(No Model.)

E. VON HAKEN.

SWITCH OPERATING DEVICE.

No. 584,174. Patented June 8, 1897.

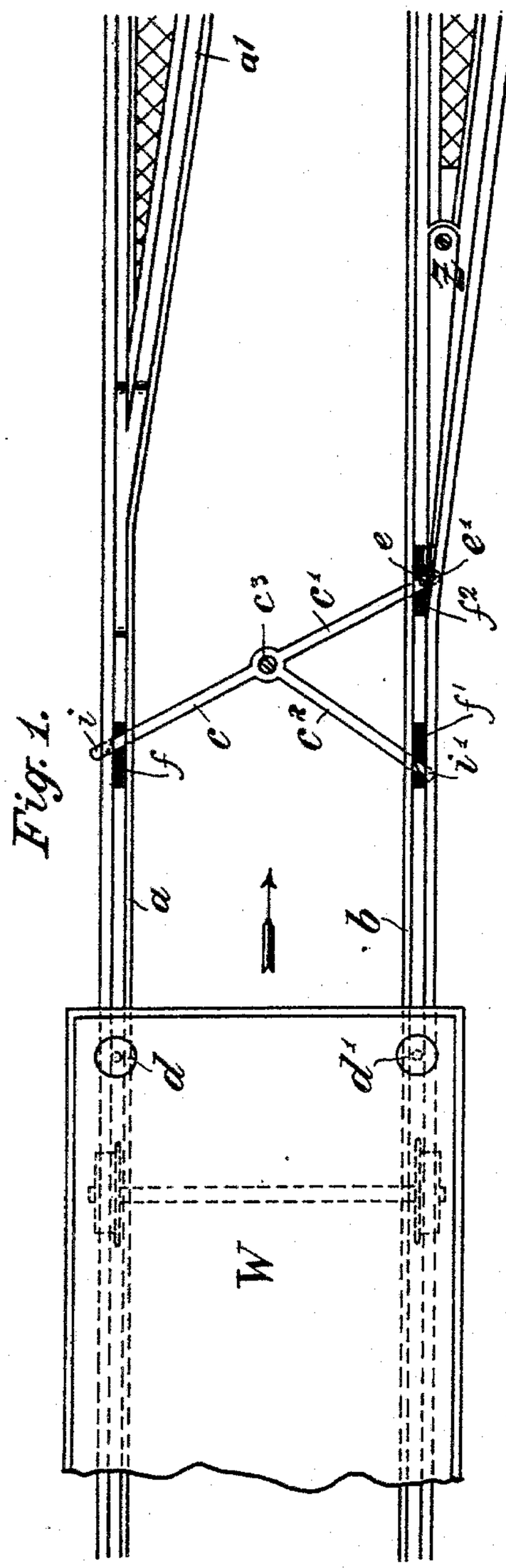

Fig. 1.

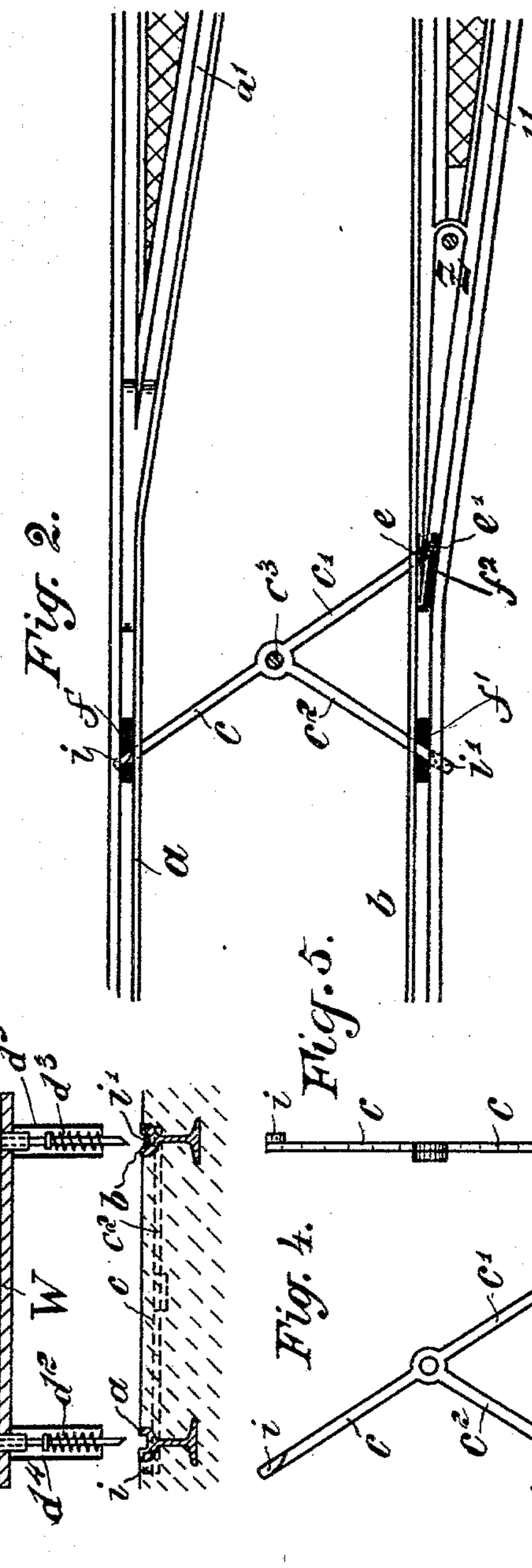

Fig. 2.

Fig. 3.

Fig. 5.

Fig. 4.

WITNESSES.

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EDUARD VON HAKEN, OF CHARLOTTENBURG, GERMANY, ASSIGNOR OF ONE-HALF TO DOCTOR MARTIN WALDECK, OF BERLIN, GERMANY.

SWITCH-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 584,174, dated June 8, 1897.

Application filed February 9, 1897. Serial No. 622,605. (No model.)

To all whom it may concern:

Be it known that I, EDUARD VON HAKEN, a subject of the Emperor of Russia, residing at Charlottenburg, in the Kingdom of Prussia, Germany, have invented new and useful Improvements in Switch-Operating Devices, of which the following is a specification.

This invention relates to that class of switch-operating devices in which the switch-point is connected with a lever or other operating device located on the track and in which said operating device is actuated by engagement with the passing car or a part carried thereon.

The invention will be fully described hereinafter and defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the invention as applied. Fig. 2 is a similar view showing the parts in a different position. Fig. 3 is a transverse section taken through the platform of the car and extending to the track. Fig. 4 is a plan view of the lever, and Fig. 5 is an edge view of the same.

The railway has the usual rails *a* and *b*, from which the switch-rails *a'* and *b'* pass. The switch-point Z is located between the rails *b* and *b'* and controls the switch. The operating-lever has three arms *c*, *c'*, and c^2 and turns on an axis c^3, located centrally in the bed of the railway. The arms *c* and c^2 of the lever extend at an obtuse angle to each other and rearwardly from the switch, and the outer terminals of the arms *c* and c^2 are provided with cams *i* and *i'*, respectively. The terminals of the arms *c* and c^2, respectively, extend through openings *f* and *f'* in the rails *a* and *b*, so that the cams *i* and *i'* will alternately lie within the flange-grooves of the rails. When one cam is within the groove of its adjacent rail, the other cam will be outside its groove, and vice versa, as the drawings clearly show.

The third arm *c'* of the operating-lever is alined longitudinally with the arm *c*, and consequently extends at an acute angle to the arm c^2 and to the switch-point Z. The end of the arm *c'* is movable in an opening f^2 in the switch-frog. The terminal of the arm *c'* is provided with two perpendicular pins *e* and *e'*, which lie one on each side of the switch-point Z, and by these means the rocking of the operating-lever imparts a similar movement to the switch-point.

The platform W of the car is provided with two operating-rods *d* and *d'*. These rods are vertically movable through the platform and are normally held raised by expansive springs d^2 and d^3, contained within sleeves d^4 and d^5, projecting downwardly from the platform and embracing the rods *d* and *d'*, the springs being each connected at one end with the rods and at the other end with the sleeves.

With the parts arranged as in Fig. 1 if it be desired that a car moving in the direction of the arrow in said figure should pass on the switch-rails *a'* and *b'* the rod *d'* should be depressed, causing it to run through the flanged groove of the rail *b* and strike the cam *i'*. This will turn the operating-lever and cause the point Z to be moved to the left, whereby the car is thrown from the main rails to the switch-rails. If the next car is to pass along the main rails, the rod *d* of the said next car should be depressed so as to engage with the cam *i*, which cam will have been previously moved into its opening *f*. The engagement of the rod *d* with the cam *i* will turn the operating-lever in the direction opposite to the direction in which it is first turned and return the switch-point Z to the position shown in Fig. 1.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a switch-point, and a lever having three arms, one of said arms having two pins embracing the switch-point, and the other two arms being each provided with an upwardly-projected cam, whereby the lever may be turned by the movement of an object against either of the cams, substantially as described.

2. In a switch, an operating-lever having three radial arms, one of said arms having pins capable of receiving a switch-point between them, and the other two arms each having a cam by which the lever may be actuated, substantially as described.

3. The combination of a switch-point, and a lever having a plurality of arms, one of which has two pins embracing the switch-point and a second of which is provided with an upwardly-projected cam capable of being engaged to swing the lever and operate the switch, substantially as described.

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

EDUARD VON HAKEN.

Witnesses:
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HENRY HASPER.