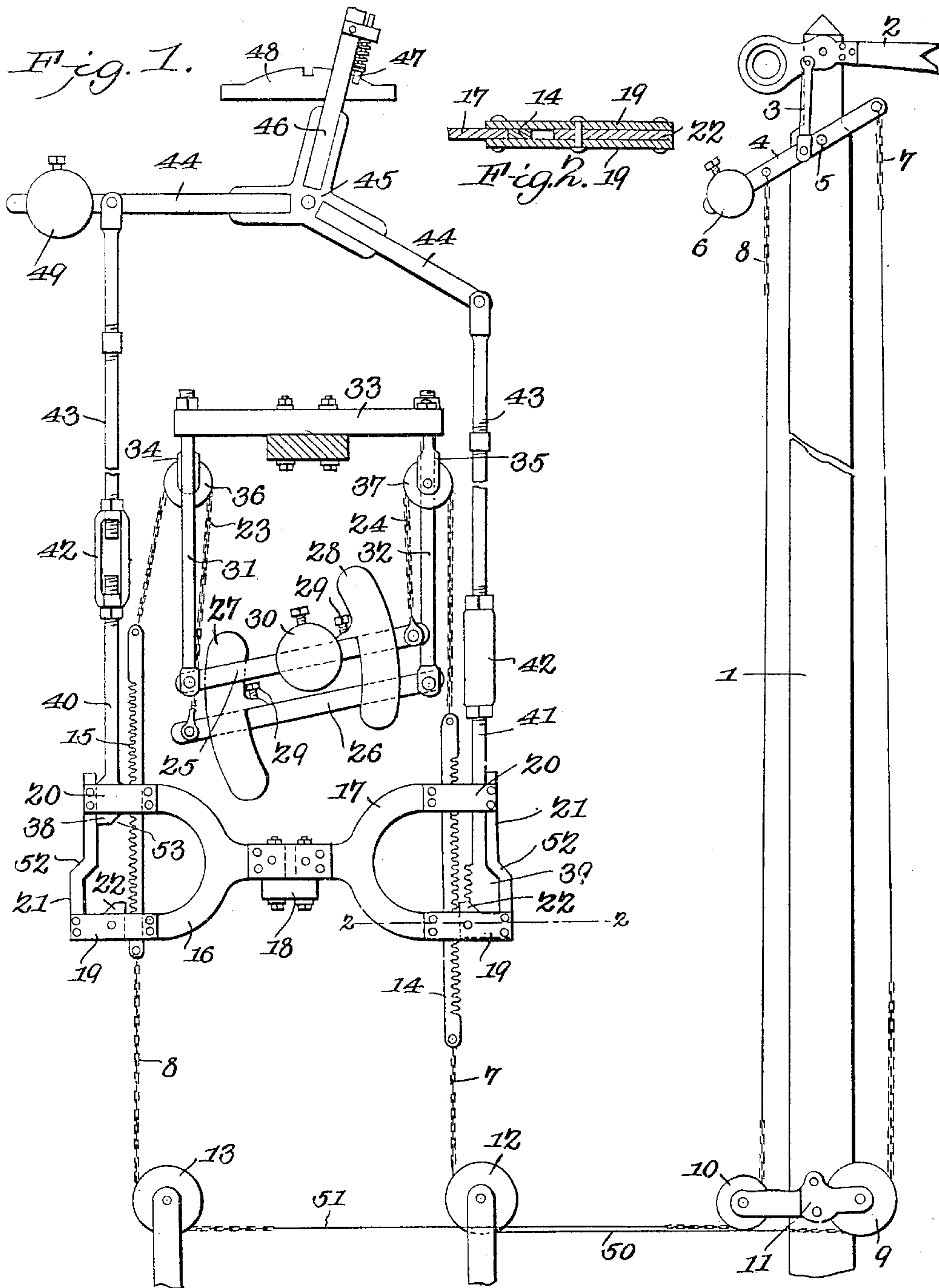


No. 818,660.

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A. BROSIUS.
RAILWAY SIGNAL.
APPLICATION FILED JAN. 19, 1906.



WITNESSES:

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ADAM BROSIUS, OF CATAWISSA, PENNSYLVANIA.

RAILWAY-SIGNAL.

No. 818,660.

Specification of Letters Patent.

Patented April 24, 1906.

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To all whom it may concern:

Be it known that I, ADAM BROSIUS, a citizen of the United States, residing at Catawissa, in the county of Columbia and State of Pennsylvania, have invented a new and useful Railway-Signal, of which the following is a specification.

This invention relates to railway-signals, and particularly to a novel arrangement of mechanism for taking up the slack of the wires or other connecting elements between the operating-lever and the semaphore, whereby the latter will always be caused positively to be moved to its proper position irrespective of the length of the wires.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a signal apparatus, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in side elevation, partly in section, of an apparatus constructed in accordance with the present invention. Fig. 2 is a horizontal sectional view taken on the line 2 2, Fig. 1.

Referring to the drawings, 1 designates an ordinary signal-post with which is combined in the ordinary manner a semaphore 2. Connected with the bull's-eye end of the semaphore is the upper end of a link 3, the lower end of which is pivotally connected with a lever 4, journaled at 5 upon the post. This lever carries at one end an adjustable weight 6 and also has connected with it two chains 7 and 8, the former of which has its point of connection at the unweighted end of the lever and the latter having its point of connection at a point between the weight 6 and the link 3.

The chains 7 and 8 pass around sheaves 9 and 10, carried by a bracket 11, securely bolted to the post, and around sheaves 12 and 13, positioned at any proper point relative to the semaphore-operating mechanism. The free terminals of the chains 7 and 8 are connected with the lower ends of a pair of rack-bars 14 and 15, that work in guide-yokes 16 and 17, carried by a suitable supporting-beam 18. That portion of each of the yokes through which the rack-bars work consists of a pair of spaced plates 19, that are bolted or riveted at 20 to the yoke-arms and

carry switch-bars 21 and shifting-lugs 22. To the upper ends of the rack-bars are connected one end of chains 23 and 24, the other ends of the chains being connected with the terminals of a pair of bars 25 and 26, that are arranged in parallelism and are held spaced apart by weights 27 and 28, that are adjustably combined with the bars by lock-bolts 29. In addition the bar 25 carries an adjustable weight 30. Pivotally connected with one end of the bar 25 is a rod 31, and pivotally connected with the bar 26 is a similar rod 32, and to the upper ends of these rods are suitably secured a beam 33. This beam also carries two yokes 34 and 35, that carry sheaves 36 and 37, around which pass the chains 23 and 24.

The teeth of the rack-bars 14 and 15 are disposed on the outer sides and are adapted to be engaged by toothed plates 38 and 39, carried by the lower ends of bars 40 and 41, the upper ends of which engage with turnbuckles 42. As clearly shown, the teeth of the rack-bar and of the toothed plate are approximately triangular in shape, with the crests sharply pointed, and this is to insure accurate meshing of the two parts when the apparatus is operated. Connecting with the turnbuckles 42 are the lower ends of a pair of rods 43, the upper ends of which have connected with them two levers 44, carried by a pivoted head 45, to which is secured the operating-lever 46, that carries a spring-pressed locking-rod 47, adapted to traverse a rack-plate 48. The lever 44 carries an adjustable weight 49, which in conjunction with the weights 28 and 29 counterbalances the weights 6 and 27.

When the parts are in the position shown, the weight 28 is exerting a draft upon the chains 24 and 7, thereby taking up any slack in the wire 50, that connects the two sections of the chain 7, a similar wire 51 connecting the two sections of the chain 8. When the lever 46 is reversed or thrown to a position opposite to that shown, the rear side of the toothed plate 39 contacts with the switch-section 52 of the switch-bar 21, thereby bringing the plate into engagement with the rack-bar, the switch-bar operating to hold the two parts in coöperative relation until again shifted. When the lever is again shifted, the inclined face 33 will contact with a similar face of the shifting-lug 22, thereby forcing the plate 38 laterally and out of engagement with the rack-bar 15, whereupon

the weight 27 will perform its function in taking up the slack of the unemployed wire and chains.

It will be seen from the foregoing description that by the arrangement herein described no matter what slack there may be in the wires and chains when either of the toothed plates are shifted to engage with the rack-bar the wire and chain that are then to be actuated have all slack taken up, so that the proper operation of the semaphore will always be assured.

I claim—

1. The combination with a semaphore, of an actuating device therefor embodying a pair of reciprocatory rack-bars, a pair of toothed plates adapted alternately to be thrown into engagement with the rack-bars, and a take-up device operatively connected with the rack-bars.

2. The combination with a semaphore, of a pair of rack-bars operatively connected with the wires thereof, an automatic operating take-up device connected with the rack-

bars, a pair of toothed plates adapted alternately and automatically to be thrown into and out of engagement with the rack-bars, and operating-levers operatively connected with the plates.

3. The combination with a semaphore, of a counterweighted lever operatively connected with the bull's-eye end thereof, a pair of rack-bars, flexible connections between the lever and the rack-bars, a compensating device connected with the rack-bars, a pair of toothed plates adapted automatically to be thrown into and out of engagement with the rack-bars, a pair of operating-levers connected with the toothed plates, and an adjustable counterweight carried by one of the mechanisms.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ADAM BROSIUS.

Witnesses:

JNO. E. PARKER,

FRANK S. APPLEMAN.