

No. 766,923.

PATENTED AUG. 9, 1904.

J. D. YOUNG.
GATE FOR RAILROAD CROSSINGS.

APPLICATION FILED JULY 9, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

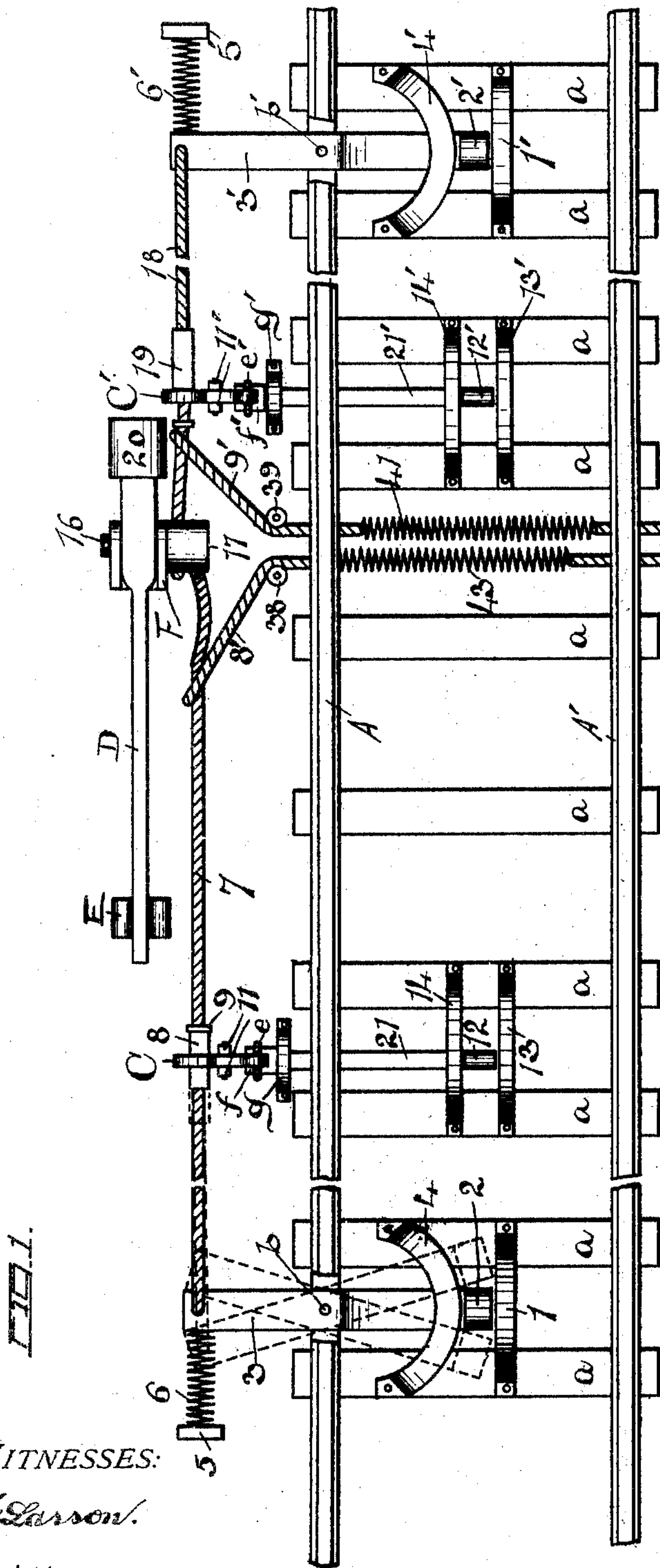


FIG. 1.

WITNESSES:

F. G. Larsson.

W. E. Windsor.

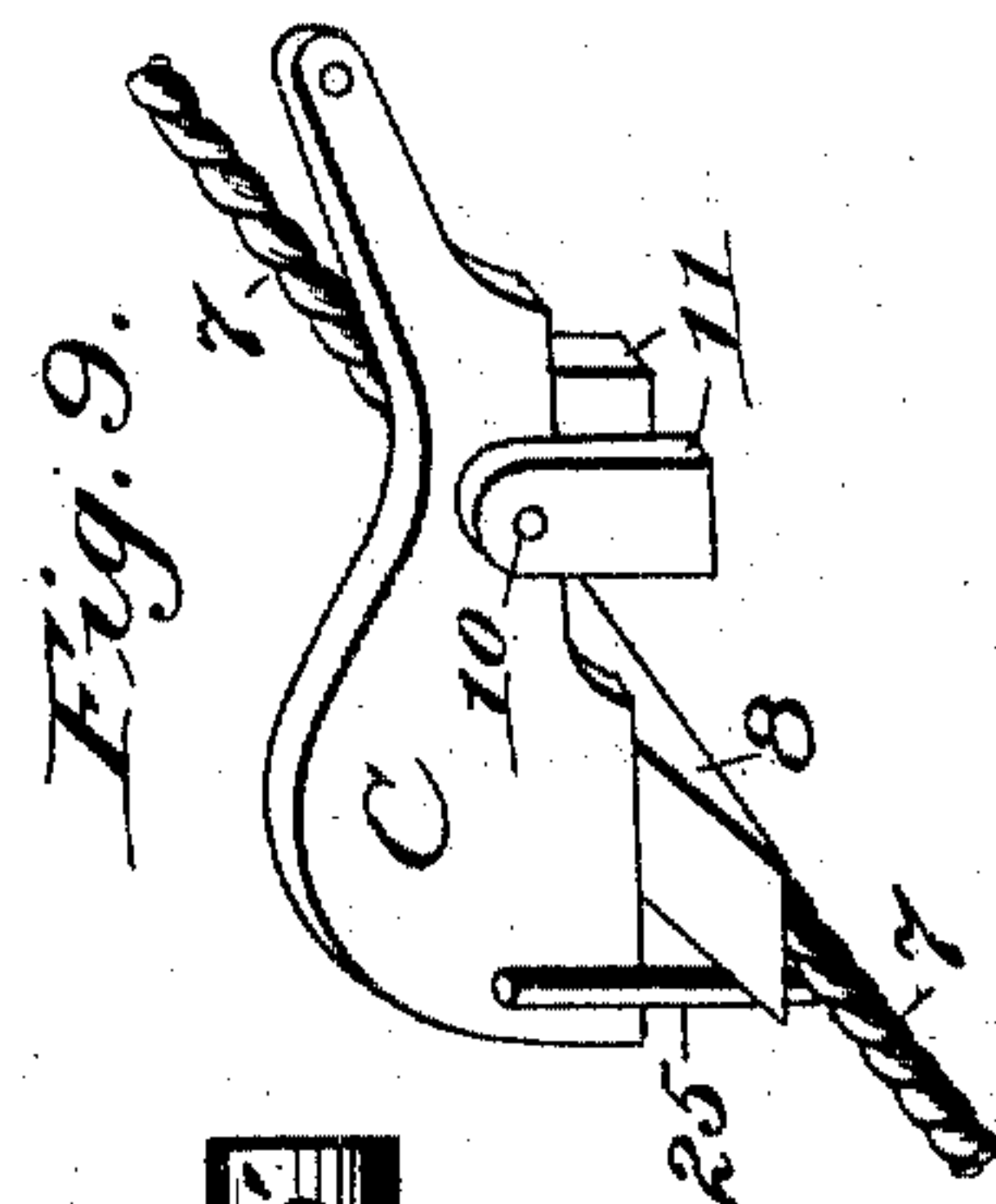


Fig. 9.

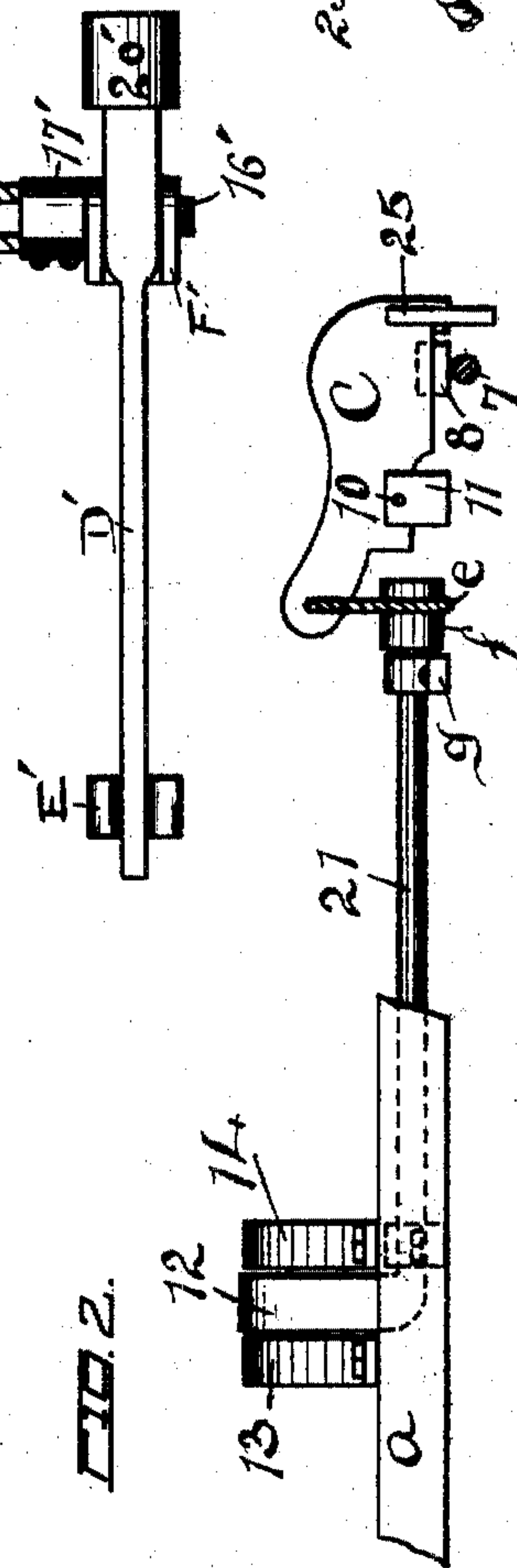


FIG. 2.

INVENTOR:

Jefferson D. Young
by W. E. Windsor Attorney.

UNITED STATES PATENT OFFICE.

JEFFERSON D. YOUNG, OF AVOCA, IOWA.

GATE FOR RAILROAD-CROSSINGS.

SPECIFICATION forming part of Letters Patent No. 766,923, dated August 9, 1904.

Application filed July 9, 1902. Serial No. 114,890. (No model.)

To all whom it may concern:

Be it known that I, JEFFERSON D. YOUNG, residing at Avoca, in the county of Pottawattamie and State of Iowa, have invented certain useful Improvements in Gates for Railroad Crossings; and I do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to a new and useful improvement in gates for railway-crossings.

The object of my invention is to provide a railroad-gate which shall be simple of construction and so arranged that the gate will be automatically opened and closed upon the approach of a train or locomotive, and the gate is so constructed that in case it should close upon a wagon or other obstruction it will rest upon the same under spring tension, so that the obstruction may be removed, permitting the closing of the gate.

In the accompanying drawings I have shown in Figure 1 a top view with portions broken away of a railroad-gate embodying my invention. Fig. 2 shows a detail of the releasing mechanism as used in my invention. Figs. 3 and 6 show enlarged details of the gate-posts. Fig. 4 shows a detail of one of the gate-supports. Fig. 5 shows a detached detail of one of the striker-bars as used in my invention. Fig. 7 shows one of the slotted brackets as used in my invention. Fig. 8 shows a side elevation with portions removed of my gate, while Fig. 9 discloses a perspective view disclosing one of the wedges.

As has been set forth, the aim of my invention is to provide a railroad-crossing gate so constructed that the same will be automatically operated by a locomotive to open and close the same.

In carrying out the aim of my invention I provide two gates upon opposite sides of the railway, as shown in top view in Fig. 1, which gates are exactly the same in construction and comprise the posts F F', one of which is shown in detail in Fig. 3 and the other in

Fig. 6. The two rails A and A' are supported by the usual ties *a*.

The posts F F' extend into the earth a suitable distance and above are slotted, as is shown at *v* in Fig. 6, so as to form seats, within which are held the gate-bars D D'. These gate-bars are each secured to a shaft 16 or 16', as is shown in Figs. 3 and 6, provided with an enlarged head 17 or 17', so that each gate-bar is held upon a rock-shaft, so that these gates may be swung upward and downward. In alinement with each gate-post, as is shown in Fig. 1, is a gate-supporting post, a detail of one of which is shown in Fig. 4, each supporting-post being provided with the seating *z*, within which the end of the gate-bar in alinement therewith is held when the gate is closed. In Fig. 8 the gate-bar D' is shown as resting within its supporting-post E'.

Each gate-bar D or D' is provided with a counterweight 20 or 20' to counterbalance the gate-bar, so that the same may be freely rocked or tilted in opening or closing the gate.

Between the rails A A' a suitable distance from the gate-posts F F' are the guard-plates 1 1', (shown in top view in Fig. 1 and side view in Fig. 8,) and these guard-plates, it will be noticed, are approximately semicircular and are secured by any suitable means to two adjacent ties *a*, as disclosed.

Adjacent each guard-plate is held a slotted bracket 4 or 4', which are secured to the ties and are approximately semicircular, as disclosed in Fig. 7.

Working upon suitable pins *b* or *b'*, as is shown in Fig. 1 and below the rail A, are the spring-held striker-bars 3 3', which extend through the slotted brackets 4 4', respectively, each striker-bar being provided with an upwardly-extending head, as is disclosed in Fig. 5, where an elevation or side view of one of these striker-bars is disclosed. In Fig. 7 I have shown a front view of one of the slotted brackets disclosing the slot *z*, through which the adjacent bar extends.

The heads 2 2' of the striker-bars in their normal position are adjacent to their respective guard-plates 1 1', as shown in Fig. 1.

Pressing against the end of each striker-

bar 3 or 3' is a coil-spring 6 or 6', suitably secured to a lug 5 or 5', so that these striker-bars 3 and 3' are normally held at right angles to the rails, as is disclosed in Fig. 1.

5 Extending from the striker-bar 3 and passing over a suitable pulley 51, as is disclosed in Fig. 6, is the strand or rope 7, which continues upward and is secured to the head 17, while extending from the striker-bar 3' and
10 passing over a counterpart pulley 50 and also secured to the head 17, as is shown in Figs. 1 and 6, is a second strand 18, these strands being so adjusted that the two connected striker-bars 3 and 3' are normally held parallel to one
15 another, as is disclosed in Fig. 1, the springs 6 6' working each against one of the striker-bars, so that these striker-bars 3 3' cannot be actuated without operating against one of said springs.

20 Normally the gate-bars D D' are held in an approximately vertical position, as is disclosed in dotted lines in Fig. 8, by virtue of the weights 20 20'. When these gate-bars D D' are in a vertical position, the points at
25 which the strands 7 and 18 are secured to the head 17 are at an angle of ninety degrees to a plane passing horizontally through these gate-bars, so that to draw on these strands 7 and 18 will rotate the head 17 in the path of
30 an arc of ninety degrees, and so carry the gate-bar D from a vertical to a horizontal position. In Fig. 6 one of the strands has been operated to draw down the head 17. From this it will be seen that these striker-bars 3 and 3'
35 are held under spring tension and when actuated rock the shaft 16 to operate the gate-bar D.

The gate-post F' has been described as being provided with a counterpart gate-bar D',
40 counterpoised by means of the weights 20' and supported upon the shafts 16', provided with the head 17', a detail of which is shown in Fig. 3, and from this head 17' extend the two strands 42 and 44, provided, respectively, with
45 the coil-springs 41 and 43, secured in turn to the strand-sections 9' and 8', these in turn being secured to the strands 18 and 7, as is disclosed in Fig. 1. These strands 8' and 9' are directed to the right and left before being se-
50 cured to the strands 7 and 18 and work over pulleys 38 and 39, so that any movement imparted to the strand 18 or 7 by means of the striker-bars 3' or 3 is imparted to the strand 42 or 44, and consequently actuates the gate-
55 bar D', this transmission of power being accomplished by securing to the head 17' the strands 44 and 42, as is disclosed in Fig. 3, so that when the gate-bar D', secured to the shaft 16', is approximately in a vertical position
60 the strands 42 and 44 are approximately also at a point ninety degrees from a plane passing horizontally through the head 17', so that when the gate-bar D is actuated the counterpart gate-bar D' will be correspondingly ac-

tuated. The strands 42 and 44 pass over suitable pulleys 7', as shown in Fig. 3.

At suitable points strands 7 and 18 have secured to them wedges 8 and 19, an end view of the wedge 8, being shown in Fig. 2, these wedges being secured by any suitable means.
70 In order to guide the strand 7, I provide at a suitable point a staple 9, which also acts as a stop for the wedge 8, which is adapted to work against said staple 9.

In connection with my gate I use two similar locking-dogs C C', adapted to ride upon
75 and against the larger end of the wedges 8 and 19, respectively. As these dogs C C' are similar in construction, the description of one will be sufficient for the other. In referring to
80 Fig. 2 the dog C is shown as mounted upon a pin 10, held within a block 11, and from one end of this dog extends a strand e, secured upon opposite sides to the head f of the rock-shaft
85 21, which is provided with an operating-head 12 and is adapted to rock from side to side. The shafts 21 21' are supported within suitable bearings g g' adjacent to the rail A, as shown. The bottoms of these dogs C C' slide upon the
90 wedges 8 and 19, respectively. The heads 12 12' of the rock-shafts 21 21' are held within similar guide-plates 13 14 and 13' 14', as shown in Figs. 1 and 8, so that anything trailing below the cars will not interfere with these heads.
95

It will be noticed that the locking-dogs C C' are heavier upon one side of the pin 10 than upon the other, which insures their being normally in engagement with their respective
100 wedges. Suitable pins 25, as shown in Fig. 2, are employed to guide the dogs C C'.

In Fig. 8 the position of the guard-plates 1 1', the rock-shafts 21 21', and the striker-bars 3 and 3' is shown, the gate-bars D D' being
105 disclosed in a closed position.

When all the instrumentalities have been properly constructed, the operation of my device is as follows: The gate-bars D D' are normally in an approximately vertical position.
110 In this condition the striker-bars 3 and 3' are in a horizontal position at right angles to the rails, as shown in Fig. 1. Now as the engine or train approaches a lug or other projection which is fixed to the cow-catcher or any other
115 suitable part of the locomotive and is held in the path of the heads 2 2' and 12 12' strikes and engages the head 2', we will assume, of the striker-bar 3', which will result in drawing the strand 18 toward the spring 6', the striker-bar 3' operating against said spring 6'. As
120 the strand 18 is drawn by the striker-bar 3', the head 17 will be revolved ninety degrees to allow the downward swing of the gate-bar D. As this strand 18 is pulled toward the spring 6' a corresponding movement is imparted to
125 the strand 42 to actuate the head 17' and close the gate-bar D', which is also carried downward, the end of each gate-bar resting within

its supporting-post. If desired, a spring can be interposed at a suitable point within the strand 18. Now unless the strand 18 is secured while the gate-bars D D' are down these gate-bars will of course instantly fly upward again, and in order to hold these gate-bars in proper position for a suitable length of time I employ the wedges 8 and 19. In the instance just described the wedge 19 was withdrawn from below the dog C' and locked to hold the gate in a horizontal position, the dog C' resting against the largest end of the wedge 19, as shown Fig. 1. As the locomotive or train advances the same projection that first struck the head 2' will strike the head 12' upon the rock-shaft 21' to wind up the strand e, tilting the head C' upward and permitting the wedge 19 to escape, so that the gates again assume their vertical position. The same projection will eventually engage the head 12 and 2, but will simply operate these instrumentalities without actuating the gate, as the striker-bar 3 will then be tilted toward the strand 7. If, however, the train approached to first engage the striker-bar 3, the instrumentalities will be actuated from that side in the manner just described. In Fig. 1 the gates are shown as having been closed by an engine striking the bar 3', locking the gate-bars in the manner set forth.

It is of course understood that the rock-shafts 21 and 21' can be placed at any suitable point adjacent the gate-posts F F', so that the gate-bars will rise immediately after the train has passed. The striker-bars 3 3' are of course placed a suitable distance away from the gates, so that they will be closed a suitable time before the train approaches the crossing.

Having thus described my said invention, what I claim as new, and desire to secure by United States Letters Patent, is—

1. In a railroad-crossing gate, the combination with a suitably-supported swinging gate-bar, a shaft to hold said gate-bar, a strand partially wound about said shaft, a pivoted striker-bar, said strand being secured to said striker-bar, a spring to hold said striker-bar in a suitable position, a wedge secured to aforesaid strand, a pivotally-supported dog adapted to work upon said wedge and against one end thereof, a rock-shaft, a head projecting from said rock-shaft, and means to connect said rock-shaft to said dog.

2. In a railroad-crossing gate, the combination with a suitable post, of a shaft revolvably secured within said post, a gate-bar secured to said shaft, a strand working partially about said shaft, a wedge secured to said strand, a pivotally-held striker-bar secured to said strand, a spring working against said striker-bar, a second gate-post, a second shaft held by said second gate-post, a second gate-bar secured to said second shaft, a second strand extending from said first-mentioned strand and partially winding about said second-mentioned shaft, a dog adapted to work upon said wedge and against one end thereof, a rock-shaft, and means to connect said dog to said rock-shaft, as and for the purpose set forth.

3. In a railroad-crossing gate, the combination with a suitable gate-post, of a shaft secured to said gate-post, a gate-bar secured to said shaft, a strand partially working about said shaft and extending in one direction, a pivoted striker-bar secured at one end to said strand, a spring working against said striker-bar, a wedge secured to aforesaid strand, a second strand extending from aforesaid shaft in an opposite direction, a second wedge secured to said last-mentioned strand, a second striker-bar pivotally supported and secured to said second strand, a spring secured to said last-mentioned strand, a dog working upon and adjacent said first-mentioned wedge, a second dog working upon and adjacent said last-mentioned wedge, a rock-shaft, means to connect said rock-shaft to said first-mentioned dog, a second rock-shaft, means to connect said second rock-shaft to said second-mentioned dog, a second gate-post, a shaft working within said second gate-post, a gate-bar secured to said last-mentioned shaft, and two strands extending from said last-mentioned shaft one end being secured to said first-mentioned strand extending in one direction, and the second strand being secured to said second-mentioned strand, extending in the opposite direction, said instrumentalities being arranged to operate substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JEFFERSON D. YOUNG.

Witnesses:

L. L. GREENE,
FRANK TRUE.