(No Model.)

W. K. BEARD & H. A. AUKAMP, Jr.

COMPENSATOR.

No. 377,476. Patented Feb. 7, 1888.

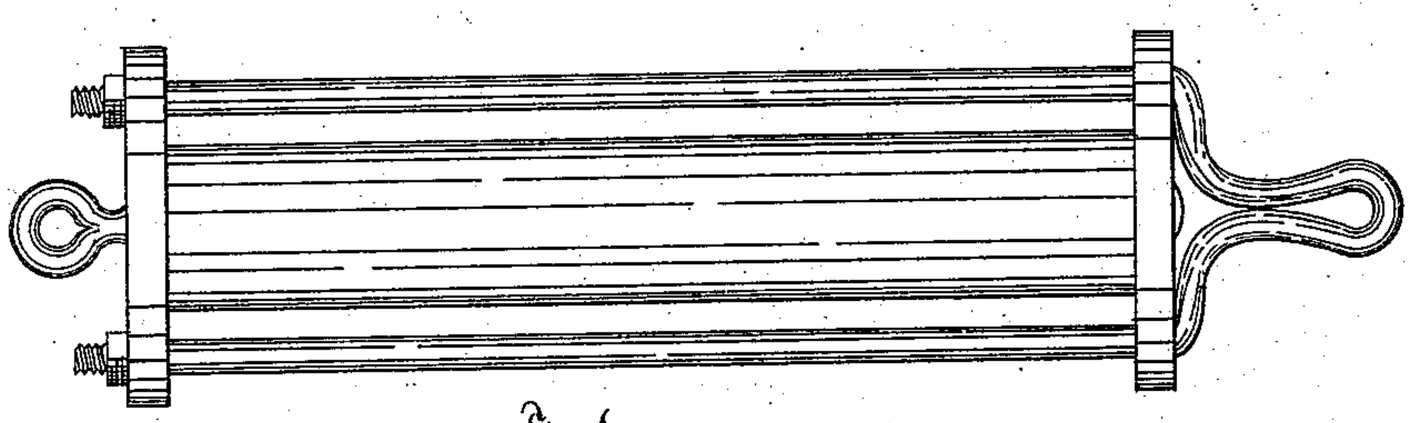

Fig. 1.

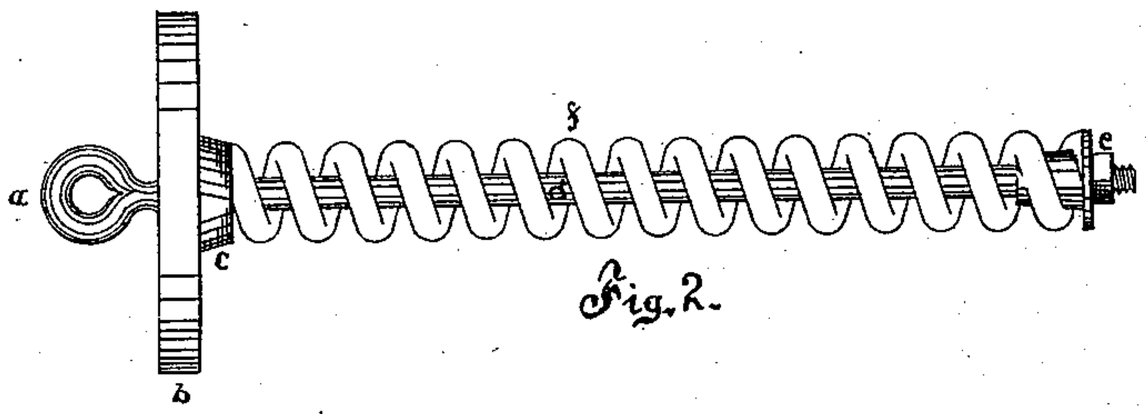

Fig. 2.

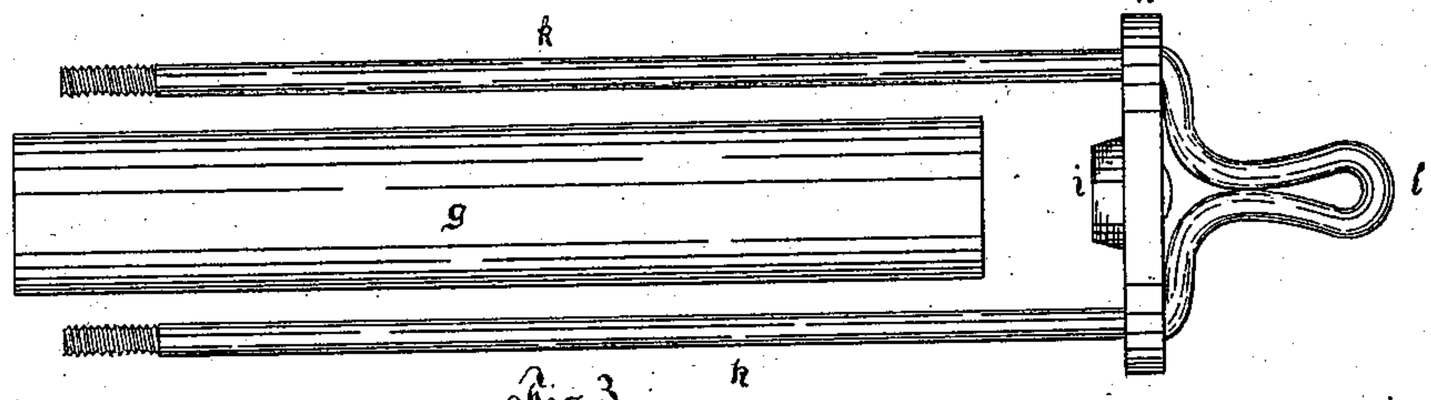

Fig. 3.

WITNESSES:

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COMPENSATOR.

SPECIFICATION forming part of Letters Patent No. 377,476, dated February 7, 1888.

Application filed September 10, 1887. Serial No. 249,325. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM K. BEARD and HENRY A. AUKAMP, Jr., of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Wire-Compensators; 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 an improvement in compensators used to counterbalance the expansion and contraction of wire used in signals.

Heretofore in the so-called "wire-compensators" the mechanism has been complicated, and in most cases the compensators have required daily watching and regulating.

The object of our invention is to provide a wire-compensator which shall be simple in construction and at the same time automatic, requiring no attention after once laid down, except in case of breakage.

Our invention consists, first, of an iron rod, one end of which is made into a loop, the other having a thread cut on it, on which screws a nut. This rod passes through a hole in a small iron plate, which fits up close against the loop, but allows the rod to move freely through it. On the inside of this plate is a small lug. Around this iron rod is coiled a steel spring, one end resting against the lug on the inside of the plate, the other held in position by the nut screwed on the other end of the rod. The afore-described plate is attached to another plate at the other end of the spring by means of an iron rod. This rod passes through a hole in the first plate and is there secured by a nut. It then passes up alongside of the spring through the second plate, and here forms a loop, after which it passes through another hole in the second plate, and is secured, like the other end, with a nut to the first plate, thus binding the two plates firmly together.

Our invention further consists in an iron barrel which covers the spring, being held in position by the two plates and the lugs on them, and serves to protect the steel spring from the weather.

To operate our compensator, the signal-wire is attached to the loops at either end of the compensator and the spring regulated according to the length and position of the signal-wire. As the wire contracts from the cold, it pulls on the rod of the compensator and the spring is shortened, while when the wire expands the spring stretches out and thus compensates for any increase or decrease in the length of the wire.

Our invention will be better understood by reference to the drawings which accompany this specification, in which similar letters refer to similar parts.

Figure 1 represents the compensator as it is ready for use. Fig. 2 shows the spring and plate withdrawn from the shelter-barrel. Fig. 3 shows in detail elevation the shelter-barrel, the rods, one of the plates, and the loop attached thereto.

a represents the loop to which one end of the wire is attached.

b represents the plate through which the stem of said loop passes; *c*, the lug on the inner side of said plate, against which the spring rests; *d*, the iron rod before referred to, with the thread and nut *e* on the other end; and *f*, the steel spring. A shelter-barrel, *g*, incloses said spring and rod, and is located between said plate *b* and another plate, *h*, these plates being in contact with its ends, respectively. A boss, *i*, on the inner face of the latter plate enters the nearer end of said barrel. A loop, *e*, is attached to the outer side of plate *h*. Stay-rods *k* extend from the inner face of plate *h* to and through plate *b*. Outside of this latter their screw-threaded ends receive nuts *m*, which hold the device together. The signal-wire is attached to loop *e*.

Having thus described our invention and its mode of operation, we claim as new and desire to secure by Letters Patent—

A plate having a loop formed on one side of it for the attachment of a signal-wire, in combination with rods extending from the outer side of said plate, another plate fastened on the other ends of said rods to complete the

frame, a barrel arranged longitudinally between these plates, an endwise-movable rod arranged within said barrel, passing through the second head and provided with a wire-attaching loop outside of the same, and a retracting-spring for said rod, also within said barrel, substantially as set forth.

In testimony whereof we have hereunto subscribed our names in the presence of two subscribing witnesses.

WILLIAM K. BEARD.
HENRY A. AUKAMP, JR.

Witnesses:
A. T. HARTMAN,
DAVID L. DEEN.