

A. K. MANSFIELD.
Switch Stand.

No. 227,372.

Patented May 11, 1880.

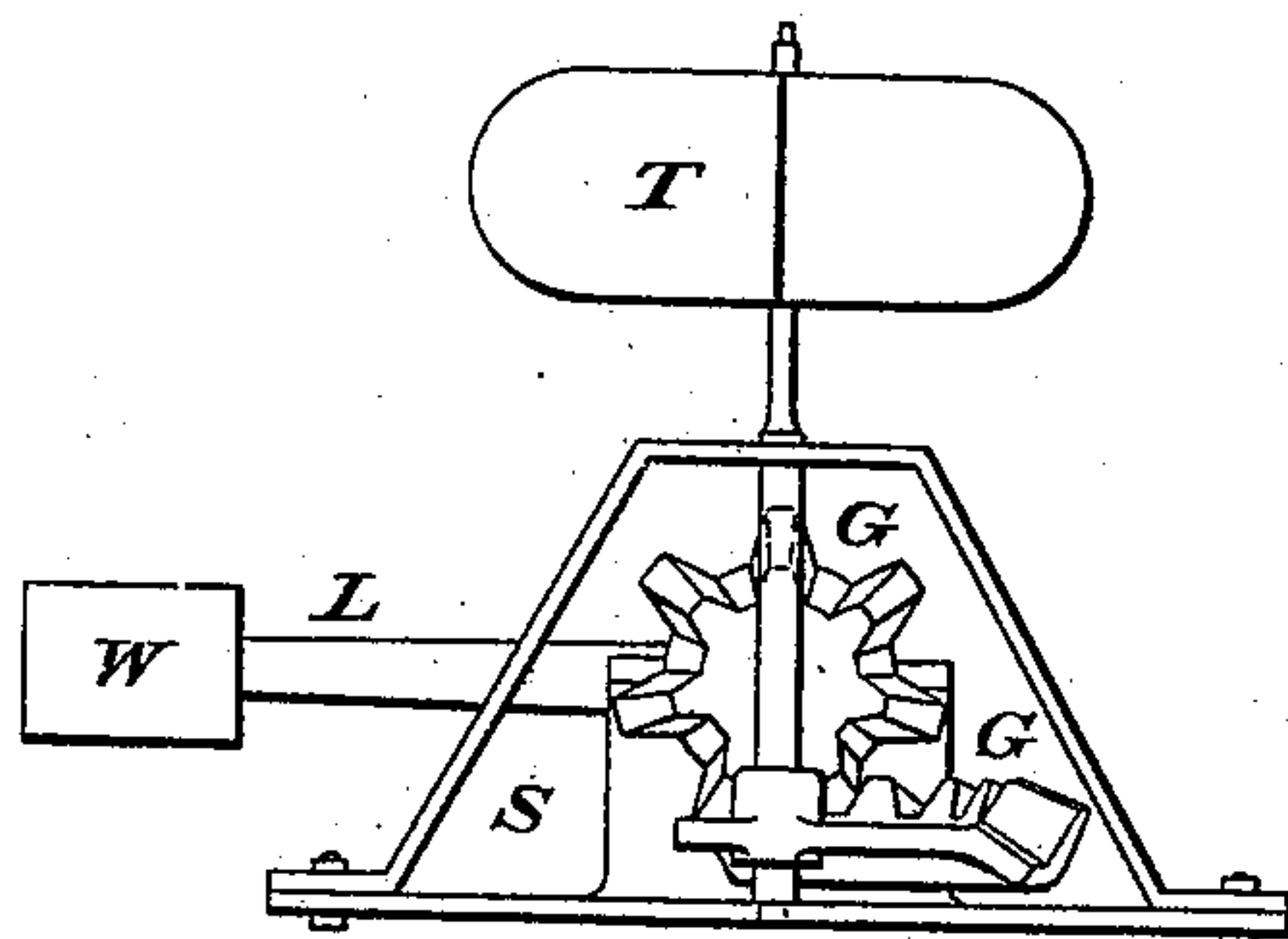


Fig. 1.

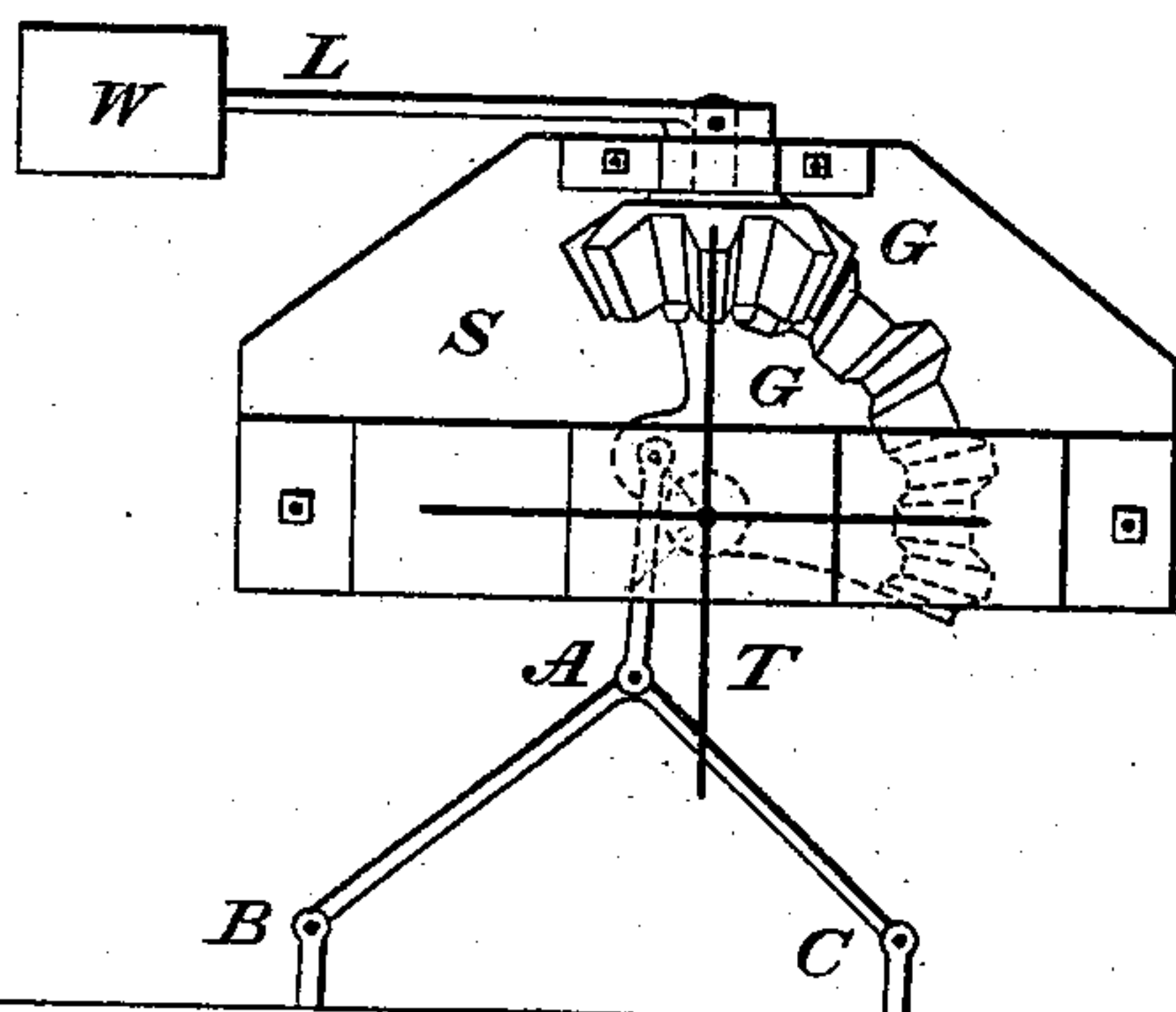
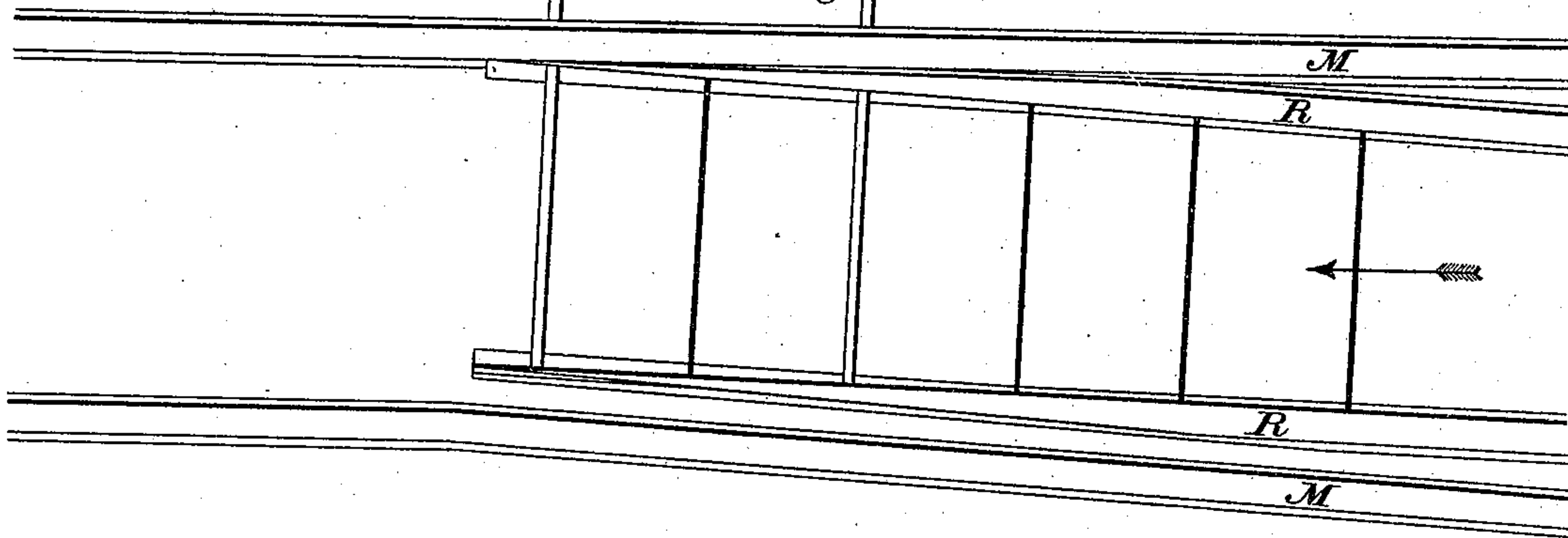


Fig. 2.



Witnesses:

G. L. Mansfield
L. Fauce

Inventor:

A. K. Mansfield.

UNITED STATES PATENT OFFICE.

ALBERT K. MANSFIELD, OF STEUBENVILLE, OHIO.

SWITCH-STAND.

SPECIFICATION forming part of Letters Patent No. 227,372, dated May 11, 1880.

Application filed January 8, 1880.

To all whom it may concern:

Be it known that I, ALBERT K. MANSFIELD, of Steubenville, in the county of Jefferson and State of Ohio, have invented a new and useful Improvement in Switch-Stands for Safety-Switches, of which the following is a specification.

The invention relates to the apparatus known as the "switch-stand," and to its combination with that class of railroad-switches known as "split" switches.

Heretofore such switches have been made safe for trains to run through by means of springs, which hold the switch-rails against the main rails, or by an indirect arrangement consisting of a switch-stand having a weighted lever connected with a movable guard-rail, the latter, when the switch is misplaced, being acted upon by the wheels of the train, and in its turn acting on the stand which throws the switch.

The first method has the objection that the switch is opened and closed by each pair of wheels in the train; also, that in case of any obstruction between the switch-rail and main rail the switch is left in a dangerous position without it being so indicated at the switch-stand. The second method is objectionable on account of its complication of parts, and consequent expense and liability to disarrangement.

The object of my invention is to secure increased safety and less complication of parts in safety-switches.

The invention consists in the peculiar construction of the switch-stand and in its direct connection with the switch.

In the drawings, Figure 1 is an elevation of the switch-stand, and Fig. 2 a plan of the stand in connection with the switch.

R R are the switch-rails; M M, the rails of the main track and siding, against which the switch-rails fit. S is the switch-stand, holding a vertical and a horizontal shaft, on which are the bevel-gears G G. On the horizontal shaft is also a lever, L, holding a weight, W, on its end, and on the vertical shaft a signal or target, T, consisting of four blades placed ninety degrees apart, as shown in the plan.

The gear on the vertical shaft, which may be a segment, is used also as a crank, a pin through its plate connecting it, by means of

the connecting-rod and the bent rod A B C, with the switch. The connecting-rod is arranged in this way in order to make a double connection with the switch to stiffen the switch at and near its point. The rod A B C may be in one piece or two, whichever is most convenient.

The switch is opened and closed by throwing the weighted lever over or back through a half-revolution. As the gears are two to one, this causes the vertical shaft to make a quarter of a revolution, which turns the signal about to indicate that the switch is set for siding or main track, as the case may be.

The motion of the weighted lever being at right angles to that of the switch, it offers less obstruction to train-men when the stand is placed between tracks than if the motion were in any other direction.

In the drawings the switch is set for the siding. If a train moves along on the main track in the direction indicated by the arrow, the first pair of wheels of the train acts upon the switch, the flange of one of them acting against the main rail on one side and the flange of the other acting against the switch-rail on the other side. In this way the weighted lever is brought to a vertical position, after which, in falling, it helps to throw the switch the remaining distance, and the train passing leaves the switch set for the main track.

If the switch were set for the main track and the train was moving off the siding in the direction of the arrow, the wheels would throw the switch in a contrary direction in a similar manner.

What I claim is—

1. The combination, in a switch-stand, of a vertical signal and crank-shaft with a horizontal weighted lever-shaft, substantially as and for the purpose specified.

2. The combination of the V-formed connecting-rod with switch-stand and switch, the free ends of said V being connected to the switch-rails and the apex thereof to the operating mechanism, all substantially as described.

ALBERT K. MANSFIELD.

Witnesses:

GEO. L. MANSFIELD,
LINUS FAUNCE.