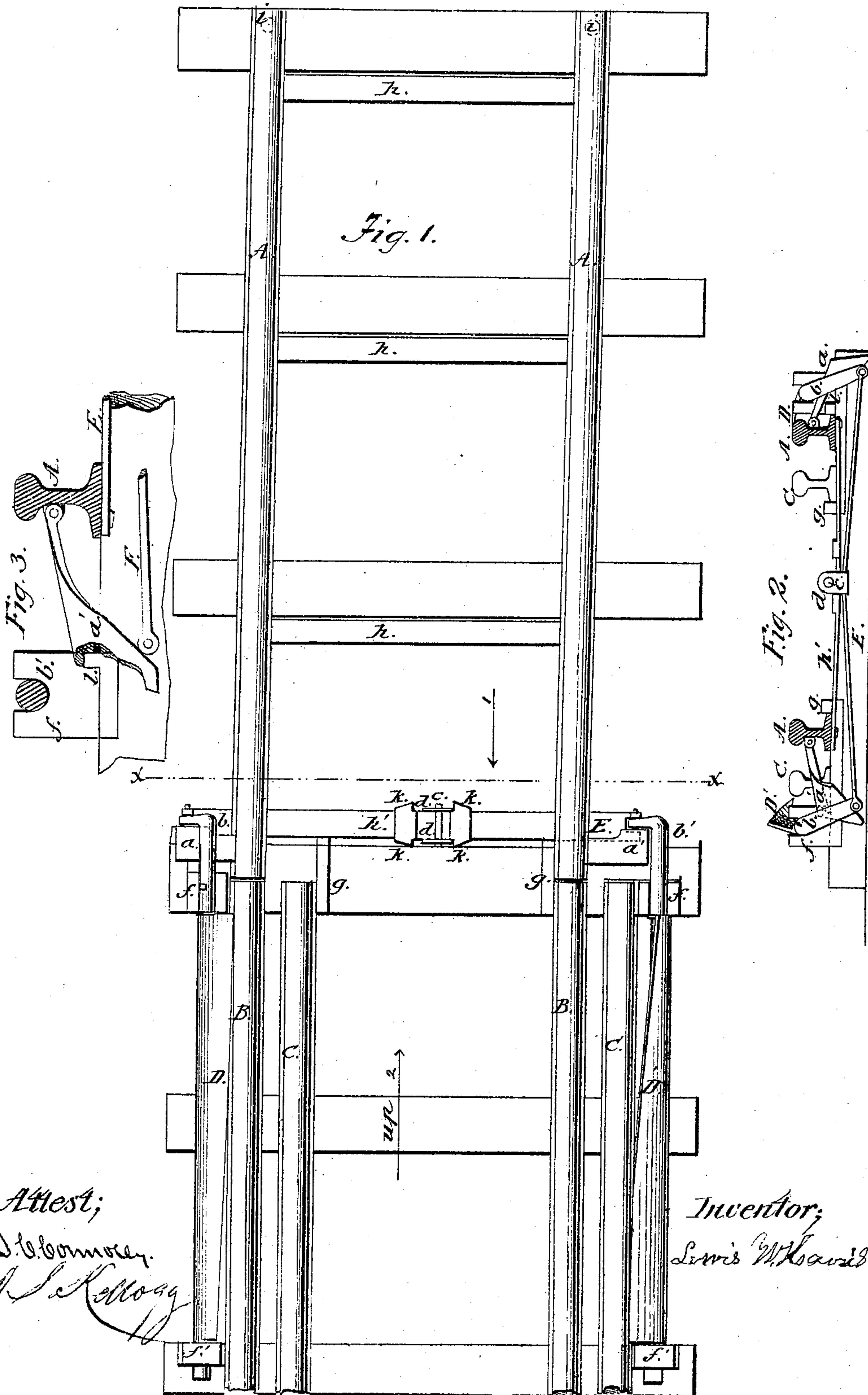


L. W. HARRIS.

Improvement in Railroad-Switches.

No. 129,132.

Patented July 16, 1872.



Attest;

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Inventor;

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# UNITED STATES PATENT OFFICE.

LEWIS W. HARRIS, OF ORISKANY FALLS, NEW YORK, ASSIGNOR OF TWO-THIRDS OF HIS RIGHT TO MILO L. JEFFERS, OF SANGERFIELD, AND JOHN C. CROSS, OF ORISKANY FALLS, NEW YORK.

## IMPROVEMENT IN RAILROAD-SWITCHES.

Specification forming part of Letters Patent No. 129,132, dated July 16, 1872.

### SPECIFICATION.

Be it known that I, LEWIS W. HARRIS, of Oriskany Falls, in the county of Oneida and State of New York, have invented a new and useful Improvement in Railroad-Switches; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, with the letters of reference marked thereon.

Like letters or figures indicate like parts.

My invention relates to an improved railroad-switch, so constructed and managed as to be operated by the weight of the train as it approaches the point where the two tracks diverge. It consists of a spiral-shaped feather coiled about the axis of a shaft supported in journal-bearings that are secured to the ties of the track, said spiral or feather having a depth sufficient to close up the space between the shaft and the outer rails, so that, when the train is approaching, the wheels, which always project beyond the width of the rail, will bear upon the spiral feather and move the shaft to which it is attached, and with it the rail to be adjusted through the agency of the strap or flat bar which is attached to the levers on the ends of the aforesaid shafts.

It will be seen, by reference to my drawing, that the crank-levers attached to the shafts on either side of the road have their ends attached loosely to a strap or flat bar, which bar connects the two cranks and causes them to move together when either is influenced by the weight bearing on either of the spiral-feathers. In the middle of this strap are flanges bent upward, at right angles to it, to form a guide to another strap or bar which connects the two movable rails. A pin passes through the flanges over the upper flat bar to keep said bar in its place as the lower bar is moving vertically with the crank-levers. The upper bar has projecting ears, which form bearings to the flanges of the lower bar as they engage said upper bar and carry the movable rails laterally. At the ends of the movable rails, and on the outside of the same, are (secured loosely with pins, and journal-bearings forming hinges) pawls, which fall by their own weight and bear against the shoulders or pro-

jections formed in the plates at the intersecting points of the tracks, to prevent the return of the movable rails and keep them in their places after the train has passed, so as to prevent any accident to the down-train should the switch-tender be out of his place when the down-train is passing. These pawls engage the projections on the bed-plates, one at a time, as the movable rails are moved to the right or left. The pawls have ears projecting down on the side of the main ties, which serve as cams, to be moved by the crank-levers to release the tracks at the proper time and allow them to move laterally as they are influenced by the weight bearing on the feather spiral. A flange projecting upward from inside of the bed-plates prevents the rails from moving too far inward, and answers the same purpose as the shoulder-projection on the outside of said bed-plate. The fixed rails are mounted on ordinary ties and are secured firmly to the same in the usual manner. The movable rails are pivoted to one of the ties some distance from the point of intersection. They have also the ordinary ties to form bearings and support to them; but, in addition to these, they have wrought-iron bars pivoted to their flanges, which hold them relatively together as they are moved laterally by the device previously described.

### *Description of Drawing.*

Figure 1 represents a plan view of my invention. Fig. 2 represents a section on line *x x*, looking in the direction of the arrow No. 1. Fig. 3 represents a detail of the pawl in its relation to the rail or stop.

### *General Description.*

A A are the movable rails, resting on ties and pivoted at points *i i*, and held together by the iron ties *h h h h'*. The tie *h'* is secured to the under side of the rail like the rest, but has ears, K, which form shoulders for the flanges *d d* on the bar E, to bear against as the tracks move to the right or left. The flat bar E has attached to it, with eyes and bolts, the crank-levers *b b'*, which are moved when the wheels of the train passing bear upon the feather spirals D D. The feather spirals are formed



about the axis of their respective shafts, so that as soon as the forward car-wheel reaches the journal-boxes  $f' f'$  they bear on the feather spirals, which yield promptly and revolve the shaft on which they are formed, and move the bar E, to which the cranks  $b b'$  are attached. The movable rails, being tied together by the iron ties  $h h h'$ , are caused to move to the right or left about the axis of the pivot  $i$  as the flanges  $d d$  come in contact with the ears K on the tie  $h$ . The pins  $c$ , passing through the flanges  $d$ , hold the tie  $h'$  and the bar E together loosely while the tracks A A' are being moved. The pawls  $a a'$  are hinged to the rails A A and bear against the stops or flanges  $l$ , projecting from the bed-plate alternately on either side, as the movable tracks are carried to the right or left. The cam extending from the pawl  $a$  or  $a'$  is moved by the bar E to release said pawl.

Having thus described my invention, I give its operation as follows: The train is supposed to be coming up in the direction of the arrow on the track C C while said track is out of line with the movable track A A. The feather spiral D is close to the track. The moment the forward wheel of the car comes in contact with the feather D' the crank  $b'$  draws the bar E to the right, and with it the track A A, until they reach their place in the line

with tracks  $c c$ . The tracks A A are checked in their movement by the flange  $g$  of the bed-plate. At the same time that the flange  $g$  stops the rail A the pawl  $a$  falls against the flange  $l$ , which prevents any back movement of the rails after the up-train has passed. When the next train comes on the track B the pawl A' is released, and the rails A A are moved to the right, as before described.

*Claim.*

What I claim as my invention, and wish to secure by Letters Patent, is—

1. The spiral feathers D and D', arranged alongside of rails C and B, in combination with the crank-levers  $b b'$ , bar E, with its flanges  $d$ , arranged as described, for the purpose set forth.

2. The tie  $h'$ , attached to the movable rails, in combination with the bar E, as and for the purposes set forth.

3. The pawls  $a a'$ , in combination with the movable rails A, stop  $l$ , and bar E or its equivalent, as and for the purpose set forth and described.

LEWIS W. HARRIS.

Witnesses:

J. S. KELLOGG,  
T. C. CONNOLLY.