

(No Model.)

W. A. LEGGO.
Telegraph Key.

No. 238,932.

Patented March 15, 1881.

Fig. 1.

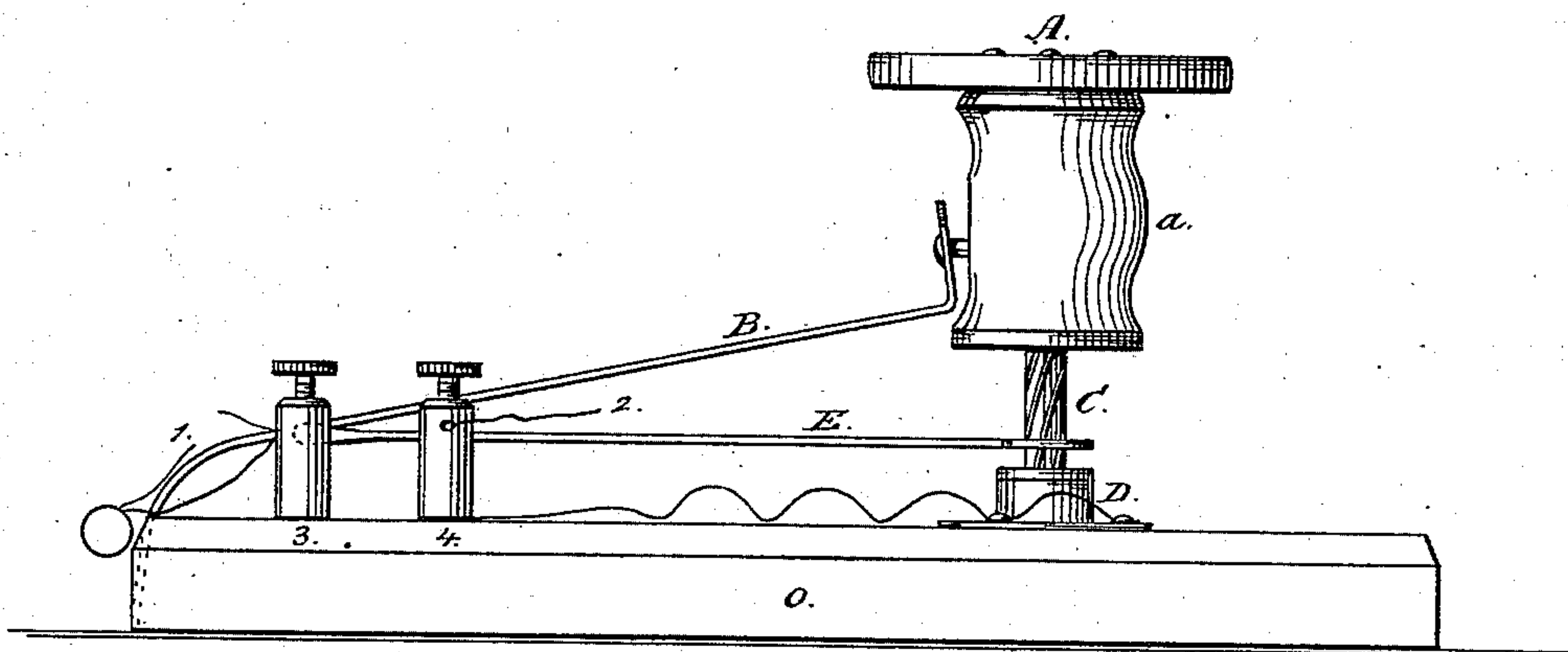
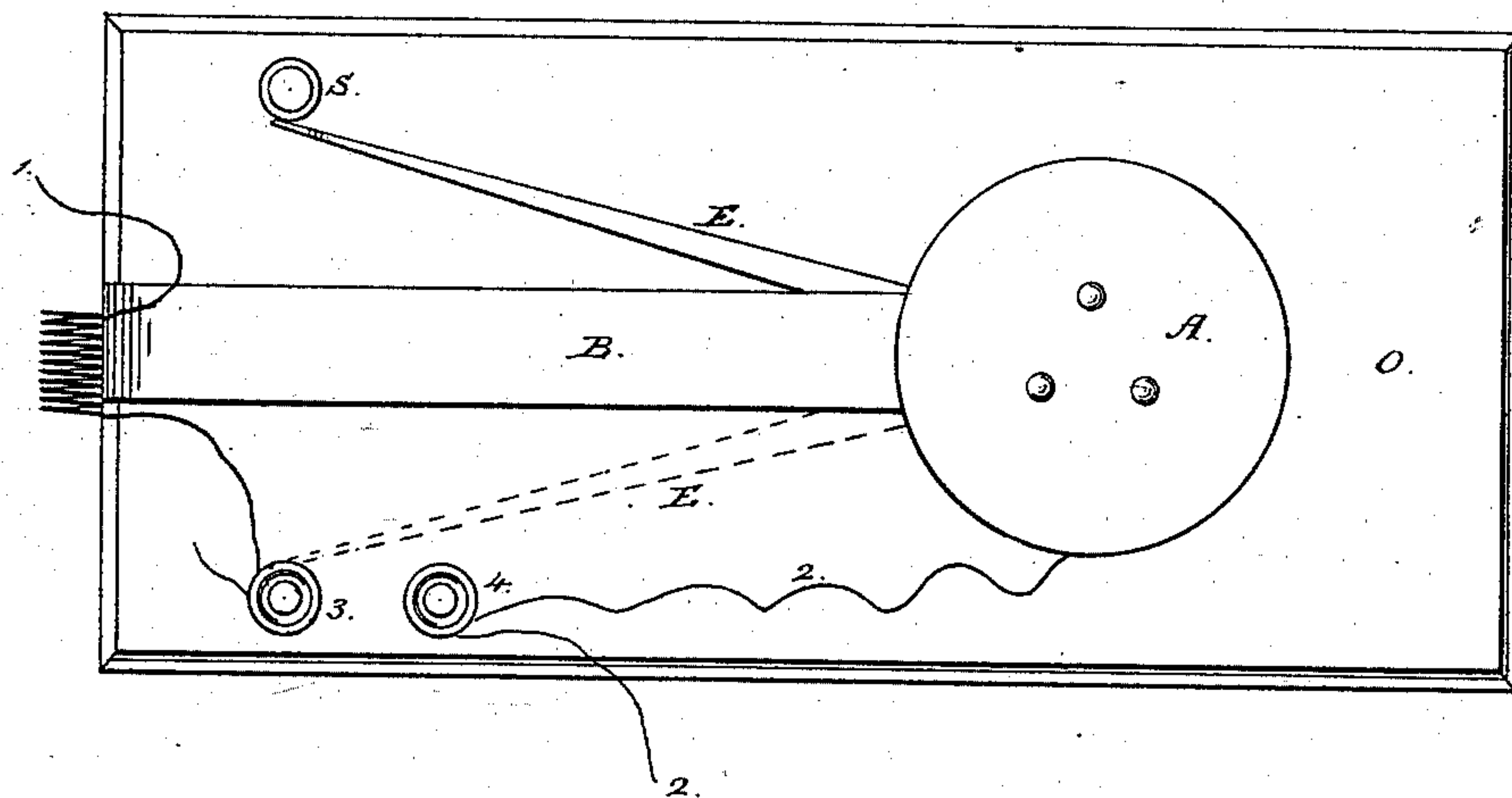


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM A. LEGGO, OF NEW YORK, N. Y., ASSIGNOR TO ELECTRO GRAPHIC MANUFACTURING COMPANY, OF SAME PLACE.

TELEGRAPH-KEY.

SPECIFICATION forming part of Letters Patent No. 238,932, dated March 15, 1881.

Application filed November 30, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. LEGGO, of New York, in the county of New York and State of New York, have invented a new and useful Telegraph-Key; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 This invention relates to that class of devices employed to make and break an electrical circuit, commonly called "Morse" or "lever."

In all such devices or keys as heretofore constructed the amount of motion permitted the moving contact-point has been very small, with a consequent very small break in the circuit. The movement of the movable contact has been very slow, comparatively, not so fast in the ordinary Morse key as the movement of the operator's hand or fingers, and in automatic devices a simple, direct, but relatively slow, lift by a thin strip of paper or equivalent material. The result has been that when it was attempted to break the circuit it was broken sluggishly, the movable contact moving a very short distance relatively very slowly, leading thus to a prolongation of the signal—a very undesirable result, which often was further increased by the formation of an arc between the points for a portion, at least, if not for all, the space through which movement was permitted. In addition, this arc, the spark seen at breaking circuit, rapidly oxidized and destroyed the contacts.

35 The object of this invention is to diminish so greatly these results as to practically eliminate them; and to that end it consists in combining with the ordinary lever of such a key such means as shall cause the closure and breakage of the circuit to be made exceedingly sudden, emphatic, and pronounced, the movable contact moving through a much larger space than hitherto with great rapidity, impinging upon the other contact with a sudden firm blow or contact, and, on breaking, leaving it as suddenly and rapidly.

As thus stated, the invention may be applied to Morse and lever keys in a number of ways. With the lever of a hand-key there may be combined some device by which the motion

given the lever by the hand is multiplied or increased several times. A convenient method of accomplishing this is to make the stem of the button upon the ordinary key-lever or upon a spring-lever hollow and screw-threaded inside, or with a pin or pins projecting into the hollow to take in the threads of a screw-threaded spindle secured in a bearing upon the base-plate in such manner that it may freely revolve. The thread upon this spindle is preferably of long pitch, so that it may be readily turned by a pressure downward of the button. To this spindle is fastened an arm, upon whose outer end is the movable contact, the arm being of such length that the slight movement of the button is amplified many times at the outer end of the arm, with a corresponding increase in rapidity of movement. Such an arrangement, it will readily be seen, will cause the movable contact to strike its anvil or to make its contact suddenly and firmly upon movement thereto, and upon the reverse motion to leave it just as suddenly and to be immediately removed therefrom to a distance precluding the formation of any deleterious arc between the contacts.

In the drawings, Figure 1 is a side view, and Fig. 2 a top view, of a device embodying the invention.

O is any suitable base, preferably of insulating material, but which may be made of conducting material, in which event the post 3 and back-stop S should be insulated therefrom. Upon this base are secured the binding-posts 3 4, to which are connected the line or circuit-conductors 1 2.

D is a bearing, in which is supported, in such manner as to be free to turn, the spindle C, screw-threaded.

A is the finger-button, having a shank, *a*, hollowed to pass over and surround the spindle C. The interior of *a* is either screw-threaded or has one or more pins projecting inwardly and taking in the threads on C, so that a downward movement of A causes C to rotate. The button A and shank *a* are attached to a spring-lever, B, secured to the base at its other end, the resilience of which normally keeps the button elevated.

Rigidly affixed to C, so as to move with it,

is the arm E, whose outer or free end forms the movable contact, connection thereto being made by post 4 and wire 2 leading to D.

5 The post 3 forms the fixed contact or an anvil, while S forms the back-stop of the arm.

10 It will be seen that a very slight depression of the button causes a partial rotation of C and a much more extended and rapid movement of E, bringing it firmly, decidedly, and quickly against 3 in closing the circuit, and that it will leave 3 as rapidly and decidedly as it approached it, moving with a rapidity which prevents almost, if not quite entirely, the formation of an arc, and removing to such distance
15 that the circuit is effectively and certainly broken.

A slight projection may be arranged on the button, which will fall or pass into the perforations in paper prepared for automatic
20 transmission.

Instead of the specific arrangement here shown, an elongated lever or a system of compound levers may be used, or any other equivalent device may be interposed between the
25 contact-points and the portion operated on to

control the circuit, which will amplify the motion of the latter and produce the results hereinbefore set forth.

What I claim is—

1. The combination, in a Morse or lever telegraphic key or circuit-controlling instrument, of a lever or button to be moved by hand or equivalent means, a single set of contact-points, and means interposed between the two for giving the movable contact a more rapid and a greater motion than that of the lever or button, substantially as and for the purposes set forth. 30 35

2. The combination, in a telegraph-key or circuit-controlling instrument, of the button, the screw-threaded spindle, the moving arm, and circuit-connections, substantially as set forth. 40

This specification signed and witnessed this 19th day of November, 1880.

W. A. LEGGO.

Witnesses:

J. HERMANN WAHLERS,
JAMES A. PAYNE.