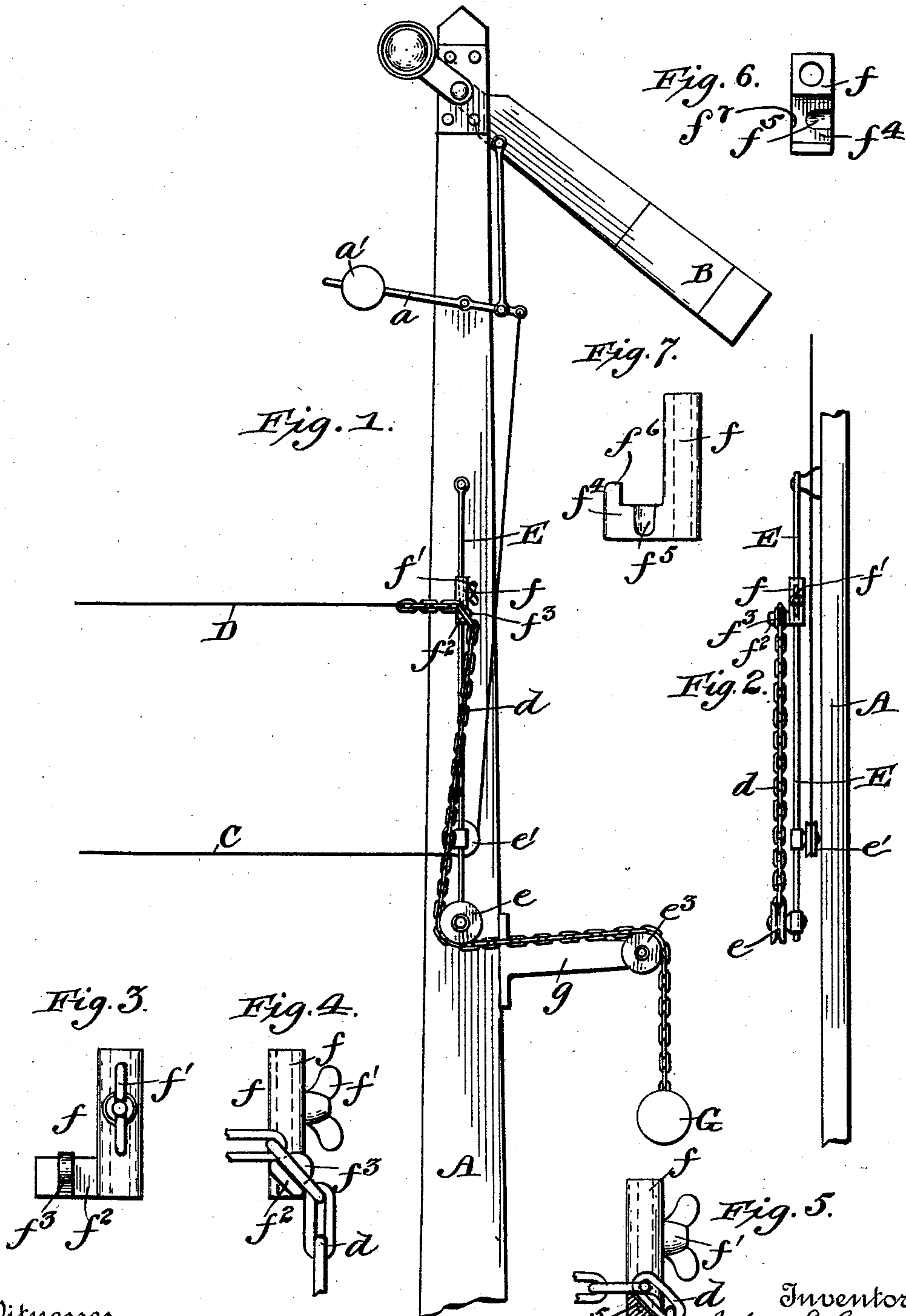


(No Model.)

J. S. LYNAM & G. F. ADAMS.  
COMPENSATOR FOR SIGNAL OPERATING WIRES.

No. 528,962.

Patented Nov. 13, 1894.



Witnesses

*Severance.*

W. Harvey Muzzey

## Inventors

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4 May 1900

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His Attorneys



# UNITED STATES PATENT OFFICE.

JOHN S. LYNAM, OF WINCHESTER, MASSACHUSETTS, AND GEORGE F. ADAMS,  
OF NASHUA, NEW HAMPSHIRE, ASSIGNORS OF ONE-THIRD TO CHARLES  
S. COLLINS, OF NASHUA, NEW HAMPSHIRE.

## COMPENSATOR FOR SIGNAL-OPERATING WIRES.

SPECIFICATION forming part of Letters Patent No. 528,962, dated November 13, 1894.

Application filed August 14, 1894. Serial No. 520,301. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN S. LYNAM, residing at Winchester, in the county of Middlesex and State of Massachusetts, and GEORGE F. ADAMS, residing at Nashua, in the county of Hillsborough and State of New Hampshire, citizens of the United States, have invented certain new and useful Improvements in Compensators for Semaphores or Signal-Operating Wires; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in compensators for semaphores or signal operating wires, and the invention consists of the combination of a pivoted lever, a fixed wire, means for adjustably connecting the fixed wire to said lever, an operating weight attached to said lever, and a signal operating wire passed about a pulley on said lever.

It also consists of the combination of a pivoted lever, a fixed wire adjustably connected thereto, an operating weight so attached to said lever that upon the breaking of the fixed wire it will become detached therefrom, and a signal operating wire.

It also consists of certain other novel constructions, combinations and arrangements of parts as will be hereinafter more particularly set forth and claimed.

In the accompanying drawings: Figure 1. is a side elevation of the devices embodying my invention. Fig. 2. is a detail end elevation of the same. Fig. 3. is a detail front elevation of the lever clamp and wire support. Fig. 4. is a detail side elevation of the same. Fig. 5. is a detail vertical section of a modified form of said clamp. Fig. 6. is a top plan view of the same, and Fig. 7. is a front elevation of the same.

A, in the drawings, represents the semaphore supporting post; B, the semaphore or signal; C, the signal operating wire; D, the fixed wire, and E, the compensator lever.

The signal B is of the usual construction and is pivotally mounted on the post A, at its upper end. The signal is connected to an

operating lever  $a$ , which is provided with a counterbalance weight  $a'$ .

It will be seen from the above that when the lever  $a$  is released by the wire C which is attached thereto, the weight  $a'$  will depress the rear end of said lever and thus force the signal B up to danger.

A compensating lever E, is pivoted at its upper end to the post A, and is provided at its lower end with a pulley  $e$ . Another pulley  $e'$ , is also mounted on the lever E, and the signal operating wire passes about this latter pulley and is attached to the end of the lever  $a$ .

The fixed wire D, which is of any desired length, is attached to a chain  $d$ , which passes over the adjustable clamp  $f$ , under pulley wheel  $e$ , and over a stationary pulley wheel  $e^3$ , mounted on an arm  $g$ , of the post A, and has a compensating weight G, attached to its end. The clamp  $f$ , is provided with a longitudinal passage through which the lever E, is passed. The clamp is adjustable on said lever by means of a thumb screw  $f'$ . The said clamp is provided with an extension  $f^2$ , which in turn is provided with a nose or stud  $f^3$ , which is adapted to engage any one of the links of the chain and thus keep said fixed wire and the weight G, in operative connection with the lever E, but at the same time would allow the link to instantly disengage from the nose should the fixed wire break and the weight would thus drop and allow the signal to rise to danger.

As the wire D, may be shorter than the main operating wire the expansion of the two wires would of course not necessarily be the same, but we have provided the adjustable clamp  $f$ , to regulate this unequal expansion. When the clamp is moved nearer to the pivotal point of the lever E, the length of the travel of the opposite end of the lever, upon the expansion of the wire D, is of course greater and as the clamp is moved away from the pivotal point of said lever, the movements of the lower end of said lever are correspondingly lessened.

The operation of the compensator is as follows: When the wire D, expands, the lever E, is pulled to the right by the weight G, which



movement carries the pulley  $e'$ , to the right also and thus takes up the slack in the wire C. The reverse action of course, follows the contraction of the wires. When it is desired to set the signal at danger the wire C, is slackened and the weight  $a'$ , forces the signal up.

In Figs. 5, 6 and 7 I have shown different views of a modified form of the fixed wire supporting clamp. This clamp, like that illustrated in Figs. 3 and 4 is provided with a longitudinal passage through which the lever E is passed, also the thumb screw for adjusting it on the same. It is provided with an extension  $f^4$  that has an upturned nose  $f^6$  at its outer end. The extension is provided also with recesses  $f^5, f^7$  into which the links of the chain fit when in position on said clamp; the horizontal link resting against the upturned nose  $f^6$  and thereby kept in position which in turn causes the two adjoining links to be firmly seated in the recesses  $f^5, f^7$ . The purpose of this form of clamp is the same as that shown in Figs. 3 and 4.

What I claim as my invention is—

1. In a compensator for semaphores or signal operating wires, the combination of a pivoted lever provided with a pulley, a fixed wire adjustably connected to said lever, an operating weight attached to said lever, and a signal operating wire passed about the pulley on the said lever, substantially as described.

2. In a compensator for semaphores or signal operating wires, the combination of a pivoted lever, a fixed wire attached thereto, a signal operating wire passing loosely over a projection of said lever, and an operating weight so attached to said lever that upon the breaking of the fixed wire it will become detached therefrom, substantially as described.

3. In a compensator for semaphores or sig-

nal operating wires, the combination of a pivoted lever, two pulleys mounted upon the same, a fixed wire, an adjustable clamp for connecting said wire to said lever, said clamp being provided with an angular extension having a stud or nose, a pulley mounted on an arm of the semaphore post, a signal operating wire passed over one of the pulleys on said lever, and a chain connected to the fixed wire and passed over the nose of the adjustable clamp, and also over one of the pulleys on the lever and the pulley on the arm of the post and terminating in a weight, substantially as described.

4. In a compensator for semaphores or signal operating wires, the combination of a pivoted weighted lever, a fixed wire, a signal operating wire passed about a projection of said lever, and means for connecting the fixed wire to the lever, but allowing it to be adjusted toward or from the fulcrum of the same whereby the relative movements of the two wires can be regulated, substantially as described.

5. In a compensator for semaphores or signal operating wires the combination of a fixed wire, a signal operating wire, compensating means for taking up the slack or allowing the contraction of said wires and a compensating weight attached to the fixed wire and engaging the compensating means but being adapted to disengage therefrom upon the breaking of the fixed wire, substantially as described.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

JOHN S. LYNAM.

GEORGE F. ADAMS.

Witnesses:

IRA F. HARRIS,

E. L. GAGE.