

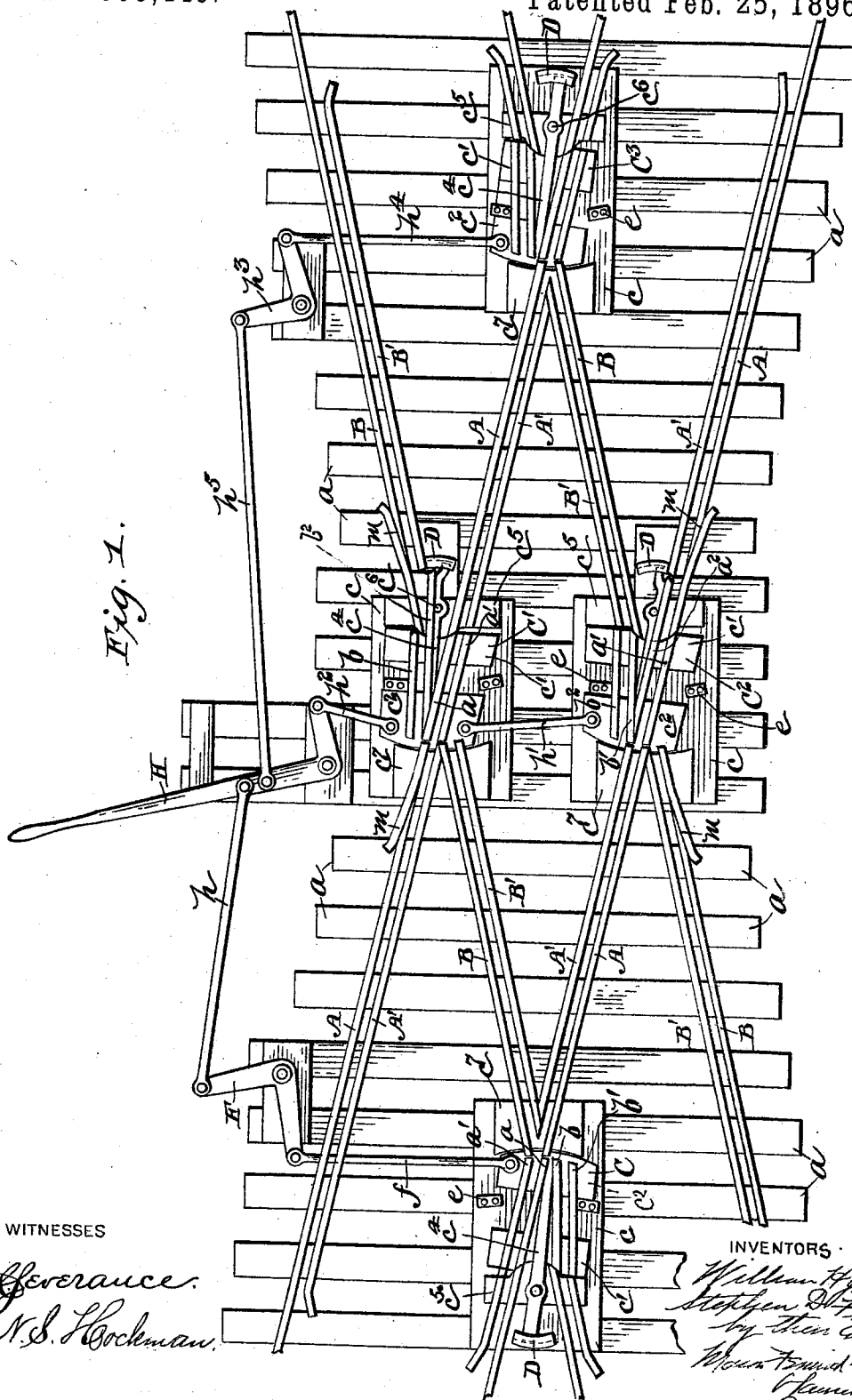
(No Model.)

3 Sheets—Sheet 1

W. H. JOHNSON & S. D. FRY.
RAILROAD CROSSING.

No. 555,449.

Patented Feb. 25, 1896.



WITNESSES

Reverence.
 N. S. Lockman.

INVENTORS

William H. H. H.
Stephen D. H. H.
by their steps
W. H. H. H.
H. H. H. H.

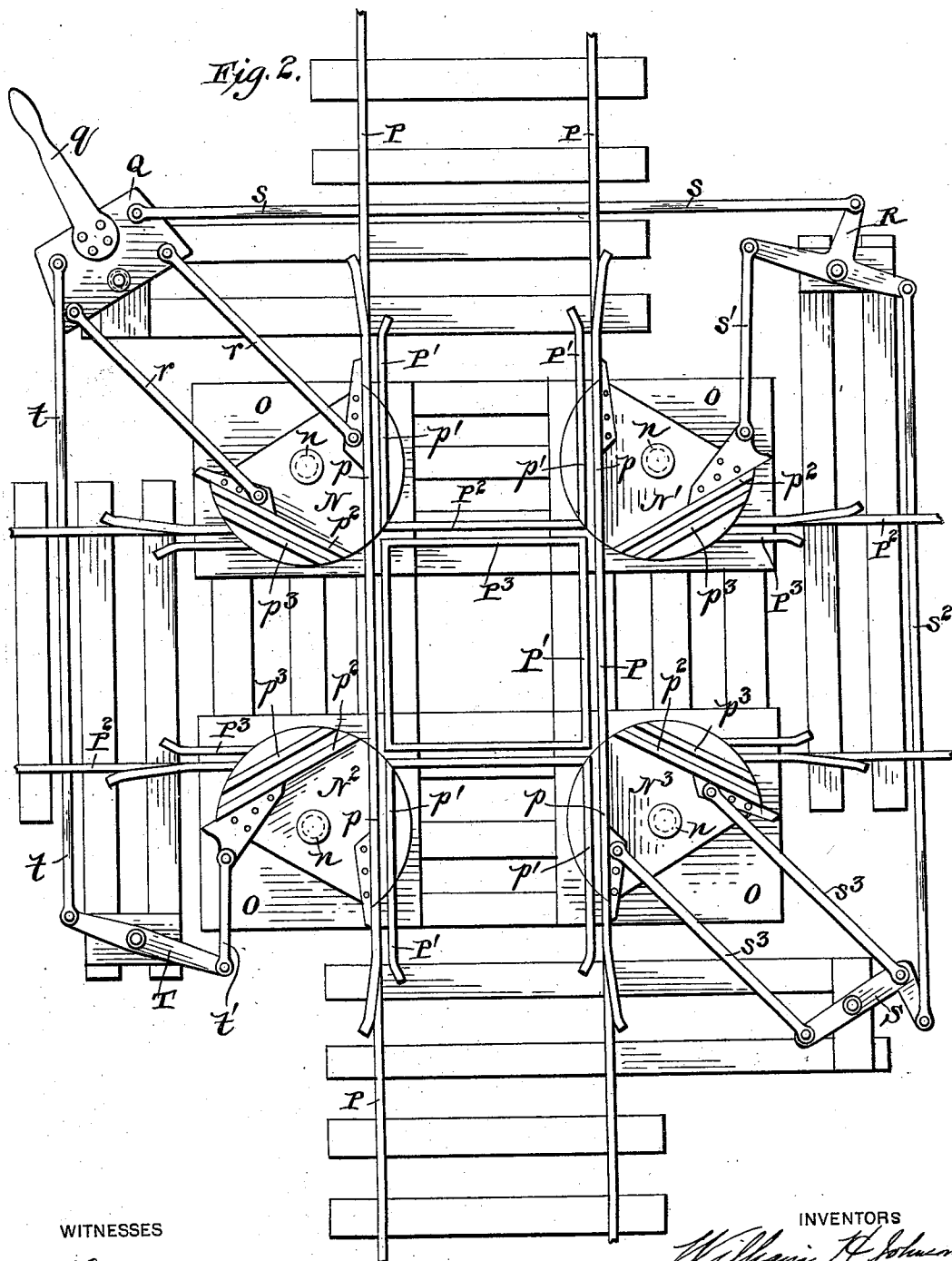
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WITNESSES

Geverance.
N. S. Lockman.

INVENTORS

William H. Johnson
Stephen D. Fry
by their attys
Wm. F. Farnish & Co.

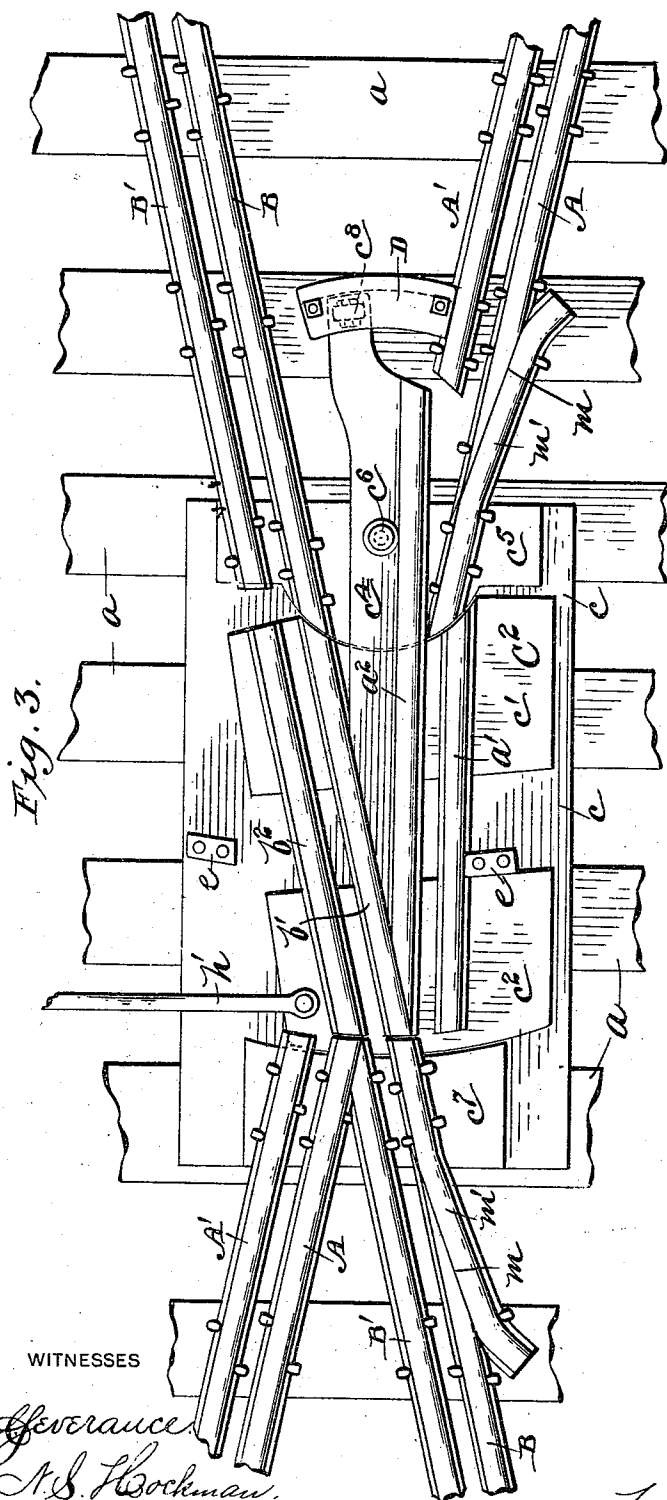
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W. H. JOHNSON & S. D. FRY.
RAILROAD CROSSING.

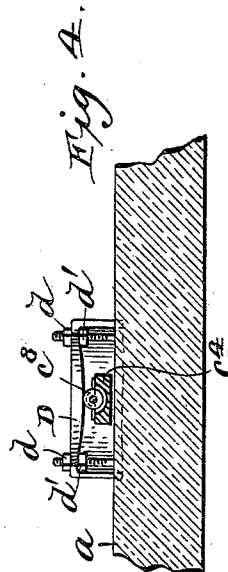
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WITNESSES

Geverance
A. S. Hockman.



INVENTORS

William H. Johnson
Stephen D. Fry
by their attys
Maxim Frank & Lawrence

UNITED STATES PATENT OFFICE.

WILLIAM H. JOHNSON, OF VEEDERSBURG, AND STEPHEN D. FRY, OF ATTICA,
INDIANA.

RAILROAD-CROSSING.

SPECIFICATION forming part of Letters Patent No. 555,449, dated February 25, 1896.

Application filed July 23, 1895. Serial No. 556,944. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. JOHNSON, residing at Veedersburg, and STEPHEN D. FRY, residing at Attica, in the county of Fountain and State of Indiana, citizens of the United States, have invented certain new and useful Improvements in Railroad-Crossings; and we do hereby declare the following to be 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.

Our invention relates to improvements in railway-crossings; and it consists of the combination, with the through and guard rails of the respective tracks, of sections carrying pairs of connecting main and guard rails pivotally mounted at the intersections of the rails and means connecting said sections whereby they are operated simultaneously to make either the rails of one or the other of the through-tracks complete.

It also consists of certain other novel constructions, combinations and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 represents a top plan view of our invention applied to a crossing in which the tracks cross diagonally. Fig. 2 represents a top plan view in which the tracks cross at right angles to each other. Fig. 3 represents an enlarged detail top plan view of one of the pivoted sections and its connections, and Fig. 4 represents a detail vertical section through the supporting lever-arm forming part of the pivotal section.

A A in the drawings represent the main rails of one track; A' A', the guard-rails of the same; B B, the main rails of the other track; B' B', the guard-rails of this latter track; C C' C² C³, the movable sections carrying the connecting main and guard rails for both tracks.

The main rails A A B B and the guard-rails A' A' B' B' are of the usual T form and are secured upon cross sleepers or ties *a*. At the intersections of the rails we provide the movable sections C C' C² C³. Each of these sections is mounted upon a base-plate *c* and comprises slide-plates *c'* *c''* upon which the two sets of connecting main and guard rails *a'* *a''*

and *b'* *b''* are rigidly mounted at suitable angles to each other, so that when said section is oscillated either one or the other track will be completed by the said connecting-rails.

Each of the movable sections is provided with a supporting-lever *c'* pivoted to a plate *c''* at *c''*, said plate being secured on the base *c*. The forward edge of the plate *c''* is cut circular, said circle being struck from the pivotal point *c''* of said lever. The rear of the plate *c'* and the rails thereon are cut concave to fit said circular portion of the plate *c''*, so that a close joint is made between the main rails and the connecting-rails.

The ends of the intersecting rails are suitably secured to plates *c''* and *c'*, secured to base-plate *c*, so that the movable sections lie between said ends and on a level with the same. The ends of said movable rails are slightly concaved and convexed so as to secure close joints between them and the ends of the connecting-sections of rails. The rails *a'* and *b'* of the sections C' C², respectively, extend backward over their respective levers *c'*, so as to make close connection with the rails A' and B', respectively. The ends of the main rails extend over the forward edges of the plates *c''*, and thus act as guides to prevent any vertical movement of said plates. The end of each lever *c'* is provided with an antifriction-roller *c''*, journaled in suitable boxes in a recess in the upper side of said lever. This roller bears against the under convex side of a segmental flanged plate D, and thus supports the weight of the section so that it can move freely over its base-plate.

The segmental concave under side of the part D causes the section to drop at each end of its travel into frictional contact with its base-plate and assist in holding it firmly in place and keeping it from sagging by the weight of the train, as it would if it were raised as in the center of its travel. It will thus be seen that the sections swing freely with very little friction during the greater portion of their movement, but descend and become firmly seated at each end of their movement.

The parts D are adjustable vertically by bolts and nuts *d'* *d''*, respectively, which connect said parts to the base-plates, and thus

any wear or sagging of the sections can be taken up.

Suitable stops *e* are mounted on the base-plates to limit the movement of the sections, so that the main rails and the connecting-rails will exactly coincide in position when the sections come to rest against them. The sections are operated simultaneously by the following bell-cranks and connections.

The section C is connected to a bell-crank F by a connecting-rod *f*. Said bell-crank is connected to the operating bell-crank lever H by a connecting-rod *h*. The sections C' C² are linked together by a connecting-rod *h'*, and the section C' is connected to the lever H by a link *h*². The section C³ is connected to a bell-crank *h*³ by a connecting-rod *h*³, said bell-crank being connected to the lever H by a connecting-rod *h*³. We provide for the expansion of the main rails by bevel-joints *m*. These joints are formed by bending a portion of the rails attached to the plates *c*¹ *c*³ outward at an angle, as shown at *m'*, and beveling the end of the main rails so as to abut against said outwardly-bent ends, and thus be capable of sliding longitudinally when the rail expands.

The above description applies to crossings in which the tracks cross each other obliquely; but where the tracks cross at right angles to each other we employ the modified construction shown in Fig. 2. In this construction we provide four pivoted sections N N' N² N³, mounted on suitable base-plates O at the intersection of the tracks. Each of these sections is provided with two pairs of connecting main and guard rails *p p'*, respectively.

The connecting-rails *p* and *p'* are adapted to complete the main and guard rails P and P' of one track, and the rails *p*² and *p*³ complete the main and guard rails P² and P³ of the intersecting track. The sections are cut circular from a center *n*, which is their pivot-point, and fit snugly against the ends of the intersecting rails, which are cut away on the same curvature as the peripheries of the sections. In this construction the pivot-point of the section is so located that the section is nearly self-balanced and the lever and anti-friction-roller are not absolutely necessary, although in some instances we prefer to employ them in this construction also. The sections in this construction are operated simultaneously by the following arrangement of levers.

The section N is connected to a pivoted plate Q, to which the operating-lever *q* is attached by connecting-rods *r r*. A double bell-crank lever R is connected to plate Q by connecting-rod *s*, to section N' by connecting-rod *s'* and to a bell-crank lever S by a con-

necting-rod *s*². The lever S is connected to the section N³ by connecting-rods *s*³. The plate Q is connected to a pivoted lever T by connecting-rod *t*, and said lever is in turn connected to the section N² by a link *t'*. It will thus be seen that the operation of the lever *q* will move all of the sections simultaneously to set them to one track or the other.

Having now described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with the main and guard rails of the respective tracks, of sections carrying pairs of connecting main and guard rails and pivotally mounted at the intersections of the rails, and means connecting said sections whereby they are operated simultaneously to make either the rails of one or other of the tracks complete, substantially as described.

2. The combination with the main and guard rails of the respective tracks, of sections carrying pairs of connecting main and guard rails and pivotally mounted at the intersections of the rails, anti-friction means for supporting said sections and levers connecting said sections whereby they are operated simultaneously to complete both main and guard rails of one or the other tracks, substantially as described.

3. The combination with the main and guard rails of the respective tracks, of sections carrying pairs of connecting main and guard rails and movably mounted at the intersections of the rails, levers connected to said sections and pivotally mounted, anti-friction-rollers on the ends of said levers, flanged plates under which said rollers bear, and levers for moving said sections simultaneously, substantially as described.

4. The combination with the main and guard rails of the respective tracks, of sections carrying pairs of connecting main and guard rails and movably mounted at the intersection of the rails, levers connected to said sections and pivotally mounted, anti-friction-rollers on the ends of said levers, flanged plates having convex under sides adapted to engage said rollers, whereby the sections are raised slightly at the middle of their movement, and levers for operating all of said sections, simultaneously, substantially as described.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

WILLIAM H. JOHNSON.
STEPHEN D. FRY.

Witnesses:

J. W. IRVING,
A. F. JOHNSON.