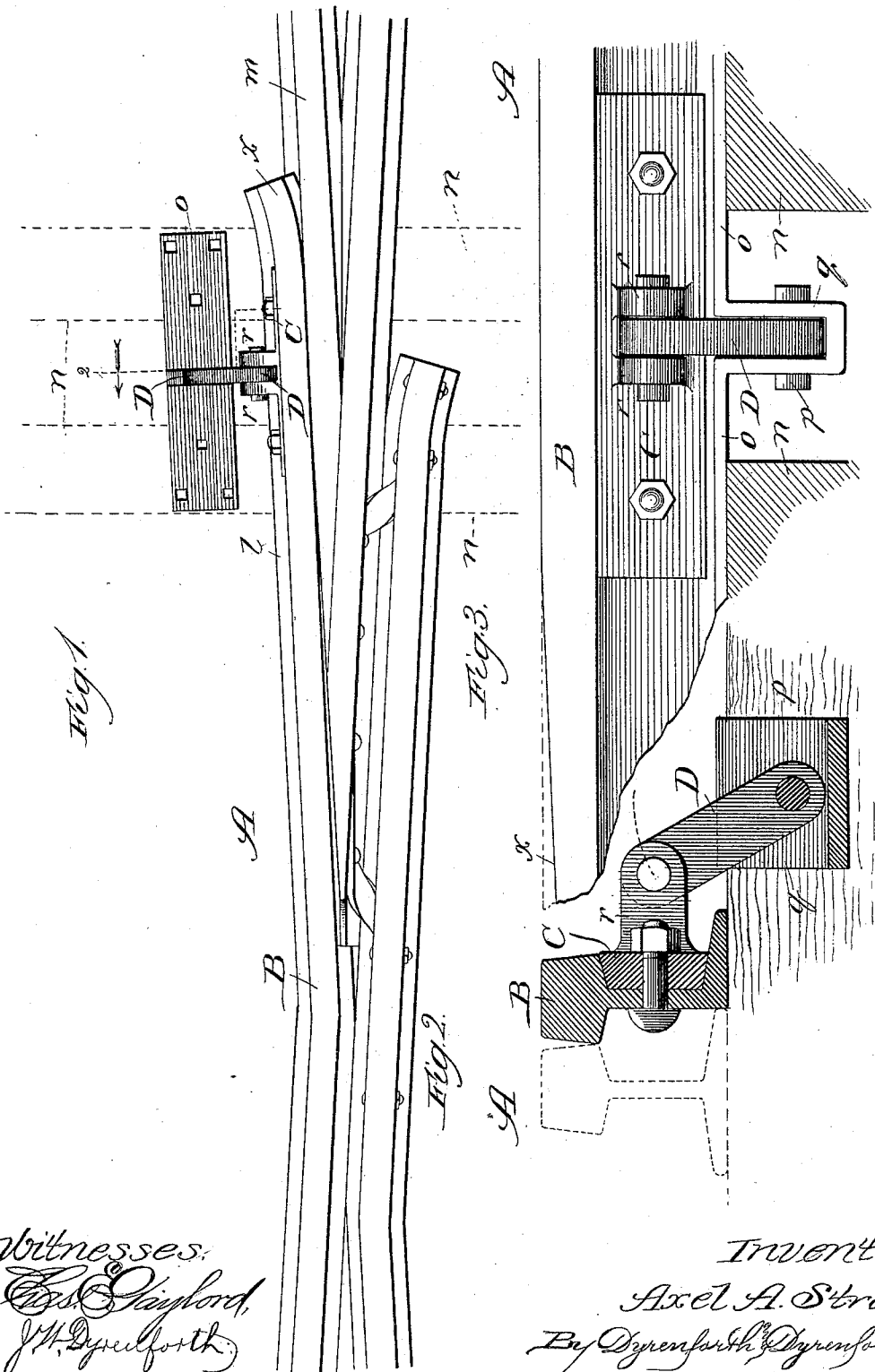


(No Model.)

A. A. STROM.
RAILROAD TRACK APPLIANCE.

No. 415,986.

Patented Nov. 26, 1889.



Witnesses,

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(A44) 1871

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UNITED STATES PATENT OFFICE.

AXEL A. STROM, OF AUSTIN, ILLINOIS.

RAILROAD-TRACK APPLIANCE.

SPECIFICATION forming part of Letters Patent No. 415,986, dated November 26, 1889.

Application filed April 26, 1889. Serial No. 308,715. (No model.)

To all whom it may concern:

Be it known that I, AXEL A. STROM, a citizen of the United States, residing at Austin, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Railroad-Track Appliances, of which the following is a specification.

My invention relates, more particularly stated, to improvement in the movable rail portion of a frog, switch, or crossing; and with relation to a frog my improvement is designed especially to afford a substitute for the so-called "spring-frog," in which the movable rail is held in its normal position and returned to that position when removed therefrom by the wheel-flanges of rolling-stock passing over the frog by the force of a spring.

My object is to simplify the mechanism for controlling the movable rail and provide a better construction for the purpose, avoiding the use of a spring which, to insure the necessary extent of movement of the rail by its recoil, should be so stiff as to operate with a degree of force liable to crack or break the rail, and which involves the employment of a form of mechanism comparatively complicated and not thoroughly reliable.

I accomplish my object by employing particular mechanism to confine the movable rail of a railroad frog, switch, or crossing yieldingly against an adjacent rail and render it separable therefrom, as by the action of the flange of a passing wheel, in an upward and lateral direction, and returnable toward its normal position with the force of its own gravity.

To avoid prolixity and unnecessary multiplication of the figures of the drawings, I confine the description of my improvement hereinafter contained and illustrate it only in connection with a railroad-frog, since in its application to a switch or crossing it involves the same general principles of construction and operation.

In the accompanying drawings, in which are represented my improved means applied to a frog, Figure 1 shows in plan view a railroad-frog embodying my improvements. Fig. 2 is a section taken on the line 2 of Fig. 1, viewed in the direction of the arrow, and enlarged; and Fig. 3, an enlarged view, in side

elevation, of a portion of the frog, the view being taken from the side at which the improved mechanism I employ is applied.

A is a frog, which may be of any suitable general construction, but shown in Fig. 1 as involving that set forth in Letters Patent of the United States No. 295,929, granted me on the 8th day of January, 1889.

B is the movable rail, which in a frog of the construction to which my improvement relates ordinarily is securely fastened at the end, where it affords an extension of the rail from which it continues, and which I bevel or hammer down, as shown at *a*, toward its diverted free extremity, thereby to lower the upper surface of the latter and bring it flush, or nearly so, when the movable rail is raised in the manner hereinafter described, with the adjacent rail, and thus prevent it from being struck by the passing train, as by the cow-catcher of the locomotive, in backing, or by other parts under the cars. The advantage of this last-named feature of my improvement is not restricted to the use thereof with the construction of frog herein shown and described, but affords the same advantage in connection with a so-called "spring rail frog," the movable rail in which, besides its lateral movement, is liable to rise, when if the upper surface of its diverted end be lowered according to my invention it is out of the way.

C is a plate secured to a side of the rail B near its free extremity, and having perforated ears *r* extending transversely from it, between which to pivot one end of a link D. The link D extends at an angle, say, of about sixty degrees from the horizontal, downward beyond the rail-flange, where it is pivotally secured, preferably, in a bearing afforded by a rectangular metal socket *q* to receive the lower end of the link and hold it by a pivot-pin *p*, passed transversely through the socket and link, the socket having lateral flanges *o* to rest upon adjacent ties *n*, to which they are secured, as shown, and whereby the socket extends below the upper surfaces of the ties.

From the foregoing description of the mechanism it will readily be seen that the flange of a wheel entering between the free end of the rail B and the stationary rail *m* adjacent

to it will exert its force laterally against the movable rail, and, owing to its connection with the link D', cause it to be moved in the arc of a circle, the extent of movement being limited, as by the contact of the rail-flange *l* with the adjacent side or edge of the link as the latter is raised toward a vertical position. The resistance to be overcome by the force of the passing wheel-flange is due primarily to the gravity of the movable rail and also to the friction on the link, and also if the movable rail be fastened at one end, substantially in the manner described, to such fastening. When the wheel-flange has passed from between the rails *m* and B, the latter is returned without undue force against the former by the force of its own gravity, which, if the rail B be fastened, as described, is supplemented by the force of its resilience.

An advantage in the employment of the link-controlling means thus described, and which is lacking in spring-held and other rails, consists in the wedging effect of the link, as the weight of the wheel and its load on the rail B presses it down, whereby the link is brought the nearer to a horizontal position and wedges or tightens the movable rail against the adjacent stationary rail, preventing (when the train is passing on the main line and not into the side track) its separation therefrom, to which there is a tendency if the holding means be in the form of a spring, the link D then partaking of the nature of a rail-brace.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a railroad-frog or the like, the combination, with the movable rail, of a plate C, secured to the rail, and a link D, pivotally connected at one end with the plate and extending therefrom at an oblique angle downward, and a separate support secured to the ties, and to which the link is pivoted at its opposite end, substantially as described.

2. In a railroad-frog or the like, the combination, with the movable rail, of a link D, pivotally connected therewith at one end and extending at an angle downward beyond the

rail-flange, and a socket *g*, supported between adjacent ties by its lateral flanges *o*, secured to the ties and having the lower end of the link pivotally confined within it, substantially as described.

3. In a railroad-frog or the like, the combination, with the movable rail, of a plate C, secured to the rail, a link D, pivotally supported at one end on the plate and extending at an angle downward beyond the rail-flange, and a socket *g*, supported to extend between adjacent ties *n* and having the lower end of the link pivotally confined within it, substantially as described.

4. In a railroad-frog or the like, the combination, with the movable rail, of a plate C, having transverse perforated ears *r* and secured to the rail-web, a link D, pivotally supported at one end between the ears *r* and extending at an angle downward beyond the rail-flange, and a socket *g*, having lateral flanges *o*, and supported at its flanges between adjacent ties *n*, and having the lower end of the link pivotally confined within it, substantially as described.

5. In a railroad-frog or the like, having the movable rail B yieldingly confined against an adjacent rail and separable therefrom, as by the flange of a passing wheel in a lateral direction, the diverted end *x* of the movable rail having its upper surface lower than that of the adjacent part of the same rail B, substantially as and for the purpose set forth.

6. In a railroad-frog or the like, the combination of a movable rail B, having the diverted end *x* beveled toward its extremity, a plate C, secured to the rail-web, a link D, pivotally connected at one end with the plate and extending at an angle downward beyond the rail-flange, and a socket *g*, having lateral flanges *o* and supported at its flanges between adjacent ties *n* and having the lower end of the link pivotally confined within it, substantially as described.

AXEL A. STROM.

In presence of—

J. W. DYRENFORTH,
M. J. BOWERS.