

(No Model.)

H. VAN HOEVENBERGH.

WINDING DEVICE FOR PRINTING TELEGRAPHS.

No. 316,695.

Patented Apr. 28, 1885.

Fig. 1,

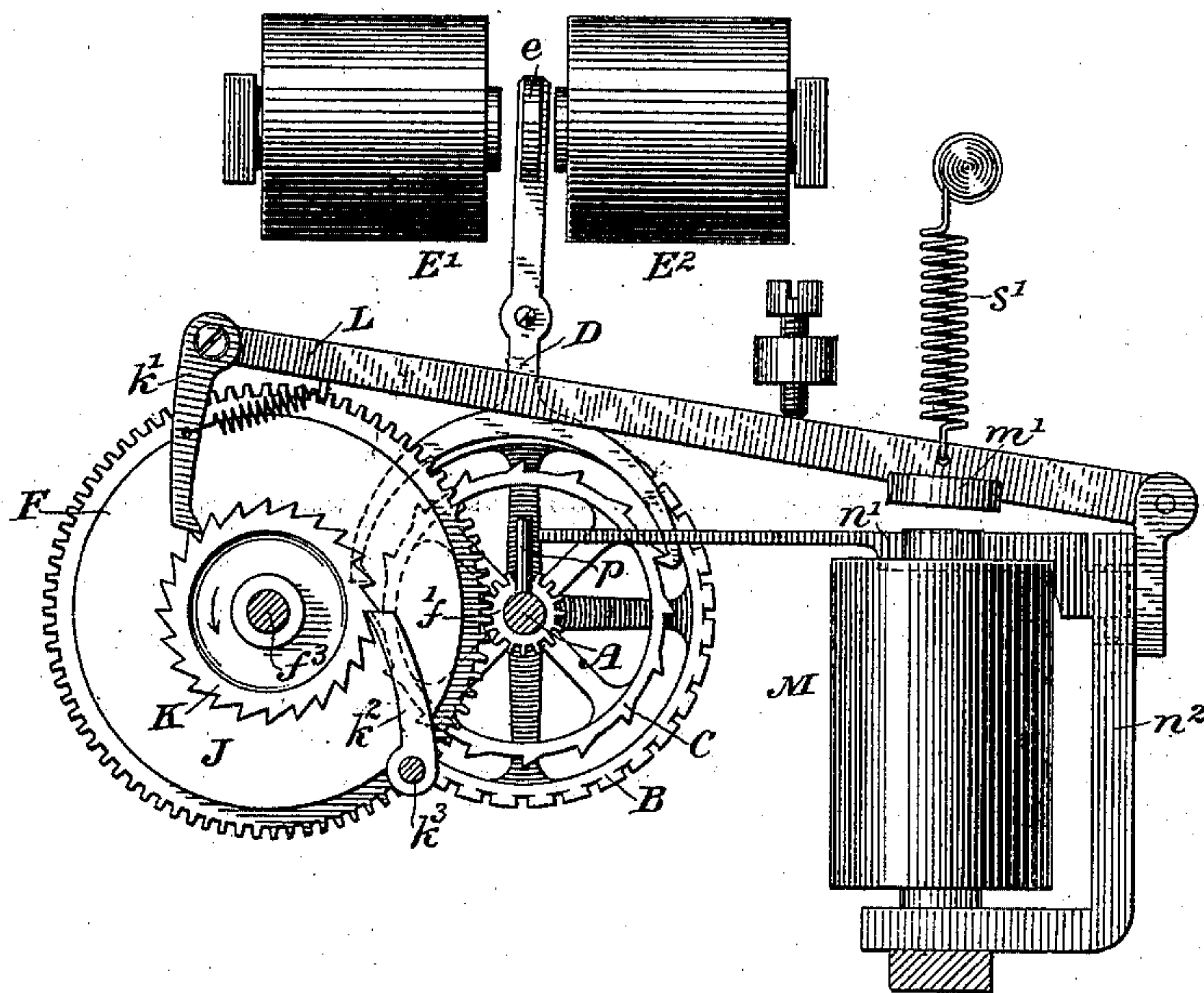
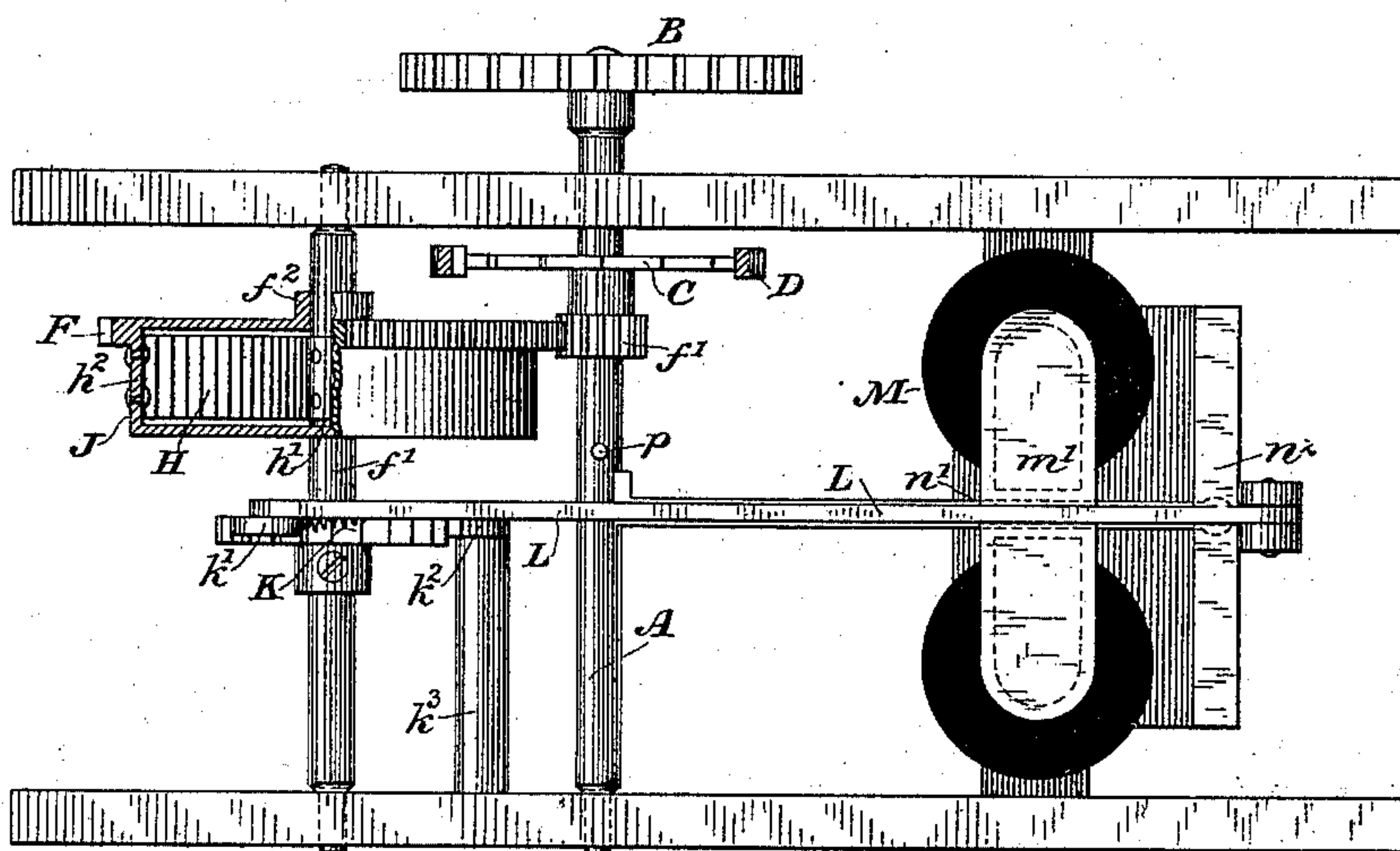


Fig. 2.



Witnesses

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WINDING DEVICE FOR PRINTING-TELEGRAPHS.

SPECIFICATION forming part of Letters Patent No. 316,695, dated April 28, 1885.

Application filed August 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY VAN HOEVENBERGH, a citizen of the United States, residing in Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Electric Winding Devices for Printing-Telegraphs, of which the following is a specification.

My invention relates to the class of apparatus employed for affording a printing-telegraph receiving-instrument the power necessary to actuate it when the escapement device is operated.

The object of the invention is to provide a convenient and efficient method of winding the spring or weight by means of which the instrument is actuated through the agency of operations performed at the transmitting-station; and the invention has for its further object to combine with the winding device a unison device which may be conveniently brought into operation for the purpose of arresting the type-wheel at its unison-point whenever it is desired.

The invention consists in organizing the apparatus in substantially the following manner: In connection with any convenient form of escapement-anchor and scape-wheel of a printing-telegraph instrument there is employed a train of gearing designed to be actuated by a spring or weight. This spring or weight is organized in such a manner that it may be wound up by the vibrations of the armature of an electro-magnet which is included in an independent circuit. This electro-magnet is designed to be vitalized by a succession of electric impulses whenever it is necessary to wind the spring, and these impulses are transmitted by means of a suitable circuit-closing key located at the transmitting-station. A polarized armature is applied to the poles of the electro-magnet which is thus employed for winding the spring or weight, and the armature is impelled in one direction or the other, accordingly as the electro-magnet is vitalized by a current transmitted through its coils in one direction or the opposite. A unison-stop is carried upon the type-wheel shaft, or upon any other convenient shaft of the re-

ceiving-instrument, and when the polarized armature is in one of its two positions it stands in the path of the unison-stop and serves thus to arrest the type-wheel at its unison-point. When, however, the armature is in the other of its two positions, it will be out of the path of the unison-stop, and the type-wheel is permitted to revolve freely.

In the accompanying drawings, Figure 1 is a side elevation of such parts of a printing-telegraph instrument as are necessary to illustrate my invention, together with the devices employed for winding the same. Fig. 2 is a plan view of the same, partly in section.

Referring to the drawings, A represents the type-wheel shaft, upon which is carried a type-wheel, B. A scape-wheel, C, is also carried upon the shaft A, and this scape-wheel, together with the type-wheel and its shaft, are permitted to revolve step by step by the action of an escapement-anchor, D. The escapement-anchor is actuated by means of two electro-magnets, E' and E², acting upon an armature, e, in the manner well understood.

The force required for actuating the type-wheel shaft is derived from a gear-wheel, F, which meshes with a pinion, f', carried upon the type-wheel shaft. There may, however, intervene between the gear F and the pinion f' any desired number of toothed wheels, for the purpose of multiplying the revolutions obtained from a single revolution of the wheel F. The wheel F is carried upon a sleeve, f², surrounding the shaft or arbor f³. A spring, H, has its inner end, h', fastened to the arbor, and the remaining end, h², of this spring is secured to a suitable drum or inclosing-case, J, secured to the wheel F. If, therefore, the arbor f be revolved in the direction indicated by the arrow independently of the wheel F, the spring will be wound in a manner well understood. For the purpose of thus winding the spring, a ratchet-wheel, K, is secured to the arbor f³, and a pawl, k', carried upon a lever, L, is employed for actuating this ratchet-wheel. The to-and-fro movements of the pawl and lever which are required for driving the ratchet-wheel are obtained by means of the action of an electro-magnet, M,

which is designed to be included in an independent circuit from the other electro-magnet of the instrument. An armature, m' , is for this purpose carried upon the lever L and applied to the poles of the electro-magnet M . When, therefore, the electro-magnet is vitalized, the lever is actuated in opposition to the tension exerted by a spring, s' , applied thereto, and the spring H' is wound. A retaining pawl or dog, k^2 , is supported from the frame of the instrument by means of a stud, k^3 , and this pawl serves to retain the ratchet-wheel in the advance positions which it is caused to assume by the action of the pawl k' . It will be understood, therefore, that by transmitting a series of impulses through the electro-magnet M the spring H will be wound. The length of the spring may be such as to serve to actuate the instrument for any required time; but in practice it may be found desirable to transmit impulses continuously through the coils of the electro-magnet M during the operation of the instrument, thus insuring that the spring shall at all times be sufficiently wound.

For the purpose of arresting the type-wheel at its unison-point when it is so desired, a polarized armature, n' , is applied to the electro-magnet M . This armature is pivoted to an extension, n^2 , of the back piece of the electro-magnet, and it extends between the poles to which the armature m' is applied. A current transmitted through the coils of the electro-magnet M in a given direction will cause the armature n' to be impelled in one direction, while currents in the opposite direction will impel the armature in the opposite direction.

Upon the type-wheel shaft A is carried a unison-stop, p , and it is designed that the armature n' shall stand in the path of this unison-stop when it is in one of its two positions, but shall be out of the path of the same when in its second position. Thus when the armature is in the position shown in the drawings it will not arrest the type-wheel shaft, but if a current of the proper character—say a positive current—be sent through the electro-magnet M , then the armature will be impelled into the path of the stop p , and thus serve to arrest the type-wheel at its unison-point.

I claim as my invention—

1. The combination, substantially as herein-

before set forth, with a type-wheel shaft, a scape-wheel, an escapement-anchor applied thereto, and an electro-magnet for actuating the same, of a spring or weight for actuating said shaft, and an independent electro-magnet included in an independent main line and its armature-lever for winding said spring or weight.

2. The combination, substantially as hereinbefore set forth, in a printing-telegraph instrument, with the type-wheel shaft, and means, substantially such as described, for permitting a step-by-step movement of the same, of a spring or weight for actuating said type-wheel shaft, a ratchet-wheel and pawl for winding said spring or weight, an electro-magnet included in an independent main line, its armature and armature-lever serving to actuate said pawl and at each successive movement in one direction to impart increased driving-power to said spring or weight, and a retaining pawl or dog applied to said ratchet-wheel.

3. The combination, substantially as hereinbefore set forth, of the escapement device of a printing-telegraph instrument, a spring or weight for actuating the same, an electro-magnet for winding said spring or weight, a unison-stop for said type-wheel, and an independent armature applied to said electro-magnet for arresting the type-wheel at its unison-point.

4. The combination, substantially as hereinbefore set forth, with the escapement device of a printing-telegraph instrument and a spring or weight for actuating the type-wheel of the instrument, of an electro-magnet, its armature and armature-lever for winding said spring or weight, a unison-stop applied to the type-wheel shaft of said instrument, and an independent armature applied to said electro-magnet, and serving to intercept the path of said unison-stop when said electro-magnet is vitalized by a current of a given character.

In testimony whereof I have hereunto subscribed my name this 26th day of June, A. D. 1884.

HENRY VAN HOEVENBERGH. [L. S.]

Witnesses:

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