

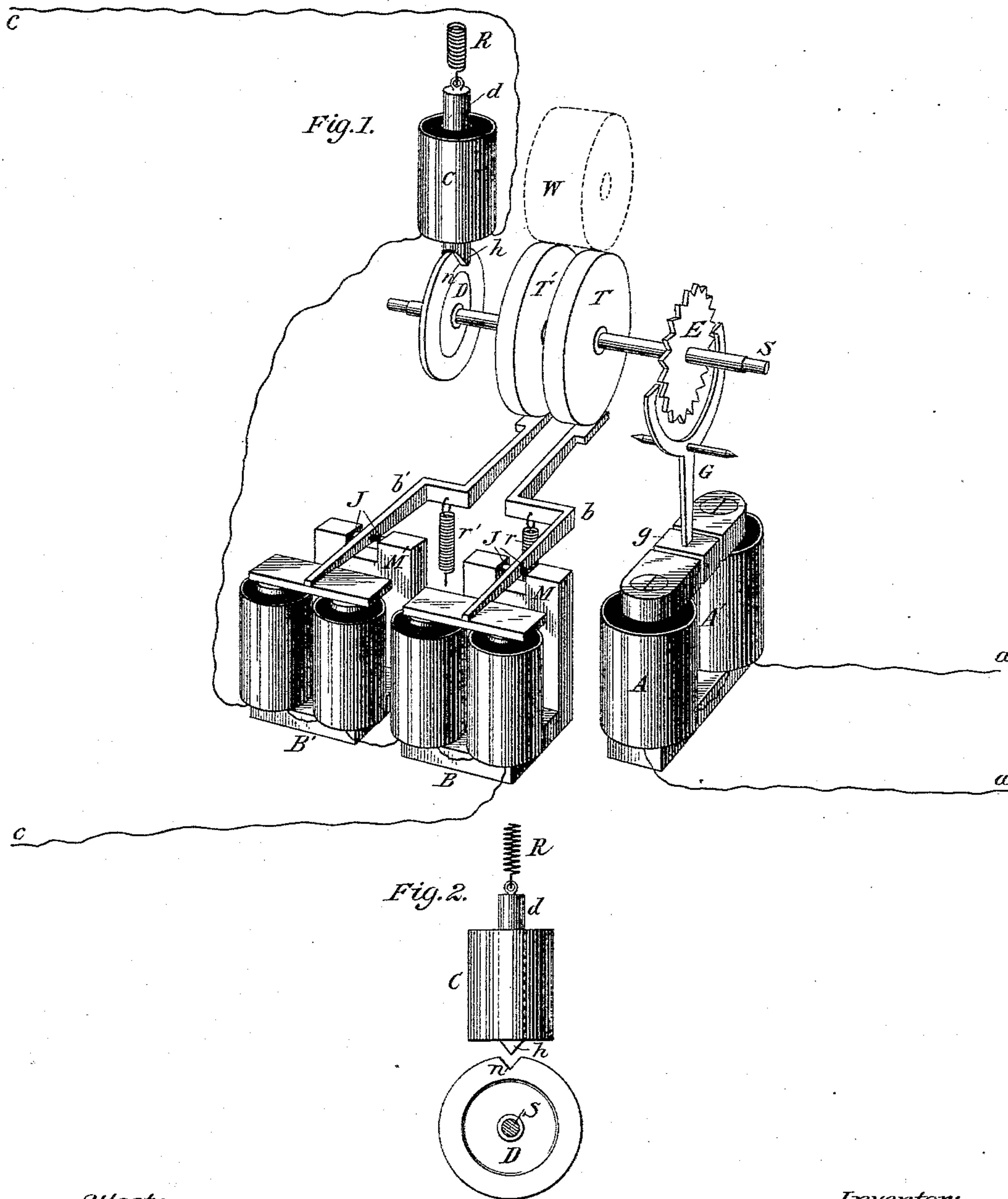
(No Model.)

L. A. McCARTHY.

UNISON DEVICE FOR PRINTING TELEGRAPHS.

No. 319,001.

Patented June 2, 1885.



Attest:

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His Attorney



# UNITED STATES PATENT OFFICE.

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## UNISON DEVICE FOR PRINTING-TELEGRAPHS.

SPECIFICATION forming part of Letters Patent No. 319,001, dated June 2, 1885.

Application filed January 19, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, LAWRENCE A. MCCARTHY, a citizen of the United States, and a resident of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Printing-Telegraph Instruments, of which the following is a specification.

My invention relates, in a two-wire printing-telegraph, to an improved unison device consisting of an electro-magnet with a movable core, which operates in conjunction with a notched disk fastened on the type-wheel shaft.

The object of my improvement is to stop the type-wheels of all the printing-instruments in a circuit at a given point, so that they will all print alike when in operation. I attain this object in the following manner: In a two-wire printing-telegraph instrument containing two type-wheels and an escapement-wheel on the same shaft rotated by mechanical means, escapement-magnets in one circuit actuating an escapement-lever and causing a step-by-step motion of the type-wheels, and in a second circuit polarized electro-magnets each actuating a printing-lever to print from one or the other type-wheel, according to the polarity of the current sent through this circuit, I place in this second circuit, for the purpose of stopping the type-wheels at a certain point, a neutral magnet with a sliding core, which, when actuated by a current, presses into a notch in a disk fastened on the type-wheel shaft.

I illustrate a printing-instrument containing my improvements in the accompanying drawings, in which—

Figure 1 represents the several parts described, their connections and relation to each other. Fig. 2 shows the neutral magnet with its movable core, its retractile spring, and the disk said core acts on.

Referring to Fig. 1, magnets A A' represent escapement-magnets in circuit *a*. These magnets control escapement-lever G by acting on armature *g*, and thereby escapement-wheel E, type-wheels T T', and disk D, which are fastened to the same shaft.

In the circuit *c* magnets B B' represent polarized magnets for actuating the printing-levers *b* and *b'*. Said levers are journaled in the permanent magnets M M' at J J'. The re-

tractile springs *r r'* hold the printing-levers *b b'* away from the type-wheels T T' when the weaker current charges the unison-magnet C, or when no current passes through the circuit *c*. In the circuit *c* is also the neutral magnet C, the end *h* of the movable core *d* of which presses into notch *n* in disk D, when a current is passed through circuit *c*, and the type-wheels are allowed to revolve until the notch in disk D comes opposite to core *d*. Spring R draws core *d* away from disk D as soon as the current is broken in circuit *c*, thereby allowing the type-wheels to rotate. While a strong current in circuit *c* actuates one or the other of the polarized magnets B or B', and thereby printing-lever *b* or *b'*, according to the polarity of the current, magnet C answers to either polarity, and also answers to a weaker current, one that will not enable magnets B and B' to attract levers *b* and *b'*, because the retractile-springs *r* and *r'* are adjusted so that levers *b b'* can only respond to stronger currents. When the magnet C responds to a steady weak current, the core *d* is pressed against the outer edge of disk D and into the notch *n* when it reaches a position in front of the end of said core, and thereby stops the wheels on the type-wheel shaft S.

Fig. 2 shows my neutral unison-magnet C, consisting of a helix with its movable core *d*. Said core is preferably wedge-shaped at the end marked *h*, so as to fit readily into the notch *n*, of the same shape, in disk D, and thereby stop the type-wheels at a predetermined point when a weak current is passed through the coils of said magnet.

It is obvious that the shape of the core and disk may be varied.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a printing-telegraph instrument wherein the escapement-magnets are in one circuit, controlling type-wheels and an escapement-wheel fixed on the same shaft, and in a second circuit are polarized magnets, each responding to a current opposite in polarity to the other for actuating the printing-levers, a unison device consisting of a neutral magnet placed in said second circuit, said magnet constructed with a sliding core and its retractile spring, together with a disk notched to receive



the end of said core, fastened to the same shaft as the escapement and type wheels, all substantially as described, and for the purpose specified.

5 2. In a printing-telegraph instrument, a unison-magnet having a sliding core, in conjunction with a notched disk fastened to the type-wheel shaft, in combination with polarized magnets, printing-levers, and type and escape-  
10 ment wheels, all substantially as described, and for the purpose specified.

3. In a printing-telegraph instrument, the

combination of a unison-magnet having a sliding core with a notched disk fastened to the type-wheel shaft, all substantially as shown. 15

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 16th day of January, 1885.

LAWRENCE A. McCARTHY.

Witnesses:

WILLIAM Y. KELLY,

F. H. LAWRENCE.