

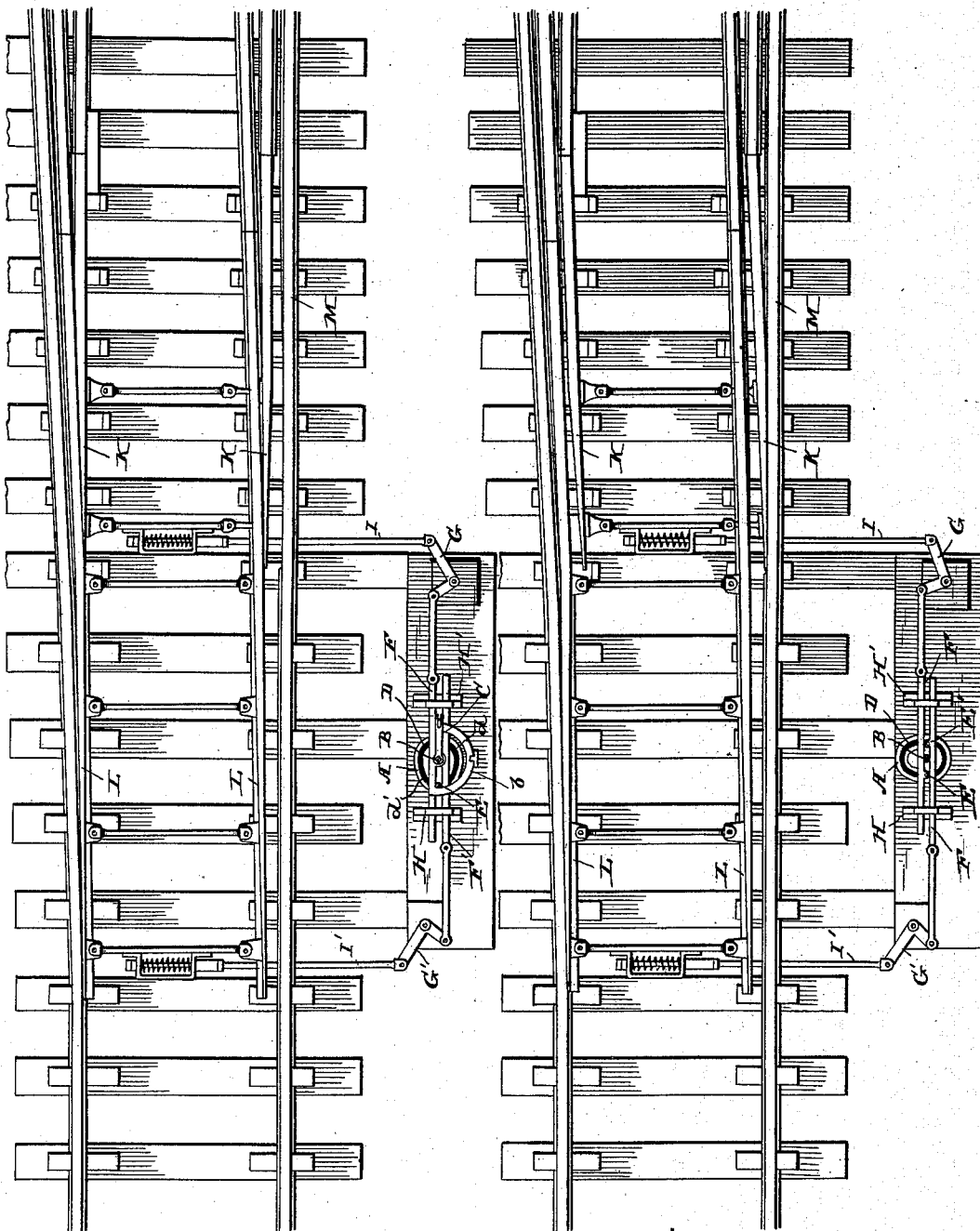
(No Model.)

2 Sheets—Sheet 1.

L. BLACKSTONE.
RAILWAY SWITCH.

No. 384,955.

Patented June 26, 1888.



Attest:
Jno. G. Hinkel, Jr.
J. S. Barker.

Fig. 2
Inventor:
Louis Blackstone
by Foster & Freeman,
Attys.

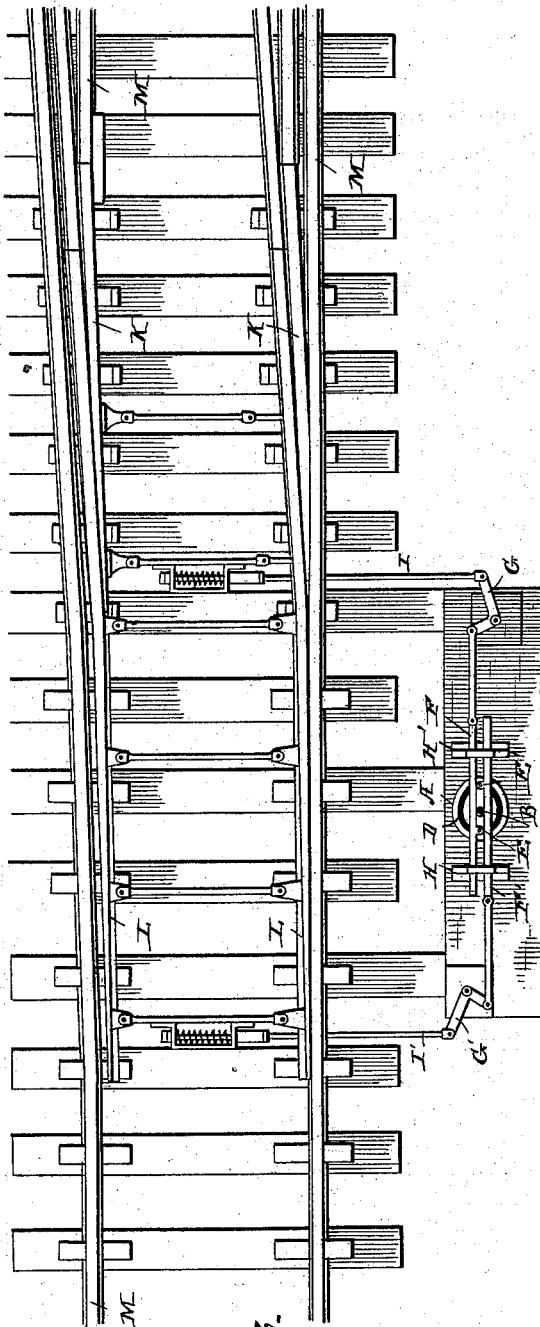
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RAILWAY SWITCH.

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J. G. Nickel, Jr.
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Fig. 3.

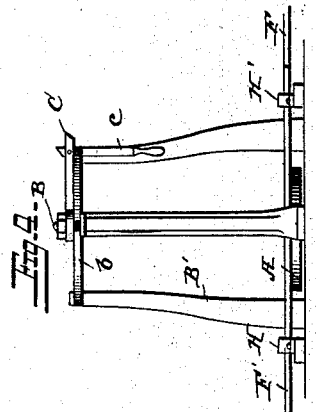
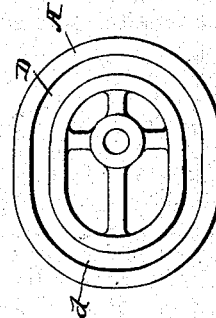
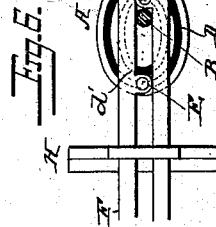
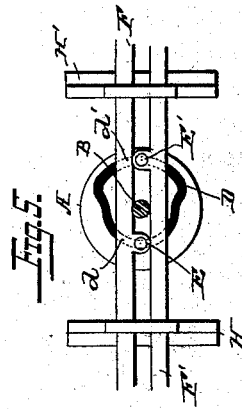


Fig. 8.

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UNITED STATES PATENT OFFICE.

LOUIS BLACKSTONE, OF JERSEY CITY, NEW JERSEY.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 384,955, dated June 26, 1888.

Application filed February 18, 1888. Serial No. 264,506. (No model.)

To all whom it may concern:

Be it known that I, LOUIS BLACKSTONE, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Railroad-Switches, of which the following is a specification.

This invention relates to devices for manipulating three-way point-switches; and it consists of certain improvements therein, as will be hereinafter pointed out.

Figure 1 is a plan view of a three-point switch having connected therewith my improved devices for moving the same. Fig. 2 is a similar view, the devices having been turned to open one of the switches, the switch-stand being removed. Fig. 3 shows the position of the parts when the second switch is open. Fig. 4 is a side view of the switch-stand. Figs. 5 and 6 show cam-plates of different construction from those shown in the other figures, and Fig. 7 is a detail plan view of the switch-actuating cam.

With the two movable switch-rails K L of a usual three-way point-switch I employ a movable cam engaging with the shifting connections of the rails of both switches to move them in succession on the movement of the cam. The cam, as shown, is in the form of a plate, A, having a substantially-elliptical groove, D, which presents two cam-edges for operating upon the ferruled studs or pins E E', projecting, respectively, from the slide-bars F F', which are connected by the bell-cranks G G', or otherwise, with the switch-bars I I', moving with the rails K L, respectively. The cam-plate is turned by a shaft, B, on an axis which is nearer one end, *d*, of the ellipse than the other, *d'*, although each end portion of the cam may be part of a circle struck from the axis of the plate as a center, such a construction being shown in Fig. 5. The shaft B is stepped at its lower end in any suitable base, and is supported above by the stand B'.

C is an operating-lever, by which the shaft is turned, movable over a sector-shaped rim, *b*, of the stand, with which it is locked by the pivoted handle portion *c* thereof engaging with notches formed in said rim.

The slide-bars F F' are held in position and given proper direction in their movements by the guides H H', in which they move.

The studs E E' are arranged upon opposite sides of the shaft B, toward or from which they are moved to a limited extent by the cam, their movements, however, being at all times directed in right lines by the guides H H'.

Supposing it be desired to move the parts from the position shown in Fig. 1, which is that occupied when the main track M is clear; to the position shown in Fig. 2, when a train will pass onto the switch-rails K, the handle *c* is raised to unlock the switch and the shaft B given a quarter-turn in the direction of the arrow, carrying with it the cam-plate a corresponding portion of a revolution. During this movement the end *d* only of the cam which is nearest the axis thereof, and, as hereinbefore stated, is preferably concentric therewith, engages the stud E', which therefore is not moved, and hence the switch-rails L are not moved. On the other hand, during this movement of the cam-plate the end *d'* of the cam farthest from the axis thereof, which is in engagement with the stud E in the position shown in Fig. 1, is moved from engagement therewith, and the concentric end portion *d* is brought to bear against it, so that the stud and with it the slide-bar F are forced in the direction of the arrow toward the shaft B, thus moving the switch-rails against the main track. A further movement of the plate—completing the half-revolution thereof and bringing the parts into the position shown in Fig. 3—does not change the position of parts moving the switch-rails K, for during this movement a portion of the concentric end *d* only of the cam is carried past the stud E, to which no movement, therefore, is imparted. This second movement will, however, shift the switch-rails L, as the end *d'* of the cam-groove will be brought to engage with the stud E', throwing the same and sliding the bar F' in the direction of the arrow.

The shape of the groove D may be variously modified, two forms being shown—one in Figs. 1 to 3 and the other in Fig. 5; and, instead of providing the plate A with but a single groove, two may be used, as shown in Fig. 6. This is an advantageous construction when it is desired to throw the rails of one switch to a greater extent than or in a different manner from those of the other.

It will be evident that while my invention is

particularly designed and adapted for use with what is known as "three-point switches," yet the essential features thereof would not be departed from were it employed with two independent switches the point-rails of which were arranged differently from those shown in the drawings.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination, with two independent switches, of a movable cam engaging in succession with the shifting connections of the two switches to move them separately and successively, substantially as described.

2. The combination, with two independent switches and their shifting connections, of a cam, with which engage in succession projections carried, respectively, by the shifting connections of the switches, and a handle for moving the cam, substantially as described.

3. In a three-way switch, the combination of the switch-rails K and L, the slide-bars F F', each carrying a projection, movable connections between the said bars and the switch-rails, respectively, a plate provided with one or more cam-edges, with which said projections engage, and a handle for turning the plate, substantially as described.

4. In a three-way switch, the combination of the switch-rails K and L, the slide-bars F F', connected, respectively, therewith, and each provided with a projection, a cam-plate provided with a cam, D, with which said projections engage, said cam having a portion, *d*, substantially concentric with the pivot of the plate, and another portion, *d'*, situated at a distance from the pivot greater than the distance of the portion *d* therefrom, substantially as described.

5. In a three way switch, the combination of the switch-rails K and L, the slide-bars F and F', connected, respectively, therewith, and provided with the studs E and E', respectively, the horizontally-arranged plate A, having formed therein the groove D, having the two portions *d* and *d'*, the shaft upon which the plate is mounted, and the handle, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS BLACKSTONE.

Witnesses:

W. P. FIELD,
G. W. MERSHON.