

(No Model.)

H. VAN HOEVENBERGH.

PLATEN SHIFTING DEVICE FOR PRINTING TELEGRAPHS.

No. 316,685.

Patented Apr. 28, 1885.

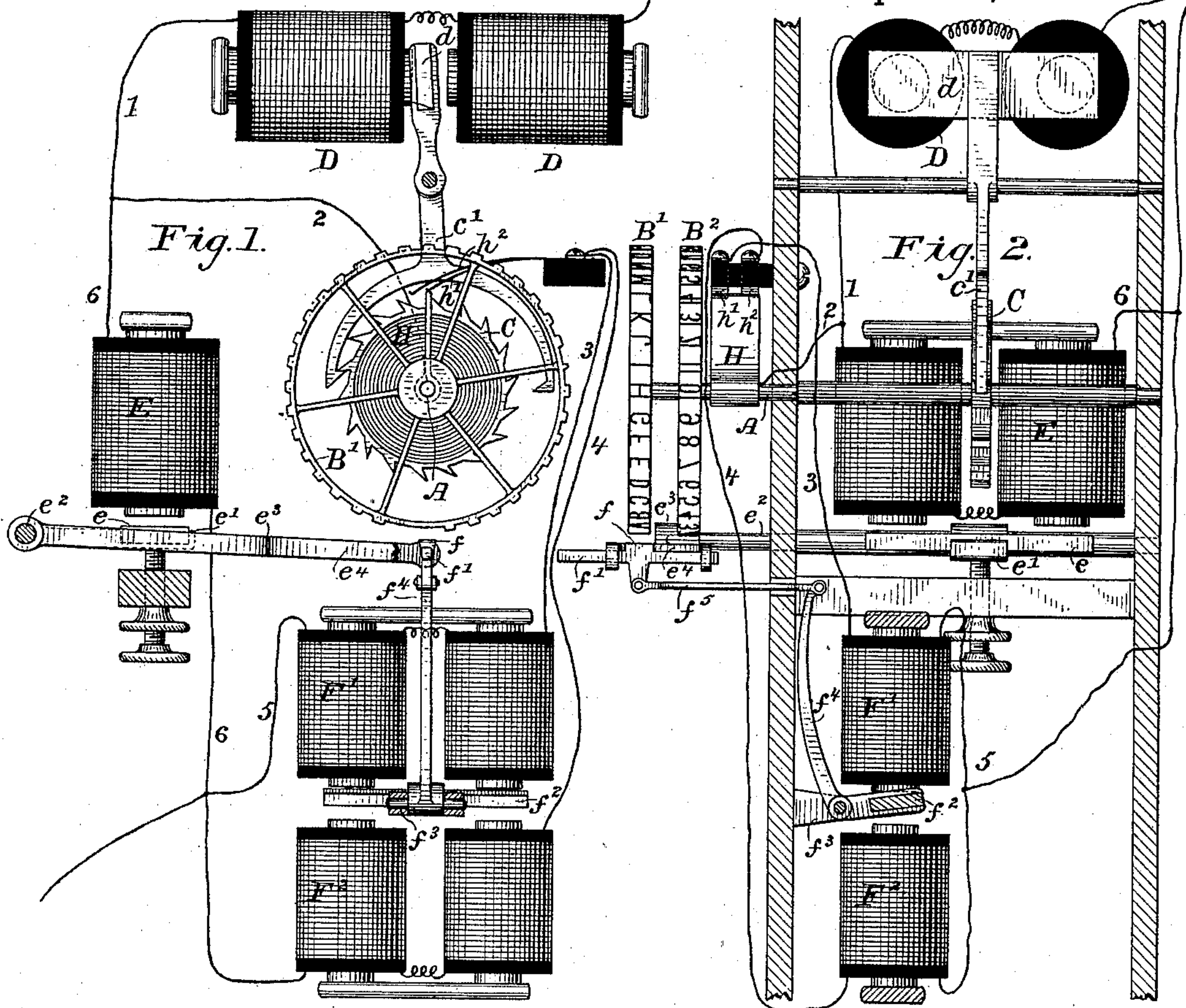


Fig. 3.

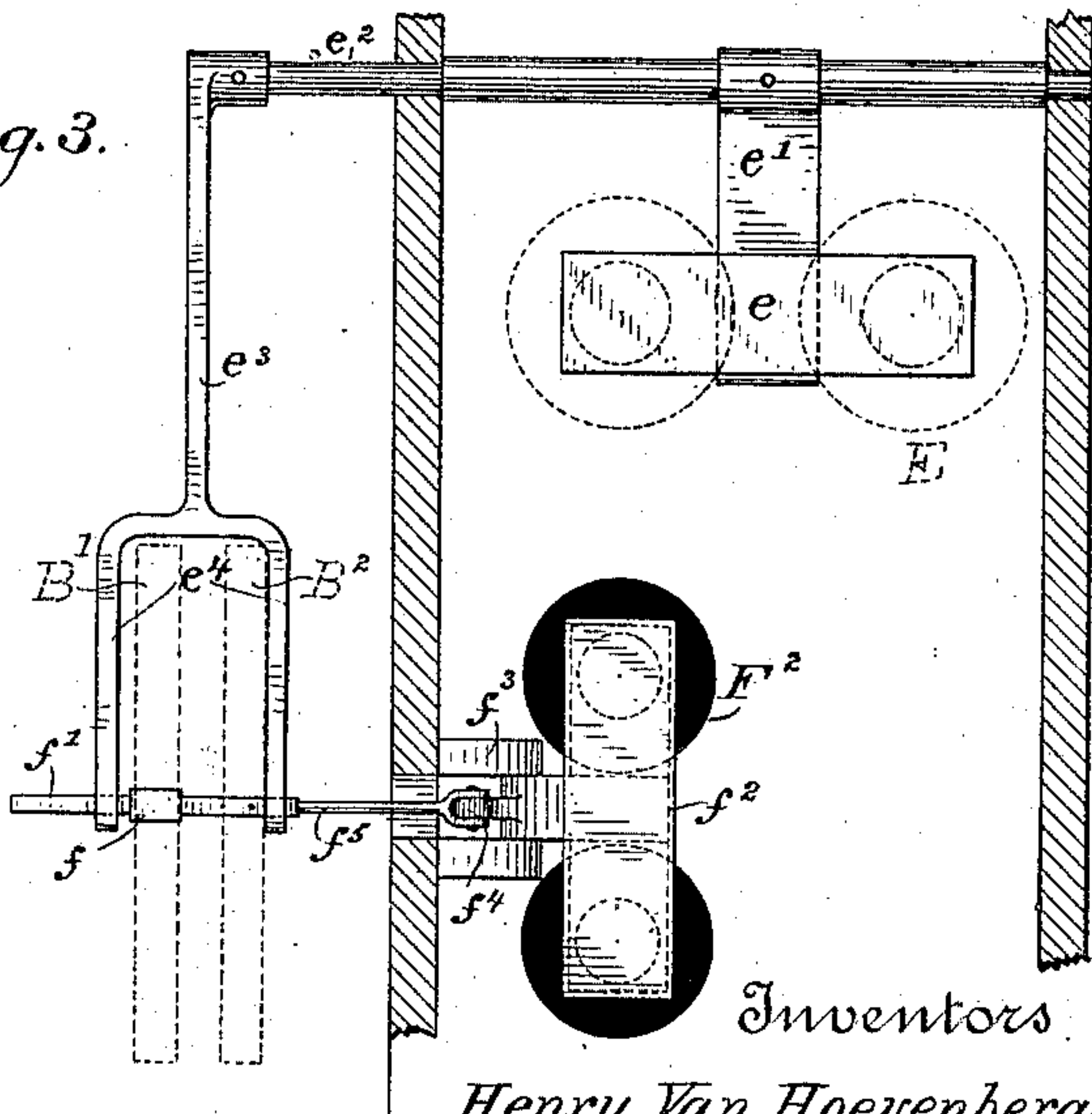
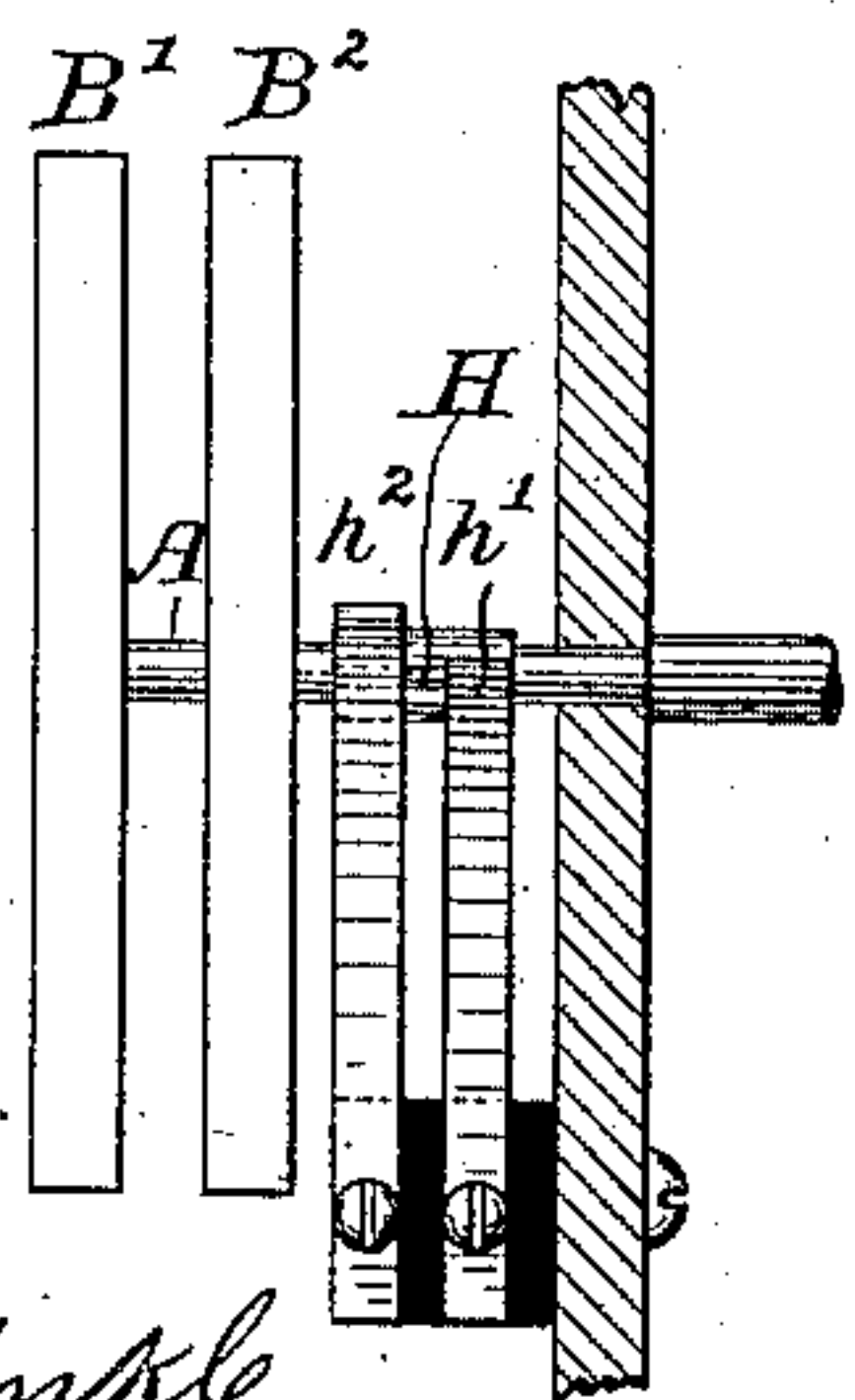


Fig. 4.



Witnesses

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PLATEN-SHIFTING DEVICE FOR PRINTING-TELEGRAPHS.

SPECIFICATION forming part of Letters Patent No. 316,685, 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 Platen-Shifting Devices for Printing-Telegraphs, of which the following is a specification.

My invention relates to the class of devices employed for the purpose of determining from which of two type-wheels in a printing-telegraph instrument impressions shall be taken.

The object of the invention is to provide simple and efficient means for moving a printing-platen from the position which it occupies when printing from either one of two type-wheels into a corresponding position with reference to the other type-wheel, and to cause it when in position to effect impressions from either type-wheel, to remain undisturbed until it is purposely transferred to the other type-wheel.

The invention consists in constructing the apparatus in substantially the following manner: Two type-wheels are mounted rigidly upon a shaft, which is designed to be rotated in any convenient manner. A single printing-platen, capable of moving laterally from the plane of one type-wheel into the plane of the other, is applied to these type-wheels. Two electro-magnets are employed for controlling the position of this platen, and these magnets are respectively included in two shunt or branch circuits of the main line. The connections of these circuits are respectively completed at different points in the revolution of the type-wheel shaft. During the normal operation of revolving the type-wheel neither electro-magnet becomes vitalized sufficiently to operate the platen-shifting device. When, however, the type-wheel is arrested in such a position that one or the other of the shunt or branch circuits is completed, then, either by means of the prolonged impulse thus occasioned, or, if it is so desired, by means of a current of increased strength, the electro-magnet which is included in that circuit becomes vitalized, and the platen is caused to stand in the plane of the corresponding type-wheel. The platen will remain in this position until the type-wheel shaft is subsequently arrested in

position to place the other electro-magnet in circuit. This electro-magnet is employed in like manner for retransferring the platen to its position in the plane of the other type-wheel. Impressions are effected from the type-wheels by means of a press-lever, to which the movable platen is applied, and an electro-magnet designed to be actuated by prolonged impulses or in any other suitable manner.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation of the essential parts of a printing-telegraph instrument, and Fig. 2 is an end view of the same. Fig. 3 is a plan view of the press-lever and the movable platen, and Fig. 4 is a like view of the type-wheels and the circuit-controlling device.

Referring to the drawings, A represents the type-wheel shaft, upon which are carried two rigid type-wheels, B' and B². One of these type-wheels is designed to carry the letters of the alphabet which are more commonly employed, while the other is designed to carry figures, certain marks of punctuation, and the remaining letters of the alphabet.

Applied to the shaft A is a scape-wheel, C, which is designed to be controlled by means of an escapement-anchor, c', which in turn is controlled by an electro-magnet, D, to which is applied the polarized armature d.

The movements of the type-wheels are controlled by means of currents of alternating polarity transmitted through an electro-magnet, D, in a manner well understood.

Impressions are effected from the type-wheels through the instrumentality of an electro-magnet, E, which is included in the same circuit with the electro-magnets D. To the electro-magnet E there is applied an armature, e, carried upon a lever, e'. The axis e² of the lever e' carries an arm or lever, e³, which supports beneath the type-wheels a movable platen, f.

The platen f is employed for effecting impressions from one or the other of the two type-wheels B' or B², accordingly as it is caused to stand in the plane of one or the other. For this purpose it is carried upon a movable bar, f', the respective extremities of which pass through the arms of a fork, e⁴, carried upon the lever e³. Two electro-magnets, F' and F²,

are employed for controlling the position of the platen f . To these electro-magnets there is applied an armature, f^2 , which is pivoted to a stud, f^3 , extending from the frame of the instrument. An arm, f^4 , extending from the armature f^2 , is coupled to the platen-rod f' by means of a link, f^5 .

When the armature-lever f^2 is adjacent to the electro-magnet F' , the platen f is caused to stand beneath the type-wheel B' . When, on the other hand, the armature f^2 is drawn toward the electro-magnet F^2 , the platen is moved from the type-wheel B' into the plane of the type-wheel B^2 , and in whichever position the platen is placed it is designed that it shall remain until it is purposely actuated. For this purpose the armature f^2 is preferably balanced by means of the arm f^4 , so that when the armature is toward the electro-magnet F' the center of gravity will fall upon one side of the axis of the armature, and when its armature is in its other position the center of gravity will fall upon the other side of the axis.

The residual magnetism of the electro-magnet toward which the armature is impelled may, if desired, be employed for the purpose of assisting in retaining the armature in proximity thereto.

The means whereby the electro-magnet F' or F^2 is vitalized when it is desired, consist of two contact-springs, h' and h^2 , which are applied to a contact-arm, H , carried upon the type-wheel shaft. One of the springs, h^2 , extends beyond the other, h' , so that during the revolution of the shaft the arm H will first make contact with the spring h' , and after having left that spring with the second spring, h^2 .

The contact-plate H is connected by means of a conductor, 2, with the conductor 1, leading from the escapement-magnets D . The contact springs or brushes h' and h^2 are respectively connected by means of conductors 3 and 4 with the coils of the electro-magnets F' and F^2 . The remaining terminals of the coils of these electro-magnets are connected, through a conductor, 5, with the conductor 6, leading from the press-magnet E to the main line. The electro-magnets F are thus included in branch or shunt circuits extending around the press-magnet E ; and it will be seen, therefore, that during the revolution of the type-wheel shaft a circuit will be closed at one point through the electro-magnet F' , and at a second point through the electro-magnet F^2 . These two magnets are intended to respond only to currents of greater duration than are normally employed for operating the escapement-anchor and the press-magnet; but they may respond to currents of greater strength, but not necessarily of greater duration. If, therefore, the platen should stand beneath the type-wheel B' and it were desired to transfer it to the type-wheel B^2 , it would be necessary only to arrest the shaft in such a position that the plate H should make contact with the brush h^2 . The shunt-circuit would then be closed through the electro-magnet F^2 , and the armature f^2

would be impelled in the proper direction to move the platen into the plane of the type-wheel B^2 .

When it is desired to retransfer the platen to the type-wheel B' , it is necessary only to arrest the type-wheel in such position that the circuit will be closed through the electro-magnet F' , and cause this magnet to be vitalized in the same manner.

In practice I prefer to place the plate H , with reference to the springs h' and h^2 , so that one of the springs will be in contact with the plate H when the type-wheels present their unison-point to the platen, and the other when a point immediately after the unison-dot is above the platen.

As already stated, it may be found desirable to employ for shifting the platen strong currents of less duration than those which are employed for vitalizing the press-magnet; but the several classes of currents may be varied as found convenient.

I claim as my invention—

1. The combination, substantially as hereinbefore set forth, with two type-wheels and a type-wheel shaft, of a movable platen, two electro-magnets for controlling the position of the same, two contact-points, a circuit-closing point applied to said contact-points, and means, substantially such as described, for causing said circuit-closing point to complete electric connections through said electro-magnets at different points in the revolution of said type-wheels.

2. The combination, substantially as hereinbefore set forth, with two type-wheels and a type-wheel shaft, of two contact-points, a circuit-closing point applied to both of said contact-points and moving with said type-wheels, which circuit-closing point makes contact with one of said contact-points at one point in the revolution of the type-wheels, and with the other contact-point in another point of the revolution of the same, two electro-magnets which are respectively included in conductors leading from said contact-points, and a movable platen which is caused to stand in the plane of one or the other of said type-wheels, accordingly as one or the other of said electro-magnets is vitalized.

3. The combination, substantially as hereinbefore set forth, with two type-wheels, a type-wheel shaft, and means, substantially such as described, for actuating the same, of a press-lever, a printing-platen movable in said lever and applied to said type-wheel, an electro-magnet and its armature for moving said platen into the plane of one of said type-wheels, a circuit-closing device controlled by the movements of said type-wheels, whereby said electro-magnet may be caused to be vitalized when said type-wheels are in a given position, and means, substantially such as described, for moving said platen into the plane of the other type-wheel.

4. The combination, substantially as hereinbefore set forth, with the type-wheel shaft

and two type-wheels of a printing-telegraph instrument, of a circuit-closing arm moving with said type-wheels, two circuit-closing springs, with which springs said circuit-closing arm makes contact at different points in the revolution of said type-wheels, and a platen-shifting device which is actuated in one direction when said circuit-closing arm makes contact with one of said springs, and in the opposite direction when it makes contact with the other of said springs.

5. The combination, substantially as hereinbefore set forth, with two type-wheels of a printing-telegraph instrument, of the press-lever, the platen f , movable in said lever, the

electro-magnets F' and F^2 and the armature f^2 , which electro-magnets and armature serve to move said platen from the plane of one type-wheel into the plane of the other, the circuit-closing arm H , and the contact-arms h' and h^2 , whereby the circuit-connections of either of said electro-magnets may be completed.

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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