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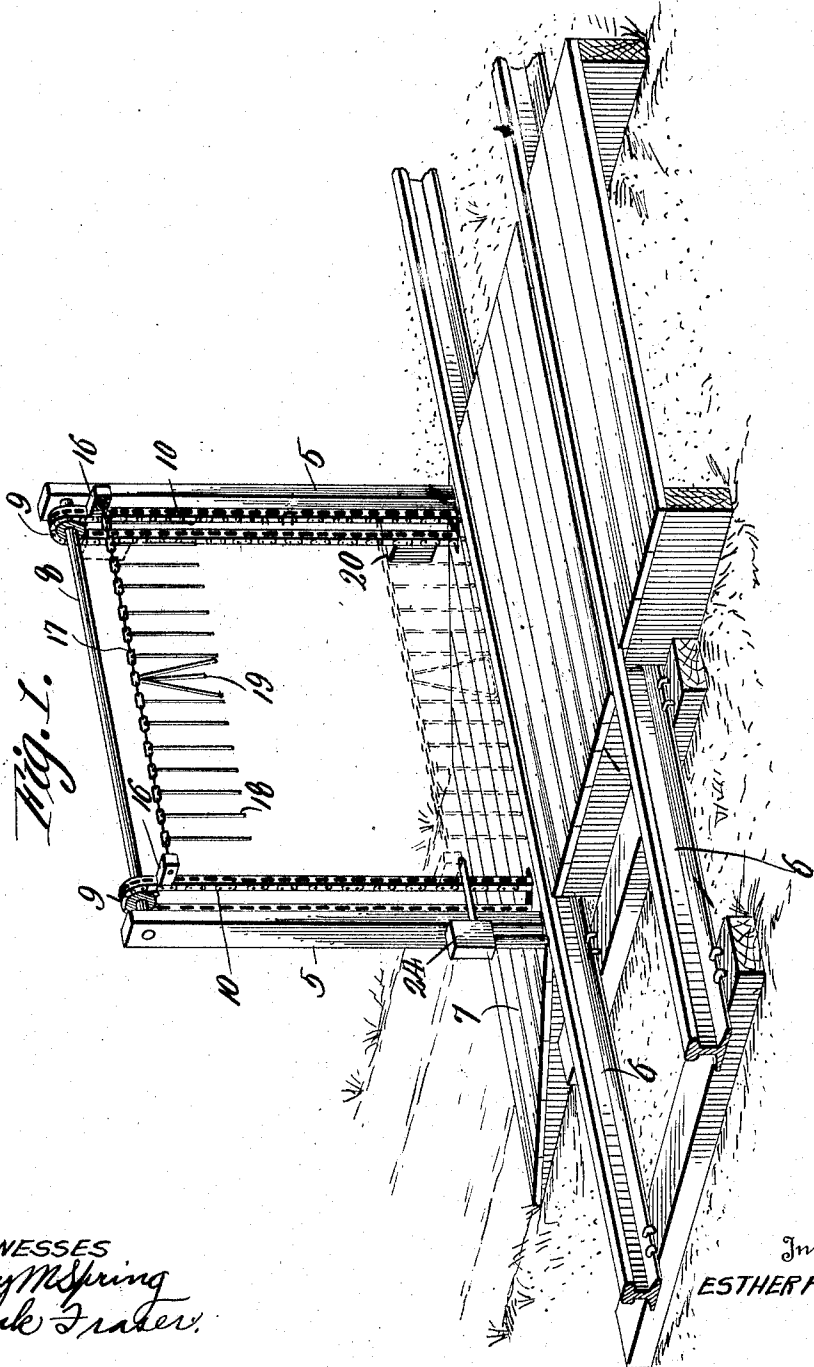
1,518,646

E. FOGERTY

RAILROAD CROSSING DEVICE

Filed Dec. 29, 1922

2 Sheets-Sheet 1



WITNESSES
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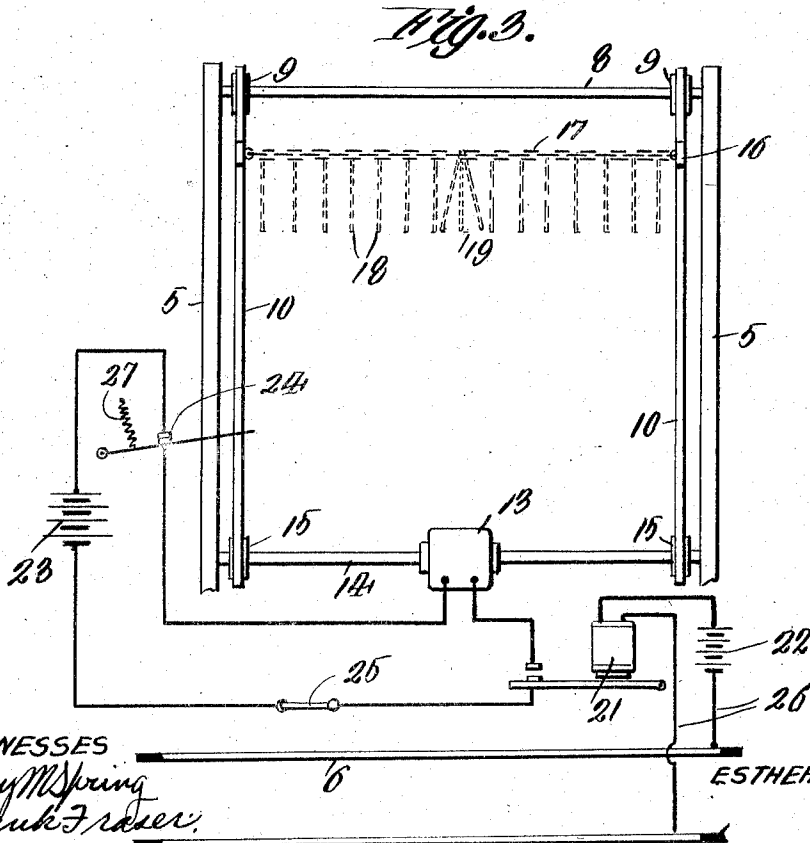
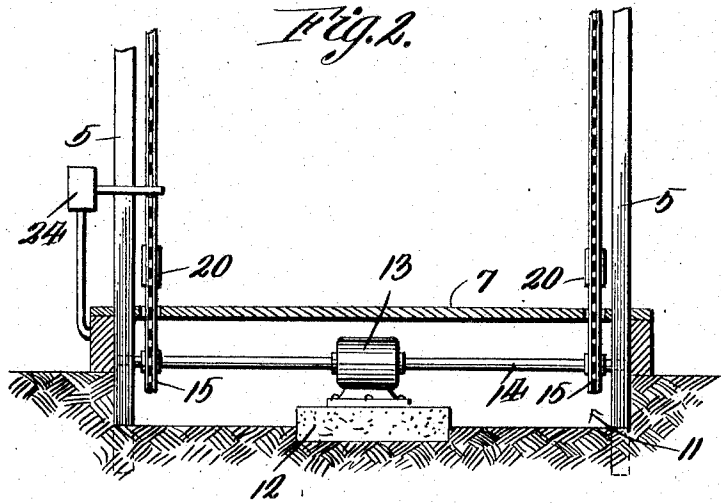
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2 Sheets-Sheet 2



WITNESSES
Chas M Spring
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UNITED STATES PATENT OFFICE.

ESTHER FOGERTY, OF OCEAN GROVE, NEW JERSEY.

RAILROAD-CROSSING DEVICE.

Application filed December 29, 1922. Serial No. 609,699.

To all whom it may concern:

Be it known that I, ESTHER FOGERTY, a citizen of the United States, residing at Ocean Grove, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Railroad-Crossing Devices, of which the following is a specification.

My invention relates to improvements in railroad crossing devices and has particular reference to that class of devices which are automatic in operation.

Another object of my invention is to provide a railroad crossing device which will normally hold the gate or barrier in its raised or open position until the approach of a train when it will by the action of a suitable contact or circuit closing block located at predetermined distances from the gate and engaging with the wheels of the locomotive or car, descend and guard or block the crossing until the train has passed, and which will be raised again when the train has passed the crossing.

A still further object of my invention is to provide a railroad crossing device, which is adapted to be automatically disposed across a street intersecting a railroad on the approach of cars or trains, and to provide a gate of such a character that in event auto vehicles should be driven thereagainst, the vehicle will be effectively stopped without any chances of injury to the vehicle or its passengers or with little chance of danger to the cars or trains on the railway.

A still further object of my invention is to provide a railroad crossing device that is strong, durable, comparatively simple and inexpensive in manufacture, and that is well adapted to the uses for which it is designed.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the drawings, wherein like numerals are employed to designate like parts throughout the same,

Figure 1 is a perspective view of apparatus embodying my invention.

Figure 2 is a vertical section illustrating the operating mechanism therefor, and

Figure 3 is a diagrammatic view of the wiring system used in accordance with my invention.

In the drawings, wherein for the purpose of illustration is shown the preferred em-

bodiment of my invention the numeral 5 designates vertical posts, which are disposed adjacent a track 6, the track section 6 being insulated from the main line of track by an insulation joint at each of its ends as shown in Figure 3 at a crossing 7. The vertical posts 5 are located, one at each side of the street crossing 7 as is clearly shown in Figure 1 of the drawings. Mounted between the posts 5, and near the upper end thereof, is a longitudinal shaft 8, which is suitably journaled in said posts. Keyed to the end of the longitudinal shaft 8, near the posts 5, are sprocket wheels 9, over which are adapted to run sprocket chains 10.

Located beneath the road crossing 7, preferably within a pit 11, is a cement base 12, on which is mounted a suitable electric motor 13, which is located intermediate the ends of a second longitudinal shaft 14, which is journaled at its ends in the posts 5. Sprocket wheels 15 are keyed to the shaft 14 at points directly below the sprocket wheels 9 on the longitudinal shaft 8. It will thus be seen that the sprocket chains 10 are adapted to run over both of the sprocket wheels 9 and 15 respectively and are operated by means of the electrically operated motor 13 which rotates the longitudinal shaft 14.

Mounted on the chains 10, are blocks 16, extending transversely from said sprocket chains. A chain 17 is connected at its ends to the blocks 16 and depending rods are connected to suitable bars or the like 18 carried by the chains 17. If it is desired, a tripod 19 may be mounted intermediate the ends of the lock signal chain 17 to act as a support for the chain 17 when the same is moved into the lowered position as indicated at Figure 1 of the drawings, so as to prevent excessive sagging of the same. Mounted on the opposite side of the sprocket chains 10, are suitable weights 20, and it will readily be seen, that the weights 20 will normally hold the longitudinal chain 17 and the rods 18 in an elevated position, but will allow the rotations of the shaft 14, due to the power transmitted by the motor 13, to operate the chain 10 so as to cause the chain 17 and the links 18 to lower.

The operating mechanism comprises a standard relay 21, a line battery 22, a local battery 23, a switch 24 and a simple switch 25. The wires 26 connected to the relay 21 and the line battery 22, are connected

in any suitable manner to the rails 6, so that the circuit therethrough will be complete by the passage of the train over the designated section of the track.

5 In operation, a train upon entering the section of track designated, closes the line battery circuit and the relay 21 brought into contact thereby, closing the local circuit of the battery 23. This causes the
10 motor 13 to rotate, the lower sprocket, which moves the chains 10, over the sprockets 9 and 15 which lowers the chain 17 and the rods 18, to a lower position thereby closing the roadway to traffic. As
15 the blocks 16 reach their lower position they open the switch 24 of the local circuit, thereby stopping the motor. When the train leaves the designated section of track, the relay 21 returns to its original position, thereby allowing the counterweights 20
20 to move down thereby returning the cross chain 17 and the links 18 to the elevated position, thereby opening the roadway for traffic. At the same time, a spring 27 returns the switch 24 to its closed position.
25 The switch 25 is interposed in the circuit to allow a workman to open a line when it is necessary. Furthermore, electric lights or other illuminating means may be suspended on the chains 17 to illuminate the
30 device at night. It will thus be seen, that I have devised a very efficient gate and gate operating mechanism means that is entirely automatic in its nature and which
35 will efficiently shut off the traffic when it is necessary.

The moving part of switch 24 lies within the path of one of the blocks 16 and is operated thereby. Switch 25 is manually
40 operated and normally closed and is provided only for emergency use, such as when a train is stationed on the block for a long period of time.

It will be noted that the combined weight
45 of counterweights 20 is heavier than the blocks 16, chain 17 and the parts carried by this chain so that no electrical energy nor mechanical means is required to raise the chain 17 and associated parts to the
50 elevated position.

It will also be noted that after a car has entered the block and closed the circuit across the tracks 6 and thru relay 21, the circuit of the main battery is closed and
55 the motor operated to lower the gate. As the chain 17 nearly reaches its lowest position block 16 opens switch 24 moving the arm thereof down. The inertia of the rotor of the motor and the moving chain 17 and counterweights 20 combine to move the
60 chain 17 to a still lower position. After

coming to rest the counterweights 20 become effective to raise the gate somewhat and when the latter has moved high enough to
65 release block 16 from the arm of switch 24, the local battery circuit is again closed and motor 13 again rotates to move the gate 17 with its associated parts down. This action is repeated as long as the car
70 remains within the block of track 6 since during this interval the contacts of line relay 21 are constantly closed.

The net result is that when a car enters the block, the gate 17 moves to a position
75 so as to obstruct traffic across the roadway and is automatically moved up and down in its lowered position, being lowered by positive drive of the motor and raised by the counterweights 20. The advantage of this action in a signal is apparent especially
80 at night when the lights thereon are illuminated. It will be observed that this up and down movement of the gate continues until the car or train leaves the block 6. As soon as this occurs the contact points of relay
85 21 are opened, the local circuit thereby opened and the counterweights 20 raise the gate to its elevated position out of the way of traffic.

Relay 21 may be any standard form whose
90 contacts are opened by spring or like means and closed magnetically. Switch 24 may be any form of lever switch provided with a spring to restore the contacts to closed position.
95

It is to be understood that the form of my invention herewith shown and described is
100 to be taken as the preferred embodiment of the same, and various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the
subjoined claim.

Having thus described my invention, I
105 claim:

A railroad crossing device of the class described comprising a pair of spaced vertical posts, spaced longitudinal shafts journaled at their ends between said posts, sprocket
110 wheels carried near the ends of said longitudinal shafts, sprocket chains adapted to run over said sprocket wheels, transversely extending lugs carried by said chains, a longitudinal gate member mounted between
115 said transversely extending lugs, counterweights adapted to raise said gate member mounted on the opposite side of said sprocket chains, and means to operate said sprocket chains.

In testimony whereof I affix my signature.
120

ESTHER FOGERTY.