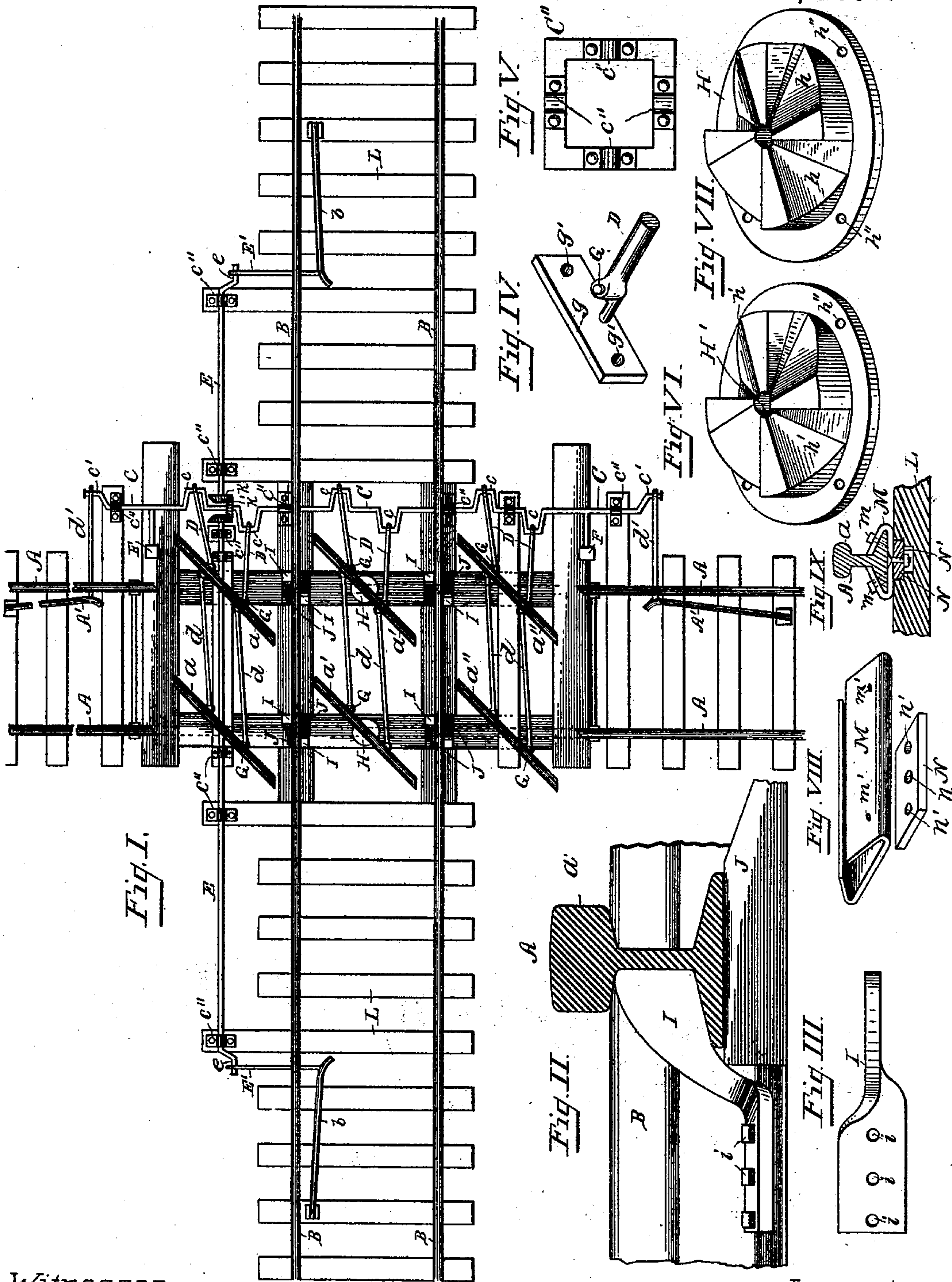


(No Model.)

D. L. McNAMARA.
AUTOMATIC RAILWAY CROSSING.

No. 512,390.

Patented Jan. 9, 1894.



Witnesses
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UNITED STATES PATENT OFFICE

DANIEL L. MCNAMARA, OF KANSAS CITY, MISSOURI.

AUTOMATIC RAILWAY-CROSSING.

SPECIFICATION forming part of Letters Patent No. 512,390, dated January 9, 1894.

Application filed June 17, 1892. Serial No. 437,025. (No model.)

To all whom it may concern:

Be it known that I, DANIEL L. MCNAMARA, a citizen of the United States, residing at Kansas City, in the county of Jackson, State of Missouri, have invented certain new and useful Improvements in Automatic Railroad-Crossings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in automatic railroad crossings, in which movable sections of track are operated by levers and tumbling rods, which receive their motion from the flange of the car wheel operating against the guide rails.

My object is to provide and construct a railroad crossing which may be opened and closed by the passage of the locomotive, the wheels of which come in contact with guard rails, thereby operating the tumbling rods, which open and close the sections of track by means of the connecting rods; and with this object in view, my invention consists in the novel construction of the track and mechanism illustrated in the accompanying drawings, in which—

Figure I. is a plan view of my adjustable, automatic railroad crossing, showing forth the improvements. Fig. II. is a sectional detail view of the crossing rail. Fig. III. is a detail view of the bearing for the adjustable rails. Fig. IV. is a detail view in perspective of one of the bridle plates, to which the bridle rods are attached. Fig. V. is a detail plan view of my preferred boxings and bearings for the gear wheels. Fig. VI. is a detail view in perspective of the inclined ratchet and base plate. Fig. VII. is a detail view in perspective of the inclined ratchet crown plate. Fig. VIII. is a detail view in perspective of the keeper and plate which hold the outer adjustable rail sections *a*, to the ties; and Fig. IX. is a cross sectional view of same, showing it secured to the tie, with the rail in position.

Referring to the drawings by letter, A, represents a railroad track, which crosses a main track B. Said track A, is formed at the crossing of the adjustable sections *a*, *a'*, *a''*, and these sections are operated by means of bridle rods, tumbling rods and gears, hereinafter described.

C, represents a tumbling rod which runs

parallel with track A, and this rod is provided with a series of cranks *c*, to which are secured a series of bridle rods D, whose opposite ends are secured to the adjustable sections *a*, *a'*, *a''*, by means of bridle plate *g*, and hook G, shown in Fig. IV.

c, are the crank ends of tumbling rod C, on which operate the draw bars *d'*, which operate the guard rails A'.

c'', are bearings located at intervals along tumbling rods C, E, to hold same in place.

The adjustable sections of track *a*, *a''*, are pivoted at their centers by a king-bolt N', which passes through the base of keepers M, and through holes *n*, in plates N, which rests in mortises cut in ties L, as illustrated. Said keepers M, are made to fit around the flanges of the rails *a*, *a''*, and are secured rigidly to same by bolts *m*, which are screwed or driven in holes *m'*; then these keepers are secured to plates N, by king-bolts N', as seen in Fig. IX. and the plates are secured rigidly to ties by bolts which pass through holes *n'*. The middle sections are secured to the ties by means of king-bolts which pass through the rails and through the ratchet plates H, H', illustrated in Figs. VI. and VII., which, when thrown open, lower the rails *a'*, so as to place them out of reach of the pilot, and when closed, to form a continuous track, will raise them above the main track to the position shown in Fig. II.

E, represents a tumbling rod laid parallel with track B, whose extremities are formed into cranks *e*, to which are hinged rods E', and this rod E, is operated by guard rails *b*, *b'*.

F, are balance weights secured on tumbling rod C, and these weights are for the purpose of throwing said tumbling rods entirely over, should the guard rail fail to do so, and to hold them firmly in position until thrown back by a train approaching on the crossing track.

H, H', are metallic plates constructed with a series of inclined planes *h*, *h'*, and when said plates are secured together by placing the crown plate H, on base plate H', the inclined planes *h*, *h'*, fit together closely. These plates form turn tables for the sections of rail *a'*, *a'*, which, when thrown out of position, as illustrated, are on a level with the crossing track and are out of the way of the pilot of the crossing engine; but when said sections

are thrown into position to form a continuous track, they are raised to the position shown in Fig. II. by means of the inclined plane on plates H, H', as hereinbefore described. Said plates H, H', are held rigidly to the ties by means of bolts passing through the track and the center hole, and by smaller bolts, or spikes, through holes h''.

I, are metallic bearing plates which form stops and supports for the movable sections of track, and these stops may be secured to the flange of the rail, as shown in Fig. II., or may be bolted to the cross ties. When bolted to the flange of the rail, it must be bent out from said rail, so as to permit the flange of the wheels to pass between said bearings and rail, without striking.

J, are wedge bearings on which sections a, a', a'' rest when in position. These wedges are so constructed as to raise the adjustable sections to a sufficient height above the main track to permit the engine and train to pass over without allowing the wheels to touch said main track.

K, are beveled gear wheels secured on tumbling rods E, and these gears mesh with a corresponding beveled gear K', secured on tumbling rod C, and these transmit the power from one rod to the other, so that all the levers, rods, &c., operate simultaneously. The bearing and boxing for these gears I prefer to construct, as illustrated in Fig. IV., though any substantial bearing may be used.

It will be seen that this crossing is operated automatically,—by means of locomotives or trains passing on the tracks A, or B. In the accompanying drawings I have illustrated my improvement to show the cross track open. Now, as the train approaches on said open track, the flanges of the drive wheels come between rails A, and guard rails A', forcing the latter out, thereby throwing the tumbling rod C, and forming a continuous track over the main track, and at the same time throwing guard rails b, b, against main rails B, where they remain until thrown open by a train passing on said main track.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

An adjustable, automatic railroad crossing; the keepers M, and plates N, which secure the adjustable sections to the ties; the adjustable sections a, a', a''; the tumbling rods C, E, operated by guard rails A' b; the gears K, K', which cause said tumbling rods to operate simultaneously; and the adjusting ratchet bearing-plates H, H', all in combination, for the purposes set forth and described.

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

DANIEL L. MCNAMARA.

Witnesses:

J. K. LATHY,
E. H. TODD.