

No. 889,787.

PATENTED JUNE 2, 1908.

I. KITSEE.

MEANS FOR PRODUCING TELEGRAPHIC TRANSMITTING TAPES.

APPLICATION FILED JAN. 5, 1905.

2 SHEETS—SHEET 1.

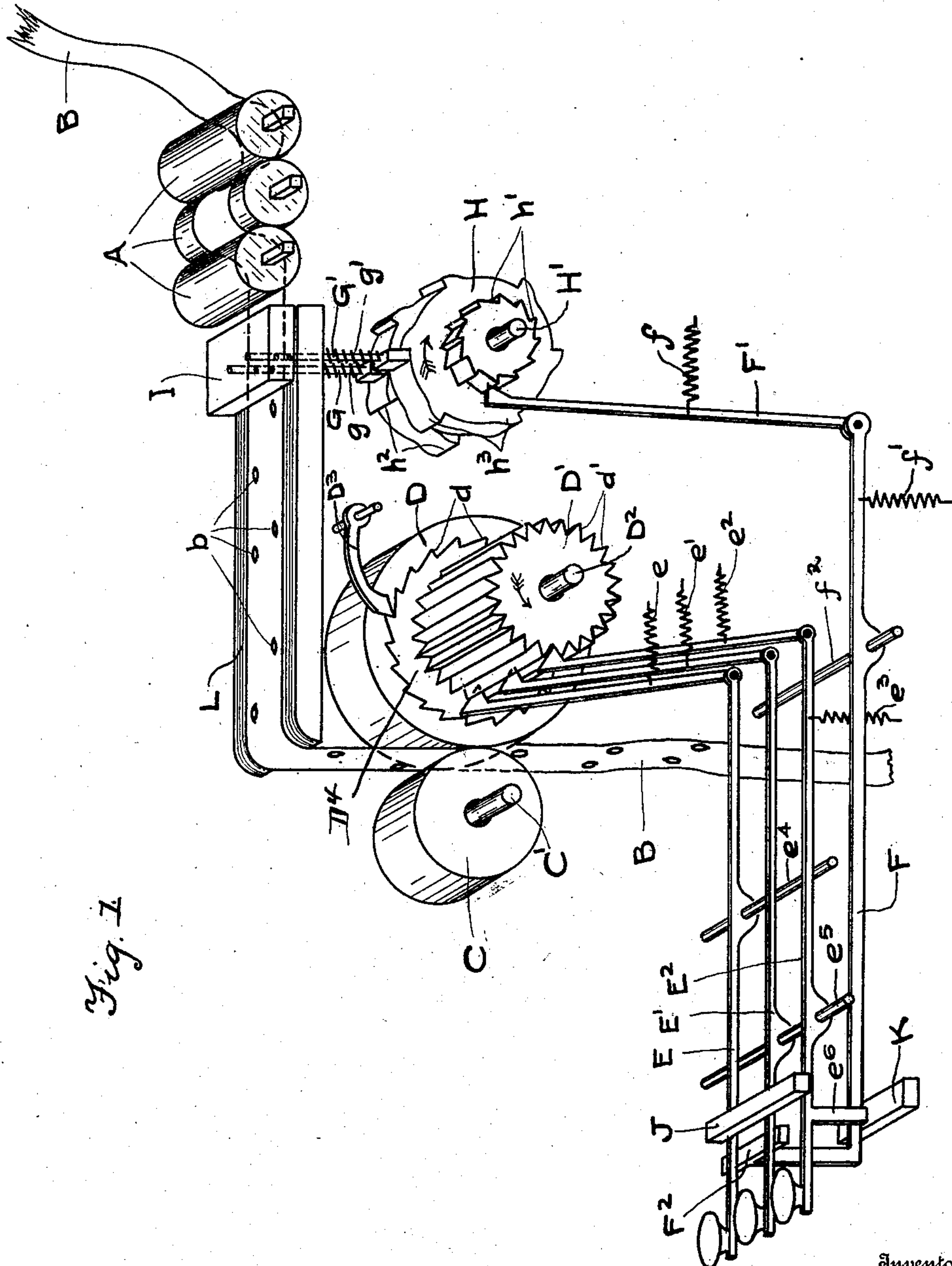


Fig. 1

Inventor

Witnesses:

Edith R. Stille
James Hokenack

I. Kitsee

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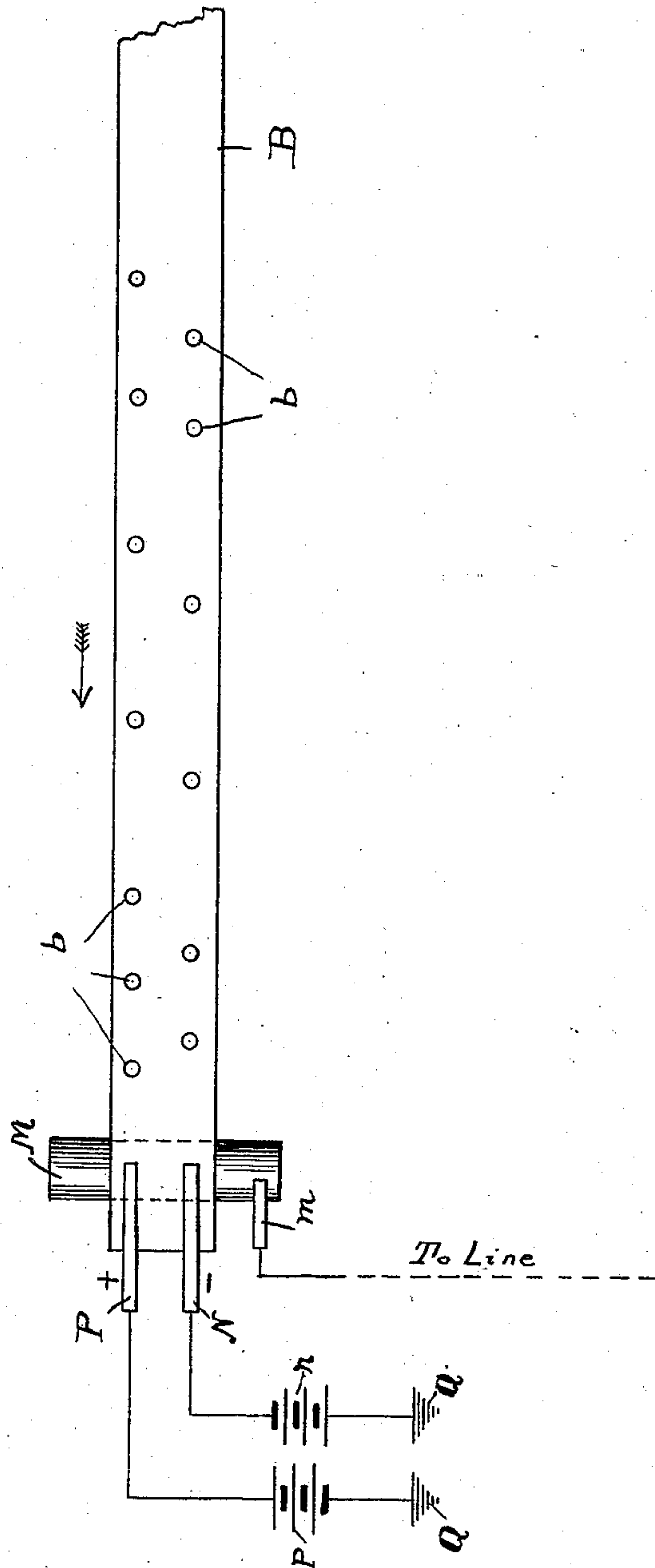
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2 SHEETS—SHEET 2.

Fig. 2.



Witnesses
Edith A. Stille
James Hobensack

Inventor
I. Kitsee

UNITED STATES PATENT OFFICE.

ISIDOR KITSEE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM J. LATTA, OF PHILADELPHIA, PENNSYLVANIA.

MEANS FOR PRODUCING TELEGRAPHIC TRANSMITTING-TAPES.

No. 889,787.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed January 5, 1905. Serial No. 239,802.

To all whom it may concern:

Be it known that I, ISIDOR KITSEE, of the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Means for Producing Telegraphic Transmitting-Tapes, of which the following is a specification.

My invention relates to an improvement in means for producing telegraphic transmitting tapes.

In Letters Patent No. 777,259, dated December 13th, 1904, I have described a method, with the aid of which true reversals may be transmitted over conducting lines, and which method has more special reference to submarine telegraphy.

In practice, the use of a double key for the transmission of the impulses in accordance with my code has some drawbacks, and it is the aim of my invention to produce a transmitting tape with the aid of a perforator in a manner so that intelligence may be electrically transmitted in accordance with the above named method automatically with the aid of this tape.

The underlying principle of the method as described in the above referred to Letters Patent consists therein, that first,—all impulses are of an alike duration and intensity; second,—after an impulse of one polarity an impulse of opposite polarity must always follow; third,—the different values between dots and dashes are indicated thereby, that a dot consists of one impulse and a dash of two impulses in quick succession. It is therefore only the difference in time lapsing between the different impulses which will enable the operator at the receiving end to distinguish between the symbol denoting a dot and the symbol denoting a dash. To produce a tape of a character so that this method should be carried out therewith, it is necessary to have recourse to a special punching device and in the drawing I have illustrated a preferred form for such device, it being obvious that the details of same may be varied to suit requirements without departing from the scope of my invention.

In these drawings, Figure 1 is an isometric view of the device embodying my invention. Fig. 2 is a diagrammatic view illustrating the electrical connection of the batteries, line and ground.

In Fig. 1, B is the tape adapted to be run

between the friction cylinders A and adapted to pass through the punch-blocks L and I. *b* are the perforations made in the tape B. C is a friction roller in juxtaposition to a second friction roller D. The friction roller C is centered on and secured to the shaft C¹, and the friction roller D is centered on and secured to the shaft D². To this shaft D² are also secured, so as to move in unison with the friction roller D, the ratchet-wheel D¹ and the ratchet-wheel D⁴; the ratchet-wheel D¹ provided with the teeth *d*¹ and the ratchet-wheel D⁴ provided with the teeth *d*. Both the teeth *d*¹ and the teeth *d* correspond in number. D³ is a ratchet engaging in the teeth *d* for the purpose of preventing a backward movement of the friction roller D. E is a key or lever provided with the spring *e* adapted to hold the key-arm in engagement with one or the other of the teeth *d*¹; this key E is fulcrumed on the pin *e*⁴. E¹ is a key or lever provided with the spring *e*² adapted to hold its key-arm in engagement with one or the other of the teeth *d*¹; this key E¹ is fulcrumed on the pin *e*⁵. E² is a key or lever provided with the spring *e*³ adapted to hold its key-arm in engagement with one or the other of the teeth *d*¹; this key E² is also fulcrumed on the pin *e*⁵. The key *e*² is further provided with the projection *e*⁶ and also with the spring *e*³ which spring holds the key in contact with the stop-block J. F is a lever fulcrumed on the pin *f*² and provided with the spring *f*¹, which spring through the cross-arm or bar F² holds the keys E and E¹ in contact with the block J. This lever F is also provided with the arm F¹, which arm, by means of the spring *f* is held in contact with the teeth *h*¹ of the punch-actuating means H. This means H is in the form of a wheel and is secured to the shaft H¹. A number of protrudences *h*² and *h*³ are placed on alternate sides of the face of the wheel H, the protrudences *h*² being on one side and the protrudences *h*³ on the other side, this for the purpose of actuating the punches G and G¹ alternately, as will later on be more fully described. The number of teeth *h*¹ corresponds to the combined number of protrudences *h*² and *h*³. The punch G is provided with the spring *g* and is held in position by the punch-block L. The punch G¹ is provided with the spring *g*¹ and is held in position also by the punch-block L. K is

a stop-block which regulates the movement of the lever F and also the movement of the key E² through its projection e⁶.

In Fig. 2, B is the tape and b are the perforations, which perforations here form the letters, G, O, O, D, or the word Good, according to my improved code. M is the conducting roller; m the brush connecting the same electrically to the line. N and P are the brushes connected with the batteries n and p respectively. Q, Q, are the grounds. The arrow shows the direction the tape is traveling in.

Through the pressing of the key E, by reason of mechanical construction and position of shaft e⁴, the key E will raise one tooth d¹ on the ratchet-wheel D¹. Simultaneously with this movement, the pressing of the lever E results in the pressing downwards of the lever F which results therein that the arm F¹ will press against one or the other of the teeth h¹ and will force the same upwards to the space of one tooth. This lever F is stopped in its downward movement by the block K which allows the lever F only to move one tooth h¹.

By reason of mechanical construction, the turning of the wheel H one tooth h¹ causes one of the raised portions h² or h³ to move one of the punches G or G¹, which punch passes through the tape B into the block I, thereby causing a perforation b to be made in said tape. These punches G and G¹ operate alternately at all times, whether actuated by key E or E¹, and cause the holes b to be made on alternate sides of the tape B.

After pressing the key E till it causes the lever F to strike the stop-block K, the same should be released; the lever F being pulled downwards by the spring f¹, will cause the key E to return to its position; on the other end, the arm F¹ will return to position or one tooth h¹ lower and will be held in contact with that tooth by means of the spring f. When the lever F causes the key E to move upward to its former position, key E being fulcrumed at e⁴ causes the end that is engaged in the teeth d¹ of the ratchet-wheel D¹ to move downward a distance of one tooth, thereby causing the friction wheel or roller D to move the space of one tooth and with the aid of this friction roller and the adjoining friction roller C, causes the tape B to be moved a predetermined space, which predetermined space will in the later using of this tape as a transmitting tape be equal to the duration of a half-time unit. Key E² operates similarly to key E except by means of the pin or fulcrum e⁵ the lever E¹ moves a distance of two teeth d¹, causing a space of tape twice as great to pass over the block L, thereby causing twice as much blank tape to remain between the perforation last made and the one to follow, which predetermined space will in the later using of this tape as a

transmitting tape be equal to the duration of one whole time-unit. Key E² is simply a spacer and does not actuate the punches G and G¹. By pressing key E², the same strikes the block K and by mechanical construction the lever end moves two teeth d¹, thereby causing the same amount of tape to pass over the block L as is caused by the key E¹. These three keys, E, E¹, and E² give the following: First,—key E gives a perforation and a short space or a half-time unit following; second,—key E¹ gives a perforation and a long space or whole time-unit following; and third,—key E² gives a corresponding long space to that of key E¹ but without any perforation at all.

In the Letters Patent above referred to, I have, for the sake of clearer understanding, given the usual Morse code in conjunction with my improved code for the word "Good" which is written as follows:—

Morse, — — . . . — . .
Cable code, + + — — — — + — —
Improved code, + — + — + — + — + — +

In accordance with my improved code, the symbols to be transmitted would be as follows:—two impulses in quick succession to denote the first dash and two impulses in quick succession to denote the second dash and one impulse to denote the dot in the letter G. To perforate a tape for the transmission of the letter G, the operator has to strike first the key E to make the first perforation of the first dash with the attending short space; then the key F¹ to make the second perforation of the first dash with its attending double space; then the key E again to make the first perforation for the second dash with its attending short space, then the key E¹ to make the second perforation of the second dash with its attending double space; then the key E¹ to make the dot with its attending double space—all this for the first letter G. After this letter is perforated complete, then the operator should strike the key E² to give an additional double space without any perforations. To produce the first letter O, which is composed of two dots, he strikes the key E¹ twice which gives two perforations, each followed by a double space. He then strikes again the key E² which gives the required double space without perforations. To produce the second letter O, he strikes the key E¹ twice which gives, as before stated, two perforations, each followed by a double space and he then again strikes the key E² for the double space without perforations. To produce the letter D, which consists, as above stated, of a dash and two dots, the operator strikes first the key E to produce the first impulse and a short space and then the key E¹ to produce the second impulse of the dash with a double space following, then he strikes the key E¹ twice to pro-

duce the two perforations for the two dots with their attending double spaces. After the word is finished, the operator strikes the space key E^2 twice so as to give twice as much space between words as between letters.

10 In the drawing the tape B is perforated so as to produce the letters "G O O D." In other words, to produce a dash, it is necessary to strike first the key E and then the key E^1 and to produce a dot it is only necessary to strike the key E^1 , and to produce an extra space it is only necessary to strike the key E^2 .

15 I am aware that to-day the Continental Morse code is used on the cable, and the grouping of the various symbols is different from the American Morse, but I have taken the American Morse as the standard and it is
20 easy for persons versed in the art to apply the principle to the Continental.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

In a device of the class described, three 25 keys, means for one key to move a tape a predetermined space, means for the second key to move a tape a predetermined longer space, means for the third key to select the space for the other two keys and means for the 30 first named two keys to punch holes in said tape, the third key provided with means to select the punch to be operated.

In testimony whereof, I hereby sign my name in the presence of two subscribing witnesses, this twentieth day of December, 35 A. D. 1904.

ISIDOR KITSEE.

Witnesses:

EDITH R. STILLEY,
JAMES HOBENSACK.