

No. 685,390.

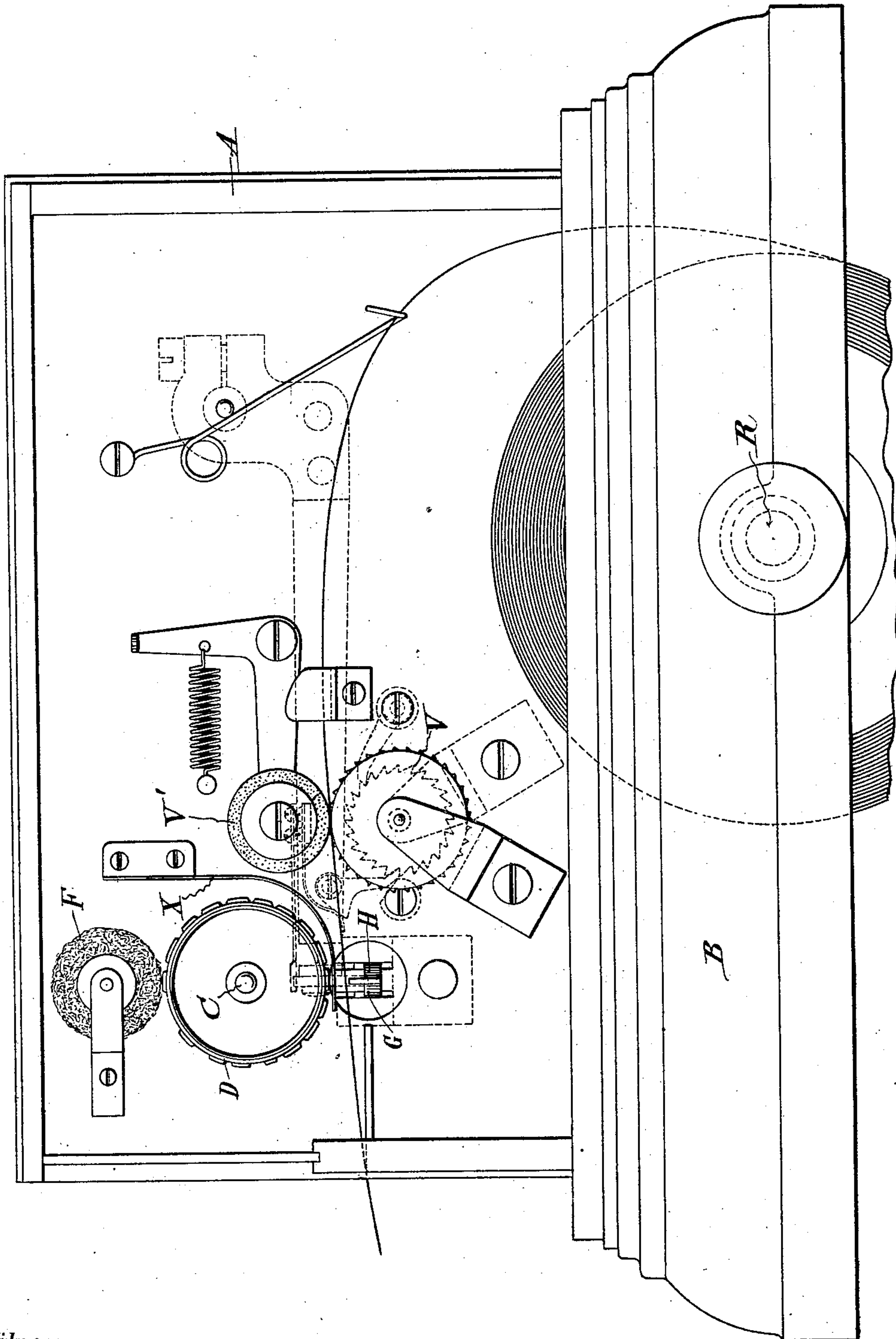
Patented Oct. 29, 1901.

J. E. WRIGHT.
PRINTING TELEGRAPH.
(Application filed Oct. 5, 1900.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1



Witnesses:

Raphael Ketter

John C. Kerr

John E. Wright, Inventor

by Ren. Page & Cooper Attys

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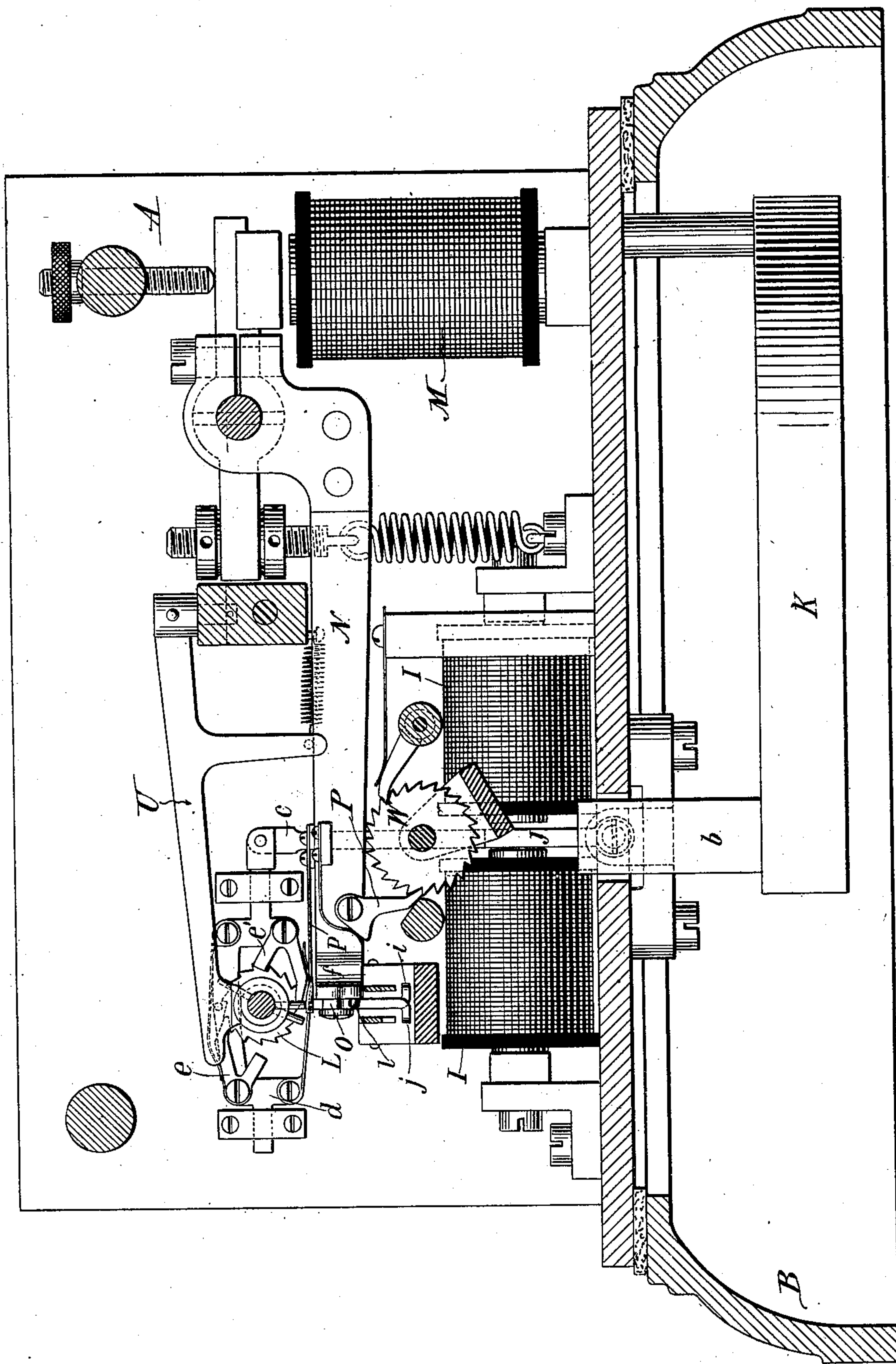
J. E. WRIGHT.
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(Application filed Oct. 5, 1900.)

(No Model.)

3 Sheets—Sheet 2.

Fig. 2



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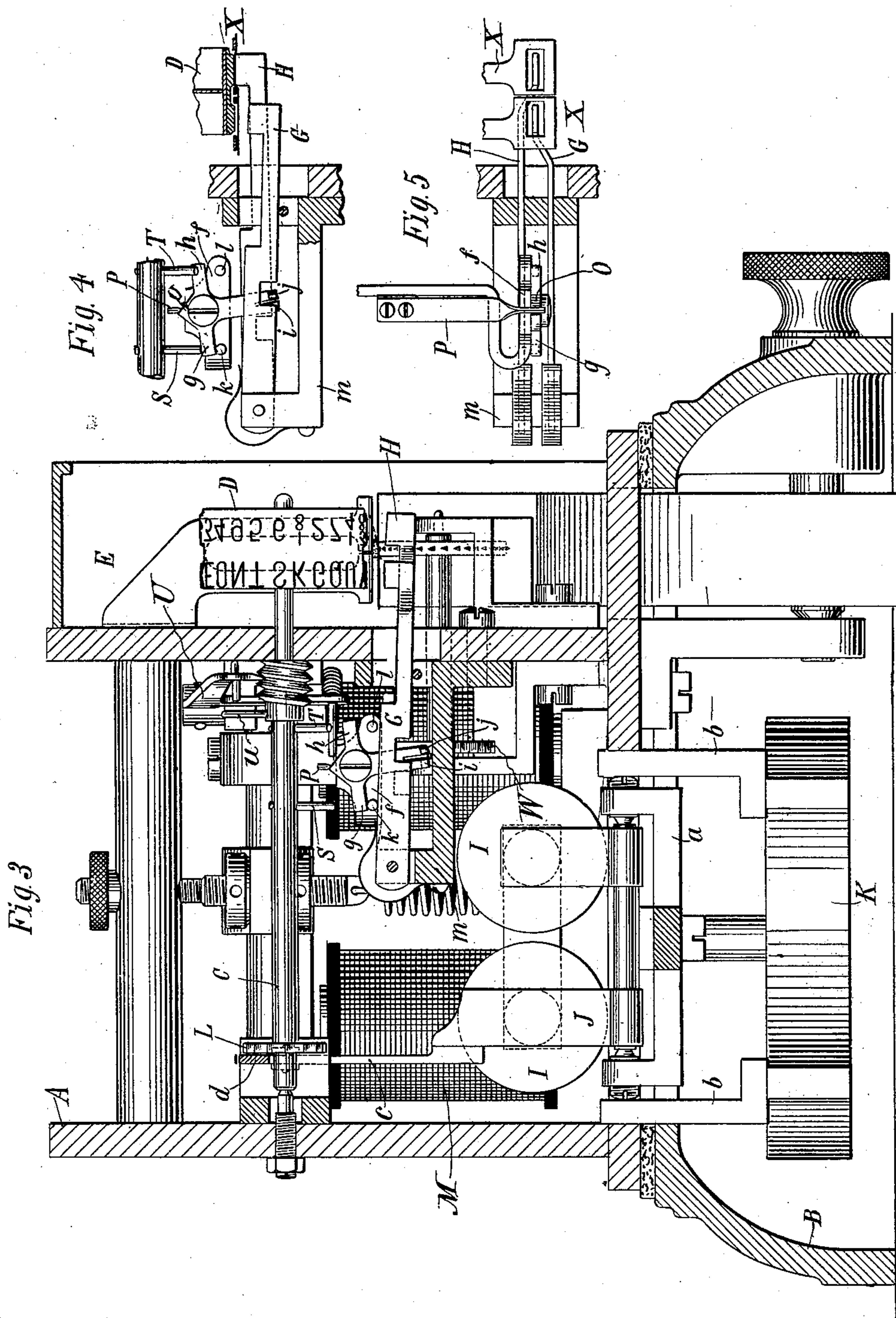
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(Application filed Oct. 5, 1900.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN E. WRIGHT, OF NEW YORK, N. Y.

PRINTING-TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 685,390, dated October 29, 1901.

Application filed October 5, 1900. Serial No. 32,167. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. WRIGHT, a citizen of the United States, residing at the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Printing-Telegraphs, of which the following is a specification, reference being had to the drawings accompanying and forming a part of the same.

The invention subject of the present application for Letters Patent is a new and improved telegraphic instrument of the class known as "stock-tickers" or "tape-printers," in which the printing-surface is a long narrow tape which is moved step by step across a given point, at which it receives the impressions from the type on a wheel.

The improvement consists in features of construction which contribute to the more rapid and perfect operation of the apparatus and which will be described by reference to the drawings.

Figure 1 is a side view of the instrument as viewed from the outside of the case. Fig. 2 is a similar view of the working parts with the side of the casing removed. Fig. 3 is an end view of the instrument with portions of the sides of the casing in section. Figs. 4 and 5 are views of portions of the printing mechanism detached from the main portion of the instrument.

As is customary in instruments of this kind, the working parts are mainly contained in a suitable casing A. This is mounted on a hollow base B, adapted to be placed on a convenient stand. The type-wheel shaft C projects through the side of the instrument and carries the type-wheel D at its end in a glass-faced compartment E. In the same compartment are arranged the tape-feeding wheels and the inking-roller F, and through a slot in the side wall of the case extend the ends of the two printing-levers G H. Thus all of the parts to which it is necessary to have frequent access are brought within easy reach for such manipulation and adjustment as may be required without the necessity of opening the case.

The working parts of the instrument and their mode of operation are as follows: I I are the magnets which operate the escapement. Between the poles of these magnets is an armature J, of substantially U shape, pivoted in a non-magnetic frame *a* and polar-

ized by the presence of two projections *b b* from a permanent magnet K, secured under the case. From one of the legs of the polarized armature extends an arm *c*, the upper end of which is pivoted to the sliding frame *d*, carrying the two pawls *e e'*. These latter are pivoted to said frame and engage alternately with and on opposite sides of the ratchet-wheel L and operate to move the same step by step when the frame is reciprocated by the oscillation of the armature J. This form of escapement is now well known, having been disclosed by me in prior patents, and is particularly effective in the instrument herein shown; but other forms of escapement may be employed without departing from the invention. As is customary in instruments of this class, a series of current impulses alternating in direction are transmitted over the line and caused to rotate the ratchet-wheel L, which, being fixed to the shaft C, sets the type-wheel D, bringing the desired character thereon into the printing position. The final and prolonged impulse acts to energize the printing-magnet M, which draws down its armature and raises the long end of the armature-lever N. This movement of the lever N effects the printing and also the feed of the paper by means of the following instrumentalities: To the end of the lever N is fixed an arm or plate *f*, to which is pivoted, so as to swing at right angles to the said lever, a bar or plate O, having four extensions or arms—two, *g h*, in the plane of oscillation and two others, *i j*, at right angles thereto and in opposite directions. In the plate *f* are set two stop-pins *k l*, with which the arms *g h* are adapted to engage, respectively, and a spring P, secured to the top of the lever N, bears down upon a cam at the top of the plate O and operates to retain one or the other arm in engagement with its pin, according to which side of the apex of the cam the spring may bear. Two parallel levers G H are pivoted to an arm *m*, secured to the frame or case of the instrument and extend at right angles to lever N out through the wall of the casing, where their ends are adapted to raise the paper up into contact with the characters on the type-wheel, as will be more fully described.

The type-wheel D has two rows of characters, one composed of letters and the other of figures, and printing is effected from one row or the other by raising one or the other

of the levers. To control this, two pins S T are set in the type-wheel shaft C at different angles, corresponding to two positions of the shaft, as determined by the ratchet-teeth, and in which blank spaces on the type-wheel are brought to the printing position. If now the plate O be in the position shown in Fig. 3, figures will be printed, because when the lever N is raised the arm *i* on plate O will engage with and lift the lever H, but not the lever G, for a notch in lever G lies directly over the arm *j* when the plate O is in the position shown. Should the next character to be printed be a letter or one in the other row on the type-wheel, the escapement is set so as to bring the pin T directly over the arm *h* of plate O. Then when the lever N is raised the pin and arm come into engagement and the plate O is upset or tilted, so that the arm *h* rests on the stop *l*, and in this position the plate is held until by a similar operation, effected by the pin S, it is returned to the position just considered. In its second position, with arm *h* resting on pin *l*, lever G, but not H, will be raised by the operation of lever N, because the pin *j* engages the lever G back of the notch, while in lever H a notch lies directly over pin *i*.

The paper tape is unwound from a reel R, mounted in the base of the instrument, and carried by suitable guides to the feed-rolls V V', the former of which is fixed to a shaft carrying a ratchet W, moved by a pawl *p*, carried by the lever N. Between the paper and the type-wheel are shields X of thin sheet metal having apertures in line with the two rows of characters on the type-wheel. The length and width of these apertures are slightly greater than those of the characters or types on the wheel; but the ends or faces of the levers G and H, which force the paper through the apertures and against the type and which constitute platens, are of much less width than the apertures and characters. In fact, I have found and I regard this as an important feature of my invention that the best results are obtained by making the printing-faces of the levers G H in the case of an instrument of substantially the dimensions shown in Fig. 5 as narrow or sharp as can be done without danger of cutting or punching the paper. By the use of such faces I obtain clearer impressions and avoid the liability of the paper catching in the apertures.

Any suitable unison device may be used with the instrument, that shown being the ordinary form, comprising a swinging arm U, engaging with a screw on the escapement-shaft and carrying a stud to engage with a unison-stop *u* on the escapement-shaft when the latter is set in the proper position to bring all of the instruments into unison. The arm U is raised out of engagement with the stop *u* by the armature-lever when the printing-magnet receives a prolonged impulse.

What I claim as my invention is—

1. In a printing-telegraph instrument, the combination with a type-wheel having two rows of characters, of a printing-magnet and armature-lever, two printing-levers provided with platens adapted to print from the two rows of characters respectively, a pivoted plate carried by the armature-lever and having arms adapted to engage with the two printing-levers respectively, according to the position in which said plate may be set, an escapement-wheel and a shaft therefor having pins or stops thereon adapted to set the plate in either of its two positions, as set forth.

2. In a printing-telegraph instrument, the combination with a type-wheel having two rows of characters, of a printing-magnet and armature-lever, two parallel printing-levers pivoted to oscillate in planes at right angles to that of the armature-lever, and provided with platens adapted to print from the two rows of characters respectively, a plate carried by the armature-lever having projections extending under the two printing-levers and pivoted to oscillate in a plane parallel with said levers, an escapement-wheel and a shaft therefor having pins or stops thereon adapted to engage with and shift the said plate, whereby it will be caused by the movement of the armature-lever to engage with either of the printing-levers and enter a notch in the other, according to the position in which it is set, as set forth.

3. In a printing-telegraph instrument, the combination with a type-wheel, of a shield having apertures which expose the characters on the wheel and one or more platens which force the paper through said apertures and against the face of the characters exposed thereby, the faces of the platens being much narrower than the characters, as set forth.

4. In a printing-telegraph instrument, the combination with a type-wheel, of a shield having apertures which expose the characters on the wheel, and one or more printing-levers, the ends of which force the paper through the apertures into contact with the characters on the type-wheel, and are much narrower than the said characters, as set forth.

5. In a printing instrument, the combination of a type-wheel, a shield arranged adjacent thereto and having an aperture through which a single type character on the wheel is exposed, and a platen arranged to force the paper through the aperture into engagement with the type-wheel, the face of the platen which passes through the aperture being narrow relative thereto, substantially as set forth.

JOHN E. WRIGHT.

Witnesses:

M. LAWSON DYER,
JOHN C. KERR.