

(Model.)

2 Sheets—Sheet 1.

A. H. PALMER & C. A. ROLFE.

NON-INTERFERING SIGNAL BOX.

No. 264,193.

Patented Sept. 12, 1882.

Fig. 1.

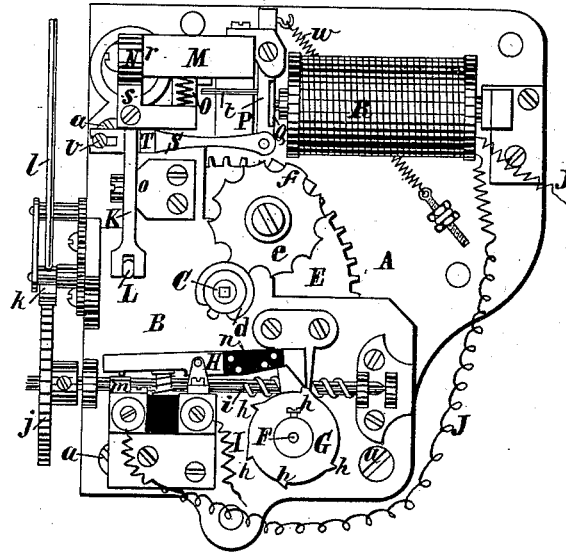
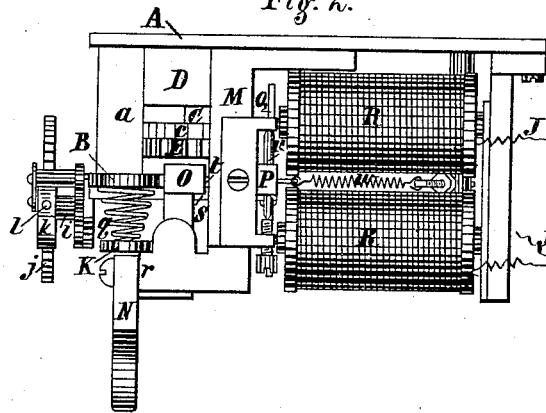


Fig. 2.



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per Edw. Sumner,  
Atty.

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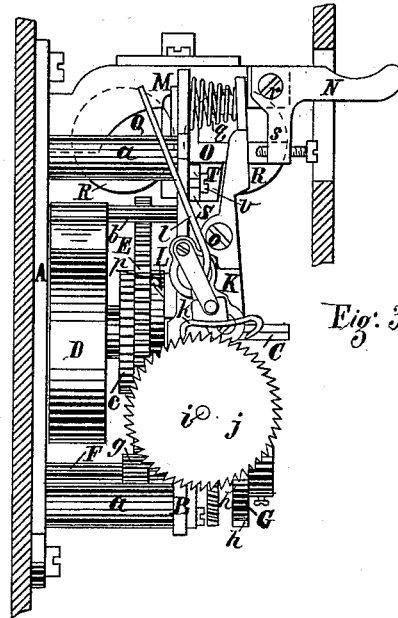


Fig. 3.

Fig. 4.

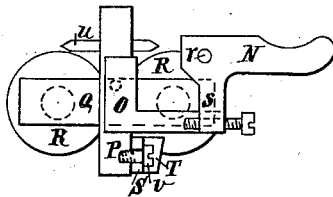


Fig. 5.

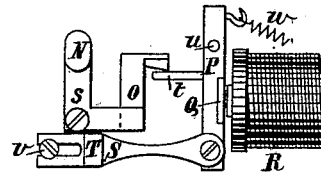
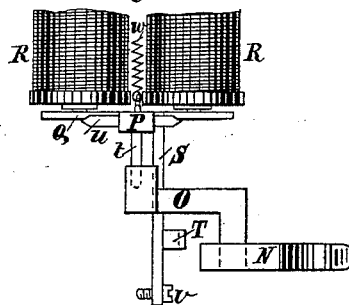


Fig. 6.



Witnesses;  
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Louis Cohen.

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# UNITED STATES PATENT OFFICE.

AUGUSTUS H. PALMER AND CHARLES A. ROLFE, OF UTICA, NEW YORK.

## NON-INTERFERING SIGNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 264,193, dated September 12, 1882.

Application filed December 3, 1881. (Model.)

*To all whom it may concern:*

Be it known that we, AUGUSTUS H. PALMER and CHARLES A. ROLFE, citizens of the United States, residing at Utica, in the county of Oneida and State of New York, have invented a new and useful Improvement in Telegraphic Fire-Alarm Apparatus, of which the following is a specification, reference being had to the accompanying drawings.

Our invention relates to an improvement in that part of telegraphic fire-alarm apparatus which constitutes the mechanism in the signal-box; and it consists in the hereinafter-described non-interfering attachment whereby after the mechanism for giving a signal has been set in operation at one box signals cannot be given at other boxes of the system on the same circuit until the signal given from the said one box has been completed.

In the drawings, (two sheets,) Figure 1 is a front view of mechanism employed in a signal-box and embodying our invention. Fig. 2 is a plan, and Fig. 3 a side view, of the same. Figs. 4, 5, and 6 are respectively side, front, and plan views of details especially illustrative of the non-interfering attachment.

The rear plate, A, and front plate, B, together with rods or posts *a*, form the framework for supporting the working parts.

Attached at one end to a shaft, C, is the motive-spring D, the other end being fastened to a fixed standard, *b*. On the shaft C is a gear, E, the shaft and gear being provided with a ratchet-wheel, *c*, and a spring and pawl, as in ordinary clock-work, that the spring D may be wound up, without revolving the gear E, by a key placed on the outer and angularly-shaped end of the shaft C. There are a pinion, *d*, on the shaft C, and a wheel, *e*, on an independent stud, both being formed and located, as shown, whereby the proper limit to the number of turns for winding up the spring is determined by the convex part *f* on the wheel *e* striking the pinion *d*. There is a pinion, *g*, fixed on a shaft, F, which engages with the gear E, and is driven thereby.

Fixed on the shaft F is a signal-wheel, G, having projections *h*. The shaft F has also a worm-gear fastened thereon, which engages with the worm on the shaft *i*. This shaft *i* has

a ratchet-wheel, *j*, a verge, *k*, engaging with the ratchet-wheel and having a balance-arm, *l*, the purpose of the worm-gear, worm, ratchet-wheel, and verge being to regulate the speed of the signal-wheel, as will be readily understood.

A lever, H, formed at the outer end, so as to be swung by the projections *h* on the signal-wheel, is pivoted to a stand, which is insulated and connected with one wire, I. Insulated and connected with the other wire, J, is a spring or bearing, *m*, which a point or projection on the inner end of the lever H strikes to complete the circuit, an insulating-piece, *n*, being inserted at the proper place as a part of the lever H.

A lever, K, pivoted at *o* to a stand on the plate B, has pivoted thereto, at its lower end, a rod, L. This rod may slide in an opening in the plate B, and is set at right angles to the plate B and side of the gear E, having its inner end formed to engage when pressed inward with one of the projections *p* on the gear E. A spring, *q*, under the upper end of the lever K tends to press this end outward, and hence the lower end and the rod L inward.

Pivoted at *r* to a stand, M, on the rear plate, A, is a lever, N, its horizontal part being adapted to be "pulled"—that is, swung downward by hand—while an arm, *s*, and screw therein is formed and adjusted to press the upper end of the lever K inward. The lever N is still further extended and formed, as shown, to have an arm, O, which, when the hand-lever N is pulled downward, will rise upward in the direction from a pin, *t*, in a lever, P, to allow the lever P to swing to the left. The lever P has a pivot-shaft, *u*, supported in fixed stands, carries the armature Q for the electro-magnet R, and has pivoted thereto at its lower end a bar, S. This bar S may slide in a horizontal direction, being guided by a screw, *v*, in plate B, and has a projection or plate, T, which will be under the upper end of the lever K when the lever P and armature are swung to the left away from the magnet, but will be out from under the lever K when the armature is held to the magnet. A spring, *w*, fastened at one end to the lever P, above the center at which it is pivoted, and the other end to a stand fixed on

plate A, tends to swing the lever P and the armature away from the magnet, and hence to slide the bar S to the left. One of the wires I and J—namely, the wire J in this case—forms  
 5 or includes the coil of the magnet R before it connects with the line-wire.

In operation, before an alarm is given at each of all the boxes on one and the same circuit the rod L is pressed inward by the  
 10 spring *q* and lever K, and engages with one of the projections *p*, and hence the gear E and signal-wheel G are at rest, and the adjustment of parts is such that the signal-wheel is in the position to have that one of the projections *h*  
 15 which has a blunt point or broad face, as shown, under the outer end of the lever H. The whole electric circuit being thus complete each magnet R will attract and hold its armature, and the projection or plate T will be held away  
 20 from under the lever K. Hence the lever N may be pulled at any one of the boxes, and the mechanism for giving the alarm at that box be set in motion, since the projection *p* is released by the rod L. Now, while the signal-  
 25 wheel makes and breaks the circuit, as required, for giving the proper signal, yet during its revolution the circuit is incomplete for most of the time. Therefore, while a signal is being given from any one of the boxes all the magnets R  
 30 have no attractive force for a greater part of the time, and the projection or plate T will be kept under the lever K to that extent at each

of the boxes that no lever, N, can be pulled to give an alarm at any of the boxes while an alarm is being given at any one of them—that  
 35 is, while the signal-wheel at any one box is revolving.

We claim as our invention—

1. The combination of magnet R, armature Q, lever P, spring *w*, and sliding bar S, bearing a stop or plate, T, substantially as and for  
 40 the purpose set forth.

2. The combination of lever K and sliding bar S, bearing a plate or stop, T, and operated by an electro-magnet and its armature, sub-  
 45 stantially as and for the purpose set forth.

3. The combination of levers N, P, and K and bar S, having a plate or stop, T, substantially as set forth.

4. The combination of a signal-wheel having projections one of which has a broader  
 50 face than one or more of the others, mechanism for operating said signal-wheel, lever for making and breaking the circuit and operated by said signal-wheel, an electro-magnet, and  
 55 a plate or stop, T, connected with and operated by means of the armature of said magnet, all substantially as and for the purpose set forth.

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