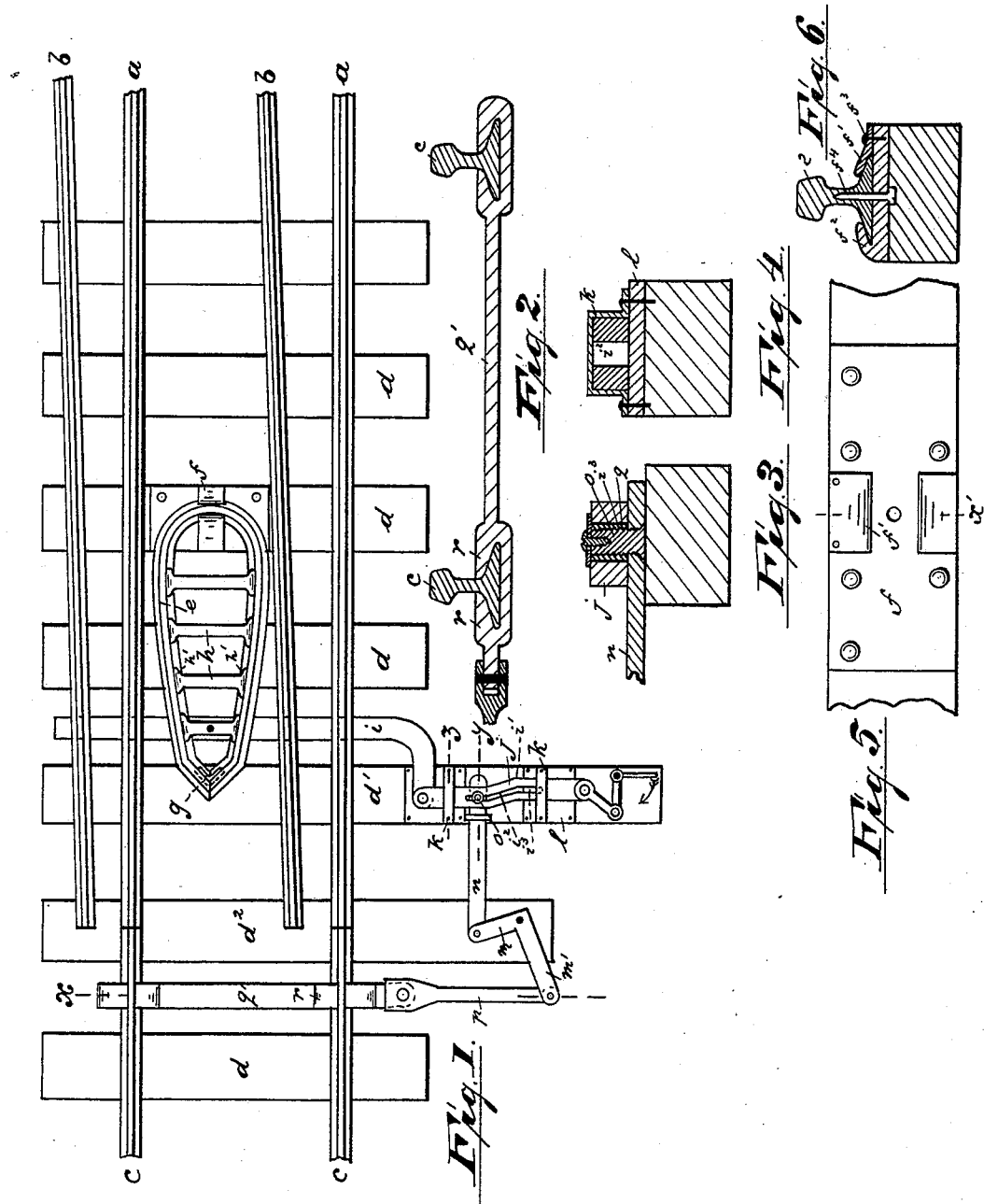


(No Model.)

S. J. NAUMBURG.
RAILWAY SWITCH.

No. 421,052.

Patented Feb. 11, 1890.



WITNESSES:

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SIMSON J. NAUMBURG, OF NEWARK, NEW JERSEY.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 421,052, dated February 11, 1890.

Application filed March 18, 1889. Serial No. 303,666. (No model.)

To all whom it may concern:

Be it known that I, SIMSON J. NAUMBURG, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Automatic Railway-Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in that class of automatic railway-switches illustrated in a contemporaneous application of one William Spielman, (patented under date March 26, 1889, No. 400,135,) of which improvements in said application I am now the sole owner by assignment.

The object of this invention is to secure a more perfect and certain automatic action of the switch under the influence of the wheels of the locomotive and to prevent partial inefficiency because of lost motion; and it consists in the arrangements and combinations of parts, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is a plan of the improved switch. Fig. 2 is a section through line *x* of Fig. 1. Fig. 3 is a section taken on line *y* of Fig. 1; Fig. 4, a section through line *z*, Fig. 1. Fig. 5 is a detail plan of a chair on which the movable switch-operating rail or lever is seated. Fig. 6 is a section on *x'*, Fig. 5.

In said drawings, *a a* indicate the main-line rails; *b b*, the siding-rails, and *c c* the switch-rails adapted to turn from the main rails to or into coincidence with the siding-rails, or vice versa, as will be understood.

d d are suitable ties or sleepers, upon which the rails are secured, and *e* is a pivotal frame or lever lying between the rails *b a b a*, so as to engage the flange of the locomotive-wheel as it passes over the main or siding rails toward the switch-rails and turn said frame or lever pivotally. The said frame is seated at

its pivotal end on a chair or plate *f*, having lips *f' f'*, which are turned, as indicated in Fig. 6, so as to overlies and hold the flange of the rail in place on the seat. One of said lips is removable, and is held to the chair or plate *f* by pins or bolts *f'*. By making said lip removable the pivoted frame or lever may be readily taken from its operative position for repair or other purposes. To prevent lateral movement between said ears I provide a pivotal pin *f'*, which is screwed into the chair from the under side, the head of the screw lying against the upper side of the tie, so that said pin, under the action of the frame or lever *e*, cannot work out of the said plate.

At the opposite end of the frame or lever, toward the switch-rails, the ends are bent together and united either integrally or by a coupling-piece *g* and do not lie apart, as in the arrangement shown in the said former contemporaneous application. By this construction greater solidity is given to the frame and less chance for vibration, which tends to improperly effect the connecting-bars and levers. The sides of the frame are braced by bars *h h*, having at their opposite ends cross-heads forming T-shaped extremities *h'*. These, in connection with the joined or united ends, secure added rigidity, so that said frame moves under the influence of the wheels with great certainty of action. The frame is connected by a bar *i*, passing beneath the rails *a b a b*, with a longitudinally-slotted bar *j*, held down upon the long tie or sleeper *d'* by straps *k k*, and is lifted slightly from the surface of said long sleeper or tie by plates *l l*, as indicated in Figs. 1 and 4. The bar *j* is bent toward its opposite ends, as at *i' i'* in Fig. 1, and the slot *i'* therein, in its body or central part, is disposed or formed at an angle to the direction of movement of said bar; the opposite ends of said slot, however, being turned, as at *i'' i''*, to lie parallel with said direction of movement.

Upon the adjacent tie *d'* is fulcrumed a bell-crank or lever *m*, which connects with the slotted bar by means of the rod *n*. Said rod is strapped down to the tie and is provided with a pin *o*, which latter is preferably provided with anti-friction roller or sleeve *g*. Said pin lies in the slot of the bar *j*, and when the latter is moved under the influence of the pivoted frame and the pin enters the inclined

portion of the slot the connecting-rod *n* is moved in a direction parallel with the rails *a b* and the bell-crank turned on its fulcrum. The arm *m'* of the lever or crank *m* connects, through the medium of the rod *p*, with a rod *q'*, to which the switch-rails *c c* are secured.

By means of the system of rods and levers described the turning of the frame in one direction causes the switch to move in the same direction. Thus a train in passing over the siding toward the switch, should the latter be open, as indicated in Fig. 1, the wheel of the locomotive will strike the pivoted frame and cause the same to turn laterally and move the system of mechanism intervening between it and the switch, and with them move the switch-rails to the siding-rails, so that the railway-train can pass thereover without accident.

The rod *q'* is held to the switch-rails by lips *r r*, which may be integrally formed in connection with the rod, as shown.

Having thus described the invention, what I claim as new is—

1. The improved switch, combining therein the main-line rails *a a*, siding-rails *b b*, switch-rails *c c*, pivotal frame *e*, bar *i*, slotted bar *j*, connecting-rod *n*, bell-crank *m*, connecting-rod *p*, and rod *q'*, all said parts being arranged and combined substantially as and for the purposes set forth.

2. The improved switch, combining therein

the rails *a a b b c c*, the sleepers *d d d' d''*, the chair *f*, providing a bearing for a frame *e*, said frame *e* arranged between the rails *b a* and *b a* and adapted to engage the flanges of the car or locomotive wheels, a sliding rod *j*, held upon the sleeper *d'* and adapted to move longitudinally thereon, said rod being provided with a slot disposed parallel with the line of movement of the said rod at *i'* and at an angle to said line at *i''*, a rod *i*, connecting said slotted rod or bar to the frame *e*, a bell-crank *m*, connected to the sliding bar *j* by a link provided with a pin *o*, said bell-crank being connected with the switch-rails to operate the same, all substantially as and for the purposes set forth.

3. In an automatic switch, substantially such as described, a frame *e*, pivoted upon a chair *f* and having its ends united and the sides braced by bars *h*, having T-heads *h'*, and a system of rods or bars and levers connecting said frame with the switch-rails, said parts being arranged and combined with the main-line and siding rails, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of March, 1889.

SIMSON J. NAUMBURG.

Witnesses:

CHARLES H. PELL,
E. L. SHERMAN.