2 Sheets--Sheet 1.

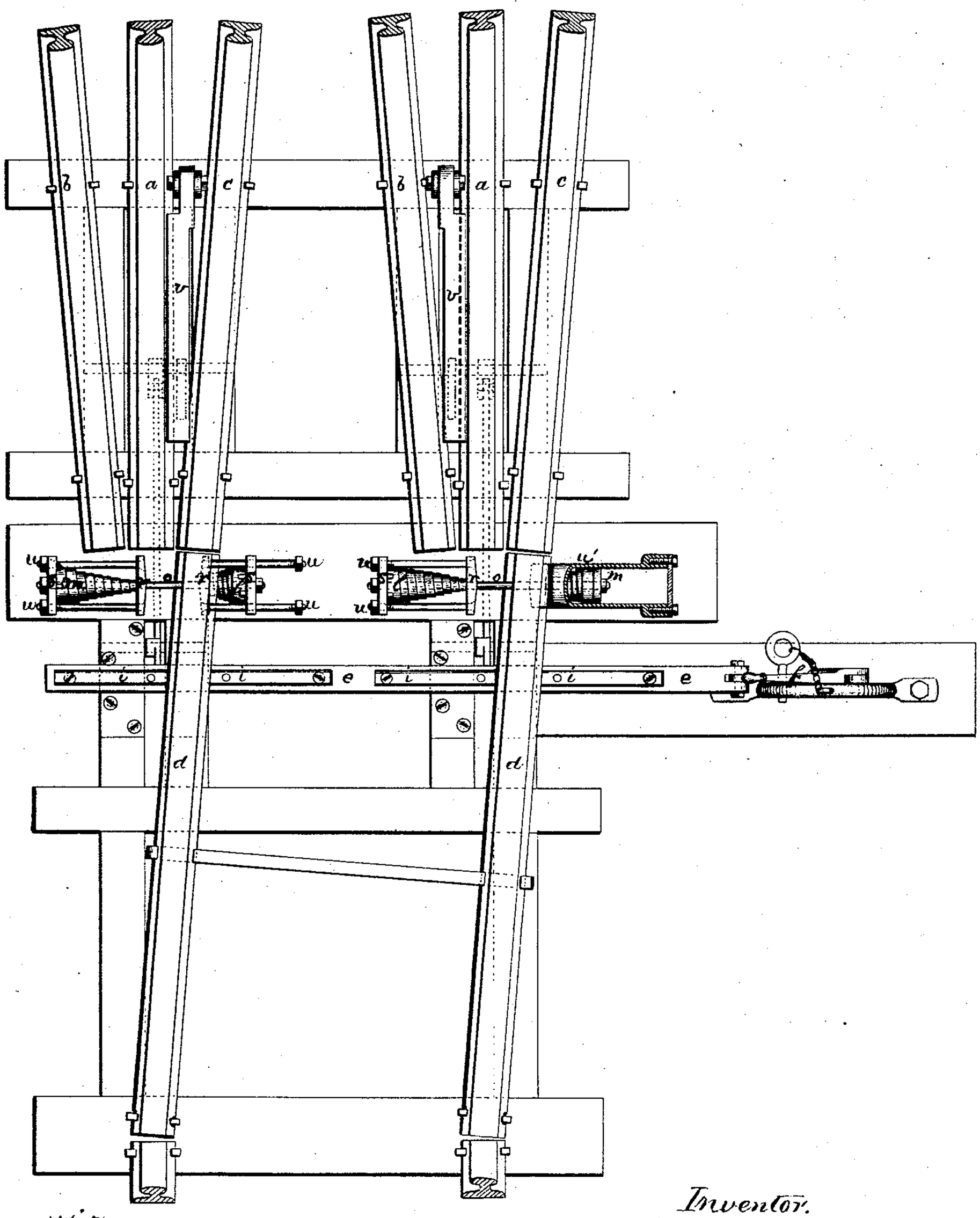
C. P. DEYOE.

Switches.

No. 156,988.

Fig. 1.

Patented Nov. 17, 1874.



Witnesses.

B. F. James.

B. L. Elwood

Inventor.

Clifford P. Deyoe.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

C. P. DEYOE.
Switches.

No. 156,988. Patented Nov. 17, 1874.

Fig. II

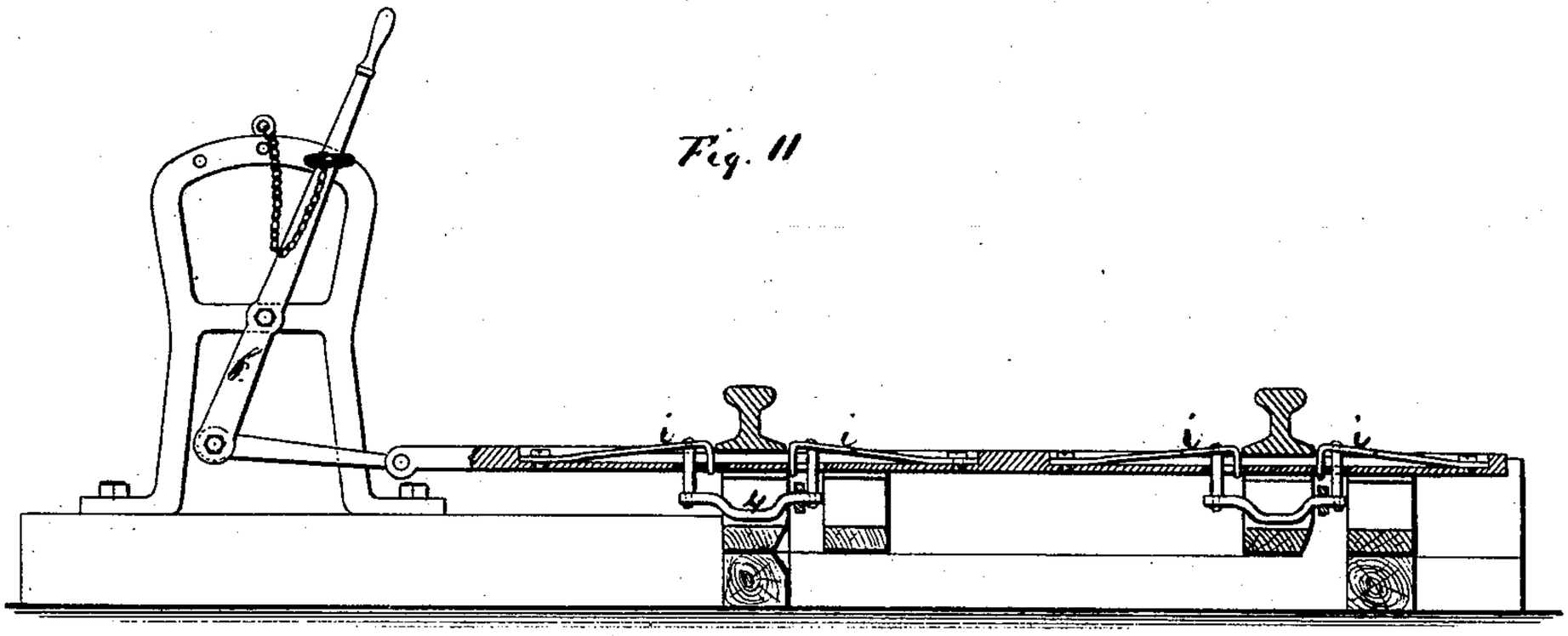
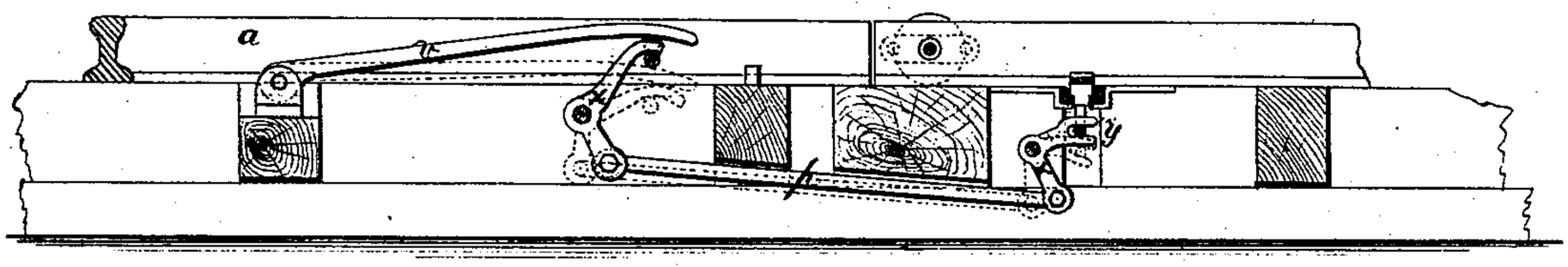


Fig. III.



Witnesses.

B. F. James,

B. L. Edwards,

Inventor.

Clifford P Deyoe

UNITED STATES PATENT OFFICE.

CLIFFORD P. DEYOE, OF POUGHKEEPSIE, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO DANIEL R. PRATT, OF SAME PLACE.

IMPROVEMENT IN SWITCHES.

Specification forming part of Letters Patent No. **156,988**, dated November 17, 1874; application filed October 8, 1874.

To all whom it may concern:

Be it known that I, CLIFFORD P. DEYOE, of Poughkeepsie, in the county of Dutchess and State of New York, have invented an Improvement in Safety-Switch for Railways, of which the following is a specification:

The nature of my invention consists in the peculiar devices employed for retaining the switch-rails in position upon their bed-plate near the point of their connection with main rails and sidings, and the means employed to release said switch-rails when out of line with the main rails, so that they can return automatically to their true position, and prevent a through train of cars from being run off or upon the wrong track. The switch-bars are applied in the usual manner, at the junction of the main track with one or more turn-outs or sidings; and the switch-rails are held in line with the main track or rails by springs contained in adjustable cases or boxes, secured to the tie or bed-plates on either side of the switch-rail at or near the point of its connection with the main rail. When the switch-rails are moved, by means of the switch-lever, from the main rails to the turn-out or siding-rails, the springs are compressed upon the side of the switch-rails in the direction toward which they are moved, so that when the lever of the switch is released the reaction of the compressed springs will cause the switch-rails to return to the exact line of the main rails. The bar that is operated by the switch-lever, and upon which the switch-rails rest, is provided with powerful spring-latches upon each side of the switch-rails, and projects sufficiently far above the flanges of such rails to secure them in proper position, and retain them so that no lateral movement of the switch-rails can be effected until such springs are withdrawn from one or the other side of such rails. Inclined and hinged plates are firmly secured to the tie, upon the inner sides of the main rails, at a suitable distance from the switch-rails, the ends of which plates, nearest the switch-rails, resting upon the arms of levers connecting with rods beneath the rails, and with bent levers at the opposite ends of such rods, the ends of said last-mentioned levers being forked, so as to engage with and rest upon a rod or plate that connects the two springs on either side of the switch-rails. The inclined plates upon or near the main rails are depressed, and are operated upon by the flanges of the forward wheels of the driver or locomotive when the switch-rails are not in line with the main track, causing the rods and levers to operate and withdraw the latches on the switch-bar, when the springs on either side of the switch-rails cause them instantly to resume their position in line with main rails before the locomotive or driver can enter upon the switch-rails.

In the drawing, Figure 1 is a plan of the rails and mechanism employed to operate the switch-rails. Fig. 2 is a cross-section, and Fig. 3 is a longitudinal section, showing the parts applied with the switch.

The rails *a a* represent the main track; *b b c c*, turn-out or siding-rails—one to the right, the other to the left, of the main track. The switch-rails *d d* are applied in the usual manner, so as to be moved to either track by the switch-bar *e* and hand-lever *f*; but said switch-bar is not permanently connected with the switch-rails, but is provided with metallic spring-latches *i i* at each side of each rail; and the rails *d d* are between springs *l l* and *m m*, which springs are, or may be, contained within metallic cases or boxes to keep them free from snow, ice, or dust, and such cases or boxes secured to the tie or bed. Each of these springs is, by preference, made of a metallic plate or strip wound up, and placed upon a central rod, *o*, between the stationary heads *s* and movable followers *r r*; and the extent of motion of said springs is determined by the screw-bolts *u u* between the stationary heads *s s* and followers *r r*, so that when the parts are in a normal position the switch-rails are held in line with the main rails *a a*.

As the springs connected with the switch-rails are compressed, when moved in either direction from the line of the main rails *a a*, it remains only necessary to liberate them from the latches *i i* to allow the springs to move the switch-rails. The latches *i i* upon the switch-bar *e* are depressed by the flanges

of the wheel of the locomotive running upon the incline plates *v*, thereby depressing them, and motion is thereby transmitted through the rods *p p*, bent levers *x*, and forks *y*, the latter moving upon the latch connections 4 to right or left, in accordance with the position of the switch-rails, thereby drawing down the latches *i i* to the level of the switch-bar *e*, when the springs *l l* and *m m* cause the switch-rails to assume their normal position. These levers and latches are illustrated and shown in Figs. 2 and 3, the fork *y* of the latch-lever receiving the segment or connection 4 below the switch-bar, said fork being always in the proper position to operate upon the latches to draw them down when the inclined plates *v* are depressed. *w'* is a cast-iron case or box in which the springs *l l* and *m m* may be placed. It will be noticed that, when the switch-rails are not in line with the main rails, the inclined plates *v* are always raised to be in contact with locomotive-wheels.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the springs *l l m m*, secured and controlled in their movement by means of the guides *u u*, secured to the movable followers *r*, with the switch-rails *d d* and switch-bar *e*, in the manner and for the purpose herein described.

2. The combination of the latches *i i*, connected, by means of the bent rod 4, with the switch-bar *e* and switch-rails *d d*, in the manner and for the purpose herein described.

3. The hinged inclined plate *v*, when combined with the bent levers *x x* and rod *p*, said levers having the fork *y* formed upon them, and engaging with the latch-connection 4, the whole constructed, arranged, and operated in the manner and for the purpose herein described.

Signed by me this 9th day of October, A. D. 1874.

CLIFFORD P. DEYOE.

Witnesses:
B. F. JAMES,
D. R. PRATT.