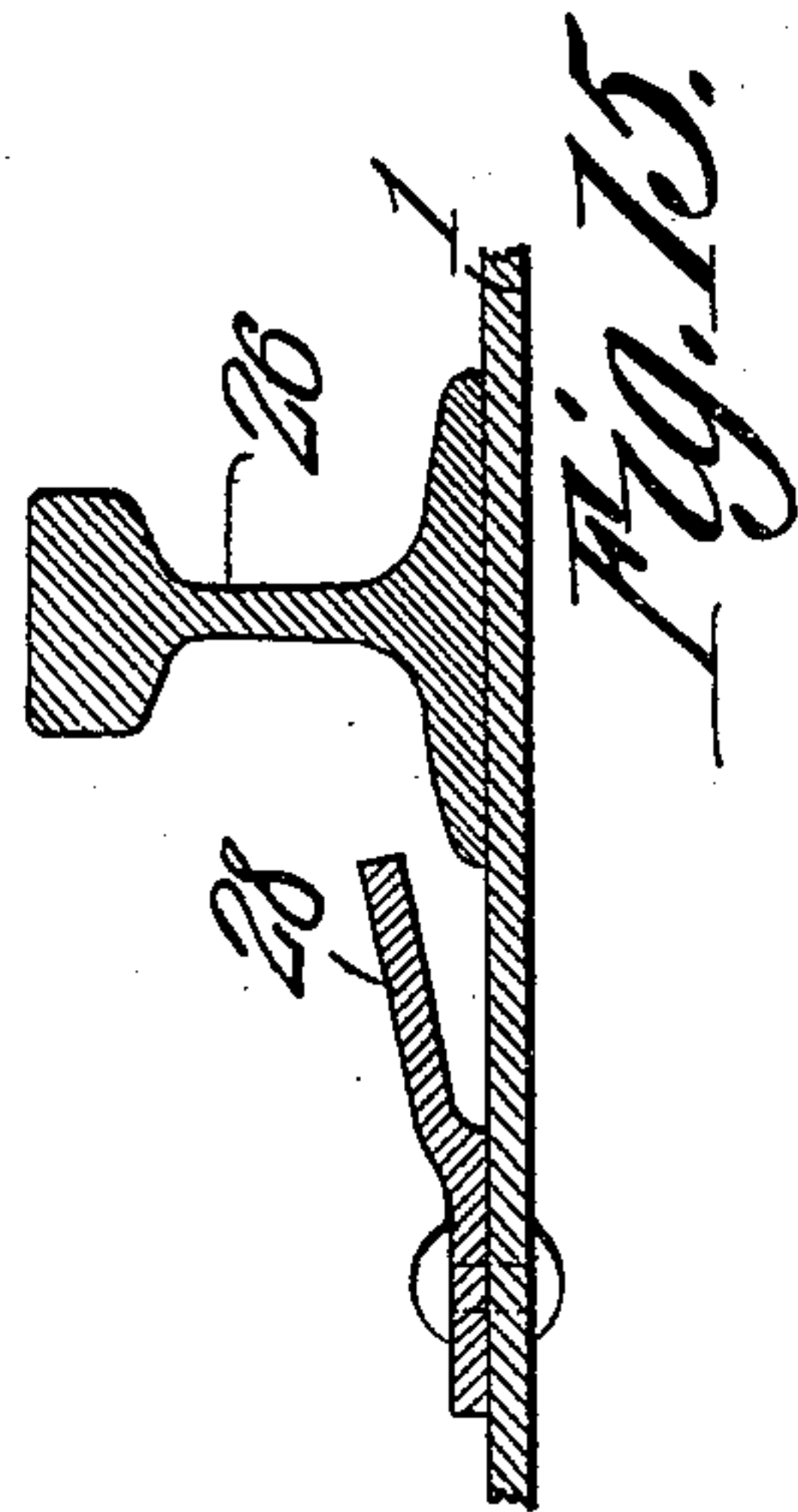
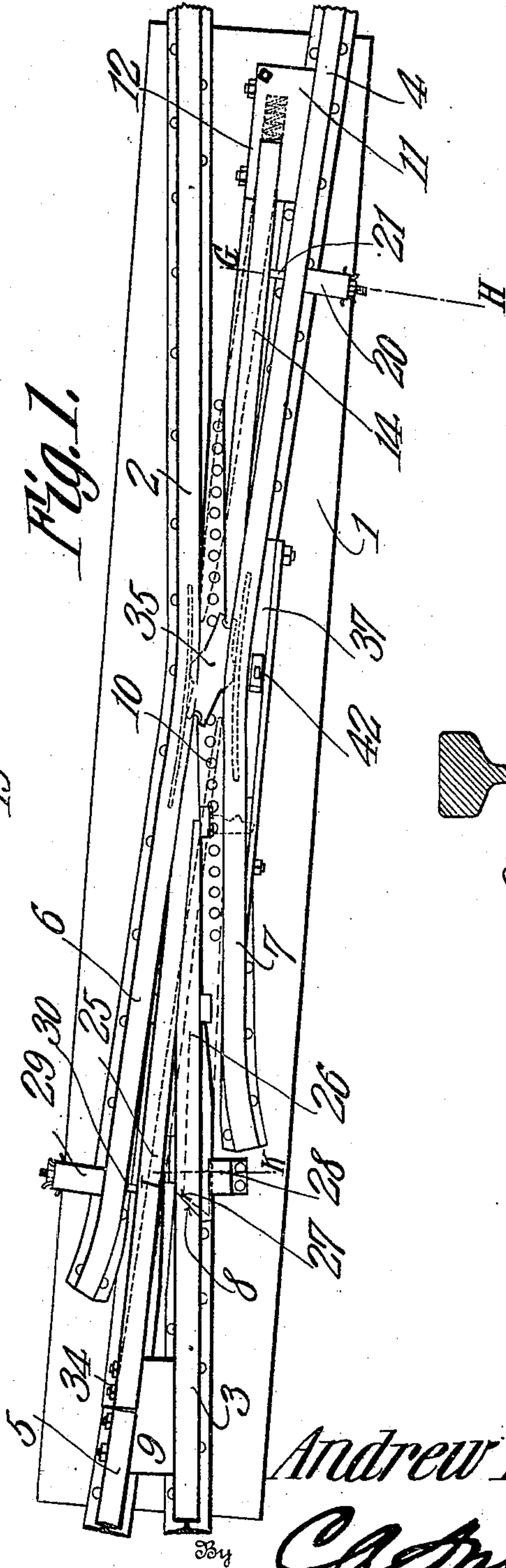
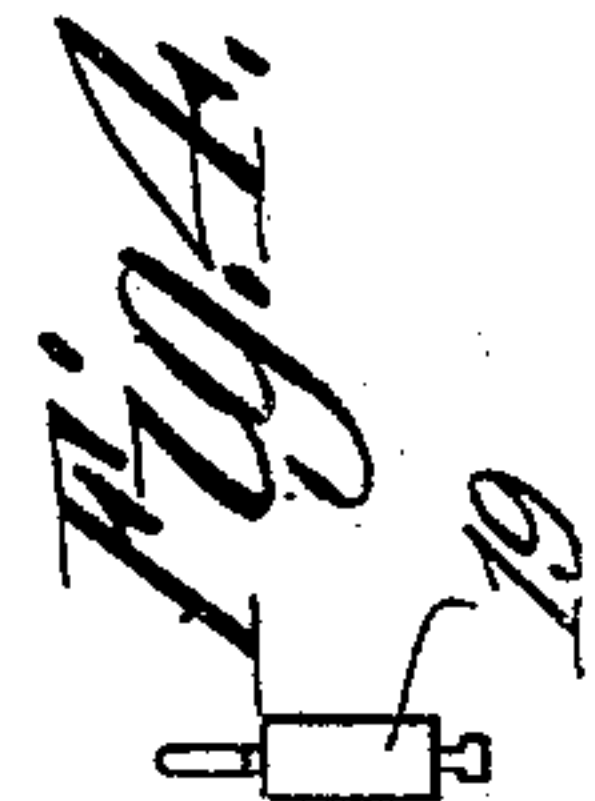
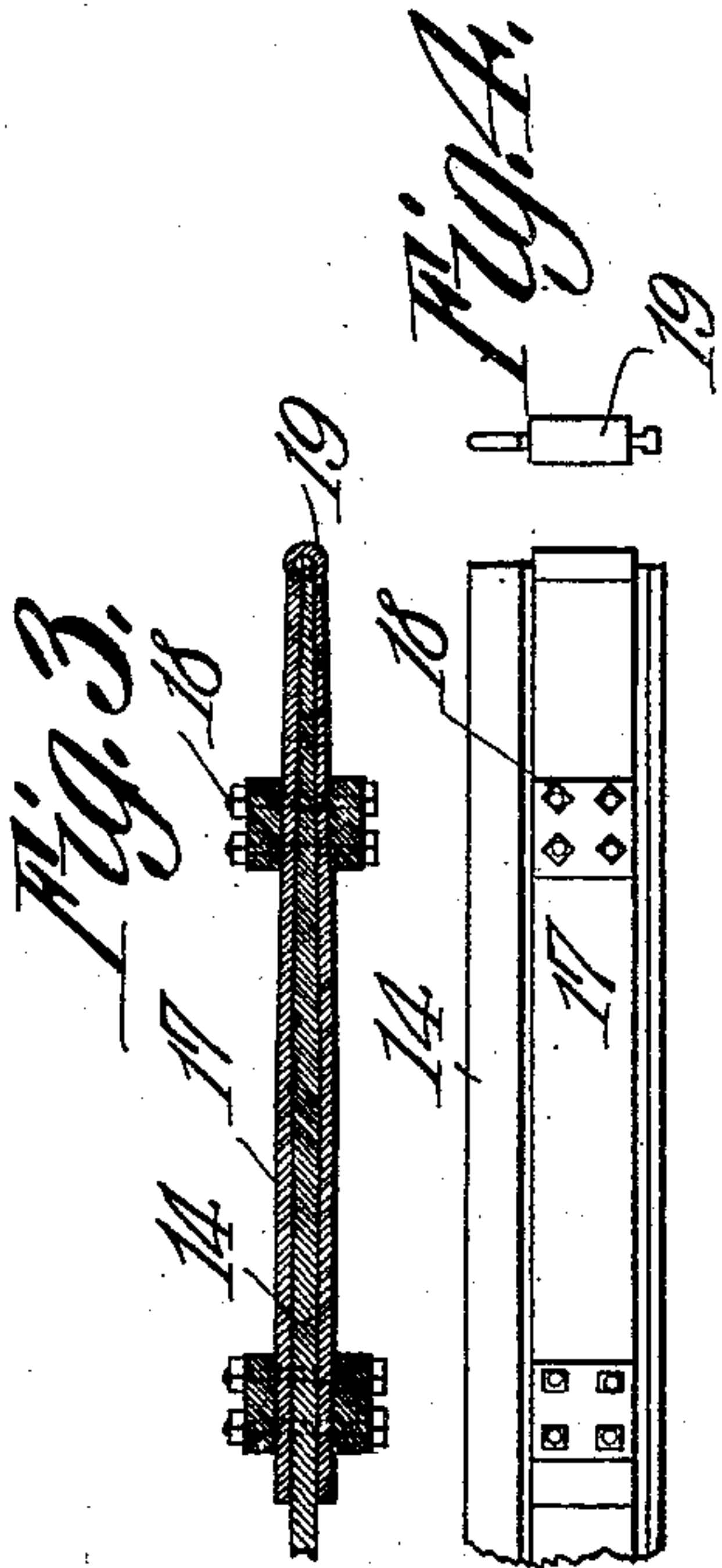
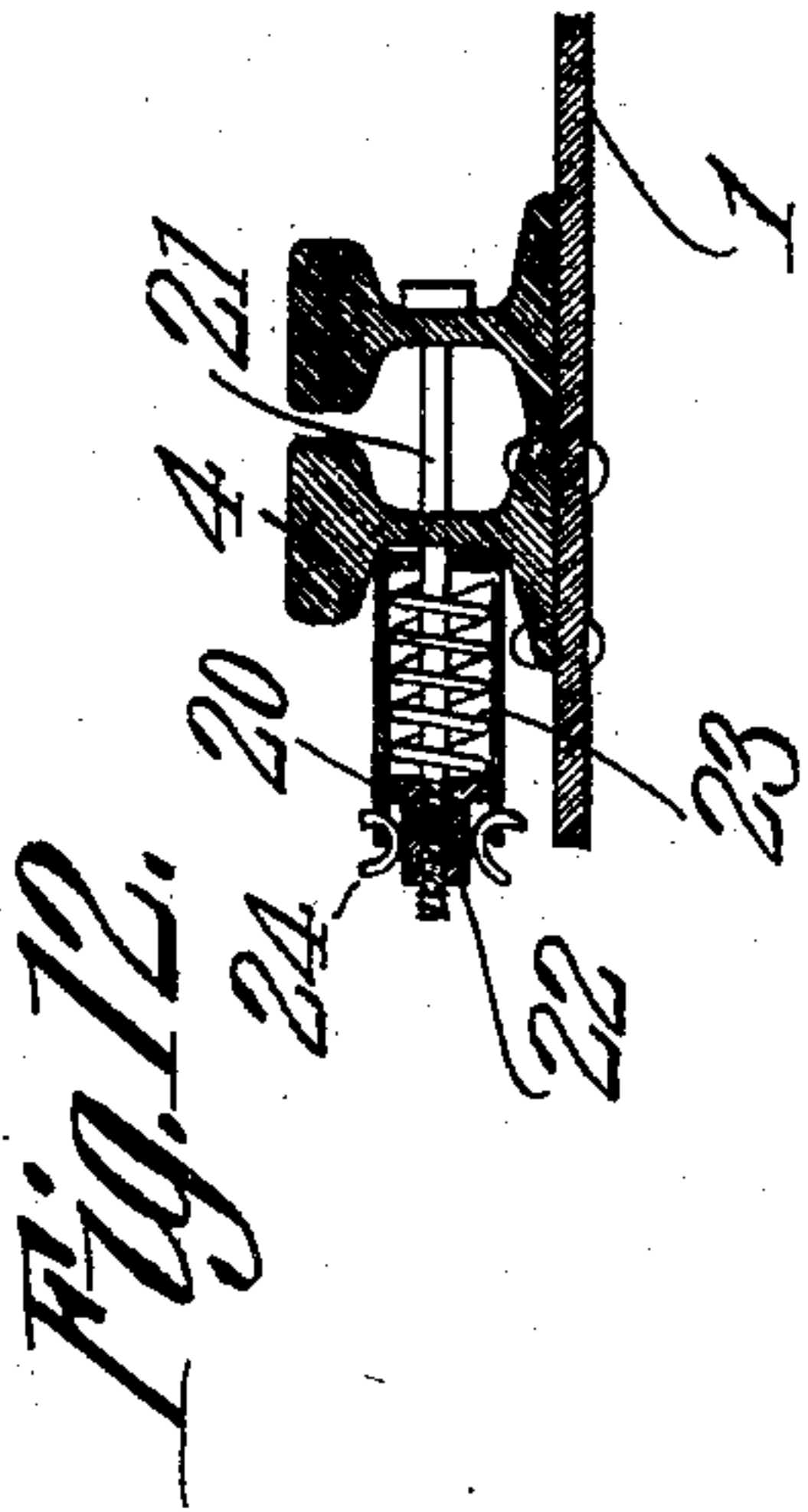


A. T. STETNA.  
RAIL FROG.  
APPLICATION FILED MAY 28, 1908.

908,349.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 1.



Witnesses

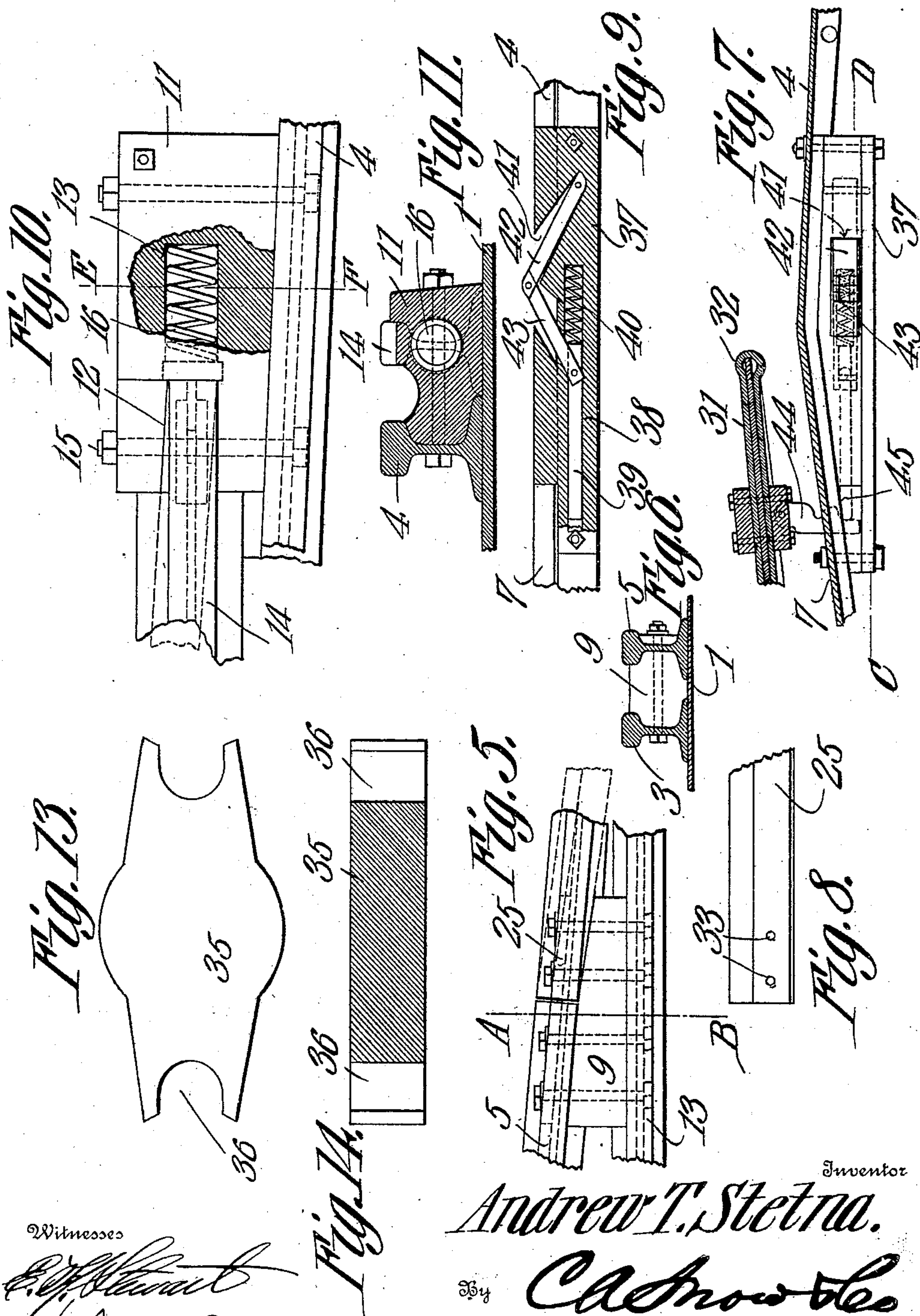
*Robert D. Lawson*

Inventor  
*Andrew T. Stetna.*  
By *Chas. Snow & Co.*  
Attorneys

908,349.

Patented Dec. 29, 1908.

2 SHEETS—SHEET 2.



Witnesses

Robert S. Lawson.

Inventor

*Andrew T. Stetna.*

Ca Snowble

Attorneys



# UNITED STATES PATENT OFFICE.

ANDREW T. STETNA, OF WHEATON, KANSAS.

## RAIL-FROG.

No. 908,349.

Specification of Letters Patent.

Patented Dec. 29, 1908.

Application filed May 28, 1908. Serial No. 435,571.

*To all whom it may concern:*

Be it known that I, ANDREW T. STETNA, a citizen of the United States, residing at Wheaton, in the county of Pottawatomie and State of Kansas, have invented a new and useful Rail-Frog, of which the following is a specification.

This invention relates to railway frogs and its object is to provide a frog having shiftable spring controlled members designed to be actuated by the flanges of car wheels passing over the frog upon either track of the crossing and when moving in either direction.

Another object is to provide opposed members movably mounted and having means whereby movement may be transmitted from one member to the other so that both will be simultaneously shifted by the car wheels.

Another object is to provide simple means whereby the members may be firmly clamped against the rails so as to prevent the flanges of the car wheels working between the members and the rails against which they are shifted.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a plan view of a frog constructed in accordance with the present invention. Fig. 2 is a side elevation of the tongue. Fig. 3 is a horizontal section there-through. Fig. 4 is an elevation of the knob end of the point. Fig. 5 is an enlarged plan view of the connection between the point and a rail. Fig. 6 is a section on line A—B, Fig. 5. Fig. 7 is a horizontal section through the point and showing the locking mechanism used in connection therewith. Fig. 8 is an elevation of the butt end portion of said point. Fig. 9 is a vertical section on line C—D, Fig. 7. Fig. 10 is a view partly in plan and partly in section of the butt end of the tongue and its holding block. Fig. 11 is a section on line E—F, Fig. 10. Fig. 12 is a section on line G—H, Fig. 1. Fig. 13 is a plan view of the intermediate actuating lever. Fig. 14 is a central longitudinal section therethrough. Fig. 15 is a section on line I—K, Fig. 1.

Referring to the figures by characters of reference, 1 designates an elongated base

plate on which are secured the alining main line rails 2 and 3 and the alining crossover rails 4 and 5. The rail 2 has its end portion bent at an angle to form a guard rail 6 extending parallel with the rails 4 and 5, while the rail 4 has its end portion bent at an angle to form a guard rail 7 extending parallel to the rails 2 and 3. Rail 5 is cut away preferably at right angles, whereas rail 3 terminates in a beveled end 8. These two rails 3 and 5 have a filling block 9 interposed between and bolted to them so that they are held properly spaced and connected at all times. Apertures 10 are preferably formed in the base plate between the rails 2 and 5 and the guard rails 6 and 7 to permit moisture to drain through the plate at these points and also to allow small particles of dirt, etc., to sift therethrough.

Secured to the rail 4 and between it and the rail 2 is a holding block 11 having a recess 12 extending into one end thereof and from the inner wall of which extends a socket 13. Projecting into the recess 12 is the butt end of a shiftable tongue 14 having its free end beveled on both faces so that the same can be shifted to fit snugly against either rail 2 or rail 4. The recess 12, as indicated in Fig. 10, is shaped so as to permit the sliding lateral movement of the tongue, which necessarily occurs within the recess while the tongue is being shifted. A bolt 15 extends through the block 11 and transversely through the recess 12 and the butt end of the tongue 14 as ordinarily, and a spring 16 is seated within socket 13 and bears constantly against the end of the tongue. As shown in Figs. 2, 3, and 4 the metal plates 17 are secured by means of bolts 18 to opposite faces of the web of tongue 14, said plates being extended beyond the point and shaped to form a knob 19.

A casing 20 is secured to the rail 4 and extends laterally therefrom and extending through this casing and through the rail is a rod 21 having a head engaging the tongue 14. A nut 22 is mounted on the threaded end of rod 21 and is designed to slide within the casing 20 and interposed between the rail 4 and this nut is a spring 23. Any suitable means such as bent wires 24 can be provided for preventing the nut 22 from unscrewing from the bolt 21. This spring pressed bolt 21 serves to hold tongue 14 normally pressed against rail 4 as shown in Fig. 1.

Extending between the guard rails 6 and 7



is a shiftable V-shaped point consisting of a relatively long arm 25 one end of which is cut off at right angles while the other end has a relatively short arm 26 bolted to it and provided with a beveled end 27 designed to abut against the beveled end 8 hereinbefore referred to. Arm 26 is so positioned as to align with the rails 2 and 3 when the point is shifted against the guard rail 6, said point being also shiftable against the guard rail 7 so as to bring the arm 25 into alignment with the rails 4 and 5. A combined stop and holding plate 28 is secured to base plate 1 and is designed to receive thereunder one base flange of the arm 26 when the point is shifted against the guard rail 7. A casing 29 similar to the casing 20 is connected to the guard rail 6 and has a spring pressed rod 30 extending therefrom and through rail 6, said rod being secured to the arm 25 of the V-shaped point. As shown in Fig. 7 the shiftable V-point formed by the arms 25 and 26 has plates 31 secured to opposite faces thereof and forming a knob 32 at the free end of the point, said knob being similar to the knob 19 heretofore referred to. It is of course to be understood that in order that the arm 25 may be shifted relative to the rail 5 it is necessary to form one or more slots 33 therein for the reception of bolts 34 extending through the filling block 9. A lever 35 is interposed between the rails 2 and 4 where they merge into the guard rails 6 and 7 and this lever has recesses 36 in its ends into which the knobs 19 and 32 project. The side edges of the lever are rounded so as to properly bear against the rails 2 and 4 as shown in Fig. 1.

Secured within the angle formed by rail 4 and guard rail 7 is a block 37 having an elongated socket 38 extending longitudinally therein and within this socket is mounted a plunger 39 which is held normally projected toward one end of the socket by means of a spring 40. Recesses 41 are formed in the upper face of the block 37 and one of them opens into socket 38. Pivoted within one recess 41 is a link 42 and another link 43 is pivoted to the link 42 and extends through the other socket 41 and is pivotally connected to the plunger 39. The joint formed by the two links 42 and 43 is normally positioned above the top face of block 37 and close to and above the tread of the rail 4. Slidably mounted within and extending transversely of the block 37 is a slide 44 pivotally connected to the V-point 25—26 and having a V-shaped tooth 45 extending from one edge thereof, either one of the inclined faces or edges of the tooth being designed to be engaged by the end of plunger 39, according to the position of the point 25—26.

It is to be understood of course that the tongue 14 and frog point 25—26 are held by the springs in casings 20 and 29 normally

pressed against the rails 4 and 6 respectively, thus maintaining the main rail 2—3 normally closed. If a car approaches the frog along rail 4 the flanges of the wheels will wedge between rail 4 and tongue 14 and will shift said tongue against rail 2 and thus tension the spring and casing 20. At the same time lever 35 will be swung by the tongue 14 so as to throw the point 25—26 against guard rail 7. This action will force the slide 44 into the block 37 and the tooth 45 thereon will push past the end of the plunger, this action being permitted in view of the fact that the plunger is spring pressed. The treads of the wheels will ride over the projecting joint formed by links 42 and 43 and the plunger 39 will thus be forced against one inclined edge of the tooth 45 and thus throw the slide 44 longitudinally so as to tightly bind the point and tongue against the rails with which they contact. As soon as the wheels have passed onto the point 25—26 and rail 5 the springs 23 will return the points to their initial positions. Obviously the frog will operate in the same manner when a car approaches it in either direction upon either rail.

The guard rail 6 is so shaped at its terminal that when the flanges of the car wheels crowd between this rail and the point 25 said point will be thrown fully over before much of the weight of the car is brought thereon. That face of the point 10 adjoining the rail 4 is provided with a slight curve so as to insure a proper contact between said parts.

What is claimed is:

1. A railway frog comprising fixedly secured main line, crossing and guard rails, a frog point and a tongue movably mounted between the rails and shiftable by wheel flanges, and means interposed between the rails and directly engaged at its ends by the ends of the point and tongue for transmitting motion between the point and the tongue.

2. In a railway frog the combination with fixedly connected main line, siding, and guard rails; of a shiftable frog point and a slidable tongue interposed between the rails and movable by the flanges of a car-wheel, and a motion-transmitting lever interposed between the rails and between the point and tongue and directly engaged at its ends by the ends of the point and tongue.

3. A railway frog consisting of fixed rails, a point and a tongue oppositely disposed, a lever movably mounted between the rails and having recessed ends, enlargements upon the point and tongue and movably mounted within the recessed ends, and means depressible under the weight of wheels passing over the rails for binding the point and tongue in shifted positions.

4. A railway frog comprising fixedly connected main line, siding, and guard rails, a frog point and a tongue oppositely disposed



and movably mounted therebetween and shiftable by the flanges of car wheels passing over the rails, means for causing the simultaneous movement of the point and tongue 5 in opposite directions, and means operated by the wheels upon the car for binding the point and tongue in shifted positions.

5. A railway frog comprising fixedly connected main line, crossing, and guard rails, a 10 movable frog point and a movable tongue oppositely disposed and interposed between the rails, spring actuated means for holding said point and tongue normally in predetermined positions, movable means connecting 15 the point and tongue for transmitting motion from one to the other, said point and tongue being shiftable by the flanges of car wheels upon the rails, a slide connected to the point, a spring pressed plunger normally engaging 20 the slide, and means connected to the plunger for actuation by wheels passing over the frog to actuate the plunger to bind the point and tongue in shifted position.

6. The combination with a shiftable frog

point, a slide movable therewith, and a 25 pointed projection upon the slide; of a spring actuated plunger normally bearing against the slide, said projection being shiftable into position at either side of the projection, and means connected to the plunger and 30 depressible by wheels upon the frog for shifting the plunger against the projection to bind the point in shifted position.

7. In a railway frog a tongue and a shiftable frog point oppositely disposed, knobs 35 disposed at the adjoining terminals of said tongue and point, and a lever interposed between and engaging the knobs, said lever constituting means for transmitting motion 40 between the tongue and point.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ANDREW T. STETNA.

Witnesses:

SETH INGALSBEЕ,  
JAMES McDERMOTT.