

E. C. Matthewson.

R R. Switches.

No 6206.

Patented Mar. 20. 1849.

Fig. 1.

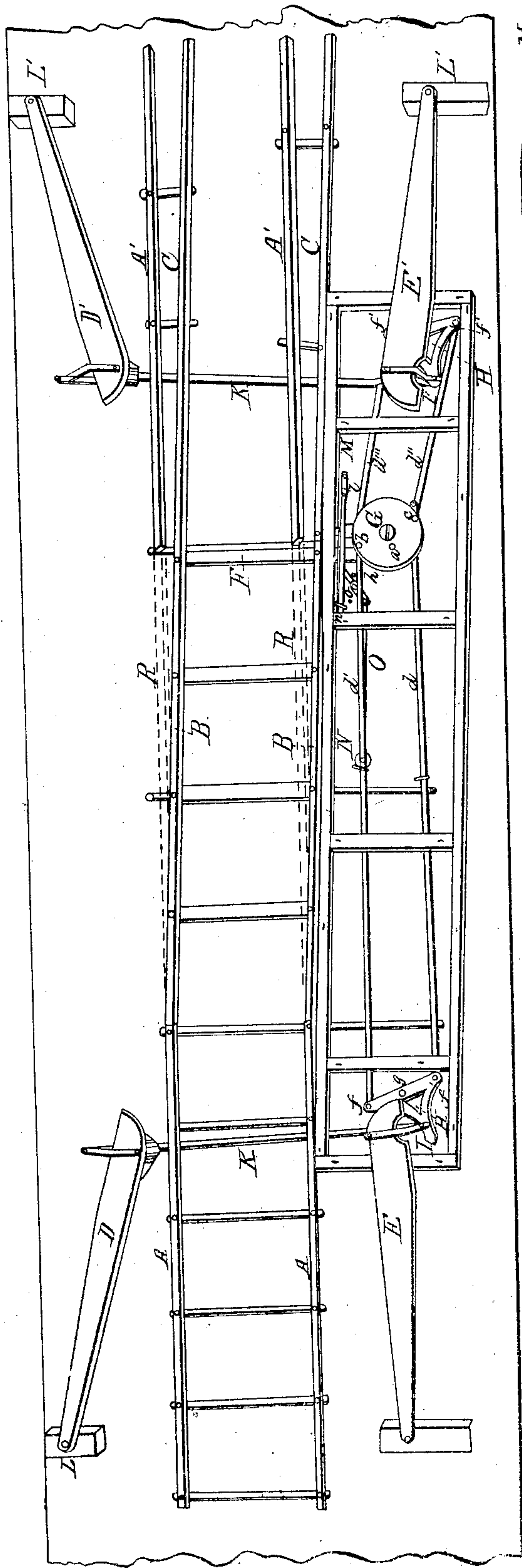


Fig. 3.

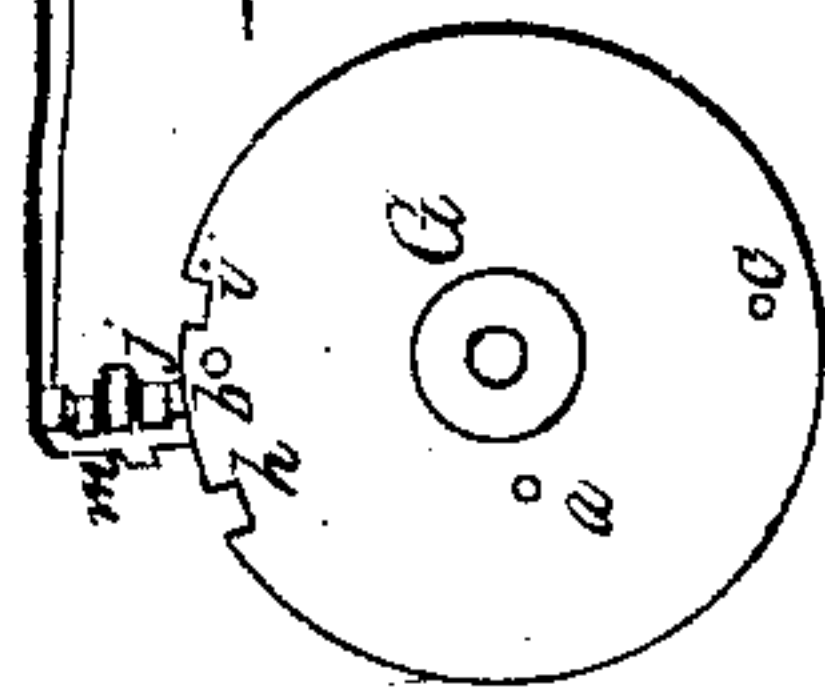


Fig. 2.

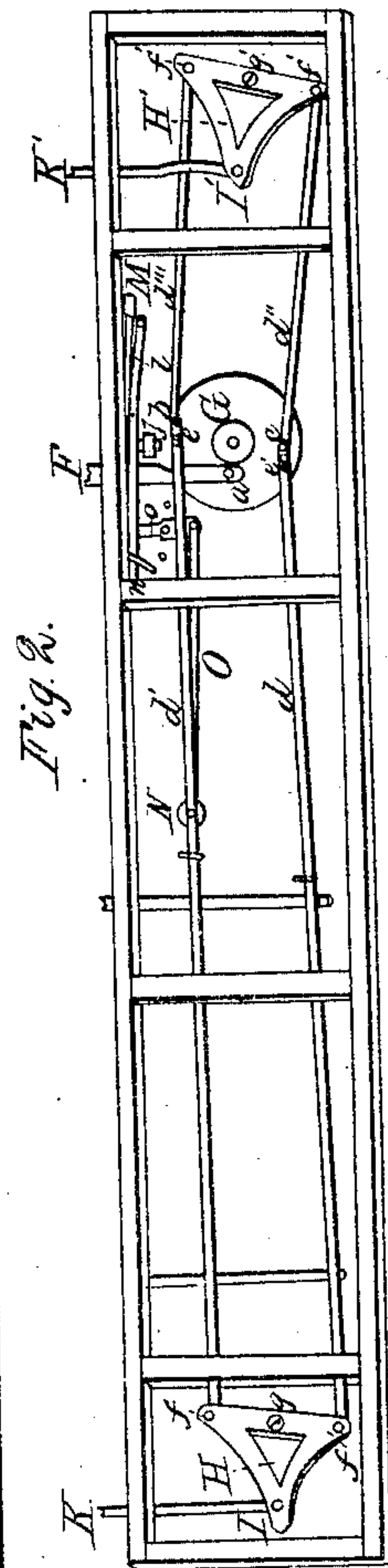
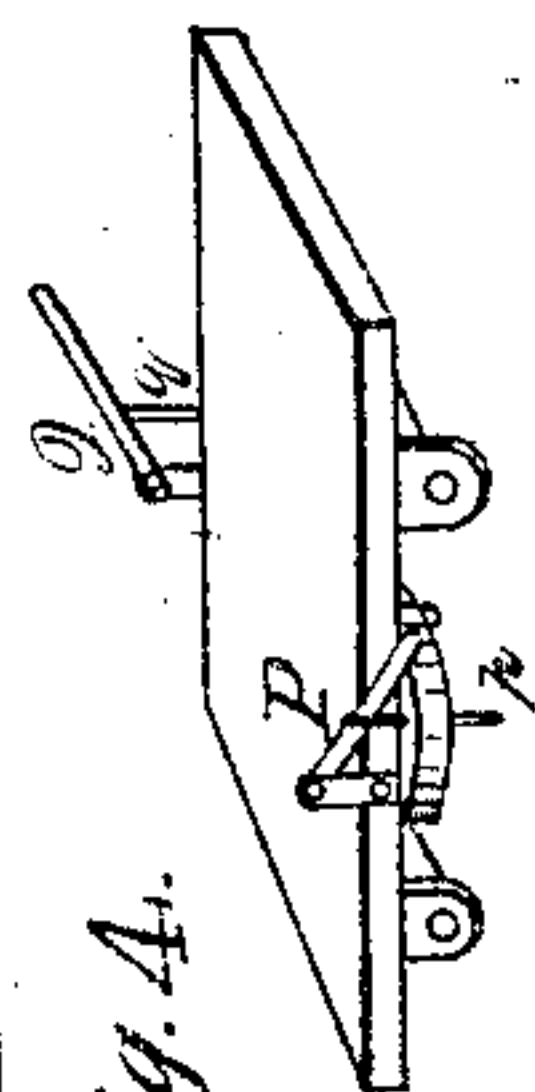


Fig. 4.



UNITED STATES PATENT OFFICE.

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SELF-ADJUSTING RAILROAD-SWITCH.

Specification of Letters Patent No. 6,206, dated March 20, 1849.

To all whom it may concern:

Be it known that I, ERASTUS C. MATTHEWSON, of the city and county of Hartford, in the State of Connecticut, have invented a new and useful Improvement in the Method of Working Switches on Railroad-Tracks; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, which make a part of this specification, in which—

Figure 1, is a perspective view of a portion of a railroad track, with a turn-out, &c., showing the apparatus for changing the switch as the locomotive, or other car, passes. Fig. 2, is a perspective view of a section of the apparatus for changing the switch, showing in part, how it is released and moved, and how it is again secured when in the desired position to direct the train onto the right track. Fig. 3, is a perspective view of the lower part of the circular box, or wheel, and of the detent and spring which secure it in its proper position, showing the joint pins, or projections, by which it is turned, and by which it moves the switch. Fig. 4, is a perspective view of the lower part, or platform, of a locomotive or other car, showing the rods, or projections, which operate on the side bars, to change the switch; and the levers which work the rods, or projections.

My improvement consists in so constructing and arranging the parts of the apparatus, and so connecting it with the switch, that by simply depressing a lever, attached to the locomotive, or other car, that forces down a rod or other projection so as to come in contact with a bar, supported in an oblique direction with the track; and by means of this bar being connected with the apparatus that moves the switch, the switch will be moved with perfect accuracy and certainty, (if it be not already in the right position, in which case it will not touch the bar.)

The railroad track, is made in the common way, and the switch is hung in the common way, as represented in Fig. 1, where A, A, A', A', & C, C, represent the stationary rails, and B, B, the switch, or movable rails.

I make the apparatus, which works the switch, of iron or any other suitable ma-

terial, as represented in Fig. 1, and, in part, in Figs. 2 & 3.

The switch, or movable part, of the track, B, B, Fig. 1, being made and attached in the common form, the bar F, Figs. 1 & 2, which connects the movable end of the switch is extended beyond the rails and attached by a joint pin, *a*, Figs. 1, 2, & 3, to the circular box, or wheel G, Figs. 1, 2, & 3, as seen at *a*, Fig. 2. This circular box, or wheel G, has two other joint pins, *b*, & *c*, Figs. 1, 2, & 3, situated near the periphery, on opposite sides, (toward and from the track,) of the center of the wheel as seen in Fig. 1. On the two pins, *b*, & *c*, Figs. 1, 2, & 3, I place the ends of two bars, *d* & *d'*, Fig. 2, with slots, *e*, & *e'*, in them near their ends (about three times as long as the diameter of the pins,) and the other ends of these bars, (*d* & *d'*) I attach, with joint pins *f*, *f*, Figs. 1, & 2, to two of the angles of a triangular piece, H, Figs. 1, & 2, secured in the center of that side, or bar, by a joint pin or screw, *g*, as seen in Figs. 1, & 2. And to the other angle, I, of the triangle, H, I attach, by a joint pin, a bar H, Figs. 1, & 2, which runs under, and across the track, as seen in Fig. 1. To the ends of this bar, K, Figs. 1, & 2, and outside of the track, I attach the movable ends of the bars D, & E, Fig. 1, the other ends being attached, by joint pins, or screws, to stationary blocks, L, & L, Fig. 1, at a somewhat greater distance from the track than the ends attached to the cross bar, K, as seen in Fig. 1, in a position somewhat elevated above the track, and nearly on a level with the lower platform of the cars, so as to be readily acted on by the rods when the train is passing.

I make the circular box or wheel, G, Fig. 1 of two disks; the lower one, (seen in Figs. 2 & 3,) has a bush in the center, sufficiently raised for the upper disk (G, Fig. 1,) to rest on, and yet leave sufficient room between them for the bars, F, *d*, & *d'*, to work freely. And it has three pins, *a*, *b*, & *c*, projecting upward, on which the bars F, *d*, & *d'*, work. And it has two notches or spaces *h*, & *i*, Fig. 3, in which a catch, or detent *j*, Figs. 2, & 3, is forced by a spring M, to hold the switch firmly in its proper position, at any time. And the upper disk, G, Fig. 1, has three holes, at *a*, *b*, & *c*, Fig. 1, to fit the pins or projections *a*, *b*, and *c*, Figs. 2, & 3.

And both disks are secured in their places by a screw, as seen in Fig. 1, or by any other means.

I attach one end of a rod, or bar, *l*, Figs. 1, & 2, by a screw or pin, as seen near *l*, Figs. 1, & 2, having the central part rest in a notch, or span, *m*, Fig. 3, in the detent *j*, and the other end pass under a small clasp, *n*, Figs. 1, & 2, under which it moves freely in a lateral direction to force back the detent, *j*, when the wheel is to be turned, as seen in Fig. 2.

On the bar, *d'*, Figs. 1 & 2, at *N*, I attach, with a joint pin, one end of a small bar, or rod, *O*, Figs. 1 & 2, while I attach the other end, by a joint pin, to one of the ends of a small lever, *o*, which is secured in the middle by a pin or stud, as seen at *o*, Figs. 1 & 2, and the other end of this lever, *o*, works against the small bar, *l*, Figs. 1 & 2, to force it, and, with it, the detent, *j*, back when it is desired to change the switch, as represented in Fig. 2.

I attach to the lower part of the locomotive, or other car, (Fig. 4,) two rods, or projecting pieces, *p* & *q*, Fig. 4, which are to be elevated, or depressed, when necessary, by the two levers, *P* & *Q*, as, seen in Fig. 4. When both of these rods, *p* & *q*, are elevated, the switch will not be disturbed by the passing of the train. But when either of them is depressed, the car, in passing, will change the switch to the same side, if it be not already on that side, in which case the switch will not be affected. Thus, place the car, Fig. 4, (with the side *P*, *p*, toward the elevated bar, *D*, Fig. 1,) on the track at the end, *A*, *A*, Fig. 1, and run it toward *A'*, *A'*, (the switch being in the position represented in Fig. 1, at *B*, *B*,) when the rod *p*, Fig. 4, will come in contact with the side of the elevated bar, *D*, and force its movable end from the track; and by the connecting bar, *K*, Figs. 1 & 2, will draw the angle *I*, of the triangle *H*, with the movable end of the elevated bar *E*, Fig. 1, in the same direction, (that is toward the bar *D*,) by which means the triangle, *H*, will be turned on the center pin, *g*, Figs. 1 & 2, so as to force the bar *d'*, toward the circular box, or wheel, *G*, and the bar, *d*, in the opposite direction. When, by reason of the small slots, *e*, & *e'*, Fig. 2, in the ends of the bars, *d*, & *d'*, the wheel *G*, will not be moved until the bar *O*, Figs. 1, & 2, has moved the lever *o*, sufficiently to force back the rod, or bar *l*, so as to raise the detent, *j*, out of the notch, or space, *i*, Fig. 3, as seen in Fig. 2, when the wheel *G*, will be turned by the action of the bars *d'*, & *d*, until the notch, or space, *h*, Figs. 3 & 2, comes opposite the detent, *j*, when the small lever *o*, will have passed by its center so as to allow the bar, *l*, to be pressed down by the force of the spring *M*, Figs. 2, & 3, so that the detent, *j*, will fall into the space, *h*, in the

wheel, *G*. By which turning of the wheel, *G*, the pin, *a*, connecting the wheel, *G*, with the bar *F*, will force the switch, *B*, *B*, back to the position represented by the dotted lines, *R*, *R*, Fig. 1, which will carry the train on to the track *A'*, *A'*, and the switch *B*, *B*, will be firmly secured by the detent, *j*, until moved again by the action of the locomotive, or other car.

To shift the switch the other way, the rod *p*, Fig. 4 must be elevated, and the rod *q* depressed; when the rod, *q*, will act against the bar *E*, Fig. 1, and all the motions will be reversed, and the switch changed from the place represented by the dotted lines, to the position now seen in Fig. 1.

Changing the switch when the train is moving in the opposite direction, (as from *A'*, *A'*, toward *A*, *A*,) is effected, substantially, in the same way by means of the bars *D'*, & *E'*, Fig. 1, being attached to the bar *K'*, which bar, *K'*, is connected with the angle, *I'*, of the triangle, *H'*, which triangle, by its two angles *f'*, & *f'*, works the bars, *d''* & *d'''*, which are joined to the ends of the bars *d*, & *d'*, by joint pins, as seen near *b*, & *c*, Fig. 2, the whole as represented in Fig. 1, and, in part, in Fig. 2.

Instead of two levers, *P*, & *Q*, to work the rods, *p*, & *q*, as seen in Fig. 4, one lever may be connected with both, so that the operation of elevating one will depress the other. And any other form of rods, or projections, may be used, so that the change be effected by, substantially, the same means, and on the same principle. And wheels or quadrants, may be used instead of triangles, and triangles, or quadrants, instead of wheels or any other analogous device to effect the same result on the same principle, substantially.

The advantages of my improvement, over all others heretofore used or known, consists in the simplicity of its construction, trifling expense of its erection, and the certainty with which the switch is moved to its appropriate place, when desired, and the firmness with which it is secured there, by the detent. As it requires nothing to be attached to the locomotive, or other car, except the rods, or projections, (to act against the bars on the sides, to change the switch,) and the levers to move them; all of which may be worked as readily and with as little trouble as a single brake. And in having the apparatus so constructed that it may all lie under the platform by the side of the track, except the bars which pass under and across the track to connect the various parts.

I am aware that the switch has been changed by the action of the cars, and the apparatus connected with them, in various ways; I therefore do not claim changing the switch by apparatus worked by the cars, as such, as my invention, but

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

The combination of the triangle, H, with the wheel, G, the detent, *j*, the lever, *o*, and the bars, *l*, & O, when connected by the bars, *d*, & *d'*, and the triangle, H, connected with the bars, D, & E, by the bar, K, and the wheel, G, connected with the switch, B, B, by the bar, F, or other analagous device;

(and the corresponding parts marked, D', 10 E', &c., when the train is passing in the opposite direction) the whole constructed, arranged, combined, and operating, substantially, as herein described.

ERASTUS C. MATTHEWSON.

Witnesses:

HENRY LEE,
R. FITZGERALD.