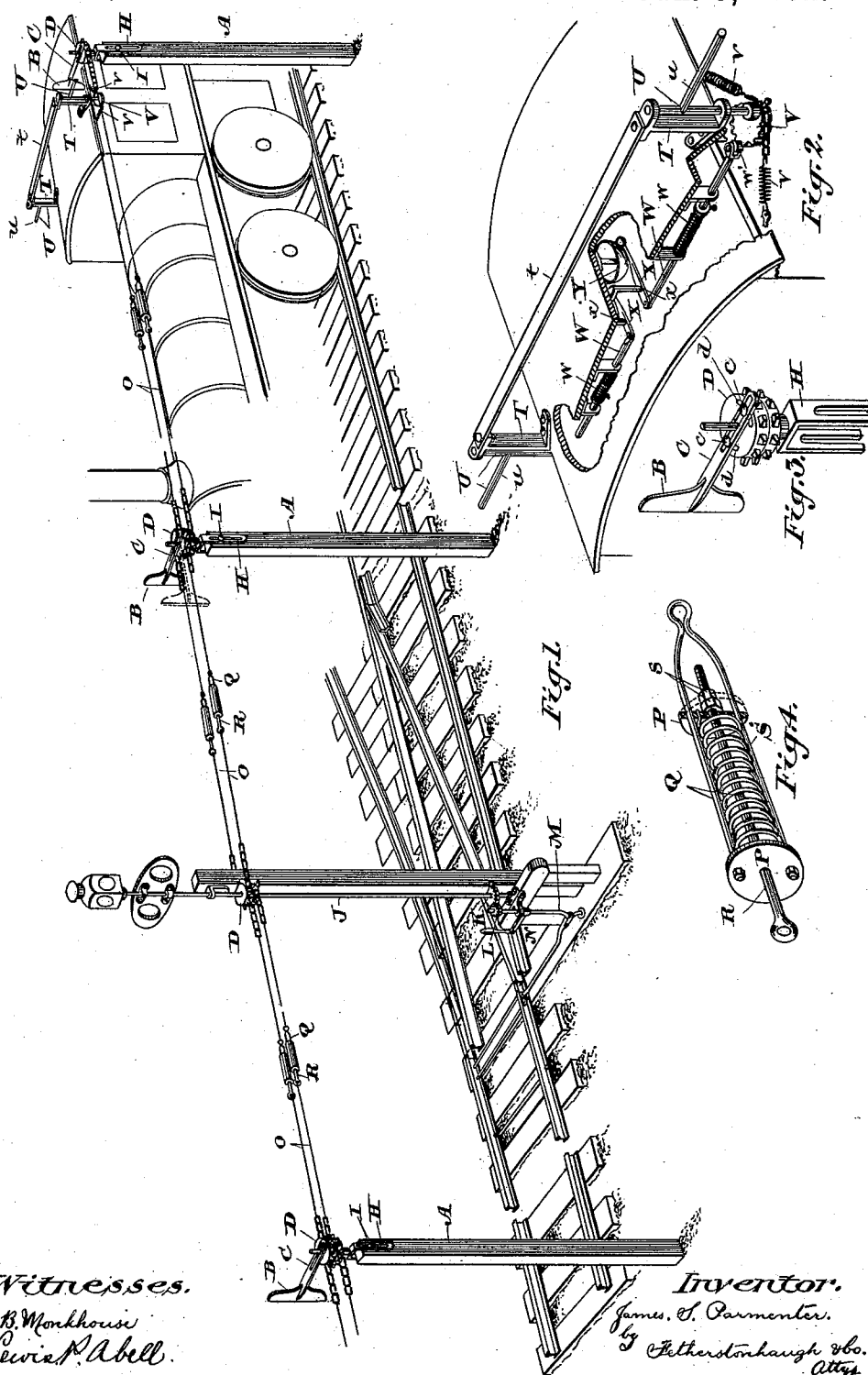


(No Model.)

J. S. PARMENTER.
RAILROAD SIGNAL.

No. 466,423.

Patented Jan. 5, 1892.



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UNITED STATES PATENT OFFICE.

JAMES SPENCER PARMENTER, OF WOODSTOCK, CANADA.

RAILROAD-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 466,423, dated January 5, 1892.

Application filed February 19, 1891. Serial No. 382,086. (No model.)

To all whom it may concern:

Be it known that I, JAMES SPENCER PARMENTER, manufacturer, of the town of Woodstock, in the county of Oxford, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Railroad-Signals, of which the following is a specification.

The object of the invention is to design a railroad-signal which will give a positive alarm to the engineer of the locomotive should the train be approaching an open switch or draw-bridge or a semaphore at "danger." The apparatus includes one or more wings extending from the top of a corresponding number of posts located at convenient distances apart on each side of the ordinary danger-indicating signal, the said wings being held stationary and projecting toward the line when there is danger ahead, so as to operate a swing-bracket on the locomotive, which is connected by mechanism to a bell, which is rung immediately the swing-bracket reaches the extension-wing, the said wings, however, being held parallel with the line when the road is clear, the whole being arranged in detail as hereinafter more particularly explained.

Figure 1 is a perspective view of a portion of a railroad-track, broken away in parts, showing my extension-wings held in position from a switch. Fig. 2 is a perspective view of the top of a locomotive, showing the mechanism for operating the bell. Fig. 3 is a detail of the means for adjusting the extension-wings. Fig. 4 is a detail of my take-up turn-buckle.

In the drawings like letters of reference indicate corresponding parts in each figure.

A are the posts, on the top of which are supported the extension-wings B. The wing B forms part of the slotted extension-bar C, which is adjustably secured to the top of the sprocket-wheel D by bolts c, which extend through the slots d in the wheel D and bar C. The sprocket-wheel D is journaled in bearings in the top of the slotted forked bracket H, which is adjustably secured at the top of the post A by the bolt I. I preferably make the sprocket-wheels D double ones, as shown, so that the connections between the posts may be positive and continuous. The sprock-

et-wheel D, fastened to the main shaft J of the switch, is also a double one. K is a gear-wheel fastened at the lower end of the shaft J, and L is a gear-pinion secured at the upper end of the counter-shaft M and designed to engage with the gear-wheel K. N is a handle by which the switch is operated. When the main line is open or incomplete at the switch, as indicated in Fig. 1, the extension-wings B are thrown toward the line by the wire ropes and chains O, connecting the sprocket-wheels D, on which the extension-wings are secured. When, however, the main line is closed or completed by the handle N, the gearing L and K, sprocket-wheels D, and wire ropes and chains O co-operate to bring the wing B parallel with the track.

In order to hold the wire rope connecting the sprocket-wheels D taut, no matter how hot or cold the weather may be, I provide an automatic take-up turn-buckle. This turn-buckle consists of two circular plates P, through both of which pass the forked rod Q and the central spindle R. A spiral spring S, partially open, is placed between the plates P, the tension of the spring S being regulated by the adjustable nuts s on the screwed end of the central spindle R. It will be seen from this construction that when the plates P have been adjusted to a proper distance apart, as the heat expands and slackens the wire ropes O the spring S, not being at its full tension, will expand outwardly and take up the slack; also, should the cold contract and shorten the wire rope O the coils of the spring are at sufficient distances apart to allow the spring to compress and thereby materially lengthen the wire rope O.

T are the brackets, secured to the top of the locomotive-cab at each side, and connected together and stiffened by the cross-piece t.

U are the swing-brackets, journaled in the brackets T. The extension-pieces u in their normal position extend out at right angles to the side of the cab and are held there by the spiral springs v, extending from the side of the cab to a pin in the outer end of the corrugated eccentric plate V.

W are sliding rods supported in brackets attached to the interior top of the cab and having their outer ends held against the corrugated edges of the eccentric plate V by the

spiral springs *w*. I preferably provide a friction-roller *w'* at the outer end of the rod *W*, as shown.

5 *X* are levers pivoted at *x* on brackets extending downwardly from the top of the cab. One end of the levers *X* is hinged on the end of the sliding rod *W*, while the other is hammer-shaped.

10 *Y* is a bell secured to the top of the cab in proximity to the hammer-shaped end of both levers.

Having now described the parts involved in my invention, I shall briefly describe their operation.

15 Should there be an open switch or draw-bridge, or a semaphore at "danger," and the engineer of the locomotive either through inadvertence did not or on account of a heavy fog could not see the danger-signal, the extension-wings, being positively held toward
20 the track at about right angles by the switch, semaphore, draw-bridge, or other danger-signal mechanism, would be struck by the extension-piece *u* of the swinging bracket *U* and
25 thrown backwardly a sufficient distance to allow it to pass the extension-wing *B*. It being thus thrown backward, it would turn the eccentric corrugated plate *V*, the edge of which, acting against the end of the sliding rod *W*,
30 would give a quick swing motion to the lever *X*, and thus ring the bell and warn the engineer of some danger ahead.

Although I describe the extension-wings *B* as being operated by switch mechanism, it
35 will of course be understood that they may be operated from any danger-signal mechanism. Again, I show the wings *B* on posts on both sides of the switch; but it will be seen that they may be placed on one side only. One
40 wing *B* only may be located on one or both sides of the switch or danger-signal; but I prefer to use two or more in order to insure the alarm being given.

45 From this description it will be readily seen that as sure as the danger-signal is set the

wings *B* are set also, so that a positive alarm-signal of any danger on the line ahead will also be communicated direct to the engineer of the locomotive by the bell and its operating mechanism, as before described. 50

I might mention that the mechanism on the cab might also be varied without departing from the principle of my invention.

As the swinging brackets and their co-operating mechanism are preferably located at
55 each side of the cab, it will be clear that the alarm will be given from extension-wings on either side of the track, and also on account of the peculiar construction of the swinging bracket the alarm or signal will be given with
60 equal facility, no matter in which way the locomotive may be running.

What I claim as my invention is—

1. In combination, the signal at the switch, the shaft *J*, carrying the same and connected
65 to the switch with operating means, a series of extension-wings arranged at different points along the track, the double sprockets on the shaft *J* and at the wings, and the connections between the sprockets, substantially as de-
70 scribed.

2. In a railroad-signal, an extension-wing *B*, attached to the sprocket-wheel *D*, which is connected by the wires *O* to the sprocket-wheel *D* on the shaft *J*, in combination with
75 the swinging bracket *U*, eccentric corrugated plate *V*, springs *v*, sliding rod *W*, spring *w*, lever *X*, and bell *Y*, all arranged as and for the purpose specified.

3. The extension-wing *B*, adjustably secured
80 laterally by the bolts *c*, which extend through slots in the bar *C* and sprocket-wheel *D*, and perpendicularly by the bolt *I*, extending through the slotted forked bracket *H*, as specified.

JAMES SPENCER PARMENTER.

Witnesses:

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