

(No Model.)

2 Sheets—Sheet 1.

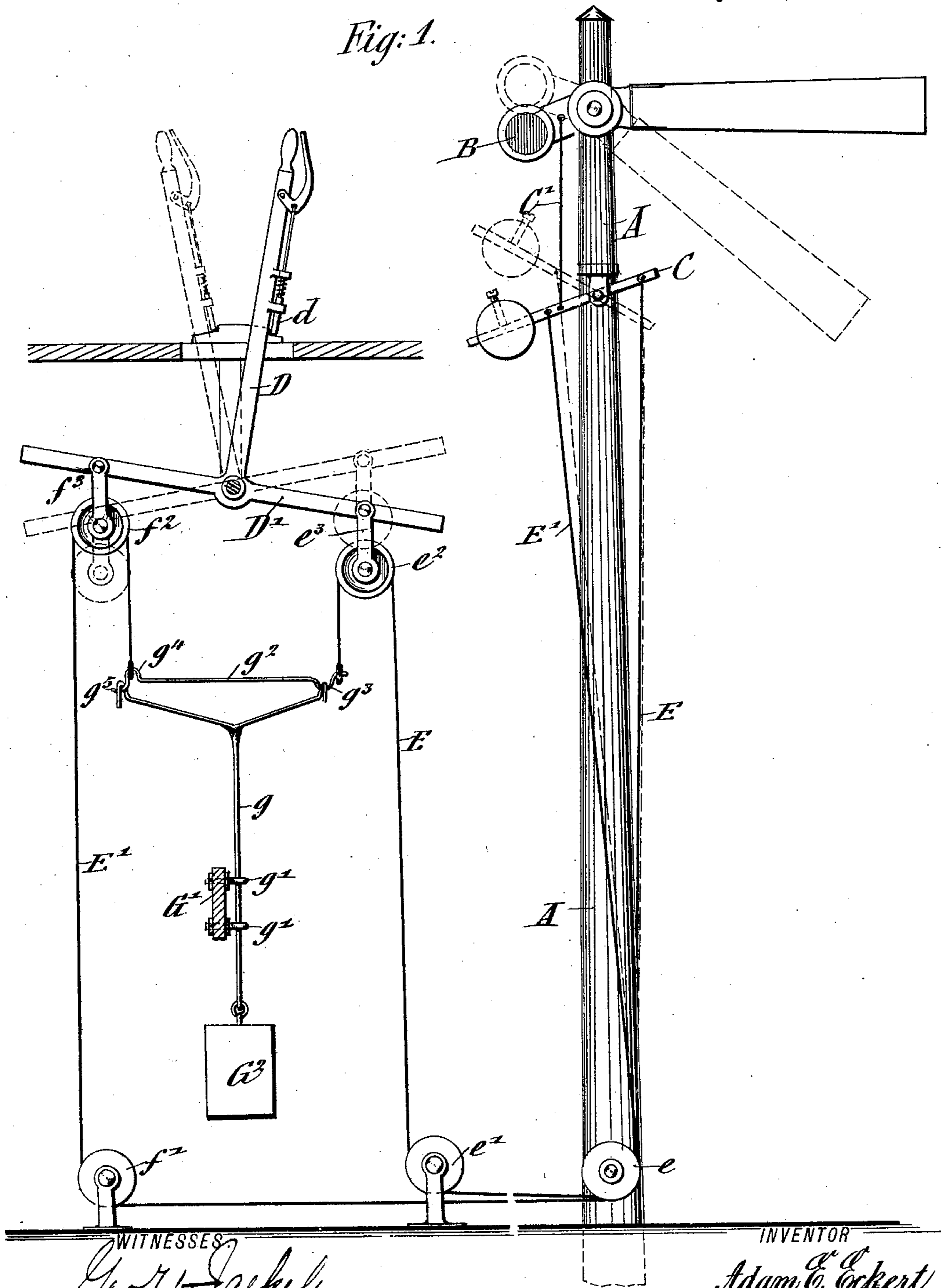
A. E. ECKERT.

COMPENSATING ATTACHMENT FOR SEMAPHORE SIGNALS.

No. 587,145.

Patented July 27, 1897.

Fig. 1.



WITNESSES
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(No Model.)

2 Sheets—Sheet 2.

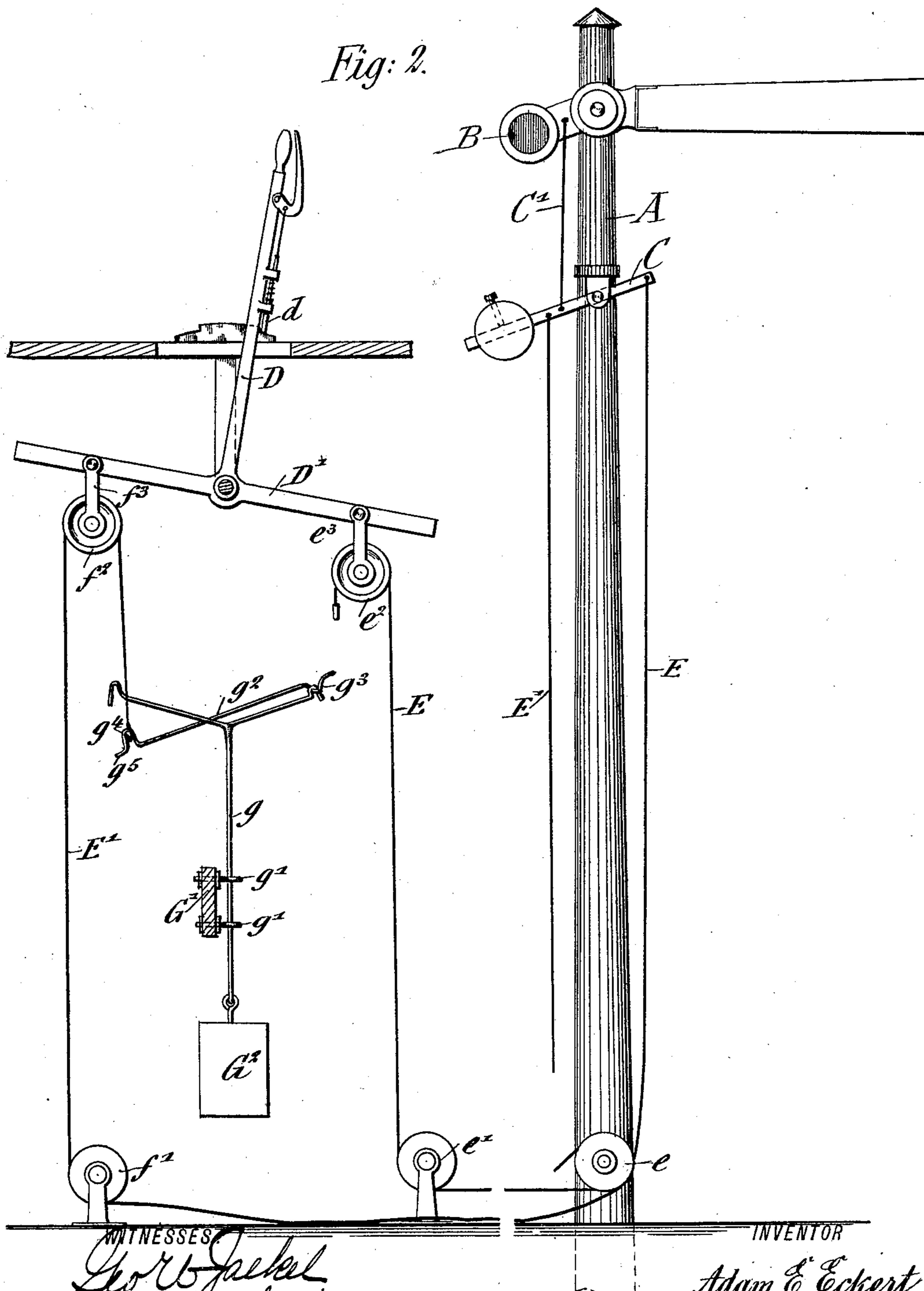
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Fig. 2.



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UNITED STATES PATENT OFFICE.

ADAM E. ECKERT, OF YONKERS, NEW YORK, ASSIGNOR OF ONE-HALF TO
ALBERT H. FANGBONER, OF SAME PLACE.

COMPENSATING ATTACHMENT FOR SEMAPHORE-SIGNALS.

SPECIFICATION forming part of Letters Patent No. 587,145, dated July 27, 1897.

Application filed May 7, 1897. Serial No. 635,474. (No model.)

To all whom it may concern:

Be it known that I, ADAM E. ECKERT, a citizen of the United States, residing at Yonkers, county of Westchester, State of New York, have invented certain new and useful Improvements in Compensating Attachments for Semaphore-Signals, of which the following is a specification.

This invention relates to an improved compensating attachment for semaphore-signals in which the wire cords that connect the semaphores with the actuating-levers are kept perfectly taut at any temperature, so that the slackening of the wires and the consequent unreliable setting of the semaphore-signals is entirely prevented, and the absolute setting of the same at any temperature to the danger position, even when the connecting wires or cords should break, is secured; and the invention consists of a compensating attachment for semaphore-signals in which the wire cords that operate the semaphore-signal are passed over suitable pulleys applied to the fulcrumed operating-lever and connected to a compensating device that takes up the slack of the wire cords and produces the setting to the danger position in case of the breaking of the connecting wire cord.

This invention consists, further, of the special construction of the compensating attachment, as will be fully described hereinafter and finally pointed out in the claims.

In the accompanying drawings, Figure 1 represents a side elevation of my improved compensating attachment for semaphore-signals, showing the same respectively in normal or danger position and in clear position in dotted lines. Fig. 2 is a like elevation showing the signal and its actuating-lever in reversed position, indicating that the track is clear.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A represents a semaphore-mast which is located at any suitable distance from the switch-tower from which the semaphore-signal is set in the danger or clear position.

B is the semaphore-signal, that is pivoted in

a suitable manner at a point near the upper end of the mast and is provided with a suitable counterweight.

C is a weighted and fulcrumed lever that is fulcrumed to the mast A at some distance below the signal-arm B and which is connected by a pivot-rod C' with the shorter arm of the semaphore-signal B. The fulcrumed and weighted lever C is connected by wire cords with the actuating-lever D, which is located at the switch-tower, said wire cords being known as "front" and "back" wires and are attached to the lever C equidistantly from the fulcrum, as shown in Fig. 1. The front wire E is guided over pulleys e e' e^2 and the back wire E' over pulleys f' f^2 , the ends of both wires being connected with a suitable compensating attachment G. The pulleys e^2 and f^2 are suspended by means of pivot links or hangers e^3 and f^3 from the lower portion D' of the fulcrumed actuating-lever D, said hangers being arranged equidistantly from the fulcrum on opposite sides of the same. Each actuating-lever D is provided with the usual locking device d , by which the lever is locked in normal or danger position and clear position in connection with the block D², as shown in Fig. 1.

The compensating attachment is composed of a vertical rod g , which is guided in suitable eyes or sleeves g' , attached to a horizontal plank G'. The lower end of the vertical rod g is provided with a suitable weight G², suspended thereto, while the upper end of the rod is provided with two arms, of which the right-hand arm is provided with a short hook, while the left-hand arm is provided with a longer hook, as shown clearly in the drawings. The hook-shaped ends of the arms serve for engaging a horizontal bar g^2 , which is provided at one end with a downwardly-bent portion g^3 and at the opposite end with an upwardly-bent portion g^4 and a hook-shaped end g^5 . The ends of the front and back wires are provided with rings, which are attached, respectively, to the right-hand end of the bar g^3 and to the bent portion g^4 of the same, while the hook-shaped ends of the forked vertical rod g are hung, respectively,

to the bent portion g^3 and the hook-shaped end g^5 of the bar g . When the actuating-lever D is in its normal position, the semaphore-signal B is in its horizontal or danger position, so as to indicate that the track is not clear. When the actuating-lever D is set into its second or clear position, the semaphore-signal is moved in its lower position and indicates thereby that the track is clear and that trains can pass. Throughout the working of the semaphore-signal the weighted compensating attachment keeps the front and back wires that form connections between the actuating-lever and semaphore-signal taut and takes up any slack that is caused by a change of temperature, and especially during hot weather when the connecting-wires are elongated by the influence of the heat.

The compensating attachment has an additional advantage—namely, that it sets the semaphore-signal to “danger” in case of a break in the front or back wire. This position is illustrated in Fig. 2, in which it is assumed that the back wire is broken. In this case the horizontal bar of the compensating attachment is disengaged and dropped down, so as to unhook the front wire, leaving it slack, so that the counterweight on the semaphore-pole places the semaphore-signal into the danger position and causing thereby the stoppage of any approaching train in case the track is not clear. If the front wire should break, the disengaging bar is not unhooked, but the additional weight of the compensating attachment is applied to the weighted semaphore-actuating lever, so that the signal is kept in its danger position, as shown in Fig. 2. In this manner semaphore-signals are reliably operated in connection with the compensating attachment, which is applied to the lower part of each actuating-lever, so that by a comparatively simple arrangement the reliable setting of semaphore-signals at all temperatures or in case of the breakage of the connecting-wires is secured.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. The combination with a semaphore-signal, of a weighted balance-lever connected with the same, an actuating-lever for the same, guide-pulleys suspended from the lower part of the actuating-lever, front and back wires passing over the guide-pulleys of the actuating-lever and connected with the said weighted balance-lever, and a weighted compensating attachment operated by the breaking of either front or back wire, substantially as set forth.

2. The combination, with a semaphore-signal, of a weighted balance-lever connected with the same, an actuating-lever located in the semaphore-switch tower, guide-pulleys suspended from the lower part of the actuating-lever, connecting front and back wires passing over suitable guide-pulleys, and the pulleys on the actuating-lever, and a compensating attachment composed of a vertically-guided weighted rod having forked and hook-shaped upper ends and a disengaging-bar the hook-shaped ends of which are connected with the ends of the said front and back wires and with the hook-shaped ends of said weighted rod, substantially as set forth.

3. A compensating attachment for semaphore-signals, composed of a vertical rod, a weight applied to the lower end of same, arms at the upper end of same provided with hook-shaped ends, and a disengaging-bar provided with bent portions and hook-shaped ends engaging respectively the hooks of the arms of the vertical rod, and rings at the ends of the connecting semaphore-operating wires, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ADAM E. ECKERT.

Witnesses:

PAUL GOEPEL,
A. H. FANGBONER.