

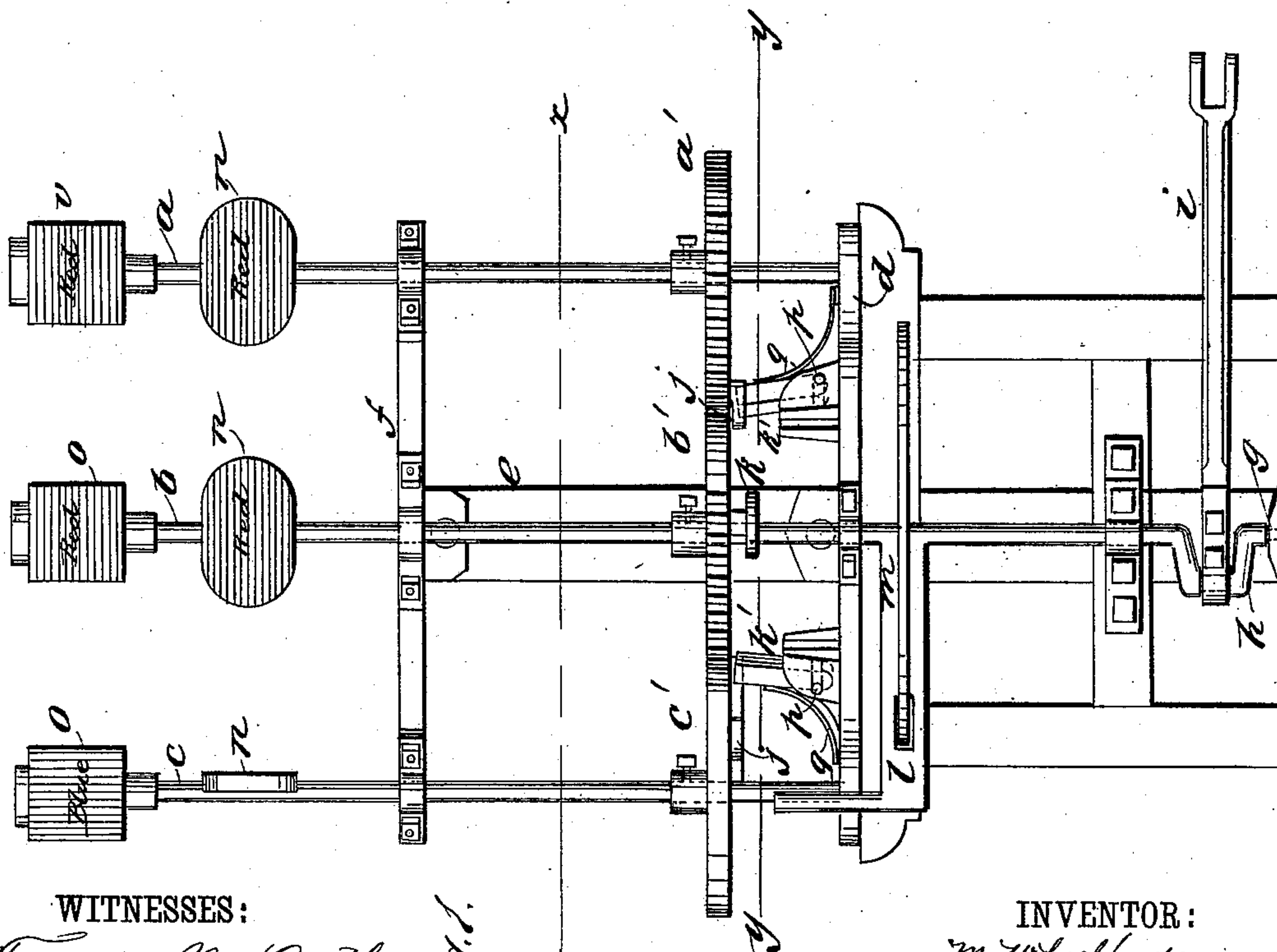
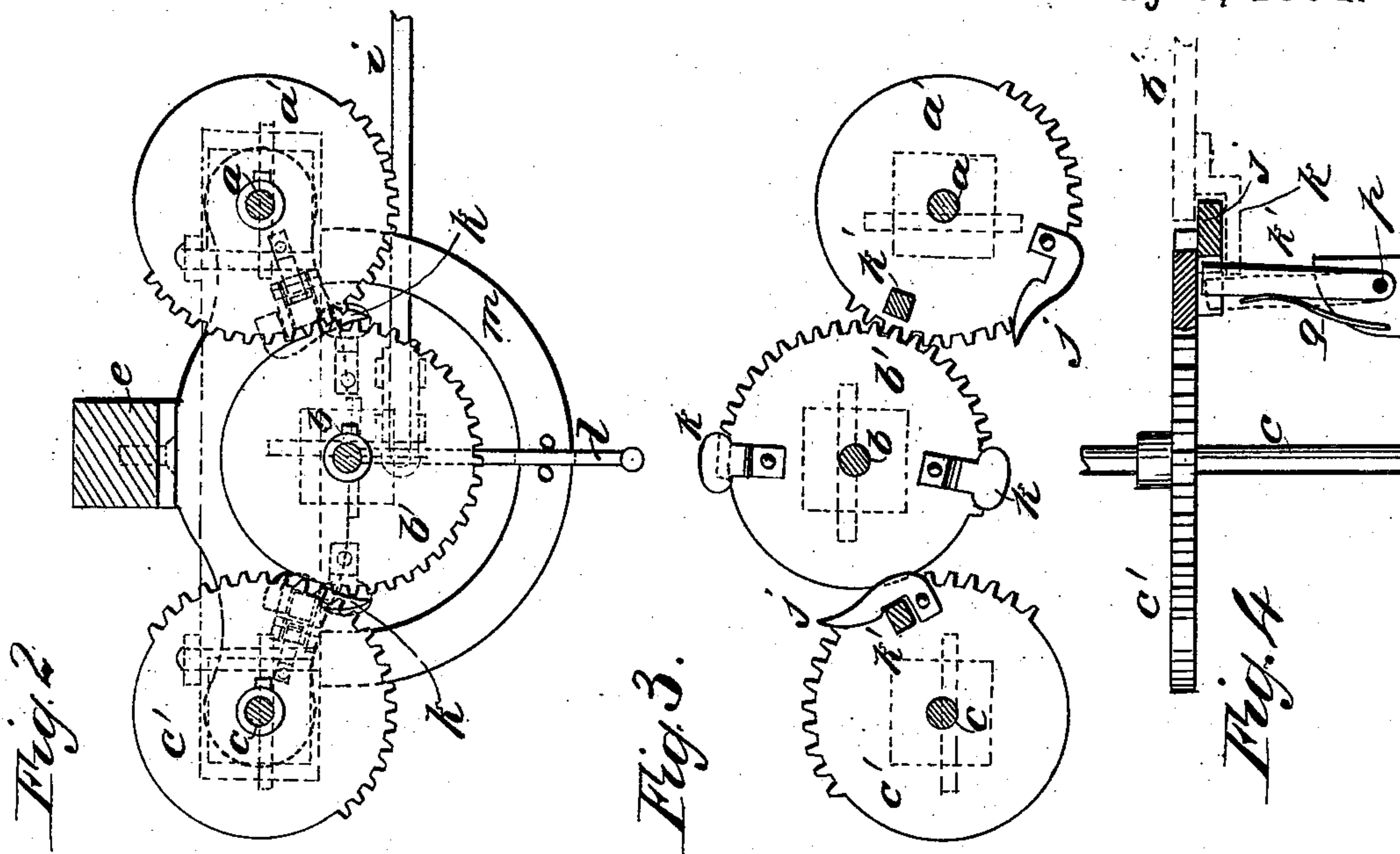
(No Model.)

J. W. ALEXANDER & M. WHEELHOUSE.

# RAILWAY SWITCH SIGNAL.

No. 298,151.

Patented May 6, 1884.



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## RAILWAY-SWITCH SIGNAL.

SPECIFICATION forming part of Letters Patent No. 298,151, dated May 6, 1884.

Application filed October 23, 1883. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH W. ALEXANDER, of Frazerville, Province of Quebec, Dominion of Canada, and MARSHALL WHEELHOUSE, of Campbellton, Province of New Brunswick, Dominion of Canada, have invented a new and Improved Railway-Switch Signal, of which the following is a full, clear, and exact description.

Our invention consists of improved arrangements of means for carrying and operating three-throw signals for three-throw switches by one lever with interlocking devices, which automatically lock the signals in position and unlock the same for shifting, as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of our improved signal. Fig. 2 is a horizontal section of Fig. 1 on line *x x*. Fig. 3 is a section on line *y y*, Fig. 1, inverted; and Fig. 4 is a detail, partly in side elevation and partly in section.

For a three-throw switch we arrange three of the usual lamp-and-board signals side by side on vertical revolving shafts *a b c*, supported by any suitable stand, *d*, upright support *e*, and beam *f*, the two outside shafts, *a* and *c*, terminating at the stand *d*, but the middle shaft, *b*, extending down to the ground, where it stands in a step, *g*, and above the step it has the crank *h*, to which the switch-shifting connecting-rod *i* is attached. The middle shaft, *b*, has a wheel, *b'*, that is toothed half its circumference, or thereabout, and has a cam projection, *k*, from the under side at each end of its toothed section. The outside shafts also have a wheel, *a'* and *c'*, respectively, which are similarly toothed, and at about the middle of their toothed sections they have a notched catch, *j*, attached to the under side, which catches are to engage with the spring-latches *k'*, pivoted to the stand *d* under the wheels, to lock the signals *a c* in position when showing the "danger" side. The teeth on said wheel *b'* are so arranged relatively to the teeth on the wheels *a'* and *c'* that the teeth of wheel *b'* will engage either with the teeth of wheels *a'* or *c'*, according to the direction in which it is

turned, as soon as their latches are released by the cams on the wheel *b'*. The middle shaft, *b*, has the shifting-lever *l* attached to it, and this lever works on a perforated curved bar, *m*, secured to the frame, and may be locked to said curved bar in its several positions by suitable pins, in the manner shown in Fig. 2, and said middle shaft holds the other signals in position by meshing with them when showing "all right."

The operation is as follows: To set the switch for the siding at the left hand which is next to the switch-stand on the right-hand side, the lever *l* is shifted to the left hand, as represented in Fig. 1, where it is to be locked by a pin in a hole of the curved bar *m*. The board *n* and the lamp *o* of the shaft *c* will then show "all right" by the blue color of the lamp and by the absence of the red side of the board from view, said shaft being then held in position by gearing with shaft *b*, which is locked by the lever *l*. The shaft *b*, and also shaft *a*, will show the danger-signals by their boards *n* and lamps *o*, the shaft *a* being locked in position by its catch *j* and latch or locking-catch *k'*. To set the switch for the middle branch, the lever *l* is turned to the center position, as in Fig. 2, on the bar *m*, and secured by a pin placed each side of it, which shaft *a* will show "all right." This will turn shaft *c* a quarter of a revolution, causing it to show red and locking it in that position by the latch *k'* passing into the notch of catch *j*; but shaft *a* will remain in its position still showing red, it being so held by its catch *j* and latch *k'*, and the teeth of its wheel being out of gear with the teeth of wheel *b'*. To set the switch to the right-hand siding, as in Fig. 3, inverted, the lever *l* is turned over to the right on bar *m* and fastened as before, causing the middle signal to show "danger" and turning shaft *a* to "all right," the cam *k* pushing latch *k'* back to release catch *j* at the beginning of the movement, and the teeth of wheel *b'* at the same time going into mesh with the teeth of wheel *a'*. The shaft *a* is then held in lock by the wheel *b'*, while the wheel *c'* remains in lock by its catch *j* and latch *k'*. The latches are jointed to suitable brackets or standards on the stand *d* at *p*, and they have a spring, *q*, to push them forward into the catches, and are prevented



from being pressed too far backward by resting against the rear parts of said brackets or standards. The reverse movements of the lever will reverse the signals in the same manner as above described.

We do not limit ourselves to the particular arrangements of the latches and their springs, nor to the kind or form of latches herein shown and described, for they may be modified to suit the judgment or will of the constructor.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a signal apparatus for three-throw switches, the combination, with the central crank-shaft, *b*, having the switch-rod *i* connected to it, also having the signal lamp and board, and also having a partly-toothed wheel, *b'*, and cams *k*, of the shafts *a c*, located on opposite sides of said central shaft, and each having a signal device, also a partly-toothed

wheel, *a' c'*, and also a catch, *j*, and said catches provided with locking-catches *k'*, substantially as described.

2. A triple signal apparatus for a three-throw switch, consisting of three shafts, *a b c*, each having the proper lamp-and-board signal, and the shafts *a c* being geared with the lever and crank-shaft *b* by the partly-toothed wheels *a'*, *c'*, and *b'*, and having self-locking catches, in combination with the unlocking-cams *k* on the wheel *b'*, substantially as described.

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