. 1, and are provided with counterweights *w*, suspended therefrom by a cord *w'*, which, when free to  
30 act, draw the gates down to the position indicated by dotted lines, Fig. 1.

The automatic mechanism here to be described acts solely upon the weight *w*, which by being left free operates the gates so that  
35 no sudden action may injure or disarrange the apparatus.

The actuating mechanism is as follows: The standards *b* are prolonged downwardly into boxes and furnish journal-bearings for  
40 a shaft *s*, extended between and into them, upon which are fastened actuating-pulleys D and windlass-pulleys *d*. To each of the latter is attached a cord *w<sup>2</sup>*, passing upward and over an idler-roller *d<sup>2</sup>*, and attached at  
45 its free end to the weight *w*. It will be apparent that by a partial rotation of the shafts *s* in one direction the weights *w* will be lifted, thus allowing the weights *b'* to raise the gates B, and that by a counter rotation of the shaft  
50 the weights *w* will be released and in falling draw down the gates B. This operation is

effected by the following connections: Attached at a given point to the periphery of each of the actuating-pulleys D is a cord *f*, (wire rope preferred,) extending outwardly  
55 in both directions parallel with the track (over guide-sheaves *x*, if necessary) and attached at each free end to a bell-crank lever E, constructed and connected as follows:

The lever E is pivoted to a plate or bar C, 60 fastened to suitable supports C' outside the trackway. The horizontal arm of the lever extends alongside of the plate, and its vertical arm projects downwardly. The attachment of the cord *f* to the vertical arm of the  
65 lever E is by a short rod *f'*, provided with a "turnbuckle" *f<sup>2</sup>* for taking up any slack in the cord, and this rod extends through the lever-arm and is there provided with a "tug-  
70 link" connection—that is to say, the rod extends loosely through the arm and is provided with a spiral spring *s'* at the opposite side of the arm bearing outwardly against a terminal head of the rod. The object of this construction will presently be explained. 75

The free end of the horizontal arm of the bell-crank is pivoted to or connected by a link *g'* with the ends of two arms *g g*, which extend thence outwardly in opposite directions adjacent to the bar or plate C, and are  
80 secured thereto by studs *g<sup>2</sup>*, entering horizontally-elongated slots of the arms. The arrangement is such that when in position to be acted upon by the train the inner ends of the arm stand above the level of the plate, as  
85 indicated at the right-hand side of Figs. 1 and 3, so as to be depressed by a roller *z*, suitably attached to the locomotive. It will be seen that by this arrangement when the roller *z* forces down the arms *g* at one side of the cross-  
90 ing the vertical arm of the lever E is thrown backward, (any sudden shock being eased by its tug-link connection,) and thus actuates the weight *w*.

A complete set of actuating connections is 95 arranged at each side of the road-crossing at the same side of the railway-track, connected in relatively opposite relations with the pulley D, so that a train approaching a crossing closes the gates and on leaving the crossing 100 opens them by means of an actuating device upon the locomotive. In case of a single



track, upon which trains run in both directions, the actuating connections at both sides of the road-crossing are duplicated at opposite sides of the track.

- 5 In case of a double trackway, with trains moving upon each in one direction only, one complete set of the devices as above described is arranged at the outer side of each track.

10 The roller *z* is arranged upon one side of the locomotive—for example, in connection with the “pilot”—in such position as to operate the bell-crank *E* in passing. In these cases the attachment of the cord or rope *f* at opposite sides of the track is at relatively op-  
15 posite points in the peripheries of the wheel, so that the action is alternating.

I claim as my invention and desire to secure by Letters Patent of the United States—

- 20 1. In railway-gate apparatus, the combination of a pivoted gate overweighted to remain normally open, an independent movable controlling-weight hung to the gate in opposite relation to its normal overweight, an independent lifting connection from said in-  
25 dependent weight to a controlling device adjacent to the track at one side of the road-crossing adapted to be operated by a train, and a connection thence to a similar controlling device at the same side of the track be-  
30 yond the road-crossing and acting in reverse, substantially as set forth.

- 35 2. In railway-gate apparatus, the combination of a pivoted gate, overweighted to stand normally open, an independent movable controlling-weight suspended therefrom in opposite relation to its normal overweight, connec-

tions from said controlling-weight in opposite directions to actuating devices adapted to be operated by a passing train, and arranged in pairs, at opposite sides of the track and at  
40 opposite sides of the road-crossing; the actuating devices of each pair being interconnected so that the approach of a train actuates the proximate controlling device to de-  
45 press the gate and elevate the opposite controlling device of its pair into the path of the train for actuation, and the actuation of the last-mentioned controlling device opens the gate and resets the initial controlling device  
50 of the pair for a new action, substantially as set forth.

3. In an automatic gate-closing device, in combination with an overweighted gate adapted to stand normally open, a counterweight  
55 controlling the gate in opposition to its overweight, a lifting-cord independently connected to said counterweight, a winding-drum to which the cord is also connected, an actuating-cord wound upon said winding-drum  
60 and attached at opposite sides of the road-crossing to two actuating devices adjacent to the track, moving simultaneously in opposite directions—one by means of the other through the medium of the connecting-cord, substan-  
65 tially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN H. FRAUMANN.

Witnesses:

L. M. HOSEA,

FRANK K. BOWMAN.