No. 790,994. PATENTED MAY 30, 1905.

S. A. ANDERSON.

RAILWAY FROG.

APPLICATION FILED SEPT. 21, 1904.

Fig. 1.

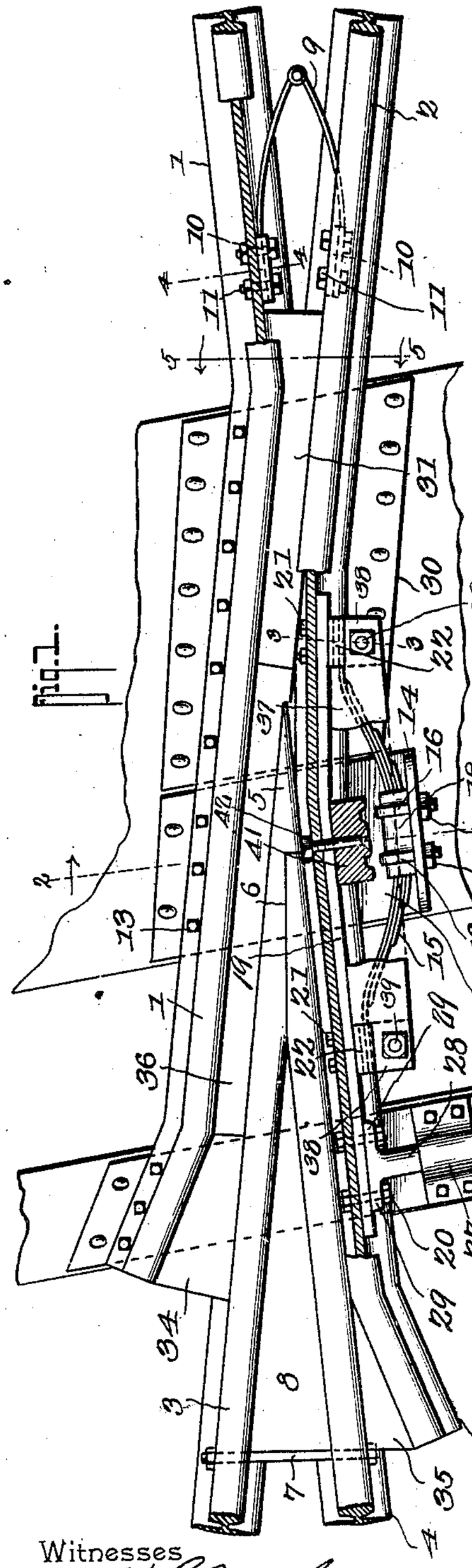

Fig. 6.

Fig. 4.

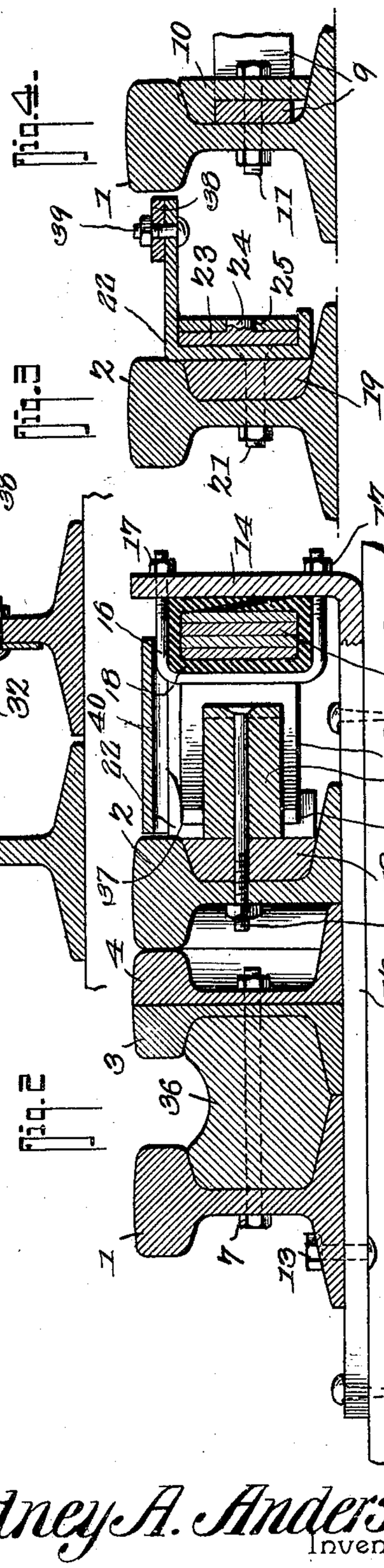

Fig. 5.

Fig. 3.

Fig. 2.

Witnesses

E. F. Stewart

L. S. Shepard.

Sidney A. Anderson,
Inventor.

by C. A. Snow & Co.
Attorneys

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No. 790,994. Patented May 30, 1905.

UNITED STATES PATENT OFFICE.

SIDNEY A. ANDERSON, OF HOUSTON, TEXAS.

RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 790,994, dated May 30, 1905.

Application filed September 21, 1904. Serial No. 225,369.

To all whom it may concern:

Be it known that I, SIDNEY A. ANDERSON, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented a new and useful Railway-Frog, of which the following is a specification.

This invention relates to railway-frogs, and has for its object to provide an improved mounting of the wing-rail, whereby the latter is maintained in yieldable engagement with the point-rail and is guided in a substantially straight line in its movements toward and away from the point-rail, so as to prevent binding of the wing-rail when displaced by wheel-flanges and in returning to its normal position.

With this object in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a plan view of the improved railway-frog, parts being broken away to illustrate the mounting of the movable wing-rail. Fig. 2 is an enlarged cross-sectional view on the line 2 2 of Fig. 1. Fig. 3 is an enlarged detail cross-sectional view on the line 3 3 of Fig. 1. Fig. 4 is a similar view on the line 4 4 of Fig. 1, and Fig. 5 is a similar view on the line 5 5 of Fig. 1. Fig. 6 is a detail perspective view of the cover-plate for the main spring.

Like characters of reference indicate corresponding parts in each of the several figures the drawings.

As indicated in the accompanying drawings, 1 designates the stationary wing-rail, and 2 the movable wing-rail, between which is located the point of the frog made up of the two stationary rails 3 and 4. The stationary rail 3 is tapered to a point 5 and is notched upon its outer side, as at 6, to receive the forward end of the rail 4 and is rigidly connected thereto by bolts 7. A suitable wedge-shaped filling-block 8 is interposed between the point-rails 3 and 4, so as to brace the same and maintain them in rigid condition.

In front of the point 5 the wing-rails 3 and 4 are suitably connected by a substantially U-shaped spring 9, interposed between the rails with its free ends directed toward the point and secured to the webs of the respective rails in the manner shown in Fig. 4, wherein it will be seen that each end of the spring is embraced between the web of the adjacent rail and an inverted substantially L-shaped plate 10, there being one or more bolts 11 piercing the web of the rail, the adjacent side of the spring, and the plate 10, thereby to provide a rigid connection between the spring and the rail. It will here be explained that the tendency of the spring 9 is to draw the movable wing-rail 4 against the point of the frog, so as to insure a positive movement of the forward end of the movable wing-rail.

Intermediate of the length of the movable wing-rail, but nearer the rear end thereof, there is a rail-chair 12, which extends beneath the several rails and is spiked down to a cross-tie in the usual manner, the fixed or stationary wing-rail 1 being rigidly connected to the rail-chair by suitable fastenings 13, either bolts or rivets. This rail-chair projects at opposite sides of the frog and terminates in an upstanding shoulder 14 at the outer side of the movable wing-rail 2. A bowed spring 15, is made up of a plurality of spring members or plies applied face to face and secured to the inner side of the shoulder 14 by means of a pair of U-shaped clips 16, which embrace the spring intermediate of its ends and pierce the shoulder 14, there being nuts 17 applied to the projected ends of the clips, so as to clamp the spring between the clips and the shoulder, that portion of the spring which is embraced by the clips being embraced by a metal sleeve 18. A filler-bar

19 is applied to the outer side of the web of the movable wing-rail 2 and is terminally secured thereto by means of the sets of bolts 20 and 21. The bolts 21 serve to secure a flanged or substantially U-shaped guide-bracket 22 against the filler-bar 19, and within this bracket or guideway is a slidable wear-plate 23, having a projection 24, engaged with a perforation 25 in the adjacent free end of the spring 15, whereby wear is taken up by the bracket 22 and the wear-plate 23, and all wear upon the spring is prevented. The opposite end of the spring is connected to the movable wing-rail in the same manner, as clearly indicated in Fig. 1.

In rear of the bowed spring 15 there is a rail chair or plate 26, projected externally of the movable wing-rail and provided with a guide loop or bracket 27 to slidably receive a finger or projection 28, carried by the wing-rail and secured thereto by means of the bolts 20, hereinbefore referred to, which pass through the ears or flanges 29 at the inner end of the projection. The purpose of this projection 28 and loop 27 is to guide the movable wing-rail in its movements toward and away from the point of the frog.

It will here be explained that each of the springs tends to yieldably force the movable wing-rail inwardly, but permits of said rail being moved or displaced outwardly by wheel-flanges passing between the movable wing-rail and the point of the frog. The spring 15 of course exerts the main influence to yieldably retain the movable wing-rail in engagement with the point of the frog. The spring 9 is supplemental thereto and is intended to insure a movement of the forward end of the wing-rail simultaneously with the remaining portion of said rail, while the guide projection 28 at the opposite end of the wing-rail insures a straight movement of the rail and prevents binding thereof.

In front of the rail-chair 12 is another and longer chair 30, which is spiked down to one or more ties and has the fixed wing-rail 1 bolted or riveted thereto, so as to insure a rigid mounting of this rail.

Between the movable and fixed wing-rails and in front of the point of the frog is a foot-guard 31, which is in the nature of a metallic plate having a pendent longitudinal flange 32 rigidly secured to the web of the stationary rail 1 by suitable fastenings 33, the body portion of the plate lying below the tread of the rail and spanning the interval between the treads of the adjacent rails and underlapping the tread of the movable rail 2. Similar foot-guards 34 and 35 are interposed between the point and the stationary rail and between the point and the movable rail at the rear end of the frog. Between the foot-guards 31 and 34 there is a filler-bar 36, which is pierced by the bolts 7 and operates to prevent the lodgment of stones, &c., between the rails, this function also being accomplished by the several foot-guards.

It is proposed to house and protect the spring 15, and this is accomplished by means of a cover-plate 37, notched at its opposite ends to have its inner edge portion fit between the brackets 22 and to produce ears or projections 38, overlapping the upper flanges of the brackets 22 and secured thereto by suitable fastenings 39, preferably bolts. At the middle of the cover-plate 37 there is an upstruck portion 40 to accommodate the clips 16, which secure the spring 15 in place.

A stop-block 41 is secured to the web of the movable wing-rail 2 by a suitable fastening 42 and is located opposite the middle of the spring 15, so as to contact with the clip 16, and thereby limit outward movement of the wing-rail.

Having thus described the invention, what is claimed is—

1. In a railway-frog, the combination with a rail-point, of a movable wing-rail, a bowed spring supported intermediate of its ends independently of the wing-rail, and wear-plates carried by opposite ends of the spring and engaging the wing-rail at the outer side thereof to yieldably maintain said rail against the point.

2. In a railway-frog, the combination with a rail-point, of a movable wing-rail, channel-brackets secured to the outer side of the wing-rail, a bowed spring supported intermediate of its ends independently of the wing-rail, and wear-plates carried by opposite ends of the spring and working in the respective channel-brackets.

3. In a railway-frog, the combination with a rail-point, of a movable wing-rail, channel-brackets secured to the outer side of the wing-rail, a bowed spring supported intermediate of its ends independently of the wing-rail with its free extremities working in the channel-brackets, and a cover-plate covering the spring and secured to the channel-brackets.

4. In a railway-frog, the combination with a rail-point, of a movable wing-rail, a bowed spring supported intermediate of its ends independently of the wing-rail with its free end portions engaging the rail, and a stop carried by the outer side of the wing-rail substantially midway between the ends of the spring for contact with the middle of the latter to limit outward movement of the wing-rail.

5. In a railway-frog, the combination with a rail-point, of a movable wing-rail, a wear-plate lying beneath the wing-rail and projected beyond the same with its projected end having an upstanding flange, a bowed spring having its free end portions bearing against the wing-rail and its intermediate portion at

the inner side of the flange, a clip embracing an intermediate portion of the spring to connect the latter to the flange, and a stop carried by and projected outwardly from the wing-rail, the clip being located in the path of the stop for engagement thereby to limit outward movement of the wing-rail.

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

SIDNEY A. ANDERSON.

Witnesses:

C. M. BOOTH,

VICTOR PETISPAIN.