(No Model.)

H. VAN HOEVENBERGH.

TYPE WHEEL FOR PRINTING TELEGRAPHS.

No. 316,683. Patented Apr. 28, 1885.

Fig. 1.

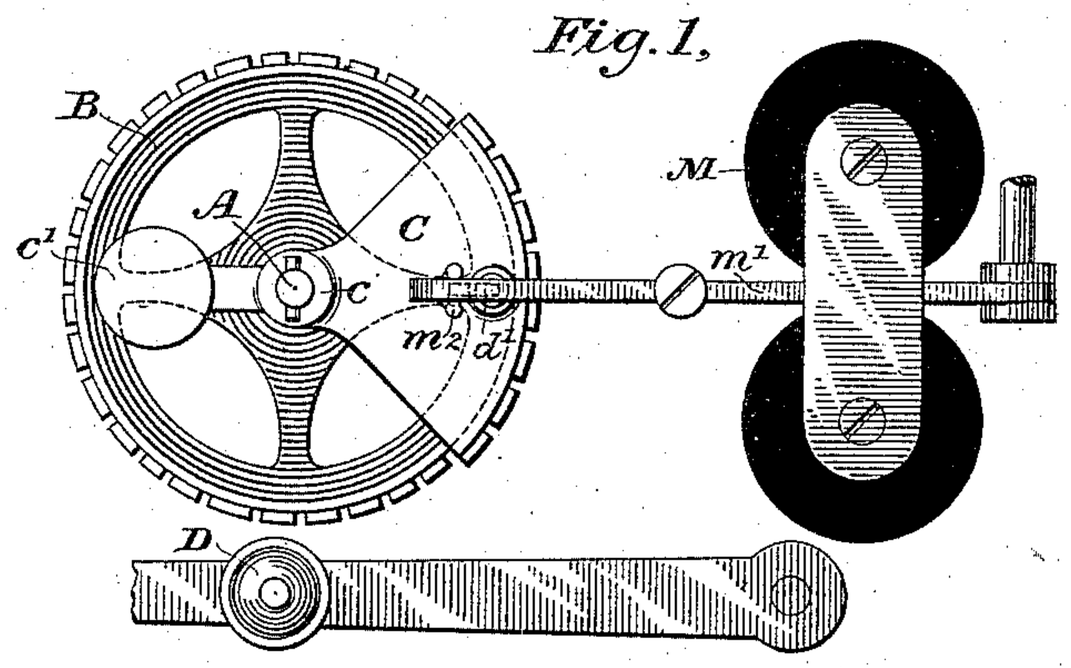


Fig. 2.

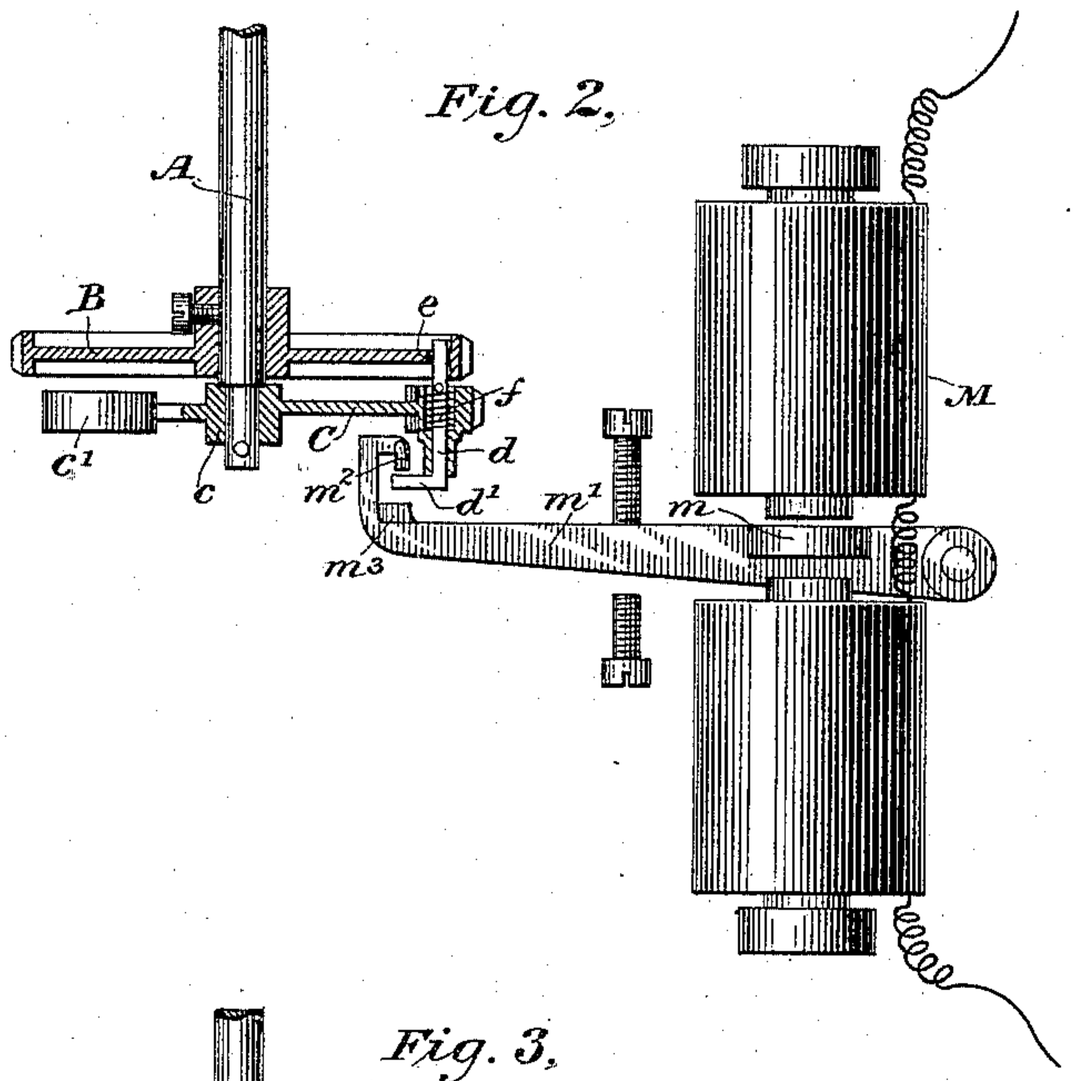
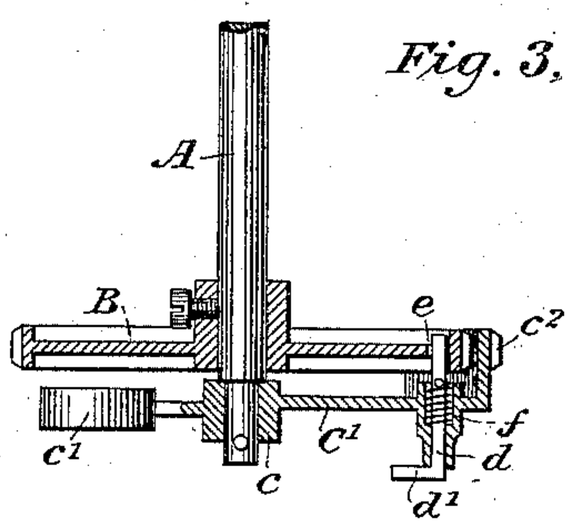


Fig. 3.



Witnesses

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TYPE-WHEEL FOR PRINTING-TELEGRAPHS.

SPECIFICATION forming part of Letters Patent No. 316,683, 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 Type-Wheels for Printing-Telegraph Instruments, of which the following is a specification.

My invention relates to the construction and organization of type-wheels for printing-telegraph receiving-instruments.

The object of the invention is to provide means for increasing the number of type which are available for the purpose of effecting impressions in a printing-telegraph instrument without increasing the number of type-wheels or extending the dimensions of the same.

The invention consists in combining, with a type-wheel of the usual construction, a segment of a type-wheel which, while carried upon the same axis, is loosely supported and may or may not be caused to engage with and be moved by the type-wheel. When it is not so engaged, impressions are taken from the type-wheel in the usual manner. If, however, the segment be locked to the type-wheel, it will be revolved therewith and impressions will be taken from the segment, to the exclusion of the characters which are carried upon the portion of the type-wheel corresponding to or parallel with the movable segment. For this purpose the movable segment is constructed of greater diameter than the type-wheel and projects slightly beyond it, so that when the printing-platen is actuated an impression will be taken therefrom and the paper tape will be prevented from striking against the type carried upon the corresponding portion of the type-wheel. A polarized electro-magnet is employed for locking and unlocking the type-wheel segment, and by means of a current of a given polarity the armature of this electro-magnet is caused to withdraw a locking-pin applied to the same and to hold the same out of engagement with the type-wheel, and at the same time to retain the movable segment in a given position. A current of the opposite polarity, however, permits the pin to again engage the type-wheel, thus locking the two parts together, and at the same time permitting the segment to revolve with the type-wheel.

In another application of even date herewith, and bearing Serial No. 139,881, certain devices are shown and described in some respects resembling those shown and described herein. I do not therefore herein claim anything shown, described, and claimed in such other application and not hereinafter specifically claimed.

In the accompanying drawings, Figure 1 is an elevation of the type-wheel in connection with such portions of the mechanism of a printing-telegraph instrument as are necessary to illustrate my invention, and Fig. 2 is a side view of the type-wheel. Fig. 3 shows a modified form of segment.

Referring to the drawings, A represents a type-wheel shaft, upon which is rigidly mounted a type-wheel, B. The shaft is provided with any suitable well-known means for advancing the type-wheel step by step, and the type-wheel is itself of the usual construction.

A type-wheel segment, C, is carried upon a sleeve, *c*, loosely surrounding the type-wheel shaft A. This segment is designed to be locked to the type-wheel, when the latter has been arrested in a given position, by means of a pin, *d*, extending through the type-wheel segment C and entering an aperture, *e*, formed in the type-wheel B. The pin *d* is normally pressed toward the type-wheel by means of a suitable spring, *f*. The segment C is formed in the arc of a circle and may be of any required length, and it is designed to carry such characters as are employed in printing less frequently than those which are carried upon the main type-wheel B. The section of the type-wheel B which is not covered by the segment C, when the latter is locked thereto, preferably carries those characters which are desired more frequently than the characters carried upon the remaining portion of the type-wheel B. The type-wheel segment C is constructed in the form of the arc of a circle having a slightly greater radius than that of the type-wheel B, so that it projects slightly beyond the periphery of the type-wheel. If, therefore, the printing-platen D of the instrument be impelled toward the type-wheel when confronted by the segment C, an impression will be taken of a character carried upon that segment, to the exclusion of the character pre-

sented by the type-wheel B, for the reason that the platen will be arrested before it has caused the paper tape to be brought into contact with the type-wheel.

The parts are so organized that the segment, when it is not locked with the type-wheel, will be held in such a position that it will be out of the path of the printing-platen.

For the purpose of locking and unlocking the type-wheel segment by means of the pin *d*, I employ, preferably, a polarized electro-magnet, M, having a permanently polarized armature, *m*, carried upon an armature-lever, *m'*. At the extremity of the lever *m'* is carried a hook or fork, m^2, which is designed to engage an extension, *d'*, of the pin *d* when the armature-lever is drawn away from the type-wheel. A current of a given polarity will impel the armature in one direction and a current of the opposite polarity in the opposite direction. The electro-magnet is preferably included in an independent conductor; but it may, if it is so desired, be included in the main-line circuit. In the latter case the escapement-anchor is preferably actuated in one direction by currents of either polarity and in the other direction by a retractile spring. When, therefore, it is desired to disengage the segment C from the type-wheel B, it is necessary only to arrest the type-wheel in a predetermined position, so that the fork m^2, carried upon the armature-lever *m'*, will be opposite the pin *d*, and to then transmit a current of the proper polarity—say positive—through the electro-magnet M, thus causing the armature *m* to be impelled away from the type-wheel. The fork m^2 then engages the projection *d'*, carried upon the pin *d*, and withdraws the latter from the aperture *e*, formed in the type-wheel B. The armature will then retain its position away from the type-wheel until it is again actuated by a current of the opposite polarity—that is to say, negative. The segment will therefore not only be unlocked from the type-wheel, but it will be retained in a given position by reason of the engagement of the pin *d* between the arms of the fork m^2. When, however, it is desired to again cause the segment to be engaged, the type-wheel is brought into such a position that the hole *e* will be in the path of the pin *d*, and the armature is then caused to move toward the type-wheel B. If, however, it should chance that the type-wheel has been thrown out of unison, the pin will rest against the surface of the type-wheel and the segment will be prevented from turning by reason of the pin *d* striking against a shoulder, m^3, carried upon the armature-lever *m'*. As soon, however, as the type-wheel has been brought into such position that the pin may enter the hole *e*, then the forward movement of the pin will cause it to pass out of the path of the shoulder m^3.

For the purpose of maintaining the balance of the wheel when the segment C is locked thereto, a counterpoise, *c'*, is applied to the sleeve *c* upon the side opposite the segment C.

It will be evident that the type carried upon the segment C, as shown in Figs. 1 and 2, are caused to stand in a different plane from that occupied by the type upon the wheel B; but, if it is so desired, a construction such as indicated in Fig. 3 may be employed, whereby the type may be moved into the same plane as the type of the type-wheel when it is locked thereto. This modification consists in forming the periphery c^2 of the segment C' of sufficient width to project over the periphery of the corresponding portion of the type-wheel.

Any suitable form of unison device may be adapted to this instrument as found convenient.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, with a type-wheel and means for actuating the same, of an independently-movable type-wheel segment, and means, substantially such as described, for locking said segment to and unlocking it from said type-wheel.

2. The combination, substantially as hereinbefore set forth, of a type-wheel, a type-wheel segment having a greater radius than said type-wheel, and means, substantially such as described, for locking and unlocking said segment from said type-wheel.

3. The combination, substantially as hereinbefore set forth, with a type-wheel, of a type-wheel segment, means for locking said segment to said type-wheel, and a counterpoise applied to said segment.

4. The combination, substantially as hereinbefore set forth, with a type-wheel shaft and type-wheel rigidly secured thereto, of a sleeve surrounding said shaft, a type-wheel segment carried upon said sleeve, a pin for locking said segment to said type-wheel, and an electro-magnet for controlling said pin.

5. The combination, substantially as hereinbefore set forth, with a type-wheel and means for actuating the same, of a type-wheel segment having a greater radius than said type-wheel, a pin for locking said segment to said type-wheel, an electro-magnet, its armature and armature-lever, and a hook carried upon said lever, which hook serves to engage said pin and to unlock said segment from said type-wheel when the latter has been arrested in a predetermined position and the electro-magnet is vitalized, substantially as described.

6. The combination, substantially as hereinbefore set forth, of a type-wheel, a type-wheel segment having a greater radius than said type-wheel, means for locking said segment to and unlocking it from said type-wheel, and a printing-platen for effecting impressions from said type-wheel and type-wheel segment, substantially as described.

7. The combination, substantially as hereinbefore set forth, with a type-wheel and a type-wheel-segment, of a pin for locking said segment to said type-wheel, a spring normally

tending to press said pin toward said type-wheel, an electro-magnet, its armature and armature-lever for controlling the movements of said pin, a catch carried upon said lever for engaging said pin when said electro-magnet is magnetized to a given polarity, and a shoulder carried upon said lever, which shoulder extends into the path of said pin when said electro-magnet is magnetized with the opposite polarity, provided said pin is not in position to lock said type-wheel and segment.

8. The combination, substantially as hereinbefore set forth, with a type-wheel, a type-wheel segment, and means, substantially such as described, for locking the two together, of an electro-magnet, its armature and armature-lever, a catch carried upon said lever for engaging said pin, which catch retains said pin and prevents said segment from being moved when the latter is unlocked from said type-wheel.

9. The combination, substantially as hereinbefore set forth, of a type-wheel and type-wheel segment, a pin for locking the two together, and an electro-magnet, its armature and armature-lever, which lever permits said type-wheel and segment to be locked when said lever is in a given position, and which serves to prevent said segment from being actuated when said segment is unlocked from said type-wheel.

In testimony whereof I have hereunto subscribed my name this 14th day of April, A. D. 1884.

HENRY VAN HOEVENBERGH. [L. S.]

Witnesses:

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