

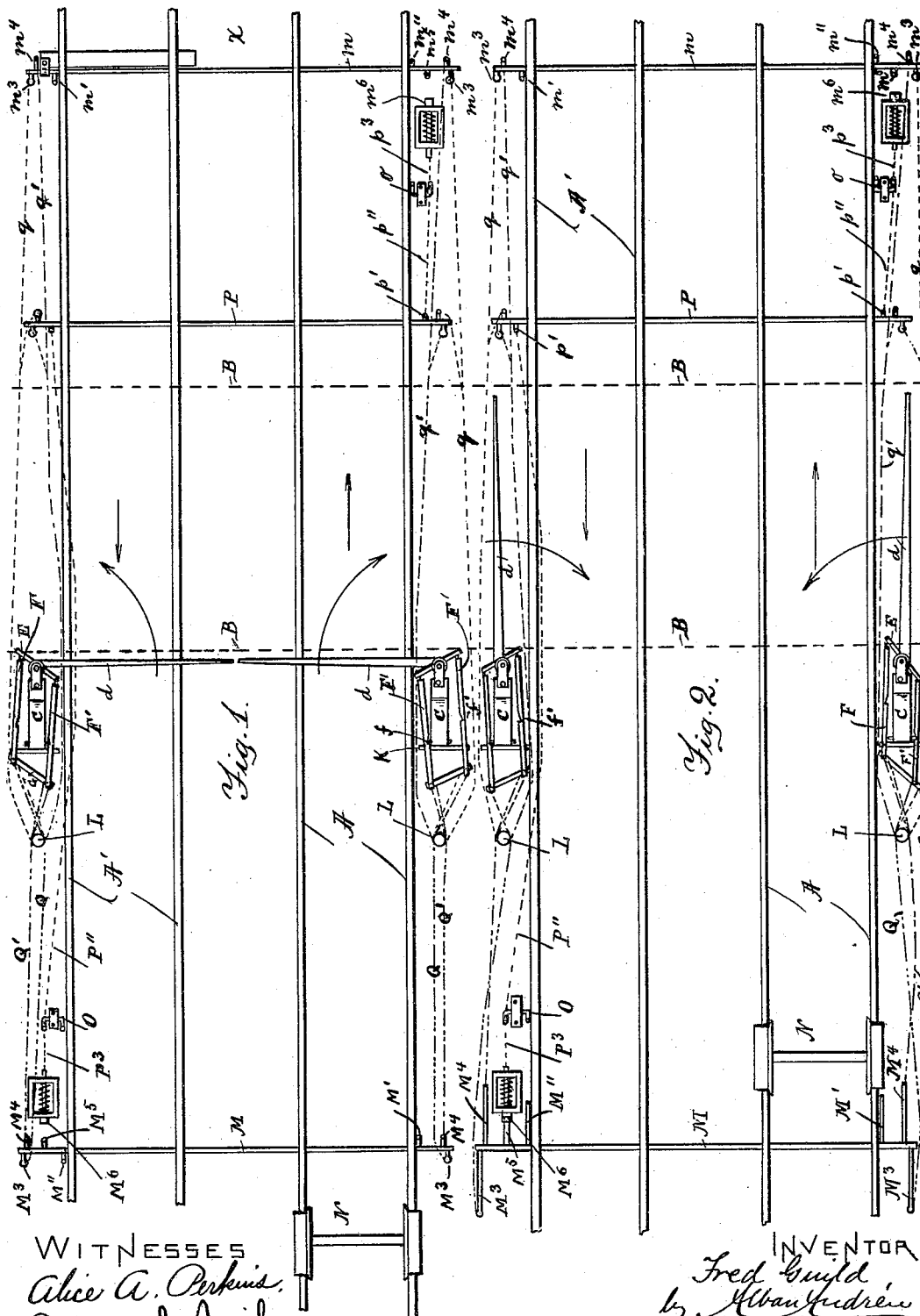
(No Model.)

2 Sheets—Sheet 1.

F. GUILD.
AUTOMATIC RAILWAY GATE.

No. 466,165.

Patented Dec. 29, 1891.



WITNESSES
Alice A. Perkins.
Emma J. Smith

INVENTOR
Fred Guild
by *Alban Andrieu*
his ATTY.

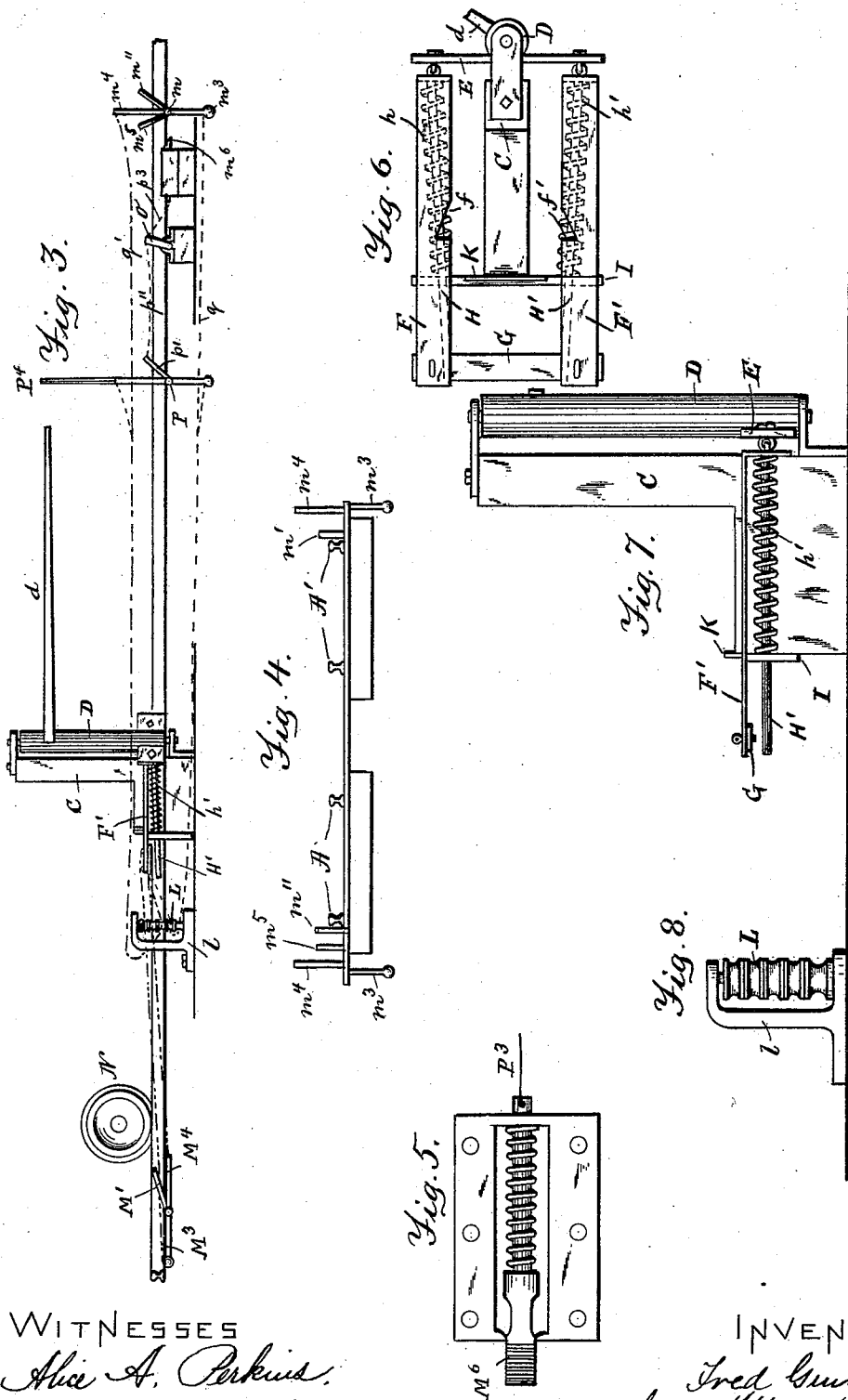
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UNITED STATES PATENT OFFICE.

FRED GUILD, OF CANTON, ASSIGNOR OF ONE-HALF TO LOWELL M. REYNOLDS, OF BROCKTON, MASSACHUSETTS.

AUTOMATIC RAILWAY-GATE.

SPECIFICATION forming part of Letters Patent No. 466,165, dated December 29, 1891.

Application filed April 18, 1891. Serial No. 389,534. (No model.)

To all whom it may concern:

Be it known that I, FRED GUILD, a citizen of the United States, and a resident of Canton, in the county of Norfolk and State of Massachusetts, have invented new and useful Improvements in Automatic Railway-Gates, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in mechanically-operated railway-gates adapted to be automatically opened, closed, and locked in position by the passing of trains, as will hereinafter be more fully shown and described, reference being had to the accompanying drawings, wherein—

Figure 1 represents a plan view of the device, showing the gate closed to the railroad-track and open to the highway, street, or crossing. Fig. 2 represents a similar plan view, showing the gate open to the railroad-track and closed to the highway, street, or crossing. Fig. 3 represents a side elevation of Fig. 2. Fig. 4 represents an end view as seen from X in Fig. 1. Fig. 5 represents a detail plan view of the spring-latch for holding the gate open to the railroad-track after being so opened and until the train has passed beyond the street or highway. Fig. 6 represents a detail plan view of the spring-pressed locking-links and connecting mechanism for holding the gate in either of its two open and closed positions. Fig. 7 represents a detail side elevation of the gate-post and said spring-pressed locking-links, and Fig. 8 represents a detail side elevation of one of the pulleys on which the chains or wire ropes are guided.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

In Figs. 1, 2, and 4, A and A' represent a pair of parallel railroad-tracks, and the dotted lines B in Figs. 1 and 2 represent a street or highway crossing said tracks on a level.

C C represent suitable standards provided with bearings or equivalent devices, in which the gate-posts D are pivoted.

d d represent suitable gates or bars secured to the said gate-posts D D, as shown. To each

gate-post D is secured a cross-bar E, to the ends of which are hinged in a suitable manner the links or rods F F', having their rear ends loosely connected to a cross-bar G, as shown in detail in Figs. 6 and 7.

f f' are locking notches or recesses on the respective links F and F', as shown in Figs. 1, 2, and 6, the purpose of which will hereinafter be described. To the forward end of the links F and F' are pivoted the respective rods H and H', (shown in dotted lines in Fig. 6,) which rods are surrounded, respectively, by the springs h and h', the forward ends of which press against the forward ends of the links F and F'. The rear ends of said springs press against a stationary bar I, secured to the standard C or other stationary part, and through perforations in said bar I the rods H and H' pass loosely.

To the standard C is secured a lateral locking-plate K, adapted to be locked into either of the notches f f', according to the position in which the gate is to be held, as shown in Figs. 1 and 2.

L L are rollers or pulleys, preferably pivoted to stationary standards or brackets l l, Fig. 8, on which the connecting chains, ropes, or wires are guided, as will be more fully described.

M and m are shafts located in suitable bearings below the rails of the tracks, one of said shafts being arranged on one side of the highway B and the other shaft on the opposite side of the latter and at such distances from the highway as may be most practical and desirable or according to the length of the train that is to be guarded. On the shaft M is secured a projection M', which is arranged in very close proximity to one of the rails on the track A, so as to cause it to be actuated and its shaft rocked by the wheel of the train N, Figs. 1 and 2, passing over such projection. M'' is a similar projection on the shaft M, which is arranged in close proximity to one of the rails on the track A', as shown in Figs. 1 and 2. The shaft M is normally held in position with its projections M' M'' pointing upward, and this is done,

preferably, by means of weighted levers M^3 M^3 , secured to said shaft, as shown in Figs. 1 and 2. On the shaft M is arranged another set of levers M^4 M^4 , diametrically, or nearly so, opposed to the weighted levers M^3 M^3 .

M^5 is a locking projection secured to the shaft M for a purpose which will hereinafter be described.

m' , m'' , m^3 , m^4 , and m^5 are corresponding levers and projections on the shaft m .

Outside of the track A' and in close proximity to one of its rails is journaled in a suitable bearing a U -shaped lever O , as shown in Figs. 1 and 2, and o is a similar device on the track A .

M^6 is a spring-pressed locking-pawl arranged in a bearing outside of the track A' and opposite to the locking projection M^5 on the shaft M , which pawl is normally forced outward by means of a suitable spring, as shown in Figs. 1 and 2. m^6 is a similar spring-pressed locking-pawl arranged outside of the track A and opposite to the projection m^5 on the shaft m , as shown in Figs. 1 and 2.

Between the highway B and the rock-shaft m I prefer to arrange a shaft P , which is journaled in bearings below the rails of the tracks A and A' and has attached to it arms P' and p' , connected, respectively, by means of chains or wire ropes P'' and p'' to the respective U -shaped levers O and o , which latter are connected, respectively, by means of chains or ropes P^3 p^3 to the spring-pressed pawls M^6 m^6 , as shown.

Q is a chain or rope leading from the arm M^3 to the rear end of the link F' , and Q' is a similar chain or rope leading from the arm M^4 to the rear end of the link F , as shown in Figs. 1 and 2. Said chains or ropes Q Q' are guided on the pulley or roller I , as shown. g and g' are similar ropes or chains connecting, respectively, the arms m^3 and m^4 with the rear ends of the links F' and F , which chains or ropes are bent and guided around the rollers or pulleys L I , as shown in Figs. 1 and 2.

The operation of the device is as follows: The gates d d are normally held in position as shown in Fig. 1—that is, closed to the railway and open to the highway. If a train N comes on the track A in the direction of arrow shown in Fig. 1 on said track, the wheels on the train come in contact with the projection M' , causing shaft M to be rocked and the projection M^5 thereon to be locked with the spring-pressed pawl M^6 , as shown in Fig. 2. During such rocking motion of the shaft M its arms or levers M^3 M^3 cause a pulling strain to be exerted on the chains Q Q , causing the links F F to be released from the locking projections K , and causing the gates d d to swing to the positions shown in Fig. 2, the springs h h aiding in swinging the gates to such positions. During such motion of the gates the springs h' h' are compressed until the links F' F' are locked to the projections K K by

the pulling strain on the chains Q Q . The gates are thus kept closed to the highway just previous to and during the passing of a train. After the train has passed the highway or crossing its wheels come in contact with and depress the U -shaped lever o , which is connected by chains p'' P'' and shaft P to the spring-pressed pawl M^6 , causing the latter to be released from the projection M^5 on the shaft M and allowing the latter to swing to its normal position, with the projections M' and M^5 pointing upward, or nearly so, by which the device is set ready for the action of another train. After the train has acted on lever o , as above stated, it comes in contact with the lever or arm m'' on the shaft m , by which the latter is rocked, causing the ropes or chains g' g' to be pulled, the links F' F' to be released, and the gates d d swung to the locked position shown in Fig. 1, and so on. A similar action takes place if a train travels in the direction shown by arrow on track A' . The gates d d , as they close the railroad-track, swing from the highway toward the former, and when the highway is to be closed the said gates are swung from the track toward the highway, by which great safety is obtained in the working of the gates.

Instead of moving in a horizontal plane, the gates may be swung in a vertical plane or otherwise without departing from the essence of my invention. If so desired, the gates may be worked also by hand by means of a lever P^4 on the shaft P and connections from arms on said shaft to the chains g g' , as shown in Figs. 1, 2, and 3.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

1. The combination, in a railway-gate, of transverse rotating shafts arranged on opposite sides of the highway or crossing and provided with rigid locking projections and rigid projections to be actuated by a train, spring-pressed pawls for engaging the locking projections on the shafts, pivoted gates, connections between the gates and shafts, and lever mechanism operated by the train to release the locking-pawls from the locking projections of the shafts, substantially as described.

2. The combination of a pivoted railway-gate having a cross-bar E secured thereto, the rods H H' , pivoted to the cross-bar, the locking-links F F' , arranged to slide on the rods, the springs h h' , arranged on the rods and acting on the locking-links to assist in opening and closing the gate, the transverse rotating shafts having rigid projections to be actuated by a train, the chains or ropes connected with the transverse shafts and with the locking-links, the spring-pressed locking-pawls for engaging the transverse shafts, and devices operated by the train to release the locking-pawls from the shafts, substantially as described.

3. A pivoted railway-gate having a cross-

bar secured to it, locking-links adapted to
slide on rods pivoted to said bar, springs ar-
ranged on said rods to assist in opening and
closing the gate, and a locking device for se-
5 curing the gate in its open and closed posi-
tion, substantially as and for the purpose set
forth.

In testimony whereof I have signed my

name to this specification, in the presence of
two subscribing witnesses, on this 14th day of 10
April, A. D. 1891.

FRED GUILD.

Witnesses:

ALBAN ANDRÉN,
ALICE A. PERKINS.