

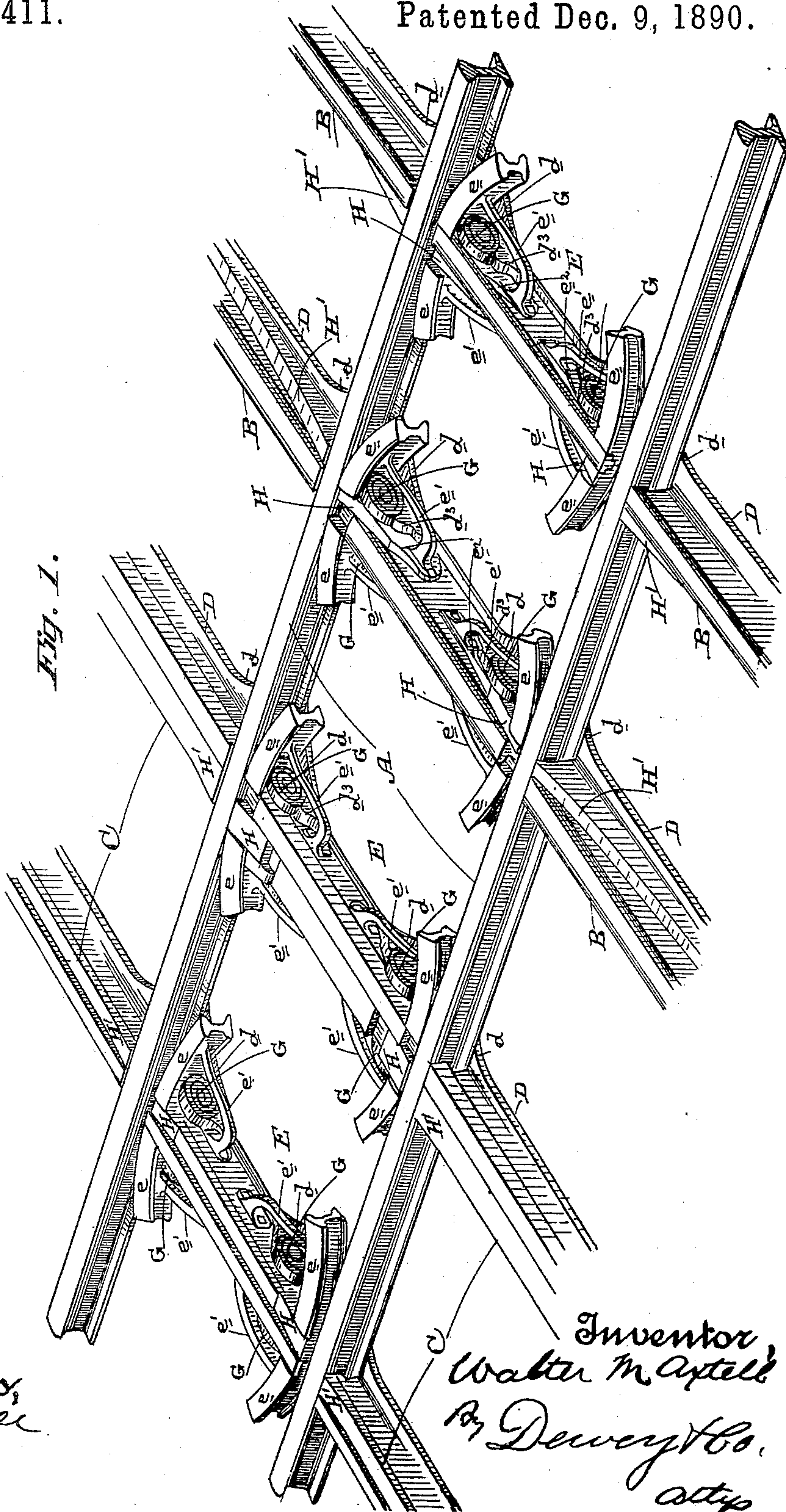
(No Model.)

3 Sheets—Sheet 1.

W. M. AXTELL.
RAILWAY CROSSING.

No. 442,411.

Patented Dec. 9, 1890.



Witnesses,
J. H. Houser
H. C. Lee.

Inventor,
Walter M. Ayell
By Dewey & Co.
attys

(No Model.)

3 Sheets—Sheet 2.

W. M. AXTELL.
RAILWAY CROSSING.

No. 442,411.

Patented Dec. 9, 1890.

Fig. 2.

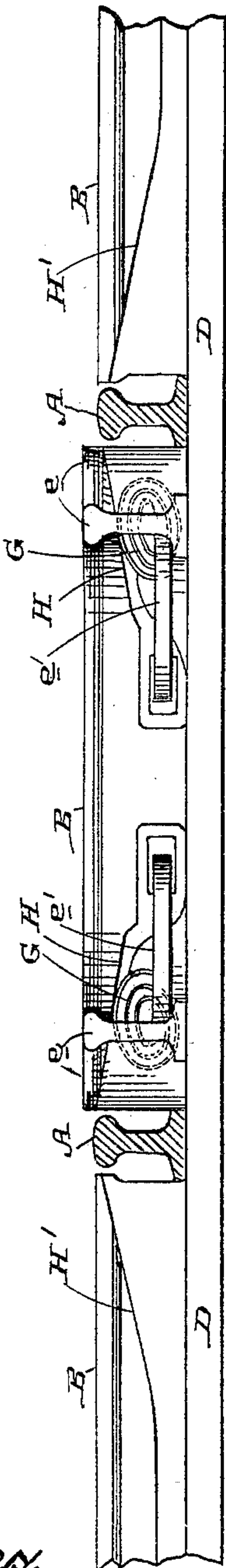
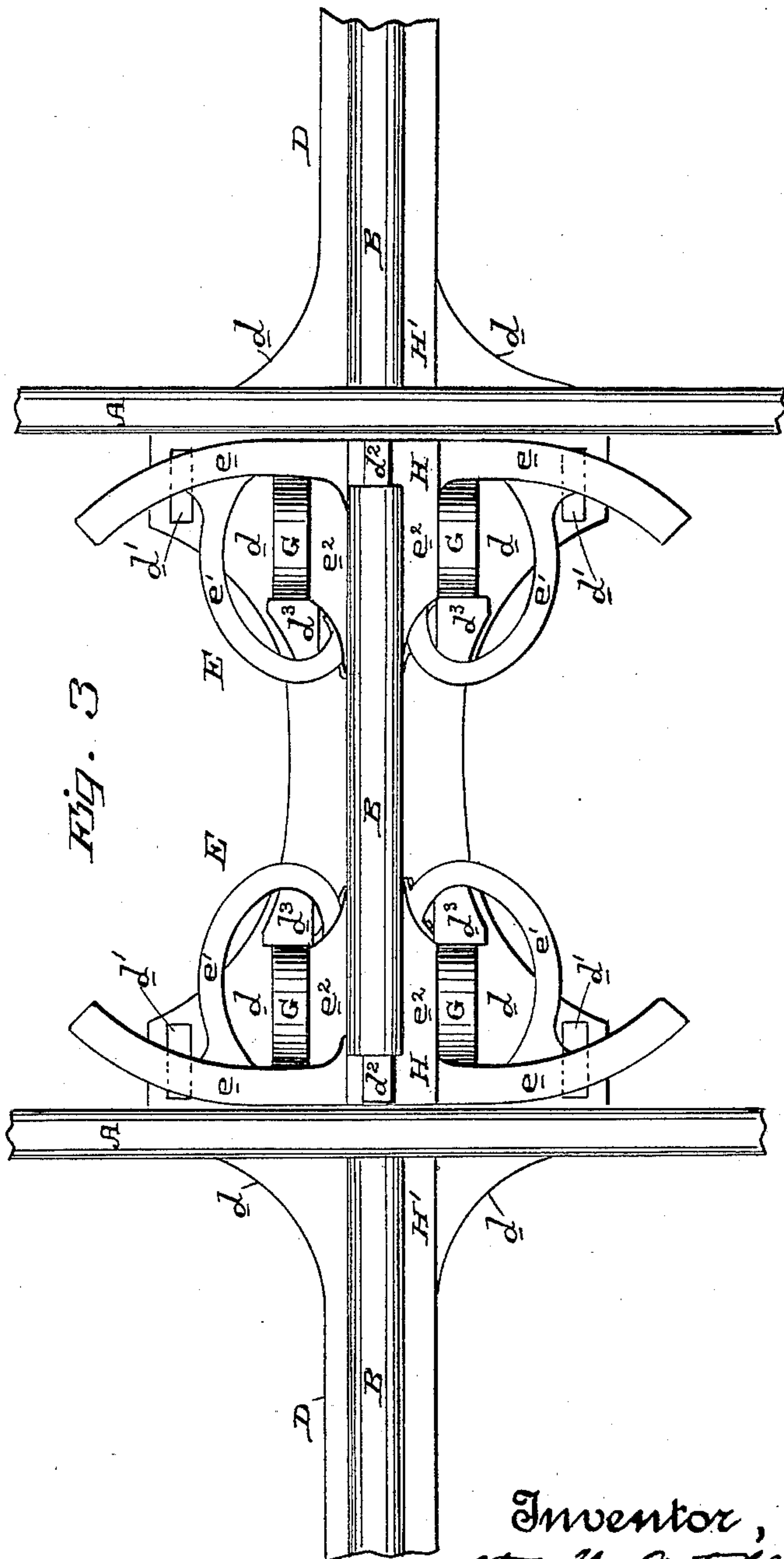


Fig. 3.



Witnesses,
J. H. H. H.
H. C. Lee.

Inventor,
Walter M. Axtell
By Denny & Co.
Attorneys

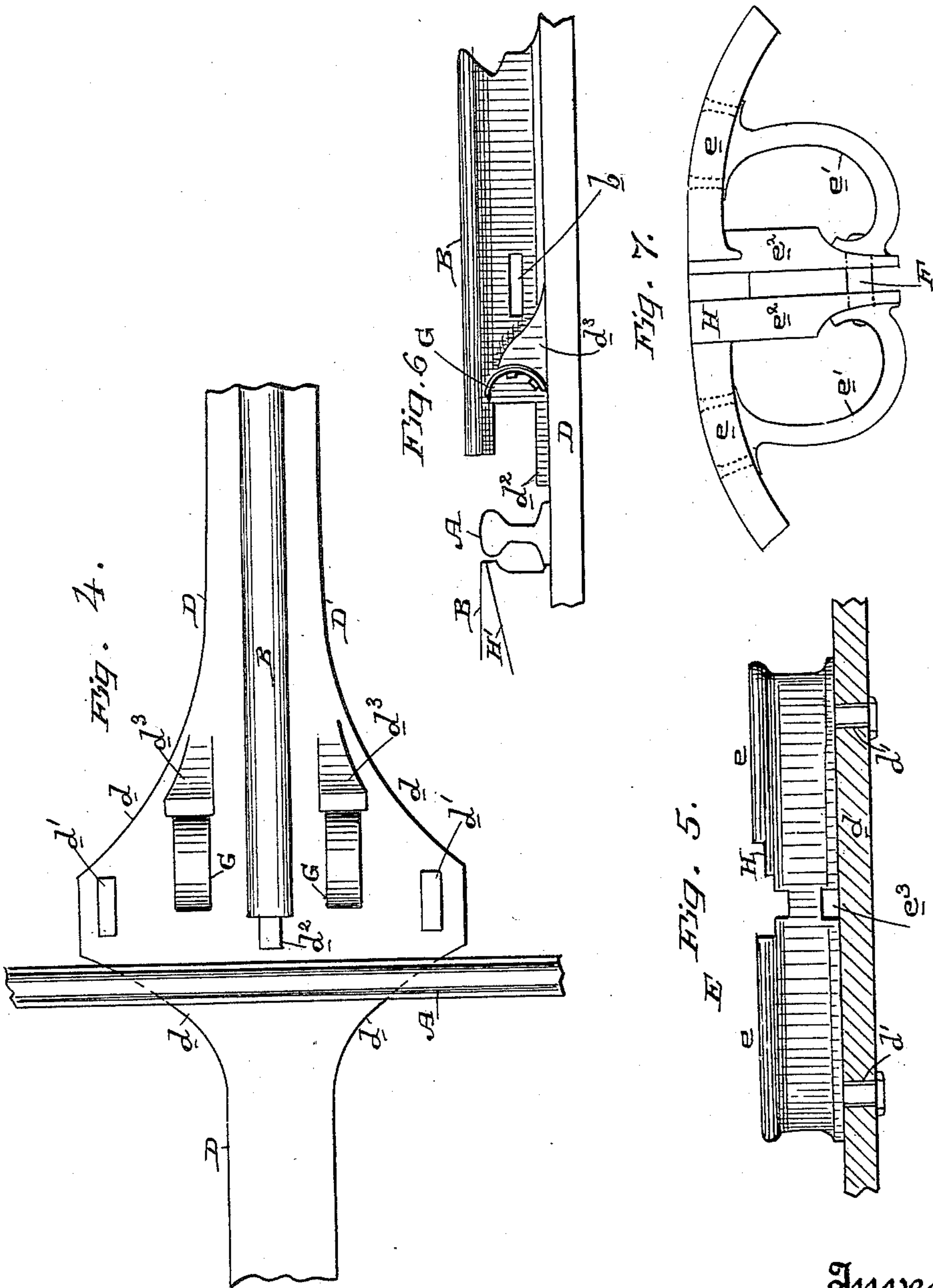
(No Model.)

3 Sheets—Sheet 3.

W. M. AXTELL.
RAILWAY CROSSING.

No. 442,411.

Patented Dec. 9, 1890.



Witnesses,
G. H. Hance
H. C. Lee

Inventor,
Walter M. Atell
By Dewey & Co
attys

UNITED STATES PATENT OFFICE.

WALTER M. AXTELL, OF FRUIT VALE, CALIFORNIA.

RAILWAY-CROSSING.

SPECIFICATION forming part of Letters Patent No. 442,411, dated December 9, 1890.

Application filed July 22, 1890. Serial No. 359,560. (No model.)

To all whom it may concern:

Be it known that I, WALTER M. AXTELL, a citizen of the United States, residing at Fruit Vale, Alameda county, State of California, have invented an Improvement in Railway-Crossings; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of railway-crossings; and it consists in the novel constructions hereinafter fully described, and specifically pointed out in the claims.

The objects of my invention are to provide a solid foundation and connection for the different joints or sections of the broken or crossing track, and also to provide for bridging the otherwise open joints of said crossing track by making a continuous track without interfering with the use of the tracks crossed.

My invention is applicable to any form of rail-track and crossing over and under any number of tracks in succession.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of two crossings, one of said crossings being with ordinary T-rails and the other crossing showing an ordinary flat rail crossing a T-rail. Fig. 2 is a side elevation of the crossing rail and guard. Fig. 3 is a plan of my crossing. Fig. 4 is a plan view of the crossing rail, the guard being removed. Fig. 5 is a front view of the guard. Fig. 6 is a side view of the crossing rail, the guard being removed. Fig. 7 is a plan of the guard.

A represents a line of track to be crossed and here shown as being of the ordinary T-rail type.

B represents a line of track crossing the track A, and of the ordinary T-rail type.

C, in Fig. 1, represents a line of track also crossing track A, and consisting of the ordinary flat rails used by street-railways.

The rails of the crossing tracks are provided with an underlying shoe or stringer represented by D and extending under and several feet on each side of the track A, which said track lies in the joints between the sections of the crossing tracks and rests upon the shoes or stringers D. These shoes or stringers give a firm and continuous foundation and connection for the crossing tracks, preventing springing and jolting at the open

ends of track, and making a comparatively easy crossing. It will be seen that what are usually the different sections of the crossing tracks or rails are now connected together rigidly by means of the shoe or stringer D, the rails being provided with cross openings sufficient to let the rails of the main track A down into them, so that they rest their bases upon the shoes or stringers. The shoes or stringers thus form foundation-pieces, and they may be of a width and thickness proportionate to the weight and traffic to be borne, and they may be extended indefinitely under any number of tracks in succession. They may be formed integral with the crossing rails, as here shown, or they may be separate pieces bolted to said rails.

In cases where the movable guards hereinafter described are not used the shoe or stringer may be of uniform width throughout its length, but where such guards are used the shoe or stringer is to be broadened out, as shown at *d*, so as to form a bed-plate for them, as will be now described.

The movable guard (represented generally by E) consists of two inwardly-curved arms *e*, having a notch or groove at their middle to fit up to and slide beside the head of the intervening or middle section of the crossing rail, backwardly-extending braces *e'*, and connecting-pieces *e²*, joining the inner ends or middles of the arms *e* with the rear ends of the braces *e'* and fitting into and sliding in the web of the crossing rail B on each side. This guard rests upon the widened portion *d* of the shoe or stringer D, and elongated slots *d'* may be made in said widened portion adapted to receive downwardly-extending pins from the guard, whereby the guard is guided and held down to place. The main guide, however, of said guard consists of a bolt F, which is secured between the rear ends of the braces *e'* and connecting-pieces *e²* and passes through an elongated slot or opening *b* in the web of the crossing rail B. This guard is farther guided in its sliding movement by having in its lower portion a groove *e³*, which fits over and is adapted to slide upon a rib *d²* on the widened portion of the shoe or stringer. This widened portion of the shoe or stringer is also provided with upwardly-extending lugs *d³*, between which and the inner surfaces of the arms *e*

of the guard E are located springs G, the tendency of which is to hold said guard up close to the inner surface of the rail of the track to be crossed. The middle portion of the guard is provided with an inclined plane H, the upper end of which lies flush with the upper surface of the head of the rails of track A.

The inner side of the crossing rail B or C is provided with an inclined plane H', the upper end of which lies flush with the top of the rail A.

The operation is as follows: The normal position of the guard E is close up to the inner side of the rail A to be crossed. The outer section of the crossing rail comes up close to the outer surface of the rail A, and the two inclined planes H and H' are close to the head of the rail A and level with its surface. Now a wheel traveling upon the crossing track B or C and approaching the track A to be crossed its flange runs up on the inclined plane H' and rolls across the track A and onto the inclined plane H of the guard and down said plane until the tread of the wheel again rests upon the head of the intervening section of the crossing rail. As it reaches the other side, the flange travels up the opposite inclined plane H of the opposite guard across the rail A onto and down the inclined plane H' of the outside section until the tread of the wheel again comes down onto the head of the outside section of the crossing rail. It will thus be seen that a continuous crossing track is provided. Nor does this interfere with the use of the track to be crossed, for the reason that as a wheel approaches on said track its flange, entering behind the inwardly-curved arm *e* of the guard, presses the whole of said guard backwardly away from the rail, so that the flange can travel by it without interference, and as soon as it has passed the springs G throw the guard back again to its normal position to close up the joint of the crossing track.

In Fig. 1 on one side I have shown, in connection with the T-rail crossing, one of the guards forced back and the other in its normal position against the rail A, and in said figure, in connection with the flat-rail crossing, I have shown one of the guards in normal position against the rail A and the other forced back.

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

1. In a railway-crossing and in combination with the crossing and crossed rails, the inclined plane H' on the outer sections of the crossing rails and the sliding inclined planes H on the intervening section of the crossing rails, the upper ends of said inclined planes being level with the upper surface of the head of the crossed rails, substantially as herein described.

2. In a railway-crossing and in combination with the crossing and crossed rails, the in-

clined planes H' of the outer sections of the crossing rails, the sliding inclined planes of the intervening sections of the crossing rails, the tops of said planes being level with the tops of the crossed rails, and springs acting upon said sliding planes to hold them normally close to the inner surfaces of the crossed rails, substantially as herein described.

3. In a railway-crossing and in combination with the crossing and crossed rails, the inclined planes H' of the outer sections of the crossing rails, the upper ends of said planes being level with the tops of the crossed rails, the sliding inclined planes of the intervening section of the crossing rails, the upper ends of said planes being level with the tops of said crossed rails, springs for holding said sliding inclined planes up close to the inner surfaces of the crossed rails, and arms connected with said sliding inclined planes adapted to be acted upon by the flanges of wheels upon the crossed rails, whereby said planes are moved inwardly to permit the passage of the wheel-flanges, substantially as herein described.

4. In a railway-crossing, the guards on the inner sides of the crossed rails and sliding beside the adjacent ends of the intervening sections of the crossing rails, consisting of the inwardly-curved arms *e*, the braces and connecting-pieces, guides for directing the movement of said guards, the inclined planes H of said guards, and the springs G for holding the guards and inclined planes to the inner surfaces of the crossed rail, substantially as herein described.

5. In a railway-crossing, the combination of the crossing and crossed rails, the inclined planes H' of the outer sections of the crossing rails, the sliding guards E of the intervening sections having the inclined planes H, arms *e*, suitable guides connecting said guards with the intervening sections of the crossing rails, and the springs G, controlling said guards, substantially as herein described.

6. In a railway-crossing, the combination of the crossed rails A, the crossing rails having the shoes or stringers D, passing under and on each side of the rails A and widened out to form a bed *d*, the inclined planes H' of the outer sections of the crossing rails, the guards E of the intervening sections of the crossing rails, the inclined planes H and arms *e* of said guards, suitable guides for directing the movement of the guards and connecting them with the intervening sections of the crossing rails and with the bed *d* of the shoes or stringers D, and the springs for controlling said guards, substantially as herein described.

In witness whereof I have hereunto set my hand.

WALTER M. AXTELL.

Witnesses:

S. H. NOURSE,
H. C. LEE.