A. G. LITTLEFIELD.

SAFETY SWITCH FOR RAILWAYS.

No. 10,086. Patented Oct. 4, 1853.

UNITED STATES PATENT OFFICE.

ARCHIBALD S. LITTLEFIELD, OF PORTLAND, MAINE.

SELF-ACTING SWITCH.

Specification of Letters Patent No. 10,086, dated October 4, 1853.

To all whom it may concern:

Be it known that I, ARCHIBALD S. LITTLEFIELD, of Portland, in the county of Cumberland and State of Maine, have invented a new and useful or Improved Safety-Switch Apparatus for Railways; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, letters, figures, and references thereof.

The principal object of my invention is to enable a moving car or train to bring into alinement with a main or siding track, a switch that may be out of engagement with that one thereof, on which such car or train may be moving toward the switch, and this in order to prevent accident or running off the track, which must otherwise result to the said car or train.

Of the said drawings, Figure 1, denotes a top view of a main track and turnout or siding having my improved switch apparatus applied to it. Fig. 2, is a side elevation of the same. Fig. 3, is a transverse, vertical and central section taken through the switch lever. Fig. 4, is a longitudinal, vertical and central section. Fig. 5, is a transverse and vertical section taken through the flange levers and rocker under them.

In the said drawings A, A′, represents the two switch rails; B, B′, the main track rails, and C, C, the turn out rails—the switch rails being applied to the main track and turnout rails—so as to be capable of having a movement into or out of alinement with one or the other as the case may require.

Close by the side of one of the rails of the main track I arrange a flange lever or depression bar D′, which turns vertically on a fulcrum *a*, at its rear end, and rests on its front end on the top of an upright bar E′, that extends upward from and is jointed to one end of a rocker lever G, disposed transversely of the tracks and under them and affixed to a rocker shaft H. There is a similar lever D, applied to one of the turnout tracks and made to rest in a similar way on the top of an upright bar E, which is jointed at its lower end to the opposite end of the rocker lever G. The said rocker shaft H, turns in suitable boxes or bearings I, I′, and has a vertical toothed sector K, attached to its front end, which sector works into a cogged rack L, that supports the switch rails, they being pivoted on it so as to be moved with and by the rack when it is moved. This rack should be supported so as to be capable of being freely moved in longitudinal directions. By means of a connecting rod or bar N, it is connected with a hand lever M, by which it may be put in such movement by power applied thereto.

A locking plate O, is fastened to the cogged sector K, and provided with two deep notches *c*, *d*, as seen in Fig. 3. Two latching levers Q, Q′, operate in connection with the locking plate. They are arranged as seen in Figs. 2, 3, 4, and 5, and turn vertically and respectively on fulcra at *e*, *e′*. Each has its front arm pressed downward by a spring *f*, while to its rear arm a bar *g*, is jointed and extends up to the flange lever or depresser bar D, or D′. While one depresser bar is being depressed down into a horizontal position, the other will be correspondingly elevated. At the same time the two latching levers will be so moved that the depresser D, or D′, which is depressed, will have its front arm thrown up and out of its notch of the locking plate O, while the other will have its front arm moved down into its notch of the locking plate. This will lock the switch or prevent its being moved by power applied to the hand lever M. The said hand lever M, is mostly inclosed within a box or chamber R, it being made to extend a short distance through a slot S, formed through the top of the box. Within this box or chamber (which is to be provided with a door, that may be under the control of a switch tender or in other words be provided with means of locking or unlocking it, he having the control of such) there are two other hand bars U, V, each of which by means of one of two connecting rods or bars W, W, is connected with one of two lent levers W′, X, (see Fig. 3,) that are respectively so placed with regard to the two latching levers Q, Q′, as to enable a person by moving either of the hand bars U, V, to throw the latching lever operated by it out of its notch in the locking plate O. Thus it will be seen that whenever it may be desirable to change or move the switch by means of the hand lever M, it becomes necessary first to open the door of the box R, and move that one of the levers U, V, which will cause to be elevated the latching bar, which may be in action so as to retain or lock the switch. This movement of the switch by the hand lever may be necessary in order to enable a

train approaching a turn out to pass from the switch and either upon the turnout or the main track.

When the car or train is moving in the opposite direction, or from either the turn out or main track toward the switch, the flanges of its wheels on one side of it, will roll over and depress that depresser bar or lever D or D′, which is directly applied to the track on which such car or train may be running, and should the switch not be in alinement or engagement with such track, the machinery will be so operated by such depression of the bar D, or D′, as to move the switch into alinement with the track before the car or train can reach the switch.

Having thus described my invention or improvement in the self adjusting and locking switch for railroads, I wish it to be understood that I am aware that the relative position of the switch with the main track, or turnout, or siding track has been changed by the action of a cam or mechanism attached to the car or cars, as well as by devices attached to the locomotive in various ways. I therefore do not claim such, but I base my invention and claim on the above described method of shifting the switch, viz., by the action of the flanges of the wheels on depresser bars and other mechanism applied to the main and turnout tracks and the switch substantially as specified. I do not claim depresser bars, but

I claim—

1. The combination of the transverse rocker lever G, the shaft H, the toothed sector K, and the rack L, as applied to the switch and the main and turnout tracks and made to operate as specified.

2. And in combination with the toothed sector, I claim the locking plate O, provided with notches as specified, the same being for the purpose of locking the switch in manner as described.

In testimony whereof I have hereto set my signature this fifteenth day of June A. D. 1853.

ARCHIBALD S. LITTLEFIELD.

Witnesses:

A. P. Sweetser,

L. A. Mitchell.