(No Model.) 3 Sheets—Sheet 1.

J. S. PETER.

AUTOMATIC SWITCH.

No. 307,137. Patented Oct. 28, 1884.

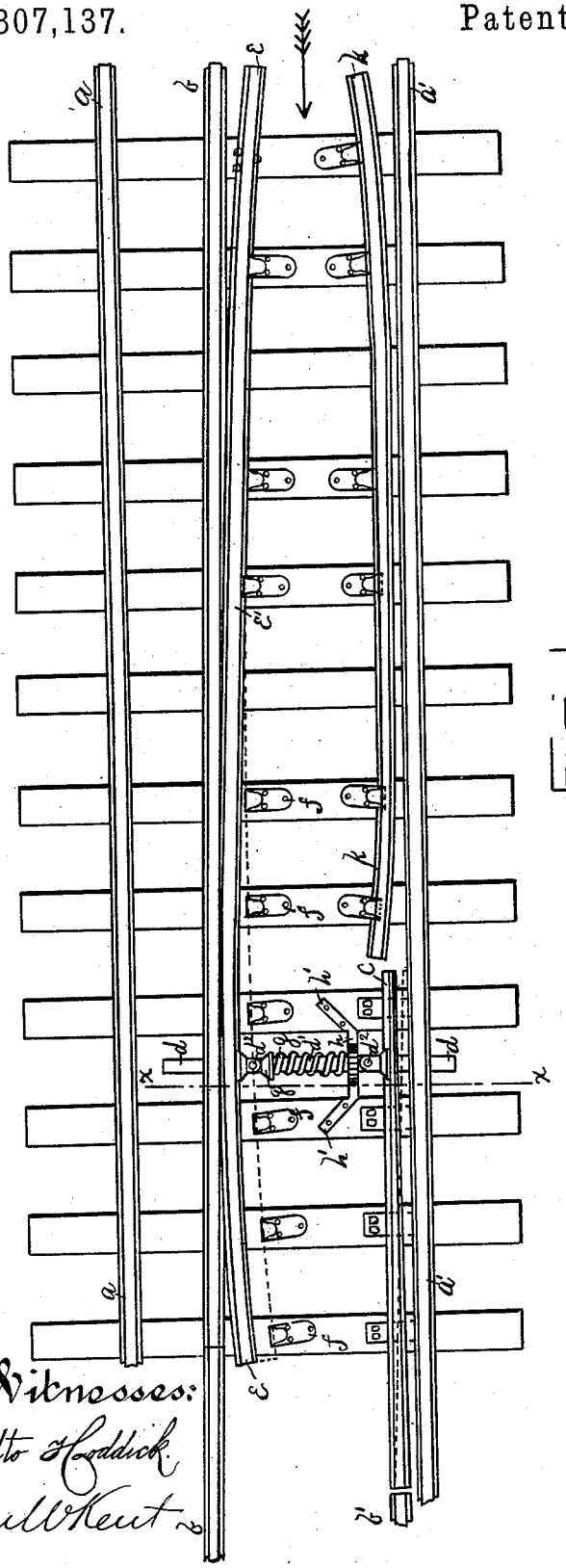

FIG 1

FIG 2

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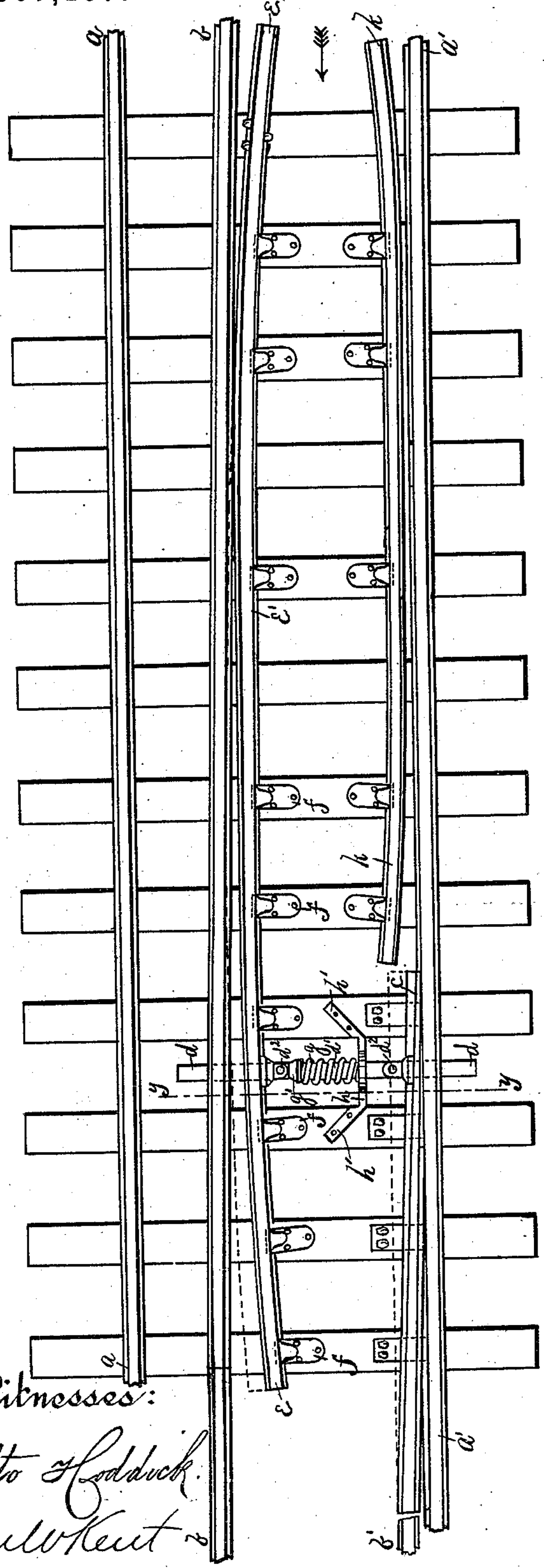

Fig 3

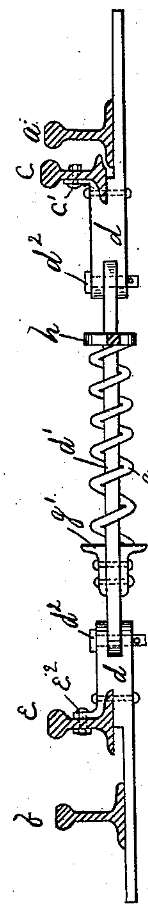

Fig 4

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(No Model.) 3 Sheets—Sheet 3.

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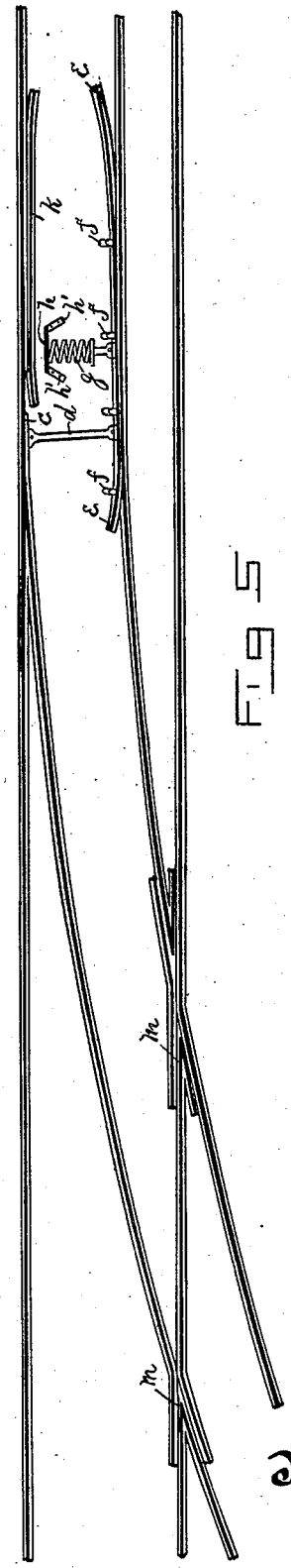

Fig 5

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UNITED STATES PATENT OFFICE.

JOHN S. PETER, OF ANGELICA, NEW YORK.

AUTOMATIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 307,137, dated October 28, 1884.

Application filed January 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. PETER, a citizen of the United States, residing at Angelica, in the county of Allegany and State of New York, have invented certain new and useful Improvements in Automatic 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates particularly to switches adapted for use at points where railroads of different gages connect, join, or have tracks and switches in common. In such cases it is frequently necessary where a third rail is ordinarily used to shift the cars of the narrow gage to an independent track the narrower gage lying within or between the rails of the wide-gage track. Heretofore it has been usually done by providing a movable switch-point operated by hand in the common manner.

The object of my invention is to effect this automatically, thus preventing the derailment of cars of either gage by the switch being left in the wrong position; and to this end my invention consists of a certain arrangement and combination of parts, which will be hereinafter fully set forth and claimed.

In the drawings, Figure 1 is a plan showing the normal position of the switches connecting the narrow-gage with the broad-gage track. Fig. 2 is a vertical section taken in the line *x x* of Fig. 1. Fig. 3 is a plan showing the position of the switch which it automatically assumes in case a narrow-gage train attempts to pass in either direction. Fig. 4 is a vertical section taken in the line *y y* of Fig. 3, and Fig. 5 is a plan illustrating a modification.

Referring to the drawings, *a a'* are the rails of the broad-gage track. *b* is one of the rails of the narrow-gage track, and *b'* is the other rail, from which one set of wheels of the narrow-gage train pass onto the rail *a'* of the broad-gage, or vice versa. To the left of the point indicated by *b'*, in Figs. 1 and 3, the rails of the narrow-gage track lie wholly within the rails of the broad-gage track, while to the right of such point the rail *a'* of the broad-gage becomes a common rail to both gages.

c is a movable switch-point similar to that employed in an ordinary split switch, and is used to connect or disconnect the narrow-gage rail *b'* with or from the broad-gage rail *a'* in the operation of the switch. *d d* are the outer ends of a tie and strut rod, the central portion, *d*, of which being pivoted to the ends *d d* at the points d^2 d^2. This tie and strut rod is placed between two ties a short distance back of the end of the switch-point *c*, its ends *d d* lying loosely under the rails *a'* and *b*. The switch-point *c* is rigidly secured to a shoulder of the tie and strut rod, as clearly shown at *c'* in Fig. 2.

e is a spring guard-rail, which is securely spiked to the ties from its right-hand end (see Fig. 1) to or near to the point *e'*, from which point to its other end it is left free to be moved away from the rail *b* to the line of brace-blocks *f*, secured to the ties. At the point where it passes the tie and strut rod *d d'* it is rigidly secured thereto, as shown at e^2, Fig. 2.

Upon the portion *d'* of the tie and strut rod is placed the coiled spring *g*, one end of which is rigidly secured to the fast collar *g'* upon the portion *d'*, the other end being left free and resting loosely against the brace *h* secured to the ties at the end *h' h'*, which brace loosely encircles the portion *d'* of the tie and strut rod *d d'*.

k is an ordinary guard-rail placed in the position shown, and secured to the ties at the usual distance from the rail *a'*.

The operation of the switch just described is as follows: In Fig. 1 the normal position of my improved switch is clearly shown in full lines, in which the switch-point *c* is held away from the main rail *a'* by the spring guard-rail, whose normal position is shown as being close to the rail *b*, the rail *e* and point *c* being rigidly connected by the tie and strut rod *d d'*. The coiled spring *g* is so arranged as also to exert an additional pressure in keeping the switch-point *c* and guard-rail *e* in their normal position. When an engine or car on the narrow-gage track approaches the switch in the direction indicated by the arrow, the wheels on the rails *a'*, being held close to such rail by the guard-rail *k*, draw the opposite

pair of wheels, and by them the guard-rail *e*, toward the center of the track, and by means of the connecting-tie and strut-rod *d d'* the point *c* is moved over to the rail *a* into the proper position to guide the advancing wheels onto the rail *b'*, as clearly shown in full lines in Fig. 3. In order to insure sufficient throw of the point *c*, the width of the narrow-gage track in the vicinity of the guard-rail *k* is somewhat increased. When the guard-rail *e* has been moved a sufficient distance by the wheels to place the point *c* in proper position, its further movement is arrested by the brace-blocks *f*, and it then acts as a guard-rail for the point *c*. When the engine or car has passed the switch, both the spring *g*, which has been compressed against the brace *h*, and the elasticity of the spring-rail serve to throw the point *c* into its normal position. With cars moving in the opposite direction upon the narrow-gage track the same result is obtained by the combined lateral pressure of the wheels against the point *c* and spring-rail *e*. The guard-rail *e*, instead of being secured so as to form a spring-acting rail, might be hinged or otherwise arranged so that it could be moved away from the rail by the wheels in order to shift the position of the point *c*, but could not of itself return the point *c*, to its normal position, in which case the spring *g*, by being made very heavy and of sufficient power, could itself perform the work.

In the modification in Fig. 5 the spiral spring *g* is shown as located away from the tie and strut rod, but applied to the spring guard-rail *e*, as before, and performing the same function as in the construction shown in Figs. 1 and 3—that is, to assist the spring guard-rail in returning to its normal position, and keeping it and the switch-point in the position shown in Fig. 1 when not in use by narrow-gage cars or engines.

Any other form of spring than that shown could be equally well employed.

I claim—

1. An automatic switch for connecting broad and narrow gage tracks, consisting, essentially, of a movable spring guard-rail rigidly connected with and operating a switch-point on the opposite side of the track, the guard-rail being operated automatically by the wheels of the engine or car, substantially as shown and described.

2. In an automatic switch, the spring guard-rail *e*, the tie and strut rod *d d'*, and the switch-point *c*, all combined and operating substantially as shown and described.

3. In an automatic switch, the spring guard-rail *e*, the tie and strut rod *d d'*, the spring *g*, the brace *h*, and the switch-point *c*, all combined and operating substantially as shown and described.

4. In an automatic switch, the spring guard-rail *e*, the tie and strut rod *d d'*, the switch-point *c*, and the guard-rail *k*, all combined and operating substantially as shown and described.

5. In an automatic switch, the spring guard-rail *e*, the tie and strut rod *d d'*, the coiled spring *g*, the brace *h*, switch-point *c*, and the guard-rail *k*, all combined and operating substantially as shown and described.

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

JOHN S. PETER.

Witnesses:
WM. F. DEVENING,
JOHN HANCOCK.