

(No Model.)

J. H. FITZGERALD.
RAILROAD GATE.

2 Sheets—Sheet 1.

No. 504,974.

Patented Sept. 12, 1893.

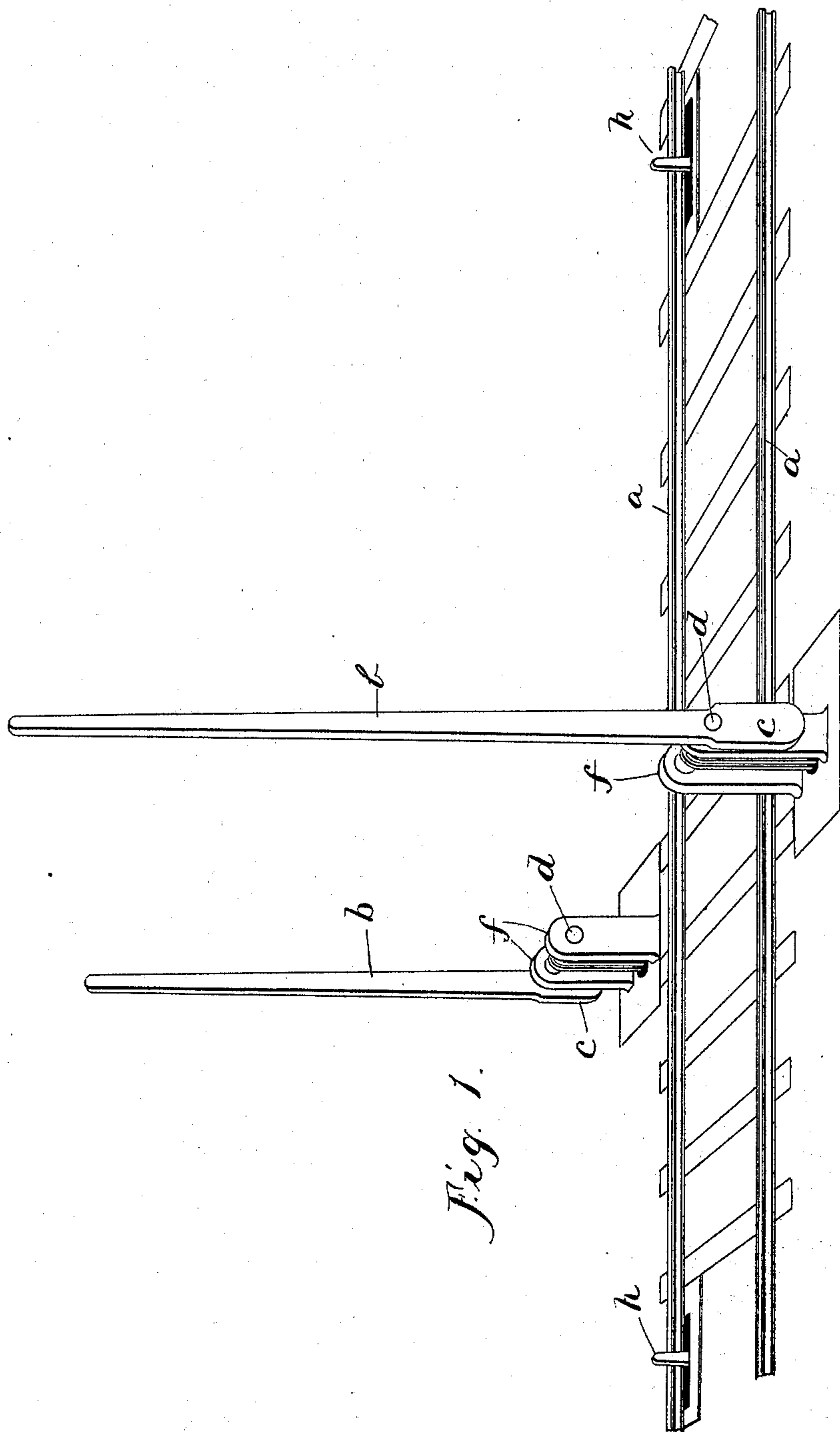


Fig. 1.

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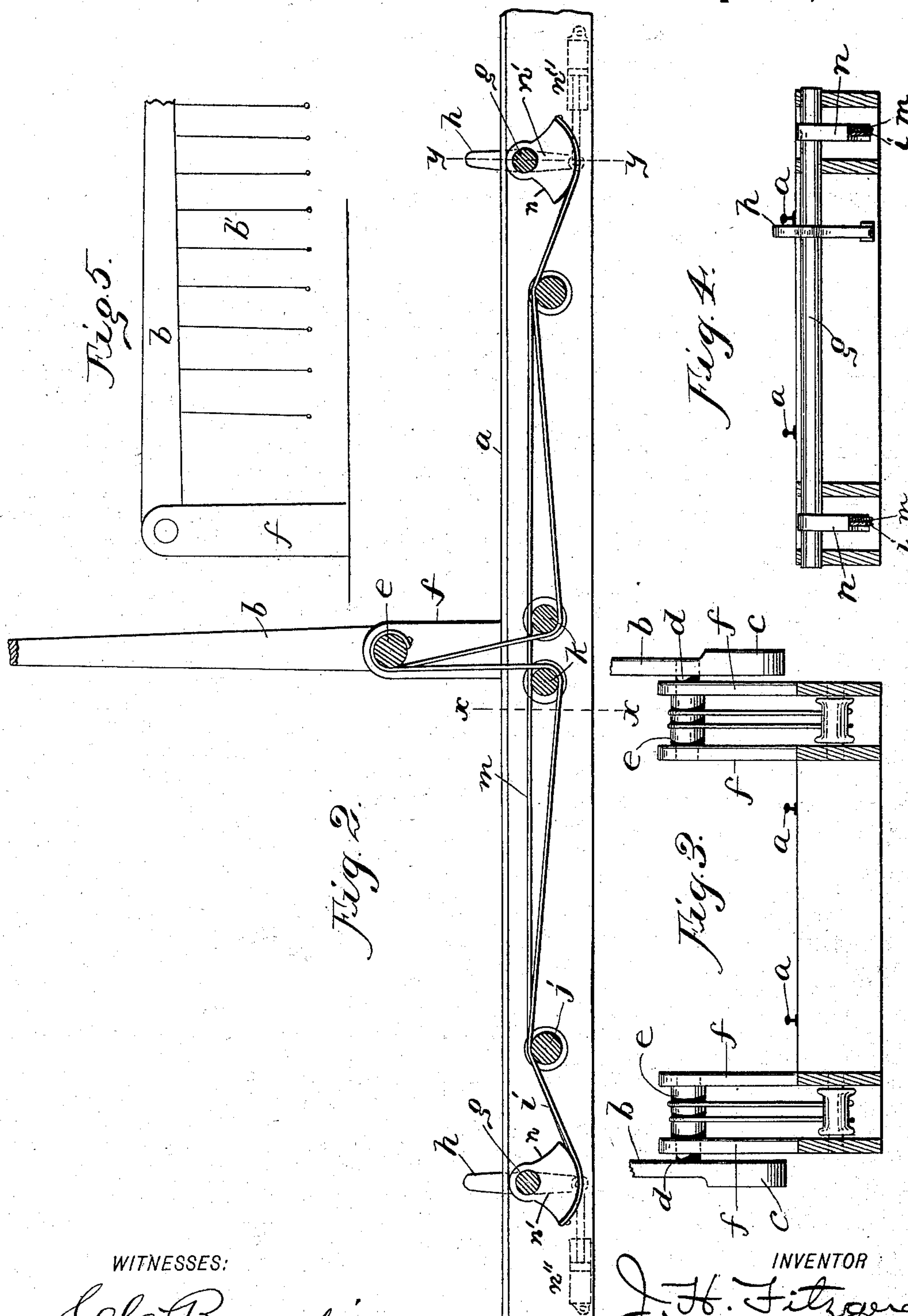
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UNITED STATES PATENT OFFICE.

JAMES H. FITZGERALD, OF WINSTON, NORTH CAROLINA.

RAILROAD-GATE.

SPECIFICATION forming part of Letters Patent No. 504,974, dated September 12, 1893.

Application filed February 27, 1893. Serial No. 463,862. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. FITZGERALD, of Winston, in the county of Forsyth and State of North Carolina, have invented certain new and useful Improvements in Railroad-Gates; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in automatic railway gates.

The object of the invention is to provide an improved automatic railroad crossing gate, exceedingly cheap, simple and durable in construction and composed of a minimum number of parts and which will be automatically operated by passing trains.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter and particularly pointed out in the claim.

Referring to the accompanying drawings:—Figure 1 is a perspective view showing a portion of a railroad track and also showing my improved gates located on each side of the track, the tripping devices being also shown extending up beside the rails. Fig. 2 is a sectional view taken in a plane extending longitudinally of the track showing the operating mechanism controlling the gates. Fig. 3 is a cross sectional view taken in the plane of the lines $x-x$ Fig. 2. Fig. 4 is a cross sectional view taken in the plane of the line $y-y$ Fig. 2. Fig. 5 is a detail view of a mast gate provided with flexible drops.

In the drawings the reference letter a , indicates a railroad track.

The reference letter b , indicates a mast gate located beside the track so as to be capable of swinging across a street or road leading over the track. These mast gates are suitably located on opposite sides of the track, and if the road or street is very wide two gates are employed to close the same. Each gate is provided with a counterweighted end c , to assist its movement and each gate is mounted on a shaft d , passing through and journaled in the supports f , extending up be-

side the track. Between the supports f , each shaft d is provided with a pulley or sheave e . The devices for operating these gates are located along the tracks a distance from the crossing and the gate. These devices preferably consist of horizontal shafts g , journaled in suitable bearings beneath the tracks and each shaft is provided with an upwardly extending arm or trip h . Each arm or trip h , extends up through a suitable slot or opening and beside a rail, so that the passing wheels will depress this trip or arm and thereby swing the shaft. It is not necessary that the arm h be very long but only required that it should be long enough to be engaged by the wheel or the flange thereof so as to rock the shaft g . Suitable casings can be provided in which to inclose the shaft g , and attachments, and so as to inclose, as it were, the slot through which the arm h extends. The ends of the shafts g , which extend beyond the track are provided with the segments n , located on their under sides. Suitable flexible connections i , are secured on these segments n , and said connections extend along beside the track through suitable casings, and over the pulleys j k , up to and around the pulleys e on the gate shaft d , the connection i , being wound on the pulleys e , in the same direction so that the mast gates will always be swung by said connection n in the same direction, and so that the shafts and their segments will swing the gates only when operated by trains moving toward the gates or street crossings and will not be so operated as to move the gates by trains passing from the crossings. It should also be observed that shaft g , is connected with both the gates on the opposite sides of the track; that is, each shaft g , usually has two of the segments h located on opposite sides of the track. It should also be observed that the pulleys over which the connections i , pass are located in the casing in which said connections are operated.

The two shafts g on opposite sides of the crossing are connected by the connection m , passing through the boxing or inclosure in which the connection i , moves and passing over the pulleys j k , and at its ends being secured to the segments n . The object of this connection is to connect the two tripping de-

vices and the gate so that they will always operate together in unity, and thereby avoid accident and trouble.

If desired the shafts g , can be provided with downwardly extending arms n' , connected with dash pot n'' , which will prevent the parts returning to their normal positions too suddenly, but will permit them to return slowly.

The operation of this apparatus is obvious. A train approaching the gate from either direction strikes the arm h , and thereby swings the shaft g , so that the segments n , are swung away from the gate, thereby drawing the connections i , away from the gates and rotating the shafts d , in a direction to swing the gates down to a horizontal position. When the train has passed over these tripping devices, the gates slowly return to their normal positions by reason of the weights c , and by reason of the weight of the segments, said segments acting as counterweights of the shaft g .

The parts of the gate are so constructed that they do not immediately return to their normal position but remain in their closed position for some little time. This is accomplished by the employment of the dash pot, or cylinder piston before mentioned which prevents the parts returning rapidly but only permits them to return slowly to their positions so that the gates will not rise until the train has passed the crossing.

To avoid all danger of persons being injured by the gates closing down on them, I can provide the gates with the series of loose weighted hangers b' shown in Fig. 5. The gates in this case will be mounted such a distance above the road surface as not to lower onto pedestrians or animals but the hangers will depend

sufficiently low to strike passing persons or animals and give due warning and yet permit passage under the gates. This will avoid the danger of vehicles being shut in on the tracks.

It should be noted that the rock shafts carrying the trips can be located any desired distance from the gates, also that where a number of parallel tracks are located together the rock shafts can be continued under all the tracks, and provided with an upwardly extending arm for each track.

It is evident that various changes might be made in the forms, constructions and arrangements of the parts described without departing from the spirit and scope of my invention. Hence I do not wish to limit myself to the exact construction herein set forth, but consider myself entitled to all such changes as fall within the spirit and scope of my invention.

What I claim is—

The combination of a swinging mast gate mounted on a shaft having a drum, a support therefor, transverse rock shafts beneath the track on opposite sides of said gate having upwardly projecting arms beside the rails and rigid depending segments, the flexible connections secured on said segments and extending along the track to said drum, as set forth, the pulleys for said connections, the downwardly extending arms from said rock shaft, and dash pots connected therewith to operate as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES H. FITZGERALD.

Witnesses:

C. M. WERLÉ,
HUBERT E. PECK.