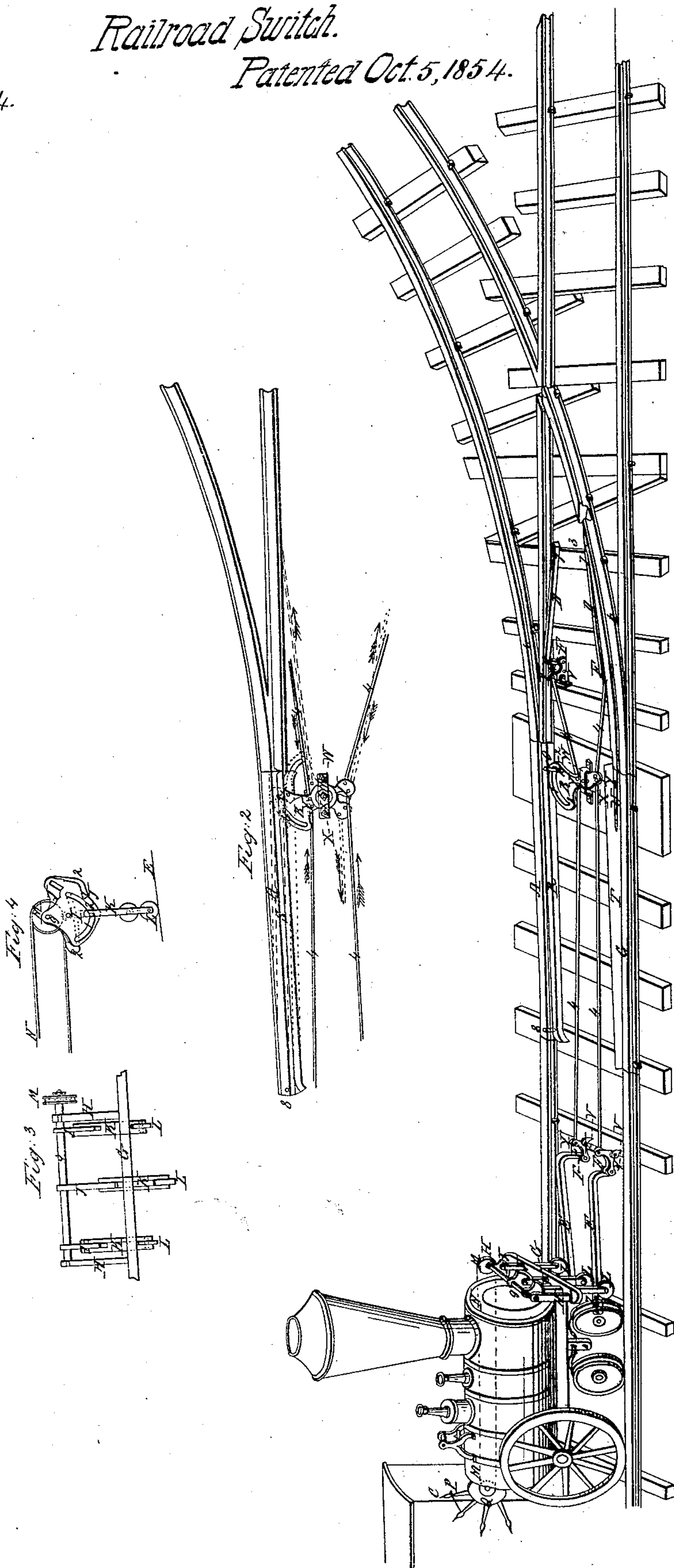


S. F. Kittle

Railroad Switch.

Patented Oct. 5, 1854.

N^o 12,024.



UNITED STATES PATENT OFFICE.

SAMUEL P. KITTLE, OF BUFFALO, NEW YORK.

RAILROAD-SWITCH.

Specification of Letters Patent No. 12,024, dated December 5, 1854.

To all whom it may concern:

Be it known that I, SAMUEL P. KITTLE, of Buffalo, in the county of Erie and State of New York, have invented a new and Improved Railroad-Switch, which I term the "Engineer's Indicated Car-Switch"; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view; Fig. 2, a working drawing of the switch-rail, cam and its attachments; Fig. 3, a working drawing and face view of the engine-cams levers and their attachments; Fig. 4, a side view of the engine cams and levers with one lever throw on the shoe E.

Let the same letters represent the same parts in all the figures; then A will represent the switch-rail; B, the cam; C, the stationary and straight rail with flange slab and frog; D D, the flange shoes; E E, the engine lever shoes; F F F F, the elbows; G, a part of the engine frame; H H, are posts which support the shaft that works the engine levers; *g* is that shaft; *i i i*, are the cam slots, through which the bolts or pins pass which connect the levers and cams, and also the switch A with the cam B; *j j j* are the engine cams; K K K are the levers; L L L are friction rollers in the levers; M M are pulleys; N is an endless chain or belt; P is the crank and indicator; Q is the dial; R is the flange guard on the switch-rail A; S, the groove for the flange to pass in; T is the slab or hardened part of the straight rail over which the flanges run in changing from the straight to the turnout track; V is the frog or termination of the turnout track; V V V are the boxes in which the elbows are secured and worked; W is the box securing the switch cam; X is a center pin or bolt passing through the box and cam by which the cam is secured and allowed to vibrate horizontally; Y Y are the points at which the rods connecting the cam and elbows are secured; O is the pin or bolt connecting the switch A and cam B; 2 is the securing point of the cams; 3 is a joint in the turnout rail; 4 4 4 4 are the rods connecting the elbows and cam B; 6 6 are the turn out tracks or rails; 7 7 7 7 are slots through which bolts pass securing the lower end of the shoes from a lateral movement; 8 is a bolt or pin

securing the stationary end of the switch-rail A.

I construct my switch of the usual metal used for such purposes, making but one movable rail. This I provide with the inside guard R, and groove S. In this groove the flanges pass being guarded on both sides, so that the train or cars are guided entirely by the switch-rail when passing over the same; this rail may be made of any desired length and size; it may be rolled out in the proper shape or worked out by iron-planer, or otherwise, or it may be made of separate pieces and bolted or screwed together. This rail is secured in its place at the heel, by the pin or bolt 8 on which it pivots. The switch is moved or made to change from the straight to the turnout track by means of the cam B or other device.

When the cam B is used it may be connected as here shown by means of the pin O working in the slot *i*. The cam B may be made of any desired size or thickness, and secured at W so that it shall have a free and sufficient movement to pass the toe of the switch from the straight to the turnout track. What I wish to describe more clearly as my invention in this connection, is the peculiar shape of the slot *i* whereby I am able without other device to secure the switch-rail at either track, the pin O being caught on the center or in a line with the pivoting bolt X of the cam, or the direction of the slot *i* being changed, so that lateral pressure on the switch-rail will not allow the switch to pass in toward a point between the two tracks any material distance. This cam may be attached to either side or under the switch-rail without materially altering its action. The shoes for the straight track, and also for the turnout tracks must be connected to this cam at points about equal distances from and at opposite sides of the pivoting pin X, so that when the switch is set for the straight track, the shoes which regulate the straight track will be down, and those which regulate the turn-out, will be up, and the reverse when the switch is set for the turnout track. This cam could be applied to a switch where two tracks are moved equally as well as to this character of switch. The box W is used simply to secure more permanently the cam.

The stationary rail C is provided with the slab or plate T which is made hard on the face, so that the flange of the car wheels in

passing over it when changing from the straight to the turnout track will not wear or cut it out readily. This slab should rise gradually from either end toward T, thereby
 5 aiding in making the curve of the turnout and at the same time avoiding the jars which might otherwise occur in passing on or off the frog V. This rail may be made of one piece, or an ordinary rail may have the slab
 10 T with its frog V, fitted to it and bolted or screwed fast, or the slab T with the frog V may be secured to the ties by the side of the rail.

By means of the elbows F F F F I am
 15 able to apply any desired length of shoes without sinking any of the acting parts of the switch below the ties; thereby I avoid the collection and obstruction of water and ice, and as all parts of the switch may be
 20 covered without obstruction (excepting the shoes and rails) no foreign substance is allowed to disturb the free action of all parts. These elbows are secured in the boxes V V V V which are attached to the ties or to
 25 timbers for this purpose. The shoes have slots at 7 7 7 7 where they are screwed to the ties by bolts which allow them a slight movement endwise, this is necessary from the circular movement of the elbows to which the
 30 shoes are attached. Instead of a slot in the shoes there might be one in each elbow and the same end gained thereby.

The shoes D D are set close to the inside of the rail, so that the flange of the car
 35 wheels will act them. These marked E E are the lever shoes and are set to correspond with the levers on the engine. The one regulating the straight track should be placed exactly in the center of the track, so that it
 40 will not be necessary to change these lines when passing through a town or by a station at high speed, although the turn-outs may be to the right and left, in case it is thought necessary to drop the center lever
 45 lower (owing to the higher speed that is usually had on the straight track) then those regulating the turn-outs then the turnout track may have a groove as shown at 3 cut for the lever to pass through.

The levers K K K which work the shoes, have friction wheels L L L and are attached to the cams J J J by pins which work in the slots I I. All these cams are secured to the shaft 9, which shaft is held in place by boxes
 55 on the posts H H. This shaft has secured to it the pulley M which corresponds to another pulley M in the engine-caboose which is fixed or located in the center of the dial Q. Over these two pulleys the endless chain
 60 N passes. On the dial plate are the letters signifying clear, straight, right and left.

Thus when the indicator P is at C, all the levers are up; when at S the middle or lever regulating the straight track is thrown down as shown in Fig. 3; when the indicator is
 65 passed to R, the center lever is raised by the action of its cam and the right hand lever thrown down as shown in Fig. 4 while the left hand lever is still held up by the slot I (in which the pin securing the lever works)
 70 having been continued in a circle the shaft G being the center pass the indicator to L and by the action of the cams the right hand lever will be raised, the left hand lever dropped, and the center lever held at the same
 75 height by its cam slot I being carried on in a circle. These cams hold the levers when down by the same arrangement explained in connection with the switch cam, namely the construction of the slot I. Instead of this
 80 arrangement of cams and lever I have contemplated attaching the levers or arms directly to a shaft so that they will project out at different angles—in a manner that when one arm hangs vertical the others will be
 85 raised sufficient to clear (at least) their corresponding shoes if raised—and instead of the endless chain N and pulleys M M I have contemplated using a bar and crank, in which case the bar would be worked hori-
 90 zontally and the indicating letters would be on a horizontal instead of a circular dial.

That all accidents may be avoided in the use of this switch from not knowing where
 95 switches are located, there might be an indicating post set on the same side of the track the turnout is; one half mile more or less from the switch, that the engineer if unacquainted with the road, may have due and
 100 timely notice that he is approaching a switch.

Having thus fully described the nature of my invention, I would state that I am aware that many devices have been essayed for moving rail road switches, by means of the locomotive or cars in passing over the track,
 105 but I do not claim any of these independent of the effect which I attain by my special means. But

What I do claim as new and desire to secure by Letters Patent is—
 110

The moving of the switch by the passing train, through the intervention of a slotted cam which will move and then hold or lock the switch to either rail against the lateral pressure, without the use of any other de-
 115 vice than the slot, pin, and pivot—these being arranged substantially in the manner described.

SAMUEL P. KITTLE.

Witnesses:

CHAS. H. BOTTOMORE,
 JOHN C. SHAFER.