

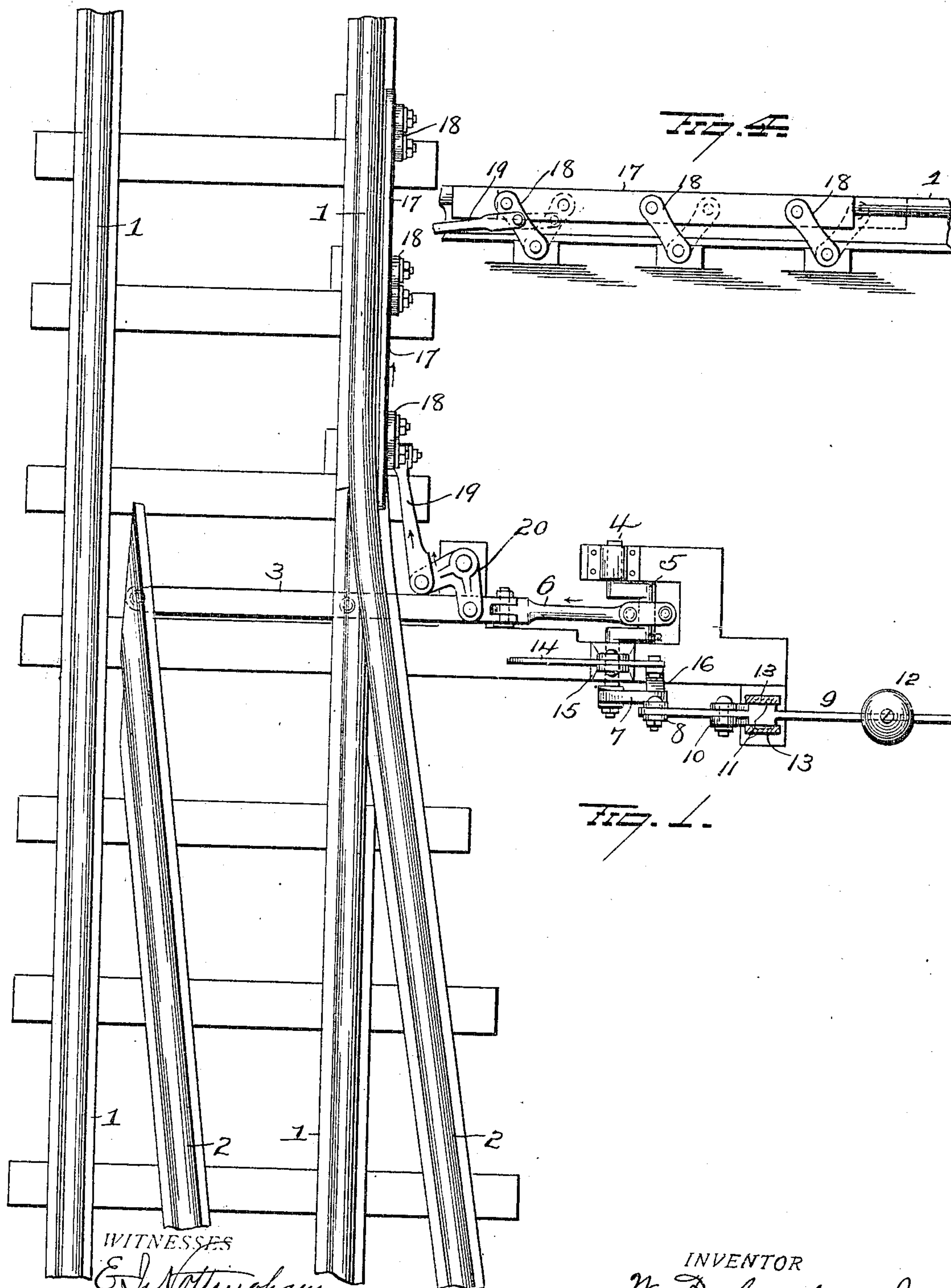
No. 831,708.

PATENTED SEPT. 25, 1906.

W. R. COCHRAN, JR.
RAILWAY SWITCH.

APPLICATION FILED AUG. 17, 1905.

2 SHEETS—SHEET 1.



~~WITNESSES~~

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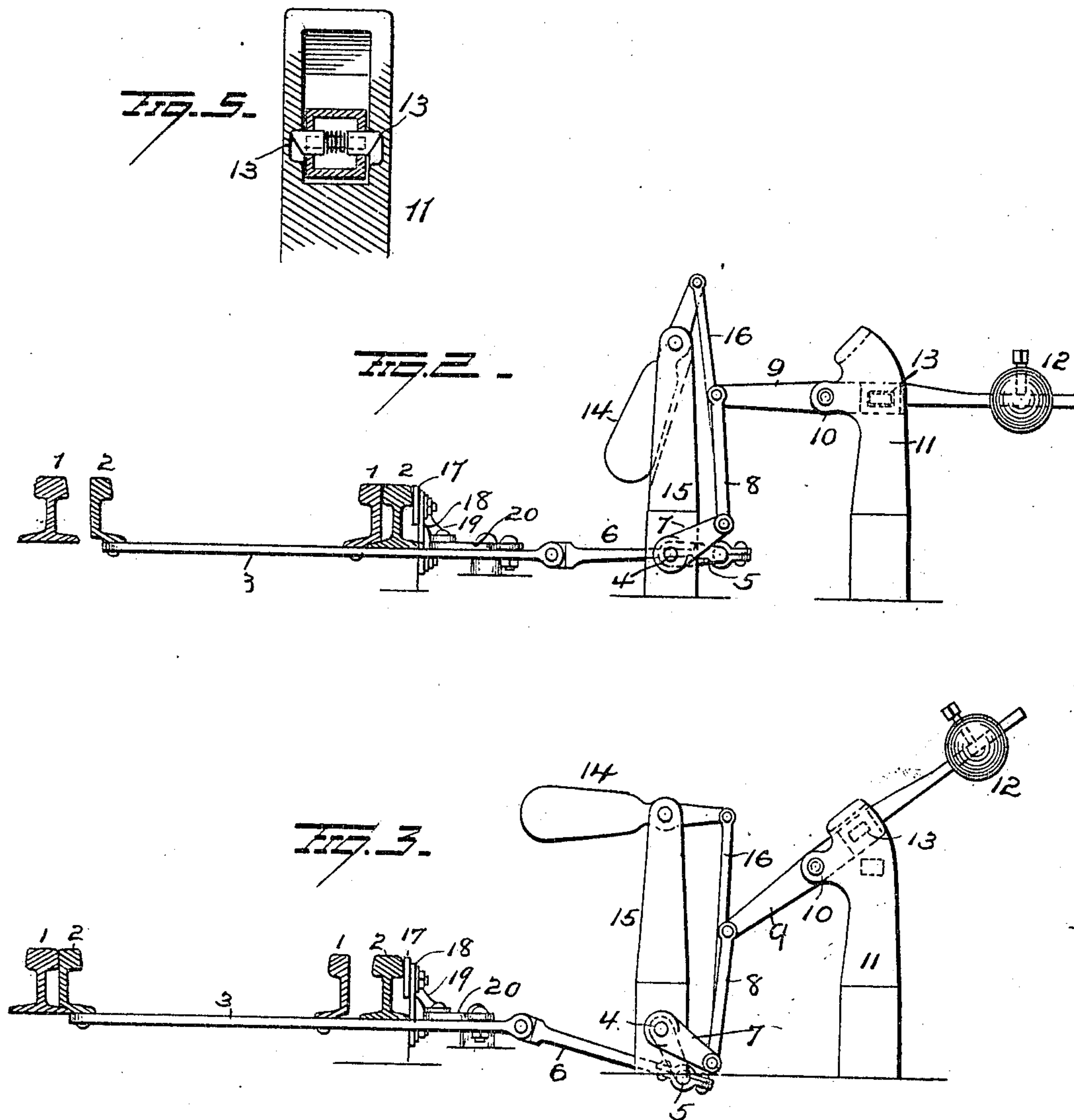
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UNITED STATES PATENT OFFICE.

WILLIAM R. COCHRAN, JR., OF DELPHOS, OHIO, ASSIGNOR TO THE
SHELBY SAFETY SWITCH COMPANY, OF SHELBY, OHIO.

RAILWAY-SWITCH.

No. 831,708.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed August 17, 1905. Serial No. 274,573.

To all whom it may concern:

Be it known that I, WILLIAM R. COCHRAN, Jr., of Delphos, in the county of Allen and State of Ohio, have invented certain new and
5 useful Improvements in Railway-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
10 the same.

My invention relates to improvements in railway-switches, the object of the invention being to provide a switch which will positively and automatically lock the main track
15 open and the siding closed after a train has passed onto or from the siding and provide improved mechanism controlled by the train to hold the siding open until a train has passed thereon or therefrom.

20 A further object is to provide a normally operated switch with automatic means for closing the same after a train has been shifted and so construct the operating mechanism that the switch will be locked not only by a
25 spring locking mechanism, but also by reason of the dead-center of its movable parts, all of which closing mechanism being prevented from operation by the weight of the train upon improved treadle mechanism or upon
30 the switch-rails.

With these and other objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully
35 hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view illustrating my improvements. Fig. 2 is a view in cross-section, showing the
40 siding closed. Fig. 3 is a similar view showing the siding open, and Figs. 4 and 5 are views of details of construction.

1 1 represent the rails of the main track, and 2 2 the rails of a siding, the switch-points being secured to a bar 3 below the rails, which
45 extends out to one side, as shown.

4 represents a switch-throwing crank-shaft having a U-arm or crank 5 connected by a link 6 with bar 3, and when said U-arm or
50 crank 5 is in its horizontal position the switch-points will be securely locked to maintain the main track open, as the pivotal points of the several parts are in alinement and it would be impossible to move the

switch-points save by moving the crank- 55 shaft, even though no other locking means be provided, but which are necessary to prevent manipulation of the switch by unauthorized persons.

A crank-arm 7 is secured on one end of 60 shaft 4 and connected by a link 8 with an operating-lever 9, fulcrumed between its ends in a lug 10 on a bifurcated standard 11, and a weight 12 is adjustably secured on the
65 outer end of lever 9 to pull the same downward and close the switch when released by the operator, and the train permits the switch-rails to move, as will hereinafter appear. This bifurcated standard 11 is provided in its opposite faces with notches, into
70 which spring-pressed pawls 13, carried by lever 9, are adapted to move and lock the switch closed, and before the lever can again be elevated the operator must insert a key
75 and withdraw the pawls.

A semaphore 14 or other signal mounted in a standard 15 is connected by a link 16 with crank-arm 7, so that the operation of the switch also operates the semaphore or other
80 signal, and the engineer can see just the position of the switch as he approaches the same, and should the mechanism be injured or refuse to work properly the signal will prevent damage to an oncoming train.

In order that the siding may be main- 85 tained open while a train is passing onto or from the siding, and obviating the necessity of the brakeman remaining at the lever, a treadle-bar 17 is supported by pivoted links 18 against either the outer or inner side of
90 one of the rails 1 of the main track, and one of these pivoted links 18 is connected by a link 19 with one end of a horizontally-mounted bell-crank lever 20, the other end of said bell-crank lever being connected with bar 3,
95 so that as the latter is moved to throw the siding open the treadle-bar will be swung on the links 18 to the position shown in dotted lines in Fig. 4, and the weight of the train on said treadle-bar will prevent closing the
100 switch until the train has passed, and the weight of the train on the switch-points will also prevent movement thereof. As soon as the train has passed completely onto or from the siding the weighted lever 9 will fall and
105 throw the switch-points, through the medium of the parts above explained, to close the siding, and the lever will be automat-

ically locked by its pawls 13, and the rails further locked against accidental movement by the position of the U-arm or crank 5.

My improvements are of extremely simple construction, can be installed at a very small cost, are strong and durable and not liable to get out of repair, and are absolute and positive in their automatic operation, relieving the trainmen of work, saving time, and absolutely insuring an open main track at all times, save when a train is passing from or onto the siding, when the siding will be held open until the train has safely passed the switch and then automatically and positively closing the siding and opening the main track.

A great many slight changes might be made in the general form and arrangement of the parts described without departing from my invention, and hence I do not restrict myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a main track, a siding, movable switch-points and a bar connected with the switch-points, of a crank-shaft for manually operating the bar and maintaining it normally locked when the main track is open, and a treadle-bar connected with the switch-bar and disposed alongside the main track to be held depressed by a train to prevent movement of the switch-bar while the train is thereon, and means for opening the main track when the train has entered the siding.

2. The combination with a main track, a siding, and movable switch-points, of a manually-operated lever to open the siding, a weight on said lever tending to close the siding, and a treadle-bar connected with the switch-points and disposed alongside the main track to be held depressed by a train against the action of the weighted operating-lever to prevent the switch-rails from moving while the train is passing to or from the siding.

3. The combination with a main track, a siding, pivoted switch-points, and a bar con-

necting said switch-points, of a shaft having a crank, a connection between the switch-bar and said crank, means tending to maintain the crank and the connection between the crank and switch-bar on a dead-center to maintain the switch-rails normally locked, a treadle-bar alongside the main track, and connections between the treadle-bar and switch-bar, whereby, when the siding has been opened manually, it will be maintained open by the train until the latter has fully entered the siding.

4. The combination with a main track, a siding, and movable switch-points, of a weighted lever to throw the switch, an automatic lock for the lever when the latter falls, a locking crank-arm interposed between the lever and switch-rails, and means controlled by the train to prevent the lever from falling until the train has passed the switch.

5. The combination with a main track, a siding, and movable switch-points, of an operating-bar connected with the switch-points, a weighted operating-lever connected with said bar and tending to maintain the switch closed, a treadle-bar beside the main track pivoted links supporting the same, a link and bell-crank lever connecting one of said pivoted links with the operating-bar so that the weight of the train on the treadle-bar will act in opposition to the weighted operating-lever to prevent movement of the switch-bar and movement of the switch-points until the train shall have passed the treadle-bar and switch-points.

6. The combination with a main track, a siding, and movable switch-points, of an operating-bar connected with the switch-points, a locking crank-shaft, a link connecting the bar and crank-shaft, a weighted lever controlling the operation of the crank-shaft and maintaining the crank of said shaft and said link narrowly on a dead-center and a signal connected with and operated by the switch-operating mechanism.

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

WILLIAM R. COCHRAN, JR.

Witnesses:

S. W. FOSTER,

A. W. BRIGHT.