

No. 610,278

Patented Sept. 6, 1898.

E. PORTER.  
TELEGRAM TRANSMITTER.

(No Model.)

(Application filed Sept. 4, 1897.)

2 Sheets—Sheet 1.

FIG. 1.

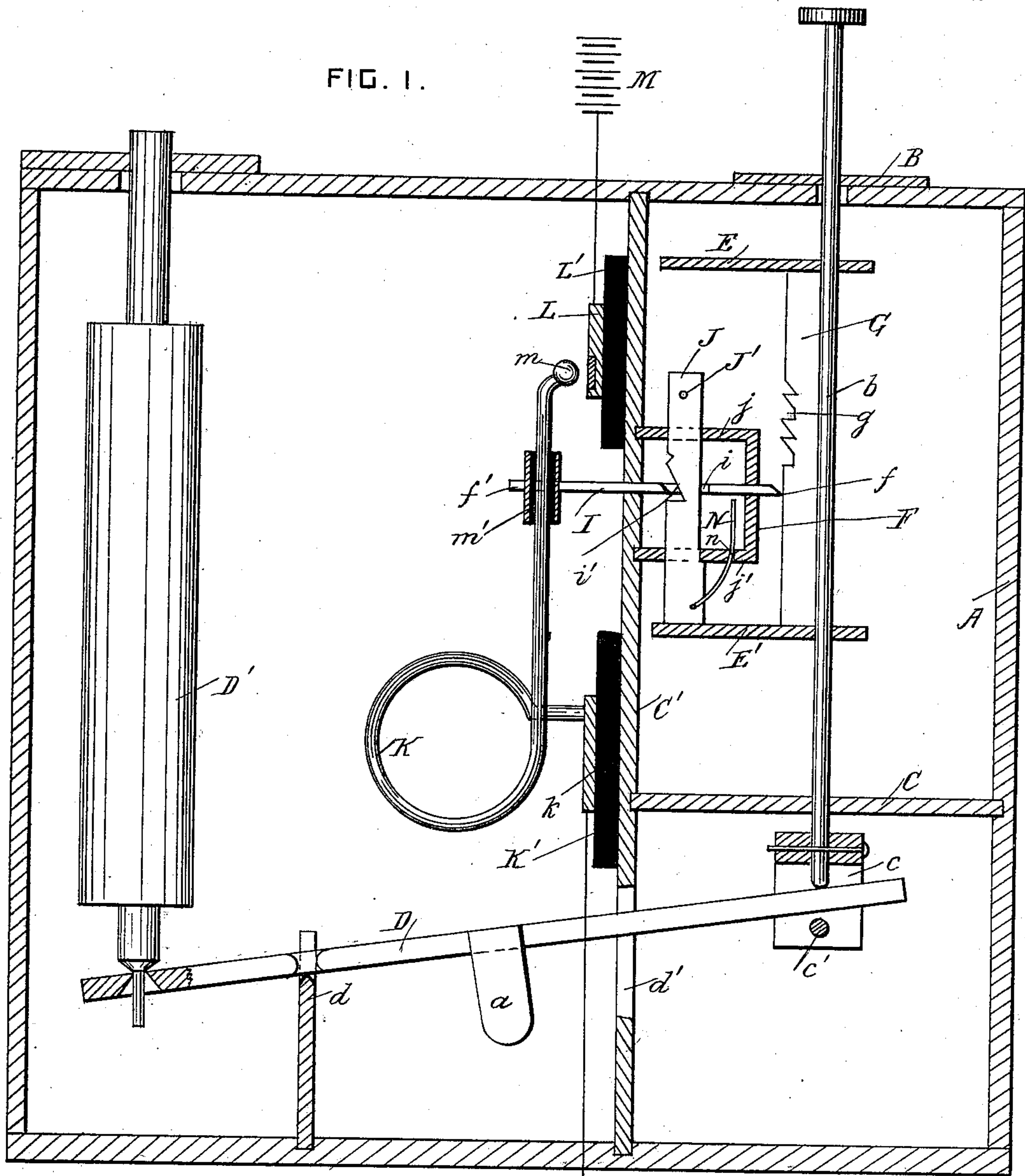
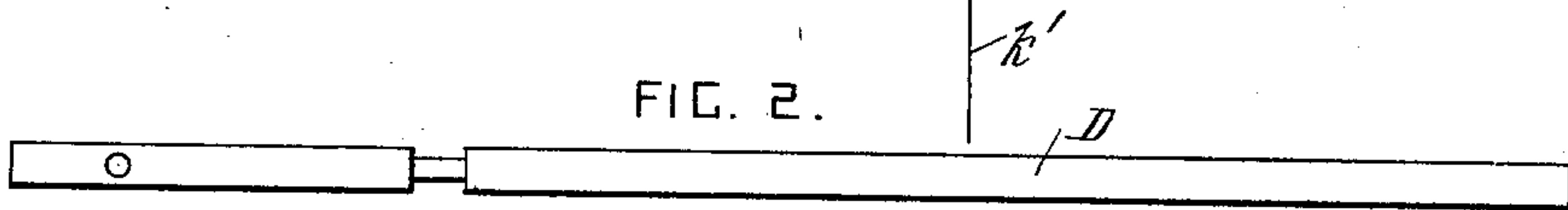


FIG. 2.



WITNESSES

A. Page

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INVENTOR.

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No. 610,278.

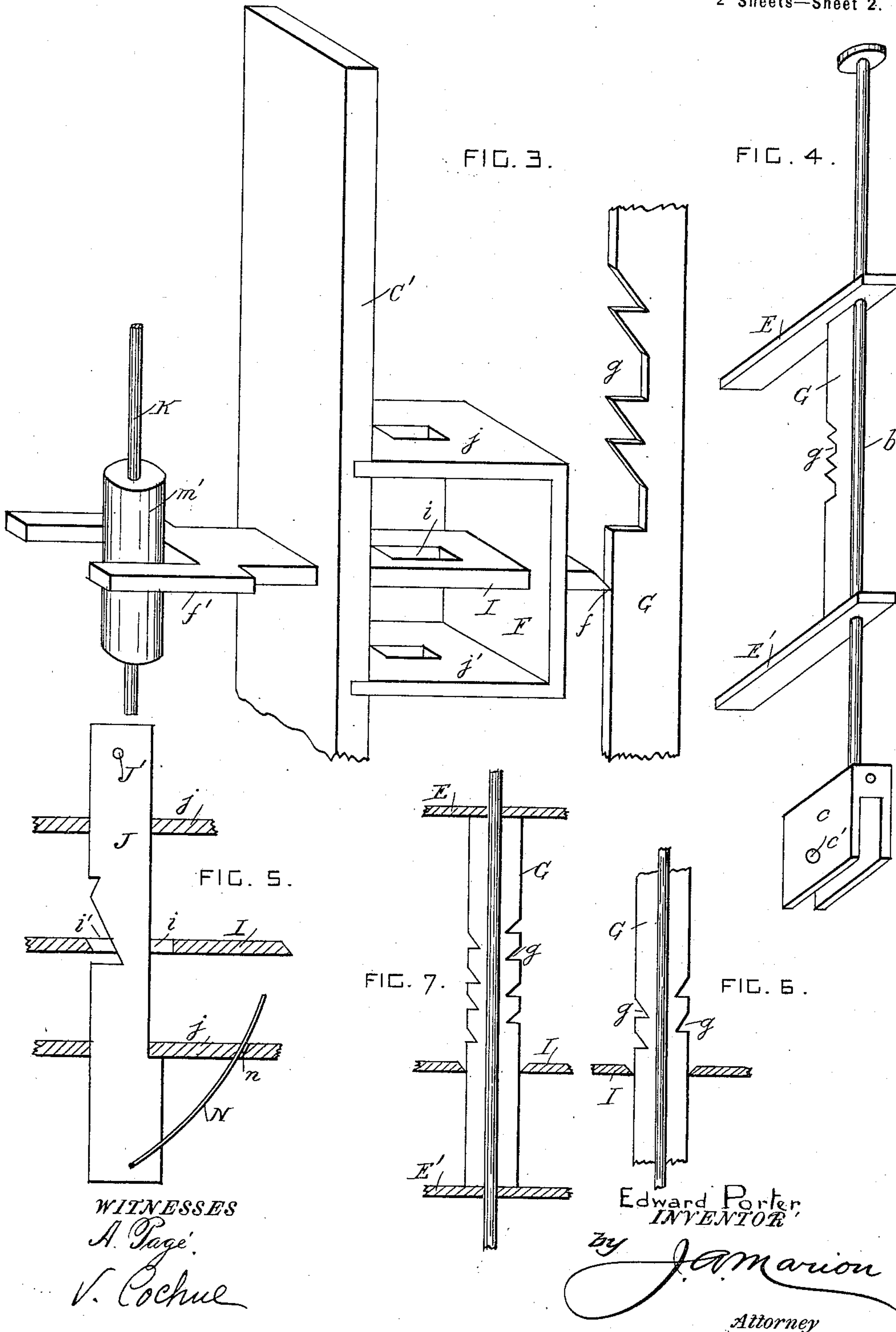
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# UNITED STATES PATENT OFFICE.

EDWARD PORTER, OF SYDNEY, NEW SOUTH WALES.

## TELEGRAM-TRANSMITTER.

SPECIFICATION forming part of Letters Patent No. 610,278, dated September 6, 1898.

Application filed September 4, 1897. Serial No. 650,580. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD PORTER, a subject of the Queen of England, residing at Belmont street, Sydney, in the Colony of New South Wales, Australia, have invented certain new and useful Improvements in Telegram-Transmitters, being an instrument for facilitating the transmission of messages by electricity; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to telegram-transmitters; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a cross-section through the instrument, showing one key and the parts coöperating with it. Fig. 2 is a detail plan view of the counterbalance-lever. Fig. 3 is a detail perspective view of the contact-slide and code-plate. Fig. 4 is a detail perspective view of one of the keys. Fig. 5 is a detail view of the stop-plate. Figs. 6 and 7 show side views of two modifications of the code-plate.

A is the frame of the instrument.

B is a guide-bar secured to the top of the frame, and *b* is a key-rod which slides vertically in a hole in the bar B. A number of similar key-rods are arranged side by side in the guide-bar; but only one key-rod is shown, as all the others are similar to it. The lower part of the key-rod is slidable in a hole in the plate C, which is secured to the side of the frame A and to a vertical plate C', which is secured within the frame. A forked bracket *c* is secured on the lower end portion of the key-rod, and *c'* is a pin which passes through the forked bracket below the end of the key-rod.

D is a counterbalance-lever pivoted on a fulcrum *d*, secured to the frame A, and passing through a slot *d'* in the plate C'.

D' is a counterbalance bearing on the free end portion of the lever D and guided in the frame in any approved manner. The counterbalance is arranged so as to always hold the key-rod in its raised position, and *a'* is a small weight on the lever D for adjusting the counterbalance.

E and E' are tappet-plates secured to the key-rod *b*.

F is a guide which is secured to the plate C'.

G is the code-plate, which is secured in a vertical position between the tappet-plates E and E'. The code-plate is provided with a notch or notches *g*, and these notches are differently disposed on the different code-plates of the instrument. Each key-rod has its particular code-plate which corresponds to some letter of the alphabet, numeral, or other arbitrary sign or word, and the disposition of the notches is preferably similar to that of the Morse telegraph-alphabet, the notches being spaced to correspond with the dots and dashes of the Morse alphabet.

I is the contact-slide, which slides horizontally in slots in the plate C' and guide F. The point *f* of the slide is arranged so that it may engage with the notches of the code-plate when the key is depressed.

J is a stop-plate which slides vertically in the upper and lower portions *j* and *j'* of the guide F. The stop-plate J is provided with a pin *J'*, which strikes the upper portion *j* and prevents the stop-plate from dropping out of the guide when otherwise unsupported. The slide I is provided with a slot *i*, through which the stop-plate passes, and the stop-plate is provided with a notch *i'* on one side. The upper part of the notch is inclined, and the edge of the slot *i* is beveled where it comes in contact with the inclined side of the notch.

K is a spring which is secured to a coupling-plate *k*, which extends the full length of the instrument and supports all the similar springs K.

K' is a plate, of insulating material, arranged between the plate *k* and the plate C'. The line-wire *k'* is connected to the plate *k*.

L is a contact-plate which extends the full length of the instrument, and L' is a plate, of insulating material, arranged between the plates L and C'. The spring K is provided with a platinum contact-piece *m* at its free end, which strikes a platinum piece on the plate L.

The point *f* of the slide I is arranged so that it may engage with the notches of the code-plate when the key is depressed. The other end of the slide I is provided with a



forked portion  $f'$ , through which the upper part of the spring K passes, and  $m'$  is insulating material interposed between the spring and the said slide.

5 M is the battery, which is connected to the contact-plate L.

N is a spring which is secured to the stop-plate and which engages with a hole  $n$  in the lower portion  $j'$  of the guide F. This spring  
10 supports the stop-plate in any position in which it is placed, so that a little force is required to move it against the frictional resistance afforded by the said spring or other equivalent device for supporting the stop-plate. The stop-plate is actuated by the tap-  
15 pet-plates E and E', which are set at a greater distance apart than the length of the stop-plate.

The action of the instrument is as follows:

20 The parts are normally in the positions shown in Fig. 1. When the key is being pressed down to its full extent by the finger, the spring K moves the slide to the right and causes it to engage with the notches of the code-plate.  
25 The notch in the stop-plate permits the slide to move to the right, as the stop-plate is supported by the spring N. The contact-piece  $m$  comes in contact with the contact-plate L each time the slide enters one of the notches of the  
30 code-plate, and the duration of the contact is regulated by the form of the notches, so that the short and long signal-currents are sent down the line-wire corresponding to the dots and dashes of the Morse alphabet. When  
35 the key-rod has been pushed down so far that the slide is above all the notches of the code-plate, the upper tappet-plate depresses the stop-plate, so that the stop-plate moves the slide a little more to the left and holds it  
40 clear of the code-plate. When the key is released, the counterbalance raises it automatically and restores it to its original position. The slide does not engage with the notches of the code-plate during the upstroke of the  
45 key-rod, as it is retained by the stop-plate until after the notches have been moved past it. The lower tappet-plate then raises the stop-plate and permits the slide to reengage with the notch in the stop-plate. All the similar  
50 keys are worked one after the other in a similar manner, the only difference in them being in the formation of the notch or notches in their code-plates, so that each key may represent a different letter, numeral, or signal.

55 The hereinbefore-described transmitter is for single-current work. For double-current transmitting two code-plates are attached to the key-rod, as shown in Figs. 6 and 7. The necessary parts of the instrument, hereinbefore described, are duplicated. The manner of notching the double code-plates varies according to the system they are used in connection with. One side of the instrument  
60 works with a positive current and the other

with a negative current. When a positive 65 current indicates a dash and a negative current a dot, the code-plate for "dash dot dash dot" will be as shown in Fig. 6. If constructed for receiving in accordance with the system 70 adopted with the Wheatstone automatic transmitter, the double code-plate for dash dot dash dot will be as shown in Fig. 7. In this latter system the receiving-electromagnet has polarized armatures, and a dot is produced by a very short positive current followed by 75 an equally short negative current to repel the armature. A dash is produced in a similar manner, but with a slight pause between the positive and negative currents, with the result that the dot of the inking-wheel is pro- 80 longed, so as to form a dash before the armature is repelled.

What I claim is—

1. In a telegram-transmitter, the combination with a slidable key having a code-plate; 85 of a slide having an operative connection with said code-plate during its downward movement; a circuit make and break device operated by said slide; a slidably-mounted stop-plate having a contact with said slide upon 90 the return movement of said key, said stop-plate serving to retain said slide in a fixed inoperative position; and means, connected with said key, for moving said stop-plate at the end of movement of said key. 95

2. In a telegram-transmitter, the combination with a slidable key, having a code-plate; of a slide operatively connected to said code-plate during the downward movement of said key; a circuit make and break device opera- 100 tively connected to said slide; a slidably-mounted stop-plate having a positive contact with said slide during the upward movement of said key, whereby said slide will be retained in fixed position away from said code-plate; 105 and tappets secured to said key for moving said stop-plate into and out of operative connection with said slide, at each end of the movement of said key.

3. In a telegram-transmitter, the combina- 110 tion with a series of keys, each provided with code-plates; of a series of slides operatively connected with said code-plates during the downward movement of said keys; an electrical contact-plate; a series of contact-pieces, 115 each having an operative connection with corresponding slides and each having an independent contact with said contact-plate; and means connected with said keys for holding said slides in a fixed inoperative position dur- 120 ing the upward movement of said key.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD PORTER.

Witnesses:

ROBERT G. MALLINSON,  
EDWARD JAMES.