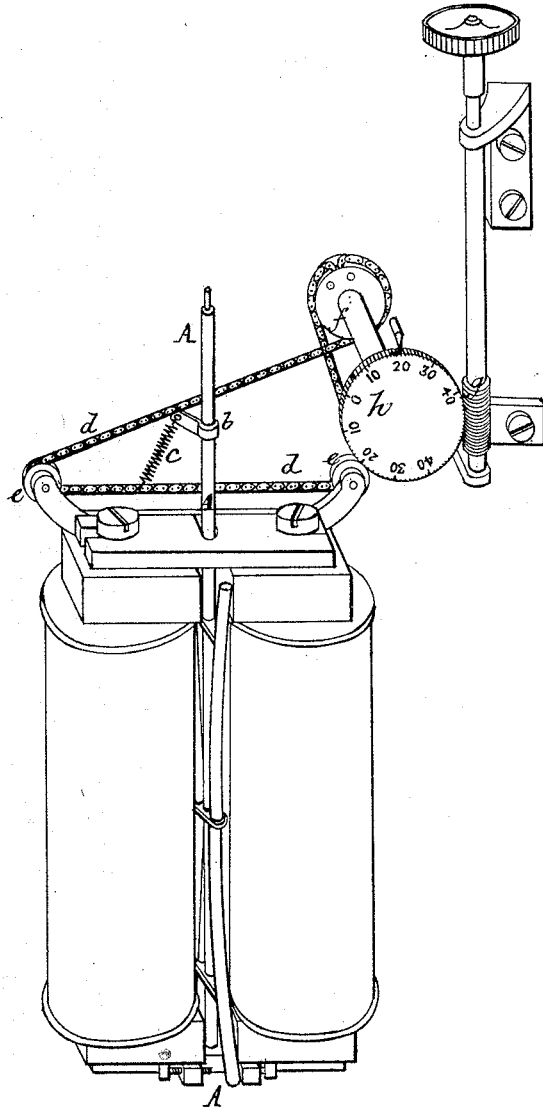


C. WHEATSTONE & J. M. A. STROH.
Magnets for Electric Telegraph.

No. 166,169.

Patented July 27, 1875.



WITNESSES.
Walter Allen
Henry Tanner.

Sir Charles Wheatstone
John Matthias Augustus Stroh
By Knight-Brig. Atty

UNITED STATES PATENT OFFICE.

CHARLES WHEATSTONE AND JOHN MATTHIAS AUGUSTUS STROH, OF
LONDON, ENGLAND.

IMPROVEMENT IN MAGNETS FOR ELECTRIC TELEGRAPHS.

Specification forming part of Letters Patent No. **166,169**, dated July 27, 1875; application filed
March 16, 1875.

To all whom it may concern:

Be it known that we, Sir CHARLES WHEATSTONE, of 19 Park Crescent, Regent's Park, knight, and JOHN MATTHIAS AUGUSTUS STROH, of 29 Tolmers Square, Hampstead Road, mechanician, both of London, county of Middlesex, England, have invented certain Improvements in the Printing-Receivers of Automatic or Fast-Speed Telegraphs, of which the following is a specification:

The present invention is an improvement on the printing-receivers of Sir CHARLES WHEATSTONE'S automatic telegraphic system, which receiver, as formerly constructed, was the subject of a patent granted to him in the United States on the 22d of December, 1874.

This improvement consists in a method of adjusting the magnetic armatures of the electro-magnet of the printing-receiver, by means of which the actions in opposite directions may be equalized or rendered unequal in any proportion that may be necessary to compensate inequalities arising from unequal actions of the coils of the two sides of the electro-magnet.

When the wire-coils upon the two sides of the electro-magnet act differently upon the magnetic armatures, which oscillate between them, we eliminate the difference by introducing the tension of a spiral spring on one side or the other of the zero position.

The arrangement for effecting this is shown in the accompanying drawing.

The axis A A is provided with an arm, *b*,

from which a spiral spring, *c*, is stretched to a small fusee-chain, *d d*, passing over suitable pulleys *e*, and round a small drum, *f*, with a micrometer-screw, *g*, and graduated dial *h*. When the micrometer-screw is turned so as to cause the fusee-chain to bring the lower end of the spring *c* in a line parallel with the axis A A, upon which the magnetic armatures of the electro-magnet are mounted, no tension is put upon the axis; but by turning it to either side a bias is given to the deflection upon that side of the neutral position of the magnet, and the inequality in the actions of the electro-magnet coils is thus balanced.

This adjustment is also employed when the transmission is disturbed by earth currents, as it enables the operator to compensate the inequalities in the two opposite currents as they occur.

We claim—

The combination, with an armature pivoted between and acted on by two electro-magnets or coils, of a spring and means for adjusting the tension thereof, and causing it to exert its force upon either side of the pivotal bearing of the armature, substantially as set forth.

C. WHEATSTONE.
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Witnesses:

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