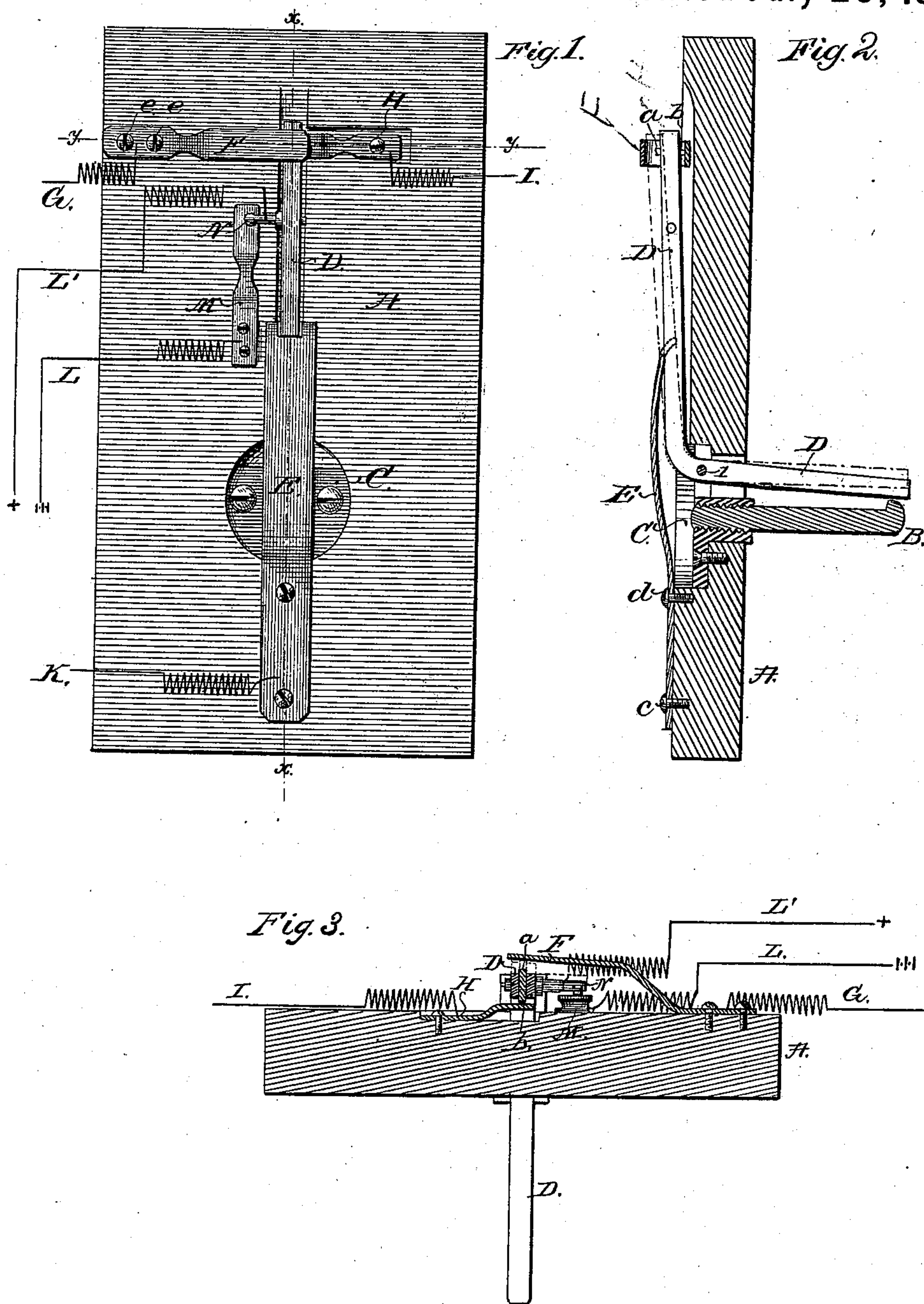


(No Model.)

F. A. KLEMM.
Telephone Switch.

No. 230,288.

Patented July 20, 1880.



WITNESSES:

J. W. Smith, Jr.,
John F. Co. President.

F. A. Klemm, INVENTOR.

By *Wm. C. Crutcher*, ATTORNEYS.

UNITED STATES PATENT OFFICE.

FRANK A. KLEMM, OF NEW YORK, N. Y.

TELEPHONE-SWITCH.

SPECIFICATION forming part of Letters Patent No. 230,288, dated July 20, 1880.

Application filed April 2, 1880. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. KLEMM, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented new and useful Improvements in Telephone-Switches, of which the following is a specification.

My invention relates to certain improvements in the construction of telephone-switches.

It has for its objects simplicity and economy in construction and absolute positiveness in operation; and with these ends in view my invention consists of a stationary hanger-post in combination with a vibratory bell-crank lever and flat spring, so arranged relating to the main-line wire, bell, telephone and transmitter wire, and local battery that the presence of the telephone in position will positively connect the bell with main line and open the local circuit, and its removal for use will cut out the bell, close local-battery circuit, and put the telephone and transmitter on the line, as will be hereinafter more fully set forth.

To enable others skilled to more fully understand my invention, I will describe its construction and operation, referring by letters to the accompanying drawings, in which—

Figure 1 is a rear view of my improved apparatus; Fig. 2, a central vertical section at line *x x* of Fig. 1; and Fig. 3, a cross-section at line *y y*, Fig. 1.

Similar letters indicate like parts in the several figures.

A represents the switch-board, to the front of which is secured a metallic hanger-post, B, which is secured in a horizontal position by a screw-thread or otherwise to a metallic plate, C, fastened to the rear side of the board, and to which is pivoted or hinged, at 1, a bell-crank lever, D, capable of vibration, as shown by dotted lines in Fig. 2. The upper end of the vertical arm of this lever is furnished with contact-points *a b*, one on each side, designed to come in contact with the bell and telephone connections respectively, as will be presently explained.

E is a flat metal spring, rigidly secured at its lower end to the board by screws *c d*, with its upper end bifurcated to straddle and bear against the lever D above the pivotal point, and thus tend to hold the contact-point *b* against the telephone-wire connection.

F is a short metal spring, secured to the board by screws *e e*, from which a wire, G, extends to the signal-bell.

H is a similar spring, secured in like manner, and from which extends the wire I, which connects the telephone and transmitter.

K is the main-line wire, connecting with the lower end of the flat metal spring E.

L L' are the local-battery wires, connecting, respectively, with a spring-plate, M, secured to the board, and a lateral arm, N, extending from the lever D.

From this construction it will be observed that when the handle of the telephone is placed upon the hanger (the space between it and the lower side of the horizontal arm of the lever D being less than the thickness of the handle) the horizontal arm of lever D is pressed upwardly, causing it to vibrate on the pivot 1, and thus carrying the upper end of the vertical arm in contact with signal-bell connection F, and out of contact with the telephone and transmitter connection H, and at the same time opens the local-battery circuit by lifting the arm N out of contact with the connection M, so that the main line then travels through the spring E, lever D, and connection F to the bell; and when the telephone is removed from the post or hanger B the power of the spring E causes the upper end of the lever D to come in contact with the telephone and transmitter connection H, thus putting them on the line, and at the same time disconnecting the bell and closing the local-battery circuit in an obvious manner.

What I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the permanent hanger B, the vibrating bell-crank lever D and actuating-spring E, to which is connected the main-line wire K, substantially as and for the purpose set forth.

2. In combination with the hanger B, lever D, and actuating-spring E, arranged as described, the connections F H M and lateral arm N, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANK A. KLEMM.

Witnesses:

S. VAN ZANDT,
MARCUS MARX.