(No Model.) 2 Sheets—Sheet 1.

G. W. BALDRIGE.

TELEGRAPH TRANSMITTER.

No. 338,691. Patented Mar. 30, 1886.

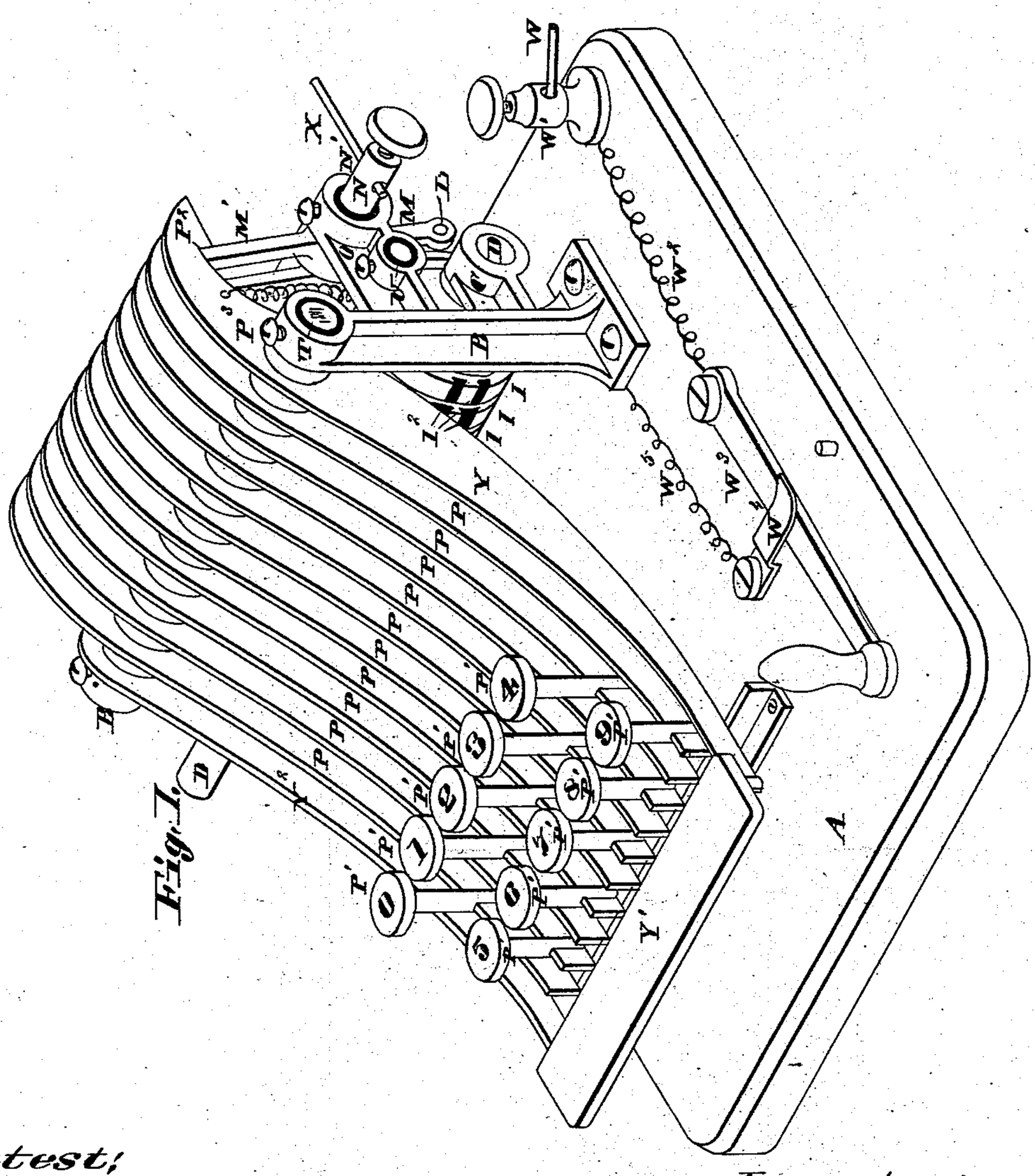

Fig. 1.

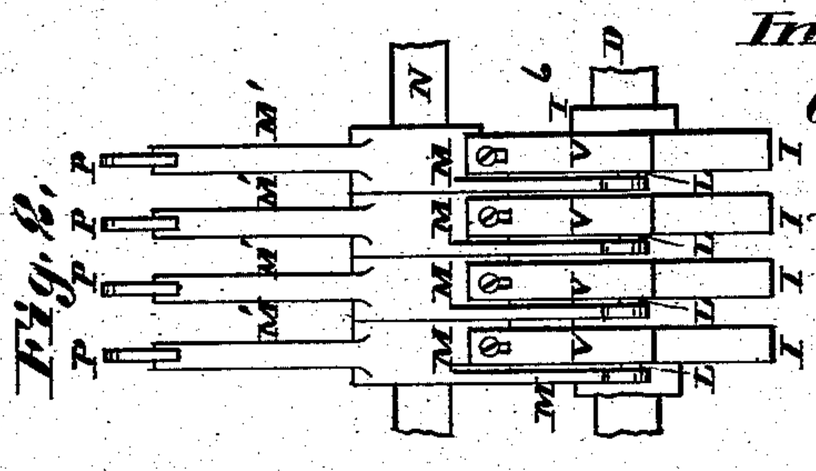

Fig. 2.

Attest;

Charles Pickles

Geo. L. Wheelock

Inventor;

Geo. W. Baldrige

By Knight Bros

Attys

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

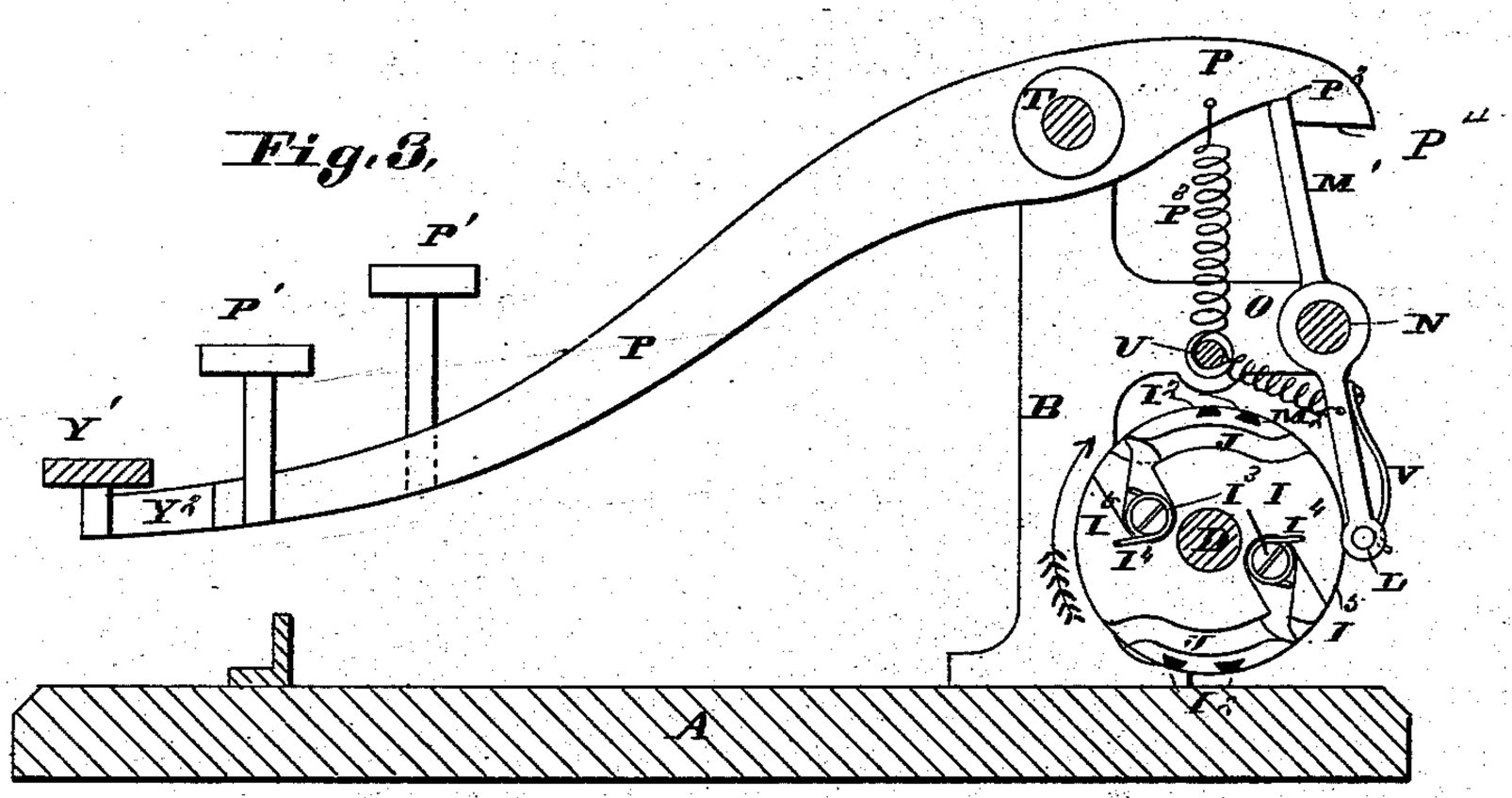


Fig. 4.

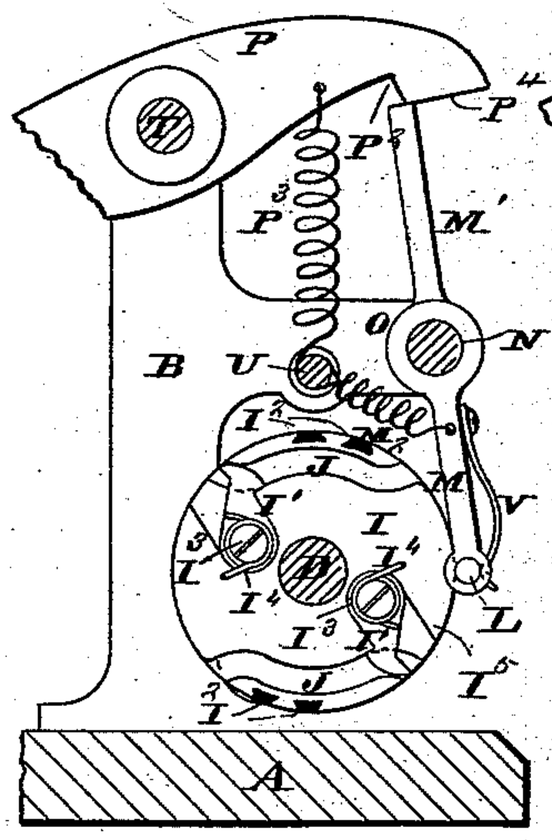


Fig. 5.

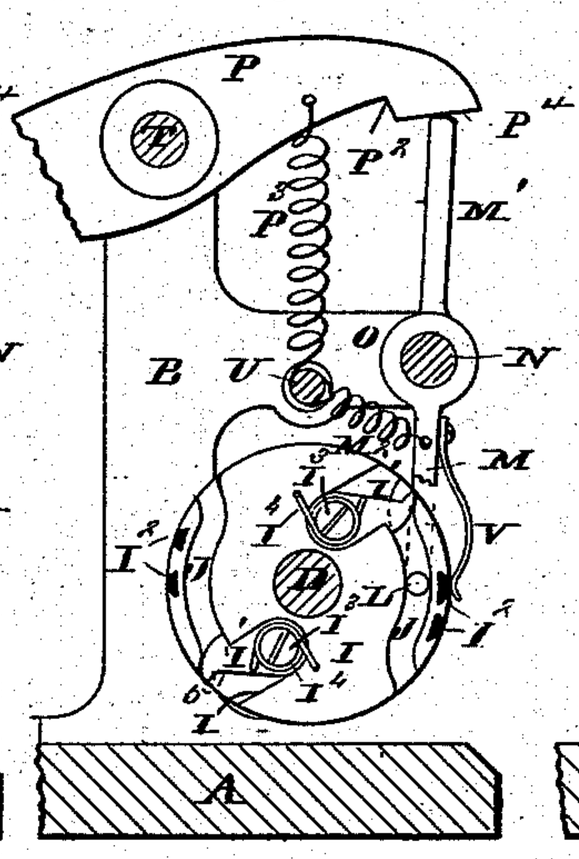


Fig. 6.

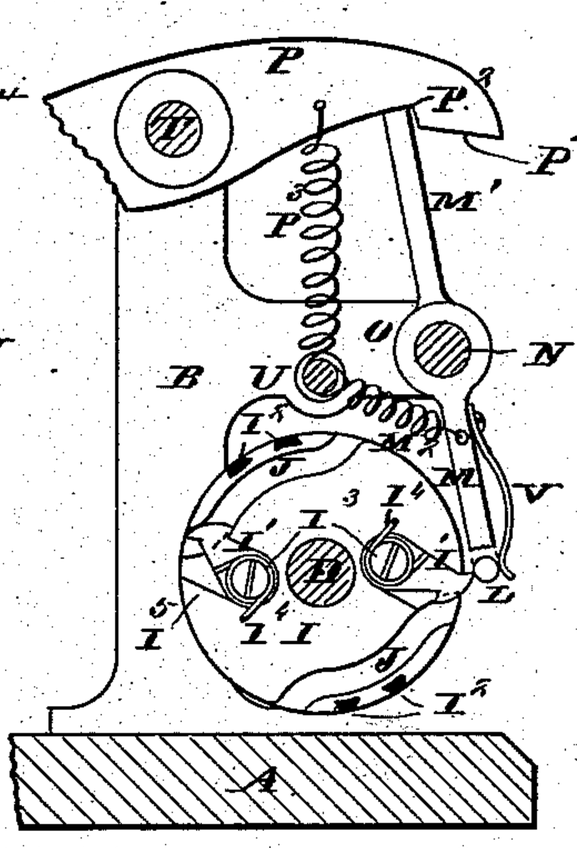


Fig. 7.

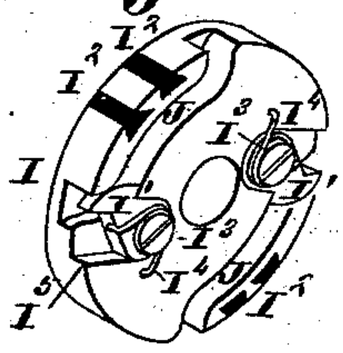


Fig. 8.

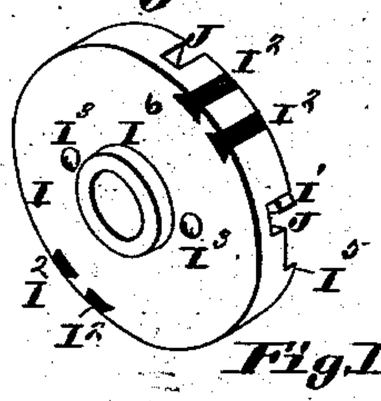


Fig. 9.

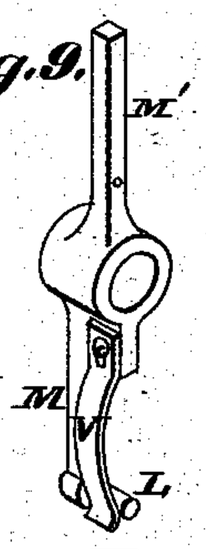


Fig. 10.

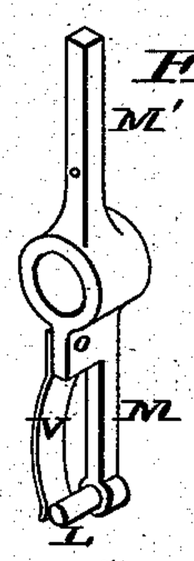
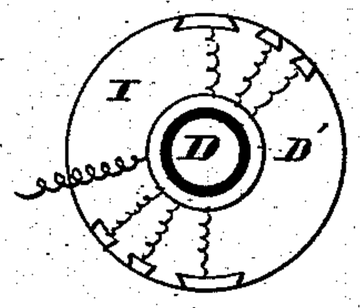


Fig. 11



Attest;
Charles Pickles
Geo. L. Wheelock

Inventar;
Geo W. Baldrige.
By Wright Brown & Quigg
Attys

UNITED STATES PATENT OFFICE.

GEORGE W. BALDRIGE, OF ST. LOUIS, MISSOURI.

TELEGRAPH-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 338,691, dated March 30, 1886.

Application filed December 26, 1884. Serial No. 151,221. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BALDRIGE, of the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Telegraph-Transmitters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is an isometrical perspective view of my improved transmitter, showing only the number or figure keys, the letter and character keys being left off. Fig. 2 is a detail end view showing part of the disks, part of the arms and their brushes or springs, and the ends of part of the keys. Fig. 3 is a vertical section of the apparatus. Figs. 4, 5, and 6 are diagrams illustrating different positions of the parts or the positions the parts assume during the operation of the machine. Figs. 7 is a perspective view of one of the disks, looking at its face; and Fig. 8 is a similar view of the back of the disk. Figs. 9 and 10 are perspective views of one of the arms, Fig. 9 being an outside, and Fig. 10 an inside, view; and Fig. 11 is a modification.

My invention relates to certain improvements in mechanical telegraph-transmitters; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, A represents the base of the apparatus, to which are secured standards B, having brackets or projections C, in which is journaled a shaft, D, carrying disks I, and being turned by means of any suitable motive power. I have not shown any means for turning it, as any well-known motor may be employed. On the periphery or rim of each disk is a letter, figure, or character, which may be duplicated or triplicated, if desired—that is to say, there is a disk for each letter, figure, and character—and this letter, figure, or character may be made twice or more times on the disk. I have shown them duplicated. In one side of each disk, behind or back of the letter, figure, or character, is a groove, J, adapted to receive a pin, L, on an arm, M, pivoted or hinged on a rod or arbor, N, supported by brackets O, formed upon or secured to the standards B; or it may be supported by any other suitable means. The pins L are either non-conductors or else are isolated from the arms. By this arrangement no matter when a letter is struck the pin rides on the outer rim of the disk, holding the contact-spring free of the type until the revolution of the disk brings the forward end of the slot opposite the pin, when the latter enters, thereby allowing the contact-spring to strike the type only at the forward part, the pin continuing in the slot until the letter is completed. This is for the reason that as the telegraphic letter P is composed of five dots, if the contact-spring were allowed to descend upon, say, the second dot, the remaining number (4) would produce the letter H upon the wire. Therefore, the groove performs a double duty. The outer rim allows the contact-spring to touch the type only at the forward end, and the inner rim acts as a stop against the spring M^2. There is an arm for each disk and each arm has an upward extension, M'.

P represents the keys supported on a rod or arbor, T, fitting in the upper ends of the standards B. On the front or inner ends of the keys are the finger-pieces P', and their back or outer ends have notches P^2, to receive the extensions of the arms. When the keys are operated and the arms moved inward by the springs M^2 and their extensions moved outward, the parts P^4 of the keys rest upon the ends of the extensions of the arms, as shown in Figs. 4 and 5, thus keeping the finger-pieces of the keys depressed until the letter is completed and the pin moved outward by the dog and the extension of the arm again moved back to the position shown in Fig. 6, and then the finger-piece will rise, thereby indicating to the operator by sight the completion of the letter. The outer ends of the keys are held down by suitable springs, P^3, and the lower ends of the arms are forced or pulled inward toward the disks when released by suitable spring, M^2. I have shown a rod, U, supported by the brackets O, to which the inner ends of these springs P^3 and M^2 may be made fast. Secured to each arm is a brush or spring, V, (which can be made adjustable,) the free end of which bears or rides upon the periphery of the disk opposite it, while the pin L of its arm is in the groove J of its disk (see Fig. 5) to close the circuit between the battery-wire W and line-wire X. As the pin reaches

the end of the groove, it comes against a spring-dog, I′, to throw the lower end of the arm out into the position shown in Fig. 6, to remove the spring or brush from the disk and open the circuit, and the arm is held back until the key is again operated, as will be understood when I explain the operation of the machine. The dogs I′ are pivoted to the disks by screws I^3, around which are coiled the springs I^4, made fast at one end to the disks and bearing by their other ends against the dogs. The electricity passes (see Fig. 1) from the battery (not shown) through the wire W, binding post W′, wire W^2, lever W^3, plate W^4, wire W^5, standard B, bracket C, shaft D, disks I, brushes or springs V, arms M, rod N, and out along the line-wire X, which is secured to the rod N, as shown at N′, Fig. 1. The disks are conductors, and have non-conductors I^2, secured in their peripheries to form the spaces of the letters, figures, or characters; or, if preferred, the disks could be non-conductors and the parts I^2 conductors; but in this case the parts I^2 would of course make the dots and dashes, or the letters, figures, and characters, and a wire or other connection would have to be made between them and sleeves D′ on the shaft D. (See Fig. 11.) This arrangement is more particularly intended for adaptation to a polarized circuit in which that which produces breaks in a straight circuit reverses the polarity (but does not break the circuit) by being conducting material, but connected, as shown, with the opposite pole of the battery. One pole is used for the dots and dashes composing the signal, and the other pole for producing the spaces.

The rods N, T, and U are isolated from their supports, as shown in Fig. 1.

Y represents the spacer-key, and Y′ its finger-bar, supported by an idle-bar, Y^2, at one end. The spacer-key operates a peculiar type—such as *n* and *m*—run together. This is to be used to indicate the completion of a word, instead of a space or interval, when sending to a mechanical receiver, the transcribing-operator writing as one word the letters or characters found between any two of these space-signals. Each disk preferably has a short hub, I^6, on one side by which they (the disks) are held a short distance apart on the shaft D.

The operation is as follows: The shaft D is first set in motion to turn the disks in the direction indicated by the arrow, Fig. 3. As soon as a key is struck, its outer end will be raised, releasing its arm M, as shown in Fig. 4, permitting the pin L to be brought against its disk by the spring M^2, and as soon as the groove J comes to the pin, by the turning of the disk the pin will enter it, permitting the brush or spring to come against the periphery of the disk (see Fig. 5) and close the circuit sending the letter, figure, or character on the disk, as above mentioned. As the pin approaches the end of the groove it comes against the spring-dog I′ and forces it back against a shoulder, I^5, of the disk, and the dog then forces the pin, arm, and brush out to the position shown in Fig. 6, out of contact with the disk, and in doing this it forces the extension M′ of the arm inward past the notch P^2 of the finger, and the spring P^3 will then pull the finger down, which will hold the arm in this position until it, the key, is again operated. As soon as the dog has passed the pin, its free end is moved back to its inner or normal position by the spring I^4, where it does not project beyond the face of the disk, and consequently will not touch the pin again until that key is again operated and the pin passes through the groove J.

By duplicating or triplicating the letters, figures, or characters, and the grooves and dogs on the disks, the machine is made to operate more quickly, as the pin L will not have so far to ride on the disk after the key is touched before entering a groove.

It is understood that by the term "character" used herein, I mean a sign made up of two or more letters or figures—for example, of two letters making a complete word.

I claim as my invention—

1. In a telegraph-transmitter, a disk carrying letters, figures, or characters, and having a way behind the letters, figures, or characters, in combination with an arm carrying a contact-brush and a pin or projection, the parts being so arranged that the pin or projection will traverse said way while the contact-brush is bearing against the letters, figures, or characters, substantially as set forth.

2. A telegraph-transmitter having the telegraphic letters, figures, or characters formed upon revolving disks, and having suitable means for closing and breaking the circuit to transmit the letters, figures, or characters, and spring-dogs secured to said disks for throwing the circuit making and closing devices away from the disks after the transmission of a character, substantially as set forth.

3. A telegraph-transmitter having the telegraphic letters, figures, or characters formed upon revolving disks, and having suitable movable contact brushes or members arranged opposite said disks and adapted to be forced into contact therewith to transmit the letter, figure, or character, the disks having grooves and dogs behind the letters, figures, or characters, the grooves being adapted to receive and hold said brushes or members against the letters, figures, or characters, and the dogs being adapted to force said brushes or members out of contact with the letters, figures, or characters, substantially as set forth.

4. In a telegraph-transmitter, the disks supported and turned by suitable means and provided with telegraphic letters, figures, or characters, back of which are grooves to receive pins or projections on arms controlled by the keys of the instrument, and having brushes for coming in contact with the letters, figures, or characters, substantially as specified.

5. In a telegraph-transmitter, the disks sup-

ported and turned by suitable means and provided with letters, figures, or characters, back of which are grooves and spring-dogs, the grooves being adapted to receive pins and projections on arms controlled by the keys of the instrument, and having brushes or springs for coming in contact with the disks to close the circuit, and the dogs being adapted to throw the arms and brushes out from the disks to open the circuit, substantially as set forth.

6. In a telegraph-transmitter, the revolving disks having letters, figures, or characters, and grooves, in combination with the spring-dogs secured to the disks, arms having extensions, springs acting to move the lower ends of the arms inward, keys with notches to engage the extensions of the arms, pins or projections on the arms to enter the grooves in the disks, and brushes or springs secured to the arms and adapted to bear against the disks on the letters, figures, or characters, substantially as and for the purpose set forth.

7. In a telegraph-transmitter, the disks secured to a revolving shaft and having letters, figures, or characters, in combination with spring-dogs secured to the disks, arms supported on a rod and having extensions, springs acting to move the lower ends of the arms inward when the keys are operated, keys supported on a rod and having notches to engage the extension of the arms, spring to pull the outer ends of the keys down, pins or projections on the arms to enter the grooves in the disk, and brushes or springs secured to the arms and adapted to bear against the disks on the letters, figures, or characters, substantially as and for the purpose set forth.

8. In a telegraph-transmitter, the combination of the type-disks, insulated arms having extensions, springs and dogs for operating the arms, and keys adapted to bear upon the extensions of the arms while the letter, figure, or character is being formed to hold the finger-piece depressed, the dogs acting to move the arms and extensions to permit the finger-keys to rise, substantially as and for the purpose set forth.

9. In a telegraph-transmitter, in combination with keys having finger-pieces, and transmitting-disks, each carrying the sign of a letter, figure, or character, arms pivoted to the stationary frame carrying brushes for contacting with said transmitting-disk, and adapted to lock the keys until a letter, figure, or character is transmitted, and means for actuating said arms so as to lock the keys and bring the brushes and disks into contact.

GEORGE W. BALDRIGE.

In presence of—
GEO. H. KNIGHT,
SAML. KNIGHT.