J. C. MIDDLETON.

RAILROAD SWITCH.

No. 180,777. Patented Aug. 8, 1876.

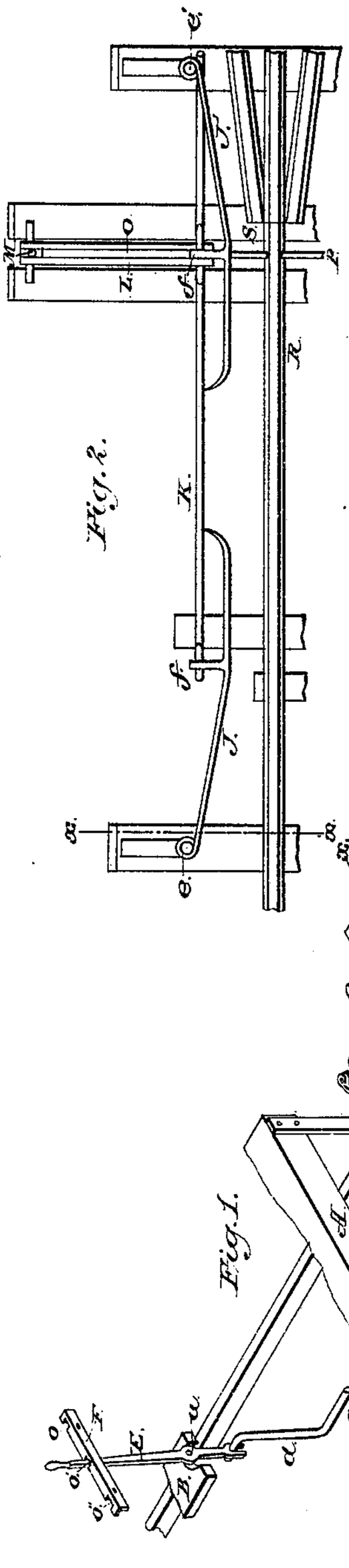

Fig. 2.

Fig. 1.

Fig. 3.

Attest:

Theo. W. Bean

Wm. F. Ruttig.

Inventor:

Joseph C. Middleton

UNITED STATES PATENT OFFICE

JOSEPH C. MIDDLETON, OF NORRISTOWN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO W. P. CUTHBERTSON, OF SAME PLACE.

IMPROVEMENT IN RAILROAD-SWITCHES.

Specification forming part of Letters Patent No. **180,777**, dated August 8, 1876; application filed June 7, 1876.

To all whom it may concern:

Be it known that I, JOSEPH C. MIDDLETON, of the borough of Norristown, in the county of Montgomery and State of Pennsylvania, have invented a new and useful Improvement in Railroad-Switches, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

The nature of my invention consists of an adjustable beam, (hereinafter described,) the same being located on the locomotive or other leading car, and being susceptible of motion to the right or left, as the case may be, by the engineer or a brakesman, and operating in conjunction with certain guards, levers, and rods, constructed and arranged as hereinafter described, to shift the switch or movable section of the track of a railroad at will while the train is in motion.

In the accompanying drawings, Figure 1 is a perspective view. Fig. 2 is a plan of one side of the track and the switch attachments; and Fig. 3 a section through *x x*, also showing the beam H, the hangers I I, and the rod C and its attachments.

In Figs. 1 and 3, A is the front of a portion of the locomotive-frame, and B is a portion of the cab-floor. Passing along under the frame A is the rod or shaft C, having at one end the crank *d*, Figs. 1 and 2, and bent over to receive the forks of the lever E. The latter works on a pin at *a*, and on the guard or rack F. At the other end of the rod C is another crank, *g*, bent out to work in the slot in the beam H, which latter slides in the hangers I I, or similar contrivances. The beam H is so made at the ends as to receive the rollers *c c'*. At the side of the track are the guards J J′ J″ J‴, Figs. 1, 2, and 3, hinged at one end on the pins *e e′ e″ e‴*, and attached to the crank of the rod or shaft K K′. At the lugs *f f′ f″ f‴* these guards J J′, &c., are inclined toward the rail from *e* to *f*, and from *f* out to the end they are parallel to the rail or track. The distance between the guards at *e* and *e′* is sufficient to admit the beam H when thrown out on either side, and the distance between it at *f f‴* is just enough for the length of the beam H (from the outside of the rollers *c* to *c′*) to pass through. The rods or shafts K K′ have a double crank, to which are connected the side guards J′ J″ by the lugs *f′ f″*, and also the connecting-bars L L′, which operate on the switch-lever M and the short lever N, Figs. 1 and 2. On the face of the guard or rack F, Figs. 1 and 3, are three notches, *o o′ o″*. When the lever E is placed in the notch at *o*, it, working on a pin at *a*, throws the lower end of the lever and the crank *d* out toward B, and, as is evident, the crank *g* thrusts the beam H out in the direction of *c*, and the roller at *c* being thus thrown farther out from the side of the track than the face of the guard J at *f*, (the distance of the guard at *e* being sufficient to admit the roller *c* when in this position, as has been heretofore explained,) the roller *c*, in passing along the guard J, gradually forces it out parallel to the track, and with it the cranks *f f′* are moved over, and the crank *f′*, having its connection with the switch-lever M, by the connecting-bar L, the switch-lever is thrown over, and shifts the movable portion of the track in the usual manner by the bar O and the tie P, and the main track R R is moved to the branch track S S; and evidently, when the lever E is changed to the notch *o″*, the end of the beam at *c′* is thrown out, and the same action takes place on the other side, and the track R R is shifted to the branch *t t*, and if the lever is put in the middle notch *o′*, the rollers *c c′* are projected equal distances on each side, and if the track is shifted to either branch, consequently the guards J or J‴ thrown in, the beam H and rollers *c c′*, passing between them, shift them right for the main track.

The distance from *f*'s to the end of the side guards J's being parallel to the track, keeps the switch in place until the weight of the train gets on the movable part of the track, thereby securing it in place. The guards J′ J″ are so placed as to shift the switch to the branches or side track when the train is coming from them to the main track.

The rods or shafts K K′ are continued out beyond the crossing of the branches with the main track, and are there connected with guards for working the switch when the train is coming from that direction on the main

track. This I have not thought necessary to illustrate in the drawings.

In a two-way switch, or one that shifts to two tracks only, the rods K K′ end with the crank at *f′ f″*, and the guard for operating the switch, when the train is coming from the other way, is connected direct with the crank.

A two-way switch may also be locked with a balance ball or weight, in the usual way.

When this device is used on or attached to cars, the rod C is not used, but the lever E is connected direct with the beam H.

I claim—

The lever E, rod C, adjustable beam H, side guards J J′ J″ J‴, crank-rod K, connecting-bars L L′, and lever N, in combination with the switch-rails, substantially as set forth, for the purpose specified.

JOSEPH C. MIDDLETON.

Witnesses:
THEO. W. BEAN,
WM. T. RUTTY.