

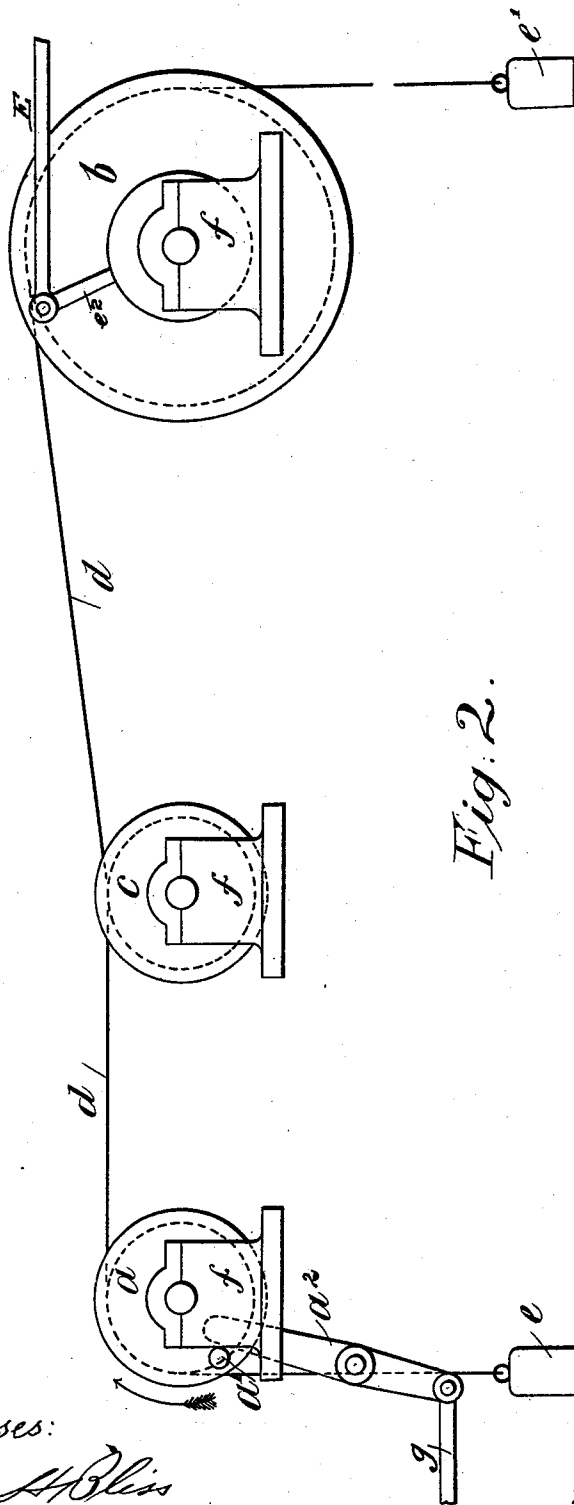
(No Model.)

W. SAUNDERS.
COMPENSATOR FOR SIGNAL OR OTHER WIRES.

No. 507,596.

Patented Oct. 31, 1893.

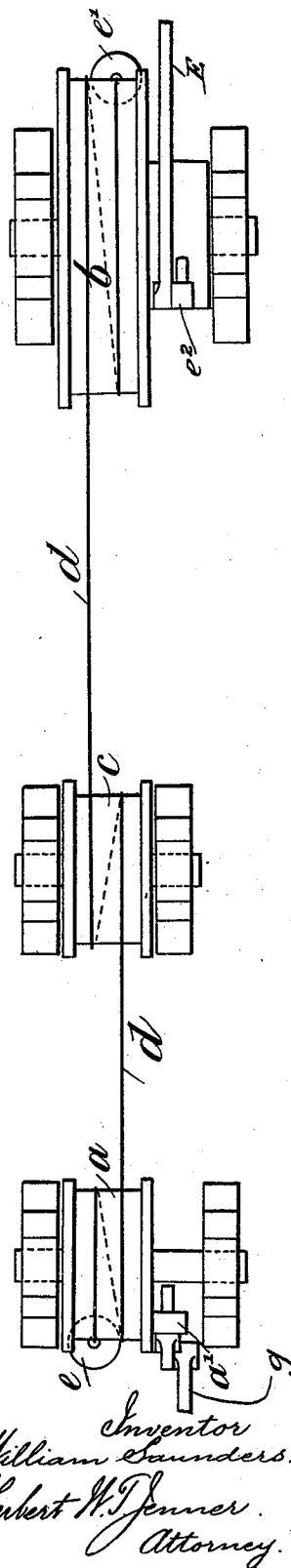
Fig. 1



Witnesses:

George H. Bliss
Edw. Bradford

Fig. 2.



Inventor
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UNITED STATES PATENT OFFICE.

WILLIAM SAUNDERS, OF LONDON, ENGLAND.

COMPENSATOR FOR SIGNAL OR OTHER WIRES.

SPECIFICATION forming part of Letters Patent No. 507,596, dated October 31, 1893.

Application filed July 3, 1893. Serial No. 479,490. (No model.) Patented in England April 28, 1893, No. 8,586; in France June 13, 1893, No. 217,622, and in Belgium June 13, 1893, No. 79,848.

To all whom it may concern:

Be it known that I, WILLIAM SAUNDERS, a subject of the Queen of Great Britain and Ireland, residing at 34 Park Grove, Battersea Park Road, London, England, have invented certain new and useful Improvements in Compensating Devices for Railway-Signal or other Wires, (for which I have obtained patents in Great Britain, No. 8,586, bearing date April 28, 1893; in France, No. 217,622, dated June 13, 1893, and in Belgium, No. 79,848, dated June 13, 1893;) and I 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.

This invention relates to an improved compensating device for railway signal and other wires or similar connections and has for its object to keep the said wires or connections taut and in proper working order however much they may expand or contract by the influence of the weather. For this purpose I provide three or more rollers or drums mounted so as to revolve in suitable bearings. To each end of the wire or connection I attach a weight and coil the said wire or other connection once around each of the said rollers or drums the latter being placed in a line with one another. The weights depend from each of the end rollers, the intermediate roller or rollers partaking of the motion of the wire as it expands or contracts in either direction even should the end roller for the time being be fixed.

In applying my invention to railway signals I may attach one end of the wire to the ordinary signal-box lever instead of passing it over the roller at that end, the other end roller actuating an arm or lever for operating the signal-arm or semaphore; or I may retain the three or more rollers and connect the signal-box lever to one end roller by means of a rod or wire, the weights depending from the end rollers counterbalancing one another and thus reducing the power necessary to actuate the signal; the weight depending from the roller connected to the said lever being preferably lighter than the weight depending from the other end roller. This latter arrangement is more applicable to signals at long

distances from the signal box while the former is applicable to signals at short distances therefrom. The intermediate roller acts as a guide or support to the wire and may be made smaller or larger than the other rollers to assist in operating the wire by the signal-lever, and in long distances there may be several of the said guide or intermediate rollers. And in order more clearly to understand my said invention I will describe the same with reference to the accompanying sheet of drawings in which—

Figure 1 is a side elevation of my improved device, and Fig. 2 is a plan.

a b are the two end rollers and c is the intermediate roller. The wire or other connection d is coiled once around each of the said rollers and has weights e e' attached to its respective ends. As the wire d expands or contracts the said rollers partake of the motion thereof in either direction being free to revolve in bearings f the weights e , e' always keeping the wire taut.

In applying my invention to railway signaling the roller b and weights e' may be dispensed with that end of the wire being attached to the signal-box lever. The roller a is provided with a projection a' which comes into contact with and actuates a lever a^2 at each revolution of the roller a which lever a^2 operates the semaphore or signal arm. The diameter of the roller a is so proportioned to the length of the signal wire d as to allow the greatest amount of contraction to which the said wire may be subjected without actuating the lever a^2 , the wheel a requiring to be turned a complete revolution before it can do so.

E is the operating rod, or its equivalent. A lever may be used if desired. This rod or lever is operatively connected with the wire d . The rod E may be fastened to the wire d , or it may be pivoted to the side of the roller b , or it may be pivoted to an arm e^2 secured to the axis of the roller b . The lever a^2 is connected to the rod g for working the signal. The projection a' is shown at one extremity of its movement, the wire d being taut and expanded to its greatest possible length. My said invention may be readily applied with a small amount of outlay to the present or or-

dinary system of railway signaling and will by its use greatly reduce the risk of accidents or imperfect working of such signals.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a signal rod *g*, and a lever connected to it; of a roller *a* provided with a lateral projection for operating the said lever, a wire having one end wound around the said roller and provided with a weight *e* for keeping it taut, and an operating device connected with the other end of the said wire for moving it longitudinally, substantially as set forth.

2. The combination, with a signal rod *g*, and a lever connected to it; of a roller *a* provided with a lateral projection for operating the said lever, a second roller *b*, a wire *d* having

its ends wound around the said rollers and provided with the weights *e* and *e'*, and an operating device for turning the roller *b*, substantially as set forth.

3. The combination, with a signal rod *g*, and a lever connected to it; of a roller *a* provided with a lateral projection for operating the said lever, a second roller *b*, a wire *d* having its ends wound around the said rollers and provided with the weights *e* and *e'*, one or more rollers *c* for supporting the middle portions of the wire *d*, and an operating device for turning the roller *b*, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM SAUNDERS.

Witnesses:

ALFRED SIMPSON,
CHARLES LEASON.