

No. 618,536.

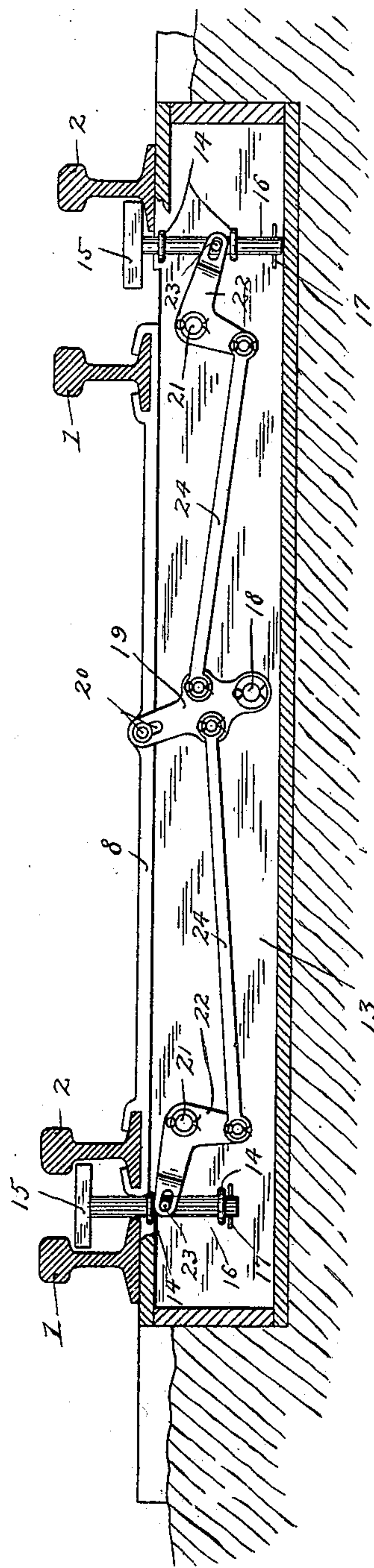
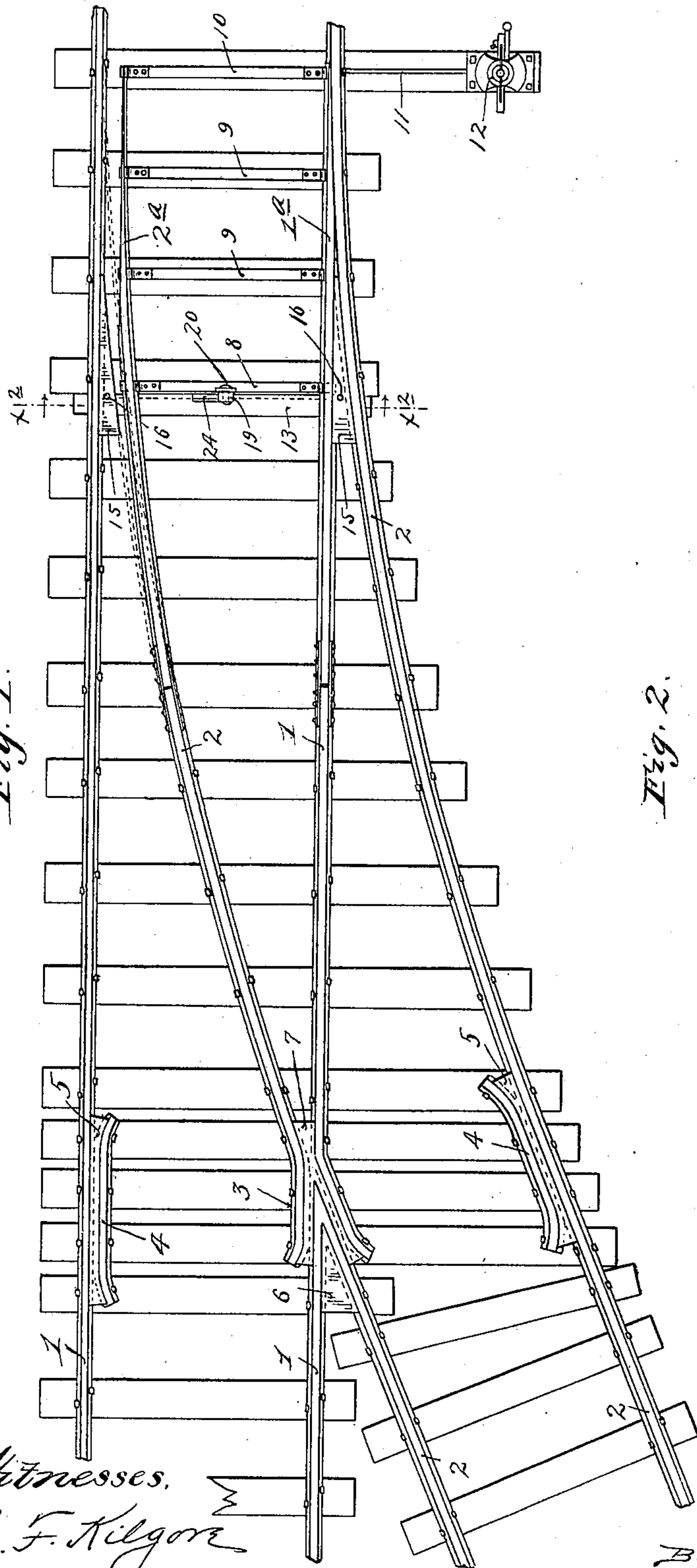
**Patented Jan. 31, 1899.**

**W. N. CARROLL.**

**BLOCKING DEVICE FOR SPLIT SWITCHES.**

(Application filed Mar. 31, 1898.)

(No Model.)



Witnesses,

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# UNITED STATES PATENT OFFICE.

WILLIAM N. CARROLL, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-THIRD TO GEORGE E. KENT, OF SAME PLACE.

## BLOCKING DEVICE FOR SPLIT SWITCHES.

SPECIFICATION forming part of Letters Patent No. 618,536, dated January 31, 1899.

Application filed March 31, 1898. Serial No. 675,862. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM N. CARROLL, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Blocking Devices for Split 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.

My invention has for its object to provide a simple and efficient device for automatically blocking so-called "split switches;" and to this end it consists of the novel devices and combinations of devices hereinafter described, and defined in the claims.

The dangers incident to leaving split switches, frogs, &c., unblocked have become a matter of such general knowledge and interest that some States have gone so far as to pass laws making it compulsory to block the sharp angles formed by such devices wherever it is possible to do so.

No difficulty has been found in blocking the frogs and their guard-rails inasmuch as these parts are fixed structures; but as a split switch has parts which must be moved and as a result change the angles formed thereby it has hitherto, I believe, been considered impossible, or, at least, impracticable, to attempt to block these switches. By my invention I keep the split switch automatically blocked in its different positions.

The preferred form of my invention is illustrated in the accompanying drawings, wherein like numerals indicate like parts throughout both views.

Figure 1 is a plan view illustrating a split switch with my improved blocking device applied thereto; and Fig. 2 is a transverse vertical section taken on the line  $x^2 x^2$  of Fig. 1, the parts being shown on an enlarged scale.

1 indicates the rails of the main line, and 2 the rails of the side track. The inner members of the rails 1 and 2 cross each other at a frog 3 and are provided with hinged or laterally-movable split-rail extensions  $1^a$  and  $2^a$ , respectively.

4 indicates short guard-rails located one on

each side of the frog 3 and cooperating one with each of the outer rails 1 and 2. These guard-rails 4 are shown as blocked by means of wooden fillings or blocks 5, and the angles formed by the frog 3 are likewise shown as blocked by wooden fillings or blocks 6 and 7.

The free or movable ends of the rail extensions  $1^a$  and  $2^a$  are tied together in the ordinary manner by means of tie-bars 8, 9, and 10, the outer member 10 being provided with a stem or extension 11, which extends to an ordinary switch-stand 12, to which it is connected and by which the split switch is operated in the ordinary manner.

The automatic attachment will now be described. Broadly it consists of a pair of movable parts connected for movement in alternate order so as to block the angle formed between the fixed rail and the section of the split switch or movable rail which is moved against the same, and at the same time leave open the passage or channel formed between the opposite fixed rail and the open section of the split switch. As shown and preferred, it comprises the following details:

13 indicates a narrow rectangular box or case which is nearly or quite embedded in the roadway and extends transversely of the track, approximately in line with the tie-bar 8. Mounted for vertical movements in suitable keepers 14, secured within the box 13 and working one in each acute angle formed between the outside rails and the split switch, is a pair of blocks 15, provided with depending stems 16. The said stems 16 work in said keepers 14, and pins 17 prevent them from being thrown out of operative position. The bodies of these blocks 15 are wedge-shaped in a horizontal plane and are of the proper angle to fill the crotches formed between the fixed outer rails and the section of the split switch which are engaged therewith in alternate order. Pivoted on a stud 18, approximately at the central portion of the box or case 13, is a rocker or oscillating lever 19, the upper end of which is attached to the intermediate portion of the tie-bar 8 by a slot-and-pin connection 20. Pivoted on studs 21, located in the box 13, one just inward of each of the block-stems 16, is a pair of small bell-



crank levers 22. The outer ends of these bell-cranks 22 are attached to the stems 16 of the blocks 15 by slot-and-pin connections 23, and their lower arms are connected to the intermediate portion of the rocker 19 by links 24.

It is obvious that by the connections just described the blocks 15 will be thrown into action or into operative positions in alternate order, or, in other words, one will be moved upward while the other is moved downward. More specifically stated, the movement of the tie-bar 8 as the split switch is thrown in a given direction will carry the rocker 19 in the same direction and through the intermediate connections will raise or throw into operating position the block 15, toward which said switch is moved. Of course this is just what is required.

From the foregoing description and statements made it will be understood that I do not limit myself to the details of construction illustrated, but, on the contrary, that my invention is generic in its scope and capable of a wide range of modification.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. An automatic blocking device for split switches, comprising a pair of parts fitted between the rails and mounted for vertical

movements, with their faces held always approximately horizontal, and connections between said blocks and the movable rail-section, for simultaneously moving said blocks in reverse order, substantially as described.

2. An automatic blocking device for split switches, comprising a pair of blocks fitted between the rails and mounted on supports that are independent of said rails, and connections between said blocks and the movable rail-sections, for simultaneously moving said block in the reverse order, substantially as described.

3. An automatic blocking device for split switches, comprising the vertically-movable blocks 15 16, working in suitable keepers, the pivoted bell-cranks 22 connected thereto, the rocker 19 connected at its upper end to a part carried by the split switch, and the links 24 connecting said rocker 19 and bell-cranks 22, said parts operating substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM N. CARROLL.

Witnesses:

BESSIE B. NELSON,  
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