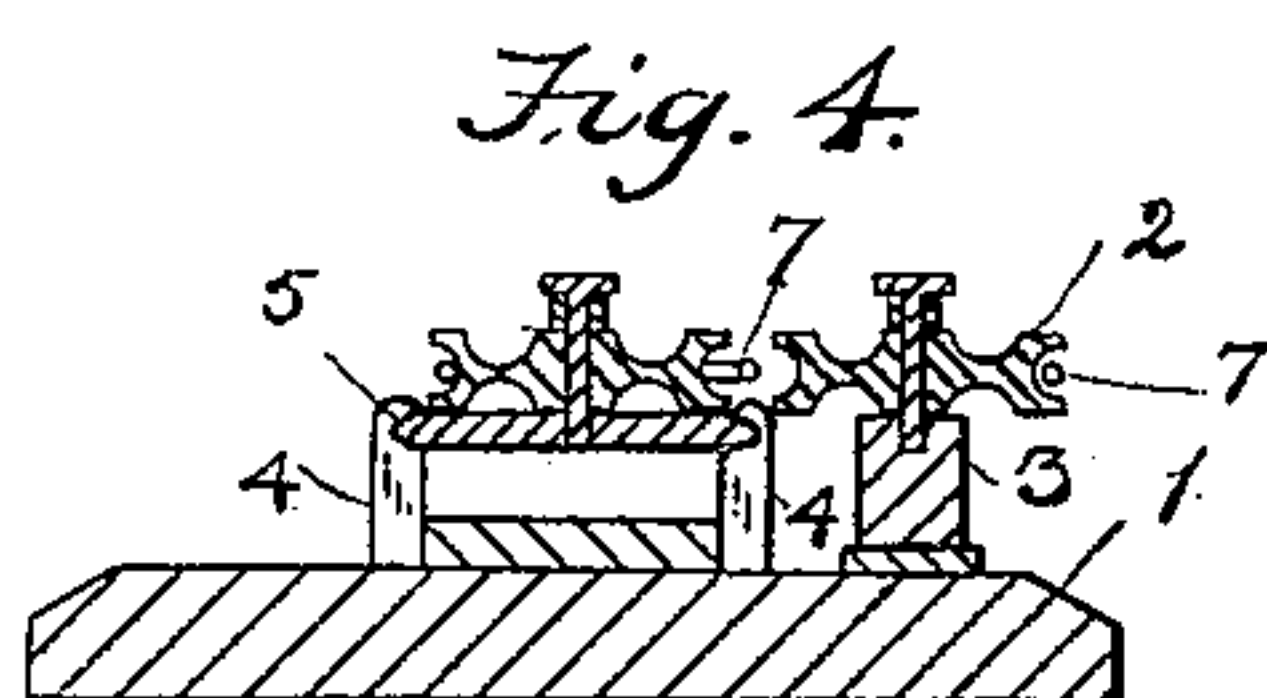
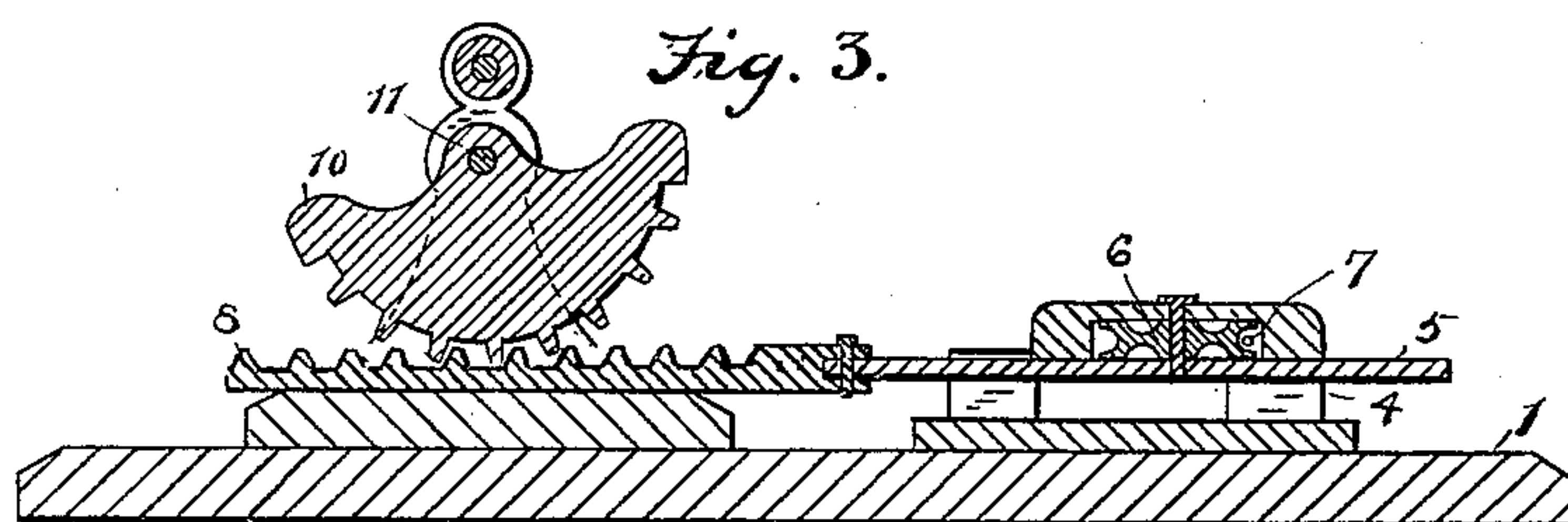
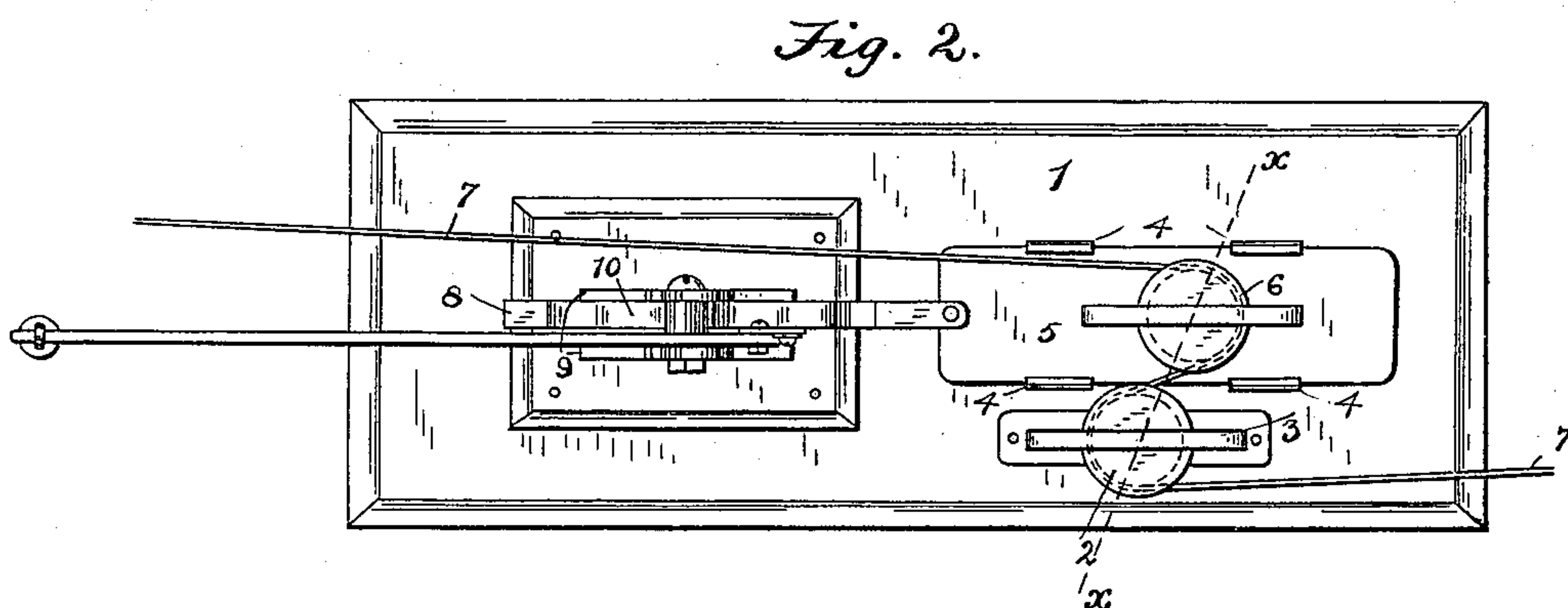
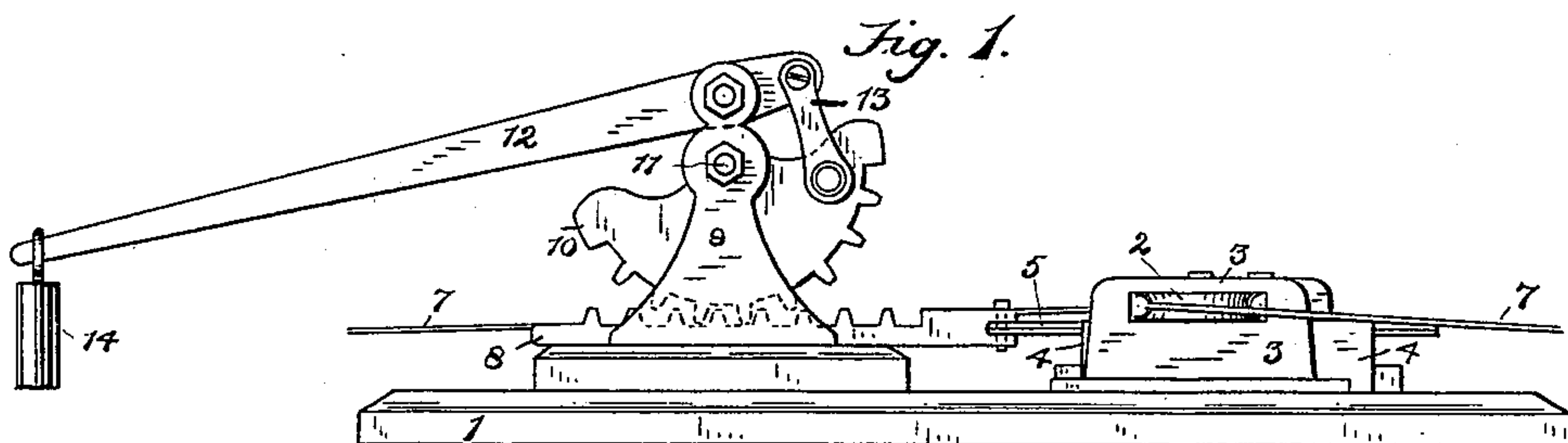


(No Model.)

S. W. BABCOCK.  
COMPENSATOR FOR SIGNAL WIRES.

No. 481,922.

Patented Sept. 6, 1892.



WITNESSES:

A. M. Kelly  
Thomas Durant

INVENTOR

Samuel W. Babcock  
BY  
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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

SAMUEL W. BABCOCK, OF AVON, NEW YORK, ASSIGNOR OF ONE-HALF  
TO E. H. BABCOCK, OF SAME PLACE.

## COMPENSATOR FOR SIGNAL-WIRES.

SPECIFICATION forming part of Letters Patent No. 481,922, dated September 6, 1892.

Application filed February 15, 1892. Serial No. 421,622. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL W. BABCOCK, of Avon, in the county of Livingston and State of New York, have invented certain new and useful Improvements in Compensators for Signal-Wires; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the reference-numerals marked thereon.

My present invention has for its objects to provide a device for compensating for the variations in the length of the wires or cables used for operating railway and other signals due to the expansion and contraction of said wires, whereby the tension of the wires will be the same at all times and there will be no liability of a failure to operate the signals from changes in temperature.

Heretofore the devices employed for this purpose have been more or less complicated in construction, or else necessitated the employment of very heavy weights or strong springs; but my device, which is exceedingly simple and cheap, is certain in operation, and as I have demonstrated by practical use will operate well on a signal-wire hundreds of feet in length and insure the proper operation of a signal; and to these ends the invention consists in certain novelties of construction and combinations of parts, all as will be herein-after fully described, and the novel features pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a side elevation of a device constructed in accordance with my invention; Fig. 2, a plan view of the same; Fig. 3, a longitudinal section, and Fig. 4 a cross-section on the line  $x$  of Fig. 2.

Similar reference-numerals in the several figures denote similar parts.

The support or base 1, which may be of any preferred or suitable shape, is provided with a pulley or roller 2, journaled in suitable bearings 3 3, and near the said roller are arranged suitable guides or bearings 4 4, in which operates a suitable slide or carriage 5, having upon it a pulley or roller 6, corresponding to the stationary-pulley 2 on the

base, said pulleys being so arranged relative to each other that the wire or cable 7, connected at one end to the signal and at the other to the operating device, passes around them in opposite directions, as shown in Fig. 2. To the end of the slide 5 is connected a rack-bar 8, extending between pillars or supports 9, secured to the base, and engaging with the teeth of said bar is a segmental gear 10, journaled in the supports upon a suitable axis 11. Above the pivot of the gear is pivoted a lever 12, the short arm of which is connected to the gear 10 near its periphery by a link 13, and the longer arm having upon it an adjustable weight 14. The weight, the segmental gear, lever, and link are so arranged that the wire or cable 7 is held taut and is given an even tension, any contraction of the wire due to cold serving to move the slide, rack, and gear to raise the weight 14, while any expansion of the wire or cable will cause the weight to fall and take up the slack, maintaining an even tension. By the employment of a pivoted connection engaging the slide and connecting the weighted lever to it by a link, as shown, I obtain practically constant strain on the wire, because the direction in which the link pulls changes very little with regard to the pivotal point of the lever.

This device is very simple, cheaply constructed, does not require a very heavy weight, and, as I have found in practice, is admirably adapted for the purpose.

It will be understood that it is not essential that the location of the pulleys over which the wire runs be precisely as shown, as they could be changed to suit varying conditions, the relation of the devices for moving the slide or carriage being practically as shown.

I claim as my invention—

1. In a device for maintaining an even tension on wires or cables, the combination, with the movable slide having the pulley thereon and the rack connected thereto, of the pivoted segmental gear, the weighted lever, and the link connecting said lever with the gear, substantially as described.

2. The combination, with the base having the guides and the stationary pulley thereon, of the slide, the pulley thereon, the rack, the

pivoted segmental gear, the pivoted lever having the weight thereon, and the link connecting the lever with the gear, substantially as described.

- 5 3. In a device for maintaining an even tension on wires or cables, the combination, with the movable slide having the pulley, of the lever having a weight thereon, a connecting-

piece pivoted on a stationary support and operating on the slide, and a link connecting said piece with the lever, substantially as described. 10

SAMUEL W. BABCOCK.

Witnesses:

EDGAR H. BABCOCK,  
JAMES SUTCLIFFE.