

No. 881,654.

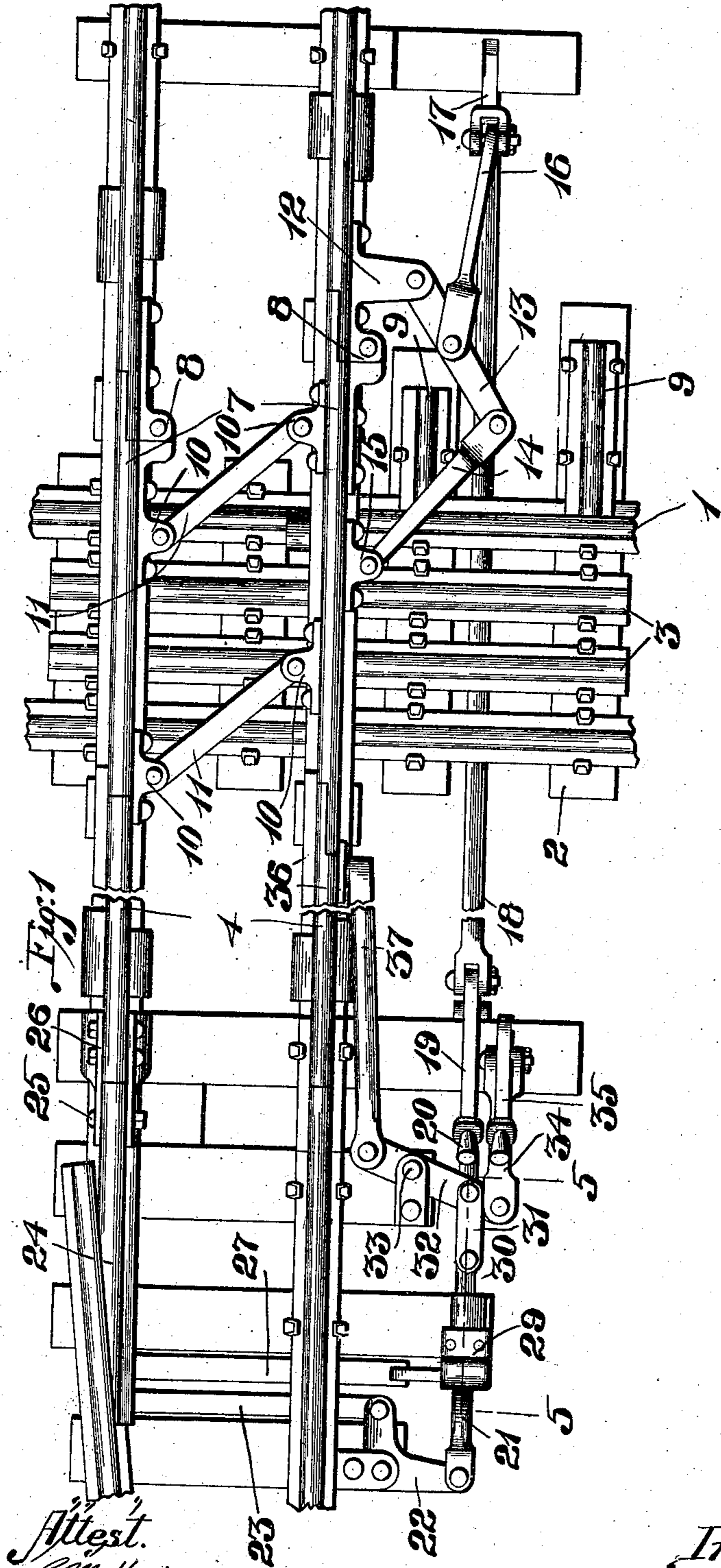
A. BERTRAND.

PATENTED MAR. 10, 1908.

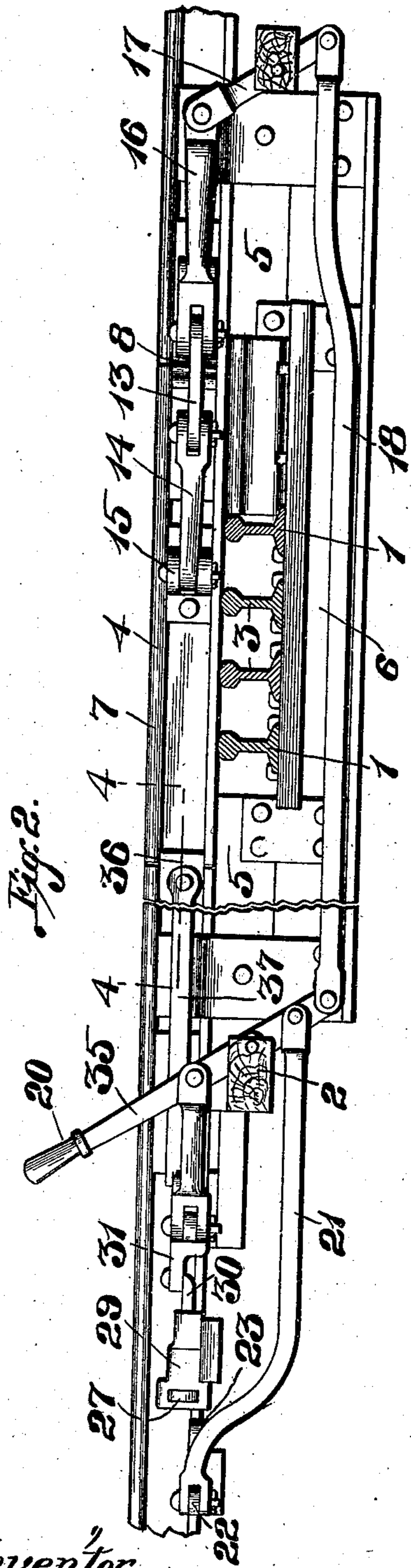
RAILWAY CROSSING.

APPLICATION FILED AUG. 26, 1907.

2 SHEETS—SHEET 1.



Attest.
E. M. Harrington
W. P. Smith



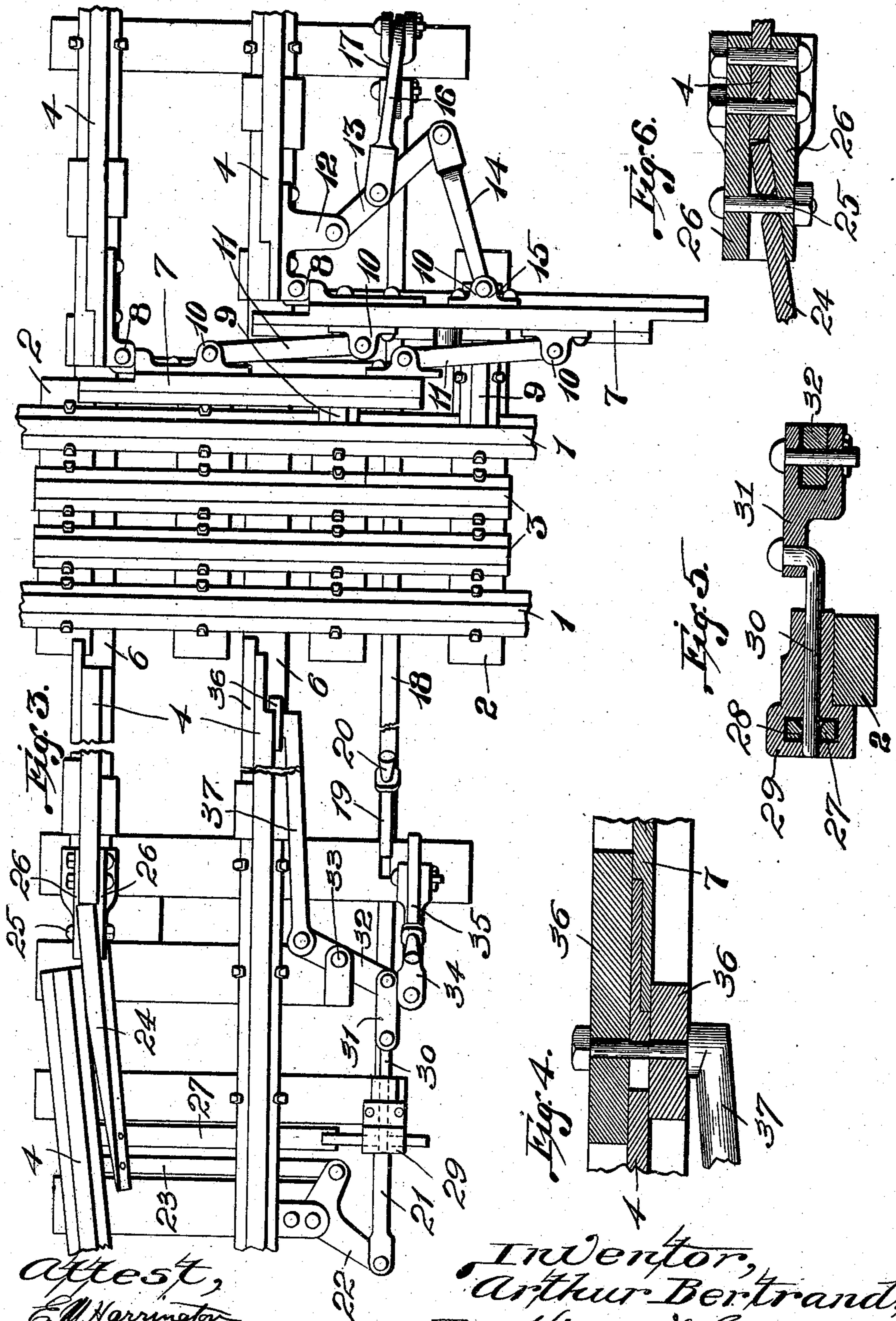
Inventor:
Arthur Bertrand
by Nigdon & Longan ATTYS.

No. 881,654.

A. BERTRAND.
RAILWAY CROSSING.
APPLICATION FILED AUG. 26, 1907.

PATENTED MAR. 10, 1908.

2 SHEETS—SHEET 2.



Attest,
E. M. Harrington
W. O. Smith

Inventor,
Arthur Bertrand,
By Higdon & Lougan,
Attys.

UNITED STATES PATENT OFFICE.

ARTHUR BERTRAND, OF KANKAKEE, ILLINOIS, ASSIGNOR TO JOSEPH E. BOWMAN, OF EVANSVILLE, INDIANA.

RAILWAY-CROSSING.

No. 881,654.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed August 26, 1907. Serial No. 390,233.

To all whom it may concern:

Be it known that I, ARTHUR BERTRAND, a citizen of the United States, and resident of Kankakee, Kankakee county, Illinois, have
5 invented certain new and useful Improvements in Railway-Crossings, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming
10 a part hereof.

My invention relates to a railway crossing, and the object of my invention is to construct a railway crossing particularly adapted for steam and interurban railways where-
15 in the main track rails remain intact at the crossing point, thus eliminating all jar, pounding, and noise incident to the travel of car wheels over crossing rails which are cut or grooves for the flanges of the wheels
20 traversing the crossing track.

A further object of my invention is to eliminate the tendency of accident due to car wheels leaving the track at a crossing as a result of jumping due to the impact of the
25 flanges of the wheels against the crossing tracks.

A further object of my invention is to arrange the rails of the crossing track above the rails of the main track, and to hinge portions of the crossing rails in such a manner
30 as that they be readily shifted into positions at right angles with the main track rails, thus leaving the main track open; and which hinged portions of the crossing track are
35 rigidly locked in both open and closed positions.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be
40 hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a plan view of a crossing of my improved construction, and showing the rails
45 of the crossing track in position above the rails of the main track; Fig. 2 is an elevation of the crossing; Fig. 3 is a plan view of the crossing with the crossing rails swung to one side, and the main track rails open; Fig. 4 is
50 a horizontal section taken on the line 4—4 of Fig. 2; Fig. 5 is an enlarged detail section taken on the line 5—5 of Fig. 1; Fig. 6 is a horizontal section of the hinged end of a derailing rail made use of in connection with the
55 crossing track rails of the crossing.

Referring by numerals to the accompanying drawings:—1 designates the main track rails, which are rigidly fixed in the usual manner to ties 2, and arranged between said
60 main track rails, at the crossing, are auxiliary rails 3, which form a support for the hinged portions of the crossing rails; which, when in position, lie immediately upon the tops of the main track rails 1 and auxiliary
65 rails 3.

The rails 4 of the crossing track are supported in such a manner as that their ends adjacent the track rails 1 occupy a plane just above the tops of said main track rails, and the ends of said crossing track rails are
70 so supported by blocks 5, which are united by stringers or sills 6, which occupy positions immediately beneath the main track rails 1.

Hinged to the ends of the crossing track
75 rails 4, to one side of the main track, is a pair of rail sections 7, which are of such length as to fit the space between the adjacent ends of the crossing track rails; and the ends of said rail sections being so con-
80 structed as to tightly fit by lap joints on the corresponding ends of the crossing track rails.

The hinges 8 which connect the rail sections 7 to the crossing track rails are so
85 arranged as that said rail sections 7 will swing horizontally to one side so as to lie at right angles to the crossing track rails and parallel with the main track rails; and arranged to one side of one of the main track
90 rails is a pair of short auxiliary rails 9, which support the rail sections 7 when the same are swung into an open position.

Fixed to the inner faces of the rail sections 7 are blocks 10, and connecting said blocks
95 in pairs is a pair of diagonally disposed parallel links 11, by means of which said rail sections 7 are caused to swing uniformly.

Fixed to the outside face of one of crossing track rails 4 is a bearing 12, and pivotally
100 connected thereto is a lever 13, to the outer end of which is pivotally connected one end of a link 14, the opposite end of which is connected to a block 15 fixed to the outer face of the longer one of the rail sections 7.
105

Pivotally connected to the center of the lever 13 is one end of a link 16, the opposite end of which is pivotally connected to the upper end of a vertically disposed lever 17, which is fulcrumed at the center to one of
110

the cross ties beneath the crossing track rails, and the lower end of said lever is pivotally connected to a connecting rod 18, which extends beneath the main track rails and terminates at a point a suitable distance away from the main track, on the side opposite from the lever 17.

Pivotally mounted on one of the cross ties, beneath the crossing track rails adjacent the end of the rod 18 is a vertically disposed lever 19, the upper end of which is provided with a handle 20, and the lower end being pivotally connected to the rod 18; and pivotally connected to the lever 19, between its fulcrum point and lower end is one end of a connecting rod 21, which extends parallel with the crossing track rails and away from the main track rails; and the opposite end of this rod 21 is pivotally connected to one end of a bell crank 22 fulcrumed on the end of one of the cross ties beneath the crossing track rails. The opposite end of this bell crank 22 is pivotally connected to one end of a transversely arranged bar 23, which extends beneath the crossing track rails, and its opposite end being pivotally connected to the point of a derailing rail 24, forming a part of one of the crossing track rails, and having its opposite end hinged upon a pin 25 fixed in plates 26, which are rigidly secured in any suitable manner to one of the crossing track rails.

Pivotally connected to the point of the derailing rail 24, and extending parallel with the bar 23, is a bar 27, the end of which terminates immediately in front of the bell crank 22, and said end being provided with a pair of horizontally arranged apertures, such as 28, and said end operates through a housing 29 fixed on the end of one of the cross ties.

Arranged to slide through the housing 29 and engaging in either one of the apertures 28 is a locking pin 30, the forward end of which is pivotally connected to a link 31, which latter is pivotally connected to a horizontally disposed lever 32, fulcrumed at 33 to one of the cross ties, and the outer end of said lever being connected by a link 34 to a vertically disposed hand lever 35 positioned adjacent the lever 19, and said hand lever 35 being fulcrumed at its lower end to one of the cross ties.

A pair of locking plates 36 are arranged to slide on the web of one of the crossing track rails, adjacent the end against which the free end of the longer rail section 7 engages, which locking plates when moved forwardly into a locked position engage both faces of the meeting ends of said rail sections 7 and the crossing track rail, and connected to these locking plates 36 is the forward end of a rod 37, the end of which is pivotally connected to the inner end of the lever 32.

When the main track is open, the various

parts of the crossing are in the positions as seen in Fig. 3, with the rail section 7 swung at right angles to the crossing track rails, thus leaving said main track rails free and open; and when the various parts are so positioned, the derailing rail 26 is swung into an open position away from the crossing track rail against which it normally engages, and the various parts are locked in their open positions by swinging the upper end of the hand lever 35 rearwardly, which action forces the locking pin 30 into the inner one of the pair of apertures 28, which action holds the bar 27 against lateral movement, and consequently locks the bar 23, bell crank 22, rod 21, lever 19, rod 18, and parts actuated thereby. A train is now free to travel at full speed over the main track rails of the crossing without extraordinary jar, or noise, and should the engineer of a train on a crossing track fail to notice the open crossing and attempt to pass the portion of the track in which the derailing rail is located, the engine or car will be derailed from the crossing track, thereby avoiding a wreck at the crossing, which would interfere with traffic on the main line and cause much greater damage to the car or engine than if the same were derailed at a predetermined point adjacent the crossing.

When it is desired to effect a crossing on the crossing rails, the hand lever 35 is moved so as to withdraw the locking pin 30 from the aperture 28 in which it is positioned, and which action moves the locking plates 36 rearwardly upon the end of the crossing track rail on which they are mounted; and, after this unlocking movement has been effected, the handle 20 on the upper end of the lever 19 is engaged, and said lever shifted so as to move the rods 18 and 21 longitudinally; and, by so doing, the bell crank 22 is actuated to move the point of the derailing rail 24 against the adjacent crossing track rail, and, at the same time, the bar 27 is shifted so as to bring the outer one of the apertures 28 into alinement with the locking pin 30. This shifting of the lever 19 reverses the position of the lever 17, which movement actuates the link 16, lever 13, and lever 14, thus swinging the rail section 7 horizontally into alinement with the crossing track rails, after which the parts are locked by reversing the position of the lever 35, which causes the locking bolt 30 to engage in the outer one of the apertures 28, and moves the locking plate 36 against the sides of the free end of the longer one of the rail sections 7. The engine or car is now free to pass over the rails of the crossing track, and while passing over the main track rails, the rail sections 7 are supported by the auxiliary rails 3, and the lap joints at the ends of the rail sections 8 prevent undue noise and vibration as the engine or car passes over the crossing rails.

A railway crossing of my improved construction is easily operated, particularly adapted for use on steam and interurban electric roads, and by its use greatly reduces the noise and jar incident to cars passing at high speed over the track rails of a crossing, and the liability of wrecks occurring at the crossing is greatly lessened.

I claim:—

10 1. A railway crossing, comprising main track rails, crossing track rails arranged in a plane above the main track rails, a pair of rail sections of the crossing track rails immediately above the main track rails hinged
15 at one end so as to swing horizontally relatively to said crossing track rails, and which crossing rail sections are of such length as to extend continuously across both the main track rails, means whereby said hinged rail
20 sections are shifted from one position to another, and means whereby the hinged rails and shifting means are locked in both open and closed positions.

25 2. A railway crossing, comprising main track rails, crossing track rails arranged in a plane above the main track rails, a pair of rail sections of the crossing track rails immediately above the main track rails hinged at one end so as to swing horizontally rela-
30 tively to said crossing track rails, and which

crossing rail sections are of such length as to extend continuously across both the main track rails and auxiliary rails arranged between and adjacent the main track rails for supporting the hinged rail sections in both open and closed positions.

3. The combination with the rails of a main track, of crossing rails arranged in a plane above the main track rails, there being movable sections of the crossing track rails arranged to swing away from their normal positions above the main track rails, and which movable sections of the crossing track rails are of such length as to extend continuously across both the main track rails, a derailing rail forming a part of one of the crossing rails and arranged adjacent the main track rails, means whereby the movable crossing rail sections and the derailing rail are simultaneously shifted, and means whereby the movable rail sections and the derailing rail are locked after being shifted from one position to another.

In testimony whereof, I have signed my name to this specification; in the presence of two subscribing witnesses.

ARTHUR BERTRAND.

Witnesses:

D. L. DURHAM,
W. R. HOBBIE.