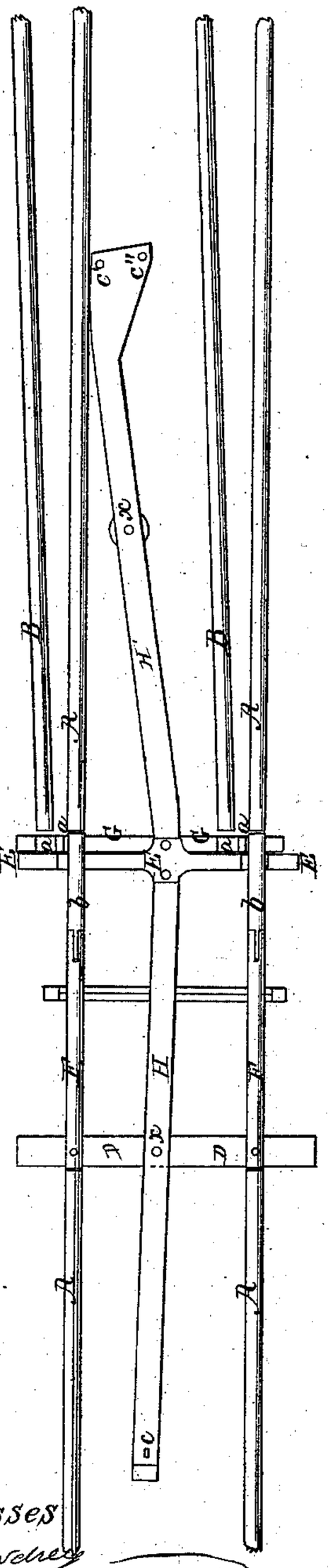
Elliott & Conkling,

Railroad Switch,

No. 26,660. Patented Jan. 3, 1860.

Fig: 1.



Witnesses
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Fig: 2.

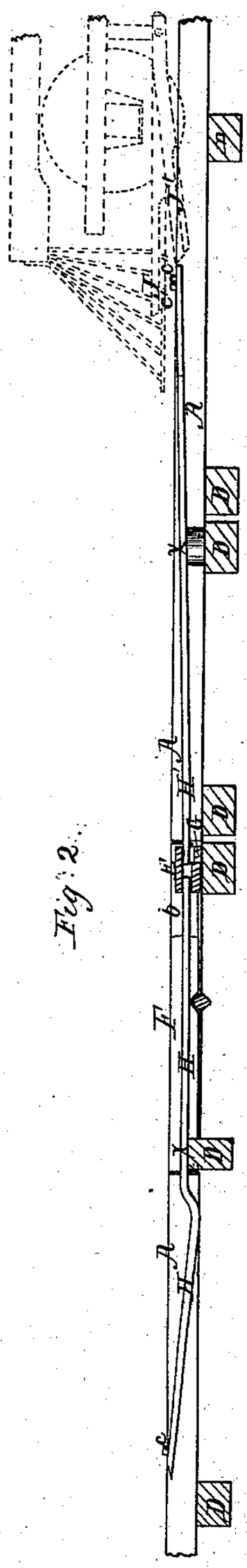
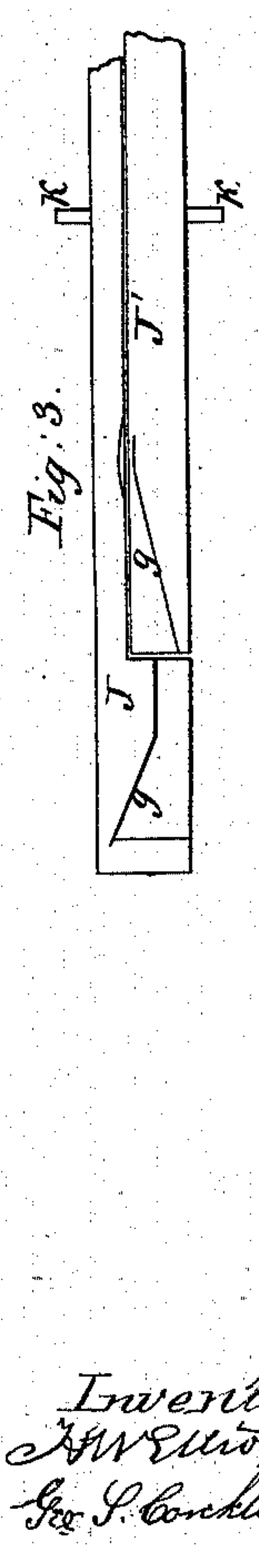


Fig: 3.



Inventors,
J. W. Elliott
Geo. S. Conkling

UNITED STATES PATENT OFFICE.

H. W. ELLIOTT AND GEO. S. CONKLING, OF GOSHEN, NEW YORK.

RAILROAD-SWITCH.

Specification of Letters Patent No. 26,660, dated January 3, 1860.

To all whom it may concern:

Be it known that we, H. W. ELLIOTT and GEORGE S. CONKLING, of Goshen, in the county of Orange and State of New York, have invented new and useful Improvements in Railroad-Switches; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this description, in which—

Figure 1, represents a plan view of our improved switch-rails, showing the arrangement of levers for operating the jointed rails when the train of cars is passing in either direction. Fig. 2, is a section taken longitudinally through the center of the track, or between two rails, showing in red lines the device for changing the position of the jointed ends of the rails so as to switch off the train upon any of the diverging tracks. Fig. 3, is a plan view of the shippers or levers which proceed out, under the engine and under the cow-catcher and are operated by the engineer for changing the switch as he may desire.

Similar letters of reference indicate corresponding parts in the three figures.

This invention places the control of the switch or switches along the whole line of rails under control of the engineer, irrespective of the position of the switch. Its object is to have a shipper or beveled and guide levers arranged under the engine and projecting out in front of the same, under the cow-catcher to be set by the engineer, to switch off the train upon any of the diverging tracks while going in one direction while cars moving in an opposite direction may pass over the switch on the main track irrespective of the position of the switch. The engineer of course knowing before he arrives at the branch-rails, what direction he wishes to take it is only necessary for him to arrange his shippers accordingly and if the switch should not be in its proper position it will be shifted before the front wheels of his engine reach the switch rails; and if the switch should be in the desired position the precaution will not do any harm. The attendance of switchmen is not necessary where our improvement is applied, nor is it even necessary to provide signal lights.

The entire device is automatic and placed in the hands of the engineer upon the train who by a single movement of a lever can establish certainty in the true movement of the switches although they may have been maliciously changed.

Our invention consists in operating the switch rails so as to shift them to the right or left and bring them in a line with the main track by peculiarly shaped and arranged levers which are situated under the cowcatcher of the engine, which levers extend back and are operated by the engineer so that through the medium of pivoted levers of a suitable length the ends of the switch-rails will be gradually, but surely, elevated out of recesses in the sleeper, for the ends of the rails to rest on, and shifted to the opposite track and in a line with the rails, and placed in recesses opposite the rail ends where the switch-rails are secured against any lateral thrust occasioned by the passing train. The levers are so elevated and at the same time thrown to the right or left as occasion may demand, and when brought directly in a line with the rails over which the train is to pass they are permitted to fall in place by their own gravity.

The parts forming our improved switch, at the rail joints, may be protected from snow, ice, and anything which would create an obstacle to its perfect operation, by a suitable covering or weather guard of sheet-metal. The sleepers upon which the levers and switch-rails rest in their movement may be beveled so that ice or snow will not form an obstruction to the movable parts exposed, all as hereinafter described as represented.

To enable those skilled in the art to fully understand our invention, we will proceed to describe its construction and operation.

By reference to the drawings A, A′, represent the permanent rails or railway, and B, (for reference) the branch rails. The train is supposed to be coming on the rails A, and it is desirable to switch upon those lettered B; D, D, are the sleepers or cross-ties and E, the movable cross tie to which the ends of the switch rails F, F, are secured. G is a stationary sleeper with recesses *a*, *a*, Fig. 1, into which the ends of the switch rails drop, these recesses keep the rail ends in place and in a line with the main rails, the ends *b*, *b*, of switch-rails are jointed by a tongue and groove joint and a transverse pin or bolt, so that they can be raised vertically over and out of the

recesses *a*, *a*, in changing the switch; thus it is not necessary to raise the whole length of switch-rails but only a small portion of them. The switch-rails are each jointed by a vertical bolt to the cross-tie D, and their ends have a slight, lateral play about these joints. H H′ are two levers having their fulcra and center of motion at *x*, *x*, a vertical pin serves to keep them in place at these points. One end of each lever H, H′, is pivoted to the movable tie E at the middle of its length, the opposite ends of these levers have perpendicular pins *c*, *c′*, *c″* projecting up from their surface. These pins and levers do not project up so far as to be in the way of passing trains. The lever H is arranged so as to be operated by trains passing over either track A, or B, in the direction of the switch. This gives a description of the construction and arrangement of the switch which is to be operated by the engineer through the medium of levers arranged under the engine in the following manner: The levers are represented, by red lines, Fig. 2, in their position under the engine, and by Fig. 3 as detached from the engine and turned over so as to exhibit their underside; J is the longer and J′ the shorter lever; these levers both have their fulcra upon the same rod K, which has its bearings in suitable hangers projecting down from each side of the forward truck frame of the locomotive. They pass out and terminate under the cow-catcher as shown by Fig. 2 and also proceed back and are connected to vertical rods which are arranged in a convenient and handy place in the engineer's box. These connecting rods which are not shown in the drawings, have suitable catches on them by which the levers J, J′, may be kept in the desired position for operating the switch. The forward ends of the levers J, J′ are beveled as shown by Figs. 2, and 3, which beveled portions strike the ends of the levers first and depress them so as to raise the ends of the jointed portions *b b* of the switch rails, F, F, out of the recesses *a*, *a*, in the sleeper G; the next movement is to give the ends of rails F, F, a lateral thrust while elevated. This movement is effected by the oblique guides *g* on either lever, the forward guide moves the switch rails in one direction while the guide on the rear lever moves the switch in the opposite direction, the pins *c*, *c′*, *c″*, being acted upon by these guides on the bottoms of levers J, J′.

If it should be found desirable a covering may be applied to the stationary sleeper or cross beam to protect the recesses from snow, ice, &c., but the necessity of this covering will be best determined in practicing our invention, and forms no part of our claim.

Having thus described the several parts forming our improvement in switching cars from one track to another what we claim and desire to secure by Letters Patent, is:

1. The combination of the levers H, H′, with their pins *c c′ c″* movable cross-tie E, jointed switch-rail F′ and sleeper G′ with recesses *a a* arranged substantially in the manner as, and for the purposes described.

2. We claim the levers J, J′ having inclined ends and oblique guides *g*, *g*, arranged in such a manner under the locomotive as to be under the control of the engineer and so as to operate the switch in the manner herein described and represented.

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