

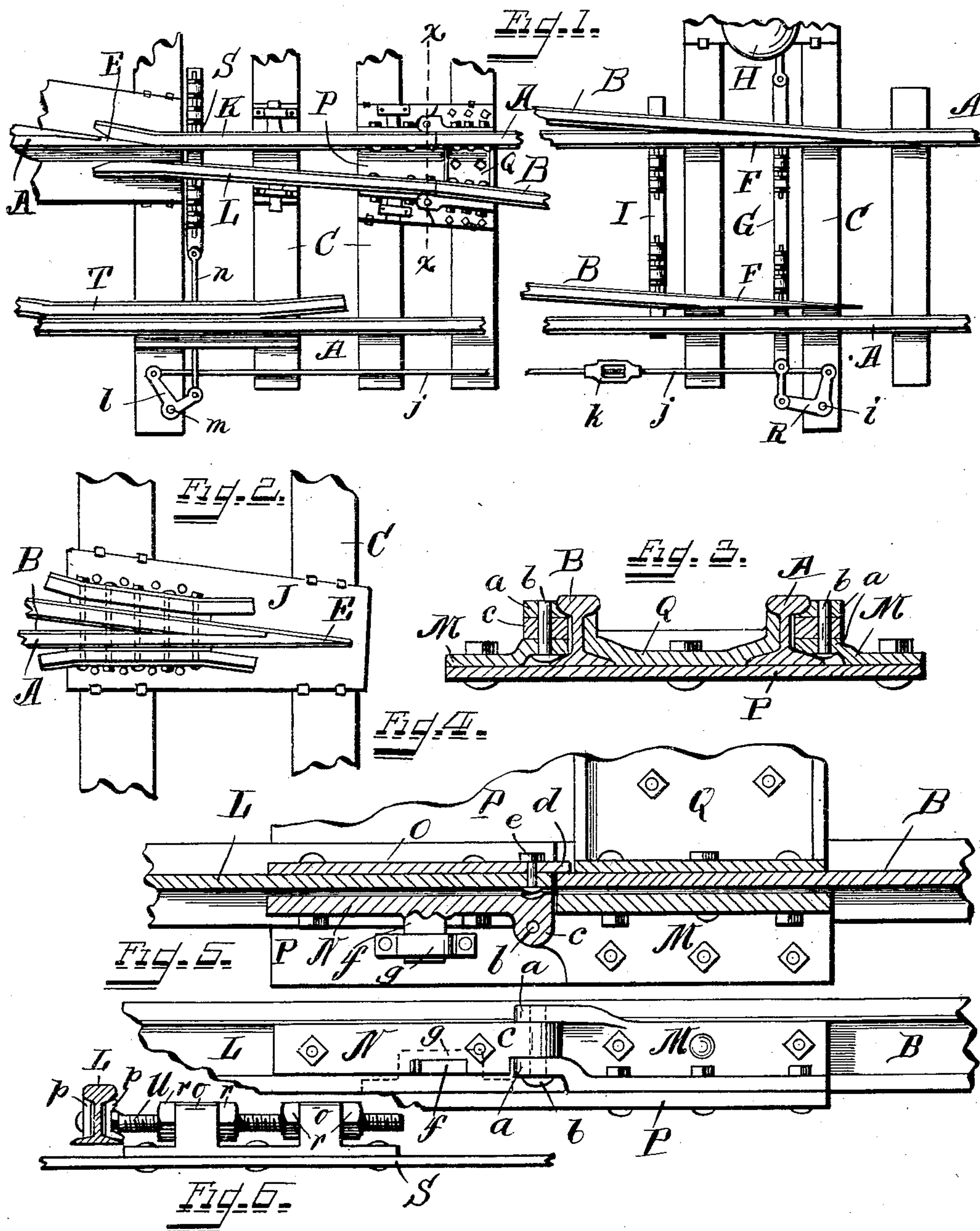
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F. C. ANDERSON.
FROG OPERATING MECHANISM.

(Application filed Aug. 12, 1901.)

(No Model.)



Witnesses.
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UNITED STATES PATENT OFFICE.

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FROG-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 703,035, dated June 24, 1902.

Application filed August 12, 1901. Serial No. 71,757. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. ANDERSON, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Frog-Operating Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to frog-operating mechanism in switch constructions whereby I am enabled to dispense with both rigid and spring frogs and am enabled in a very simple manner to provide an operating mechanism for the frog in connection with the switch mechanism by which both simplicity and cheapness of construction are obtained and whereby the safety of travel is very largely enhanced; and it consists, essentially, in the provision of hinged wings for the frog which are connected with and operated simultaneously by the switch-throwing mechanism, all as will be hereinafter more fully set forth, and specifically pointed out in the claim.

In the accompanying drawings, Figure 1 is a broken plan view of a part of the main track and a siding at the switch and frog connecting the two tracks. Fig. 2 is a plan view of the frog-point and connected parts. Fig. 3 is an enlarged sectional end elevation on the dotted line *xx* of Fig. 1. Fig. 4 is a broken sectional plan view showing the hinge-joint and its connection. Fig. 5 is a side elevation of Fig. 4, but containing the ball or tread of the rail which is removed from Fig. 4. Fig. 6 is a detail end elevation, enlarged, of the adjusting mechanism on the switch-throwing and frog-wing-throwing bars.

The same letters of reference are used to indicate identical parts in all the figures.

In Fig. 1, A represents the rails of the main track, and B the rails of the siding, both secured in the usual or any suitable manner upon the cross-ties C. F represents the usual or any suitable switch-points, connected to a subjacent bar G, operated by a switch-stand H, of the usual or any suitable construction, and I is the usual or any suitable brace-bar between the switch-points.

The frog (shown in plan in Fig. 2) may be

of the usual or any suitable construction, though it is somewhat shorter than the ordinary frog, and its point E is the termination of both the main-track rail A and side-track rail B, as illustrated. It is supported upon a base-plate J, secured to two adjacent cross-ties C and which forms a sliding bearing for the two wings K L of the frog, which wings are secured by hinged joints to the rails A B in a manner to be now described, reference being had more particularly to Figs. 4 and 5. Upon the outer side of the web of the rail B is bolted, after the manner of a fish-plate, a plate M, having perforated lugs *a*, between which is pivoted, by means of a pin *b*, an ear *c* on a plate N, bolted to the adjacent end of the web of the wing L. The plate N is bolted to a plate O upon the inner side of the web of the wing L, which plate has an extension *d* lapping over the adjacent end of the web of the rail B, as seen in Fig. 4, and one or more bolts *e*, through the web of the wing and the plate O adjacent to the hinge-joint, serve to form a rigid connection to take strain off of the pivot *b* of the hinge-joint when the wheels pass over the same. The plate N likewise has a projection *f* confined in a guide-staple *g*, bolted to a bed-plate P, extending entirely under both of the wings K L and secured to the cross-ties C beneath it. This bed-plate not only extends under the wings of the frog at the hinge-joint, but also under the adjacent ends of the rails A B, as shown in Figs. 1 and 5, and the plates M are bolted to said plate P, as shown. Between the adjacent ends of the rails A B at the hinge-joint is also secured a spacing block or plate Q, with upturned flanges, by which it is bolted through the webs of said rails to the plates M, as seen in Figs. 1 and 4. A very rigid construction is thus effected at the hinge-joints, which is at the same time simple and cheap in construction.

The end of the bar G on the side of the track opposite the switch-stand is pivoted to a bell-crank lever R, pivoted to one of the cross-ties, as at *i*, and has its opposite end connected by a rod *j*, preferably with an adjusting-turnbuckle *k* to the corresponding end of a bell-crank lever *l*, pivoted, as at *m*, to a cross-tie and having its opposite end pivoted

by a connecting-link *n* to a subjacent bar *S*, uniting the ends of the frog-wings *K L* in such manner that when the switch is thrown to make the main track continuous the frog-wing *K* is brought into close contact with the frog-point *E*, as seen in Fig. 1, and the wing *L* is thrown away from said point, and when the switch is thrown in the opposite direction, to make the side track continuous with the main track, the frog-wing *L* is brought in contact with the point *E* and the wing *K* is thrown away from said point, as will be readily understood.

T is the usual guard-rail for the frog-point, and to give adjustment to the parts I prefer to unite the switch-points and the frog-wings to their subjacent operating-bars by adjusting-screws *U*, Fig. 6, which are confined in perforated lugs *o*, secured upon the operating-bars *S G* and have their ends secured by short plates *p* on each side of the web of the rail and with locking and adjusting nuts *r* on each side of the lugs *o*.

By the foregoing construction I provide a

simple and efficient wing mechanism for the frog-point, the wings of which are hinged to the rails and by which a secure union is effected between the wing ends and the frog-point to insure safety in the passage of the wheels and to secure a positive movement in the operation of said wings which could not be secured in the case of a spring-frog or a rigid frog, as will be readily understood.

Having thus fully described my invention, I claim—

In frog-operating mechanism, the combination of the frog-wing and its adjacent rail, of a hinged joint composed of the plates *M N* pivoted together, as at *b*, and bolted to the webs of the respective rail-sections, the plate *O* bolted to the web of the frog-wing and overlapping the joint, and a guide-lug *f* for the frog-wing guided in a housing *g* secured to the plate *P*, substantially as described.

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