(No Model.)

W. COX.

ELECTRIC CALL BELL AND INDICATOR.

No. 450,558. Patented Apr. 14, 1891.

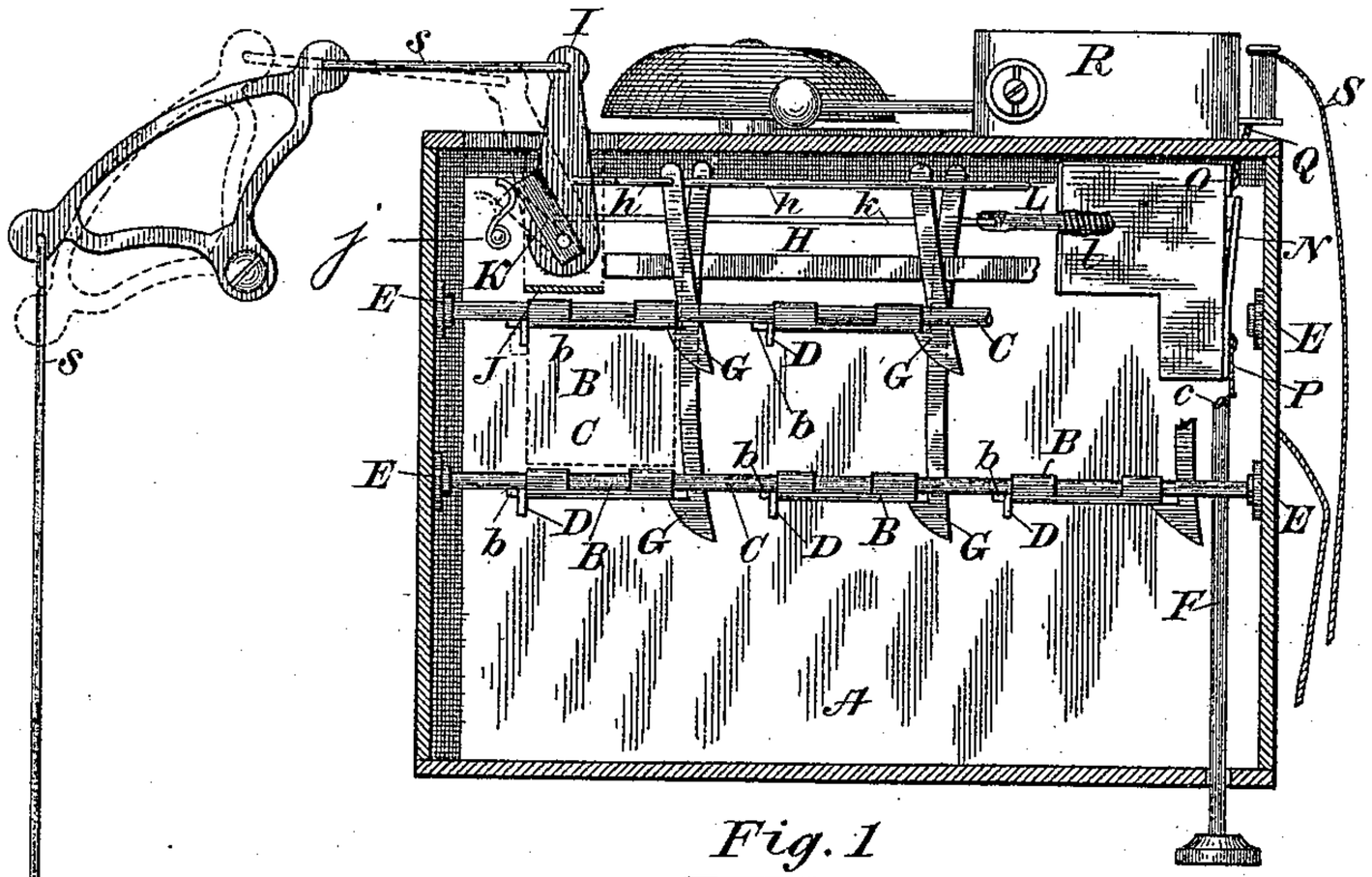

Fig. 1

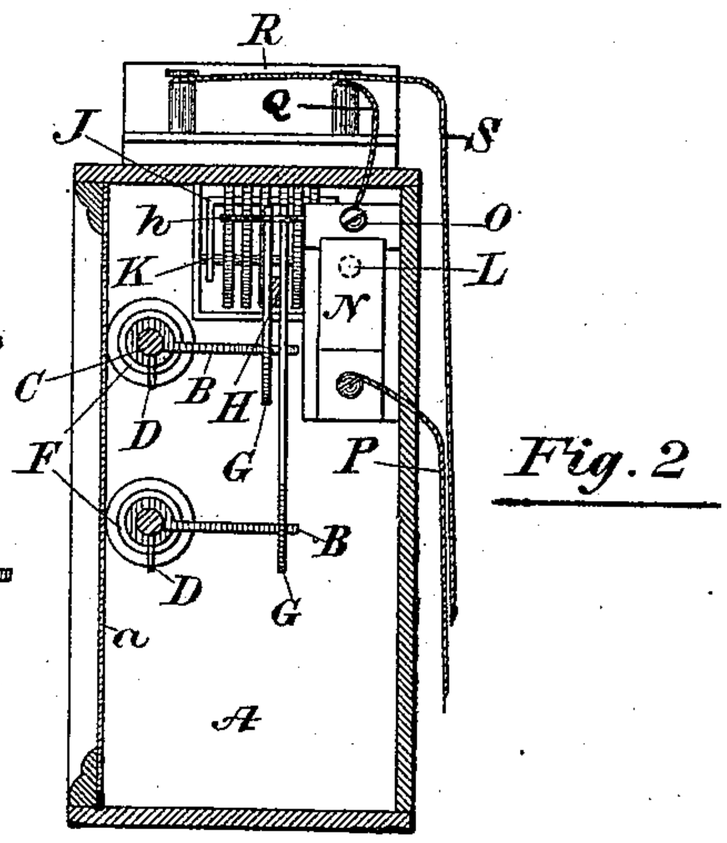

Fig. 2

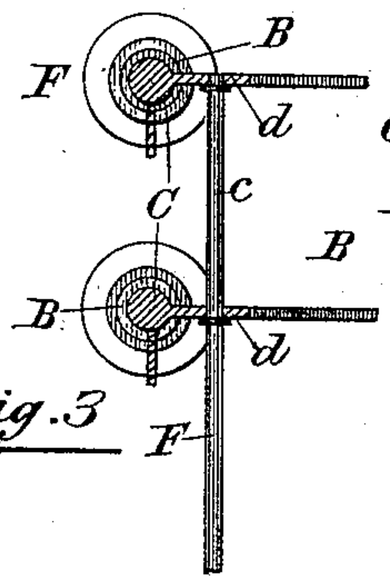

Fig. 3

Witnesses

W. H. Clapp Jr.

Robt. J. Tillings

Inventor

William Cox

Per Graham & Riches

Atty's.

UNITED STATES PATENT OFFICE.

WILLIAM COX, OF TORONTO, CANADA.

ELECTRIC CALL-BELL AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 450,558, dated April 14, 1891.

Application filed April 11, 1890. Serial No. 347,554. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM COX, bell-hanger, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Electric Call-Bells and Indicators; and I hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to improvements in that class of bells known as "electric indicators." Heretofore in private and public houses, before the introduction of electric call-bells and indicators, it was customary to arrange a number of pull-bells on a bell-board placed in the kitchen or other apartment convenient to the servants and to string the cranked pull-wires leading to these bells throughout the house. If the servant happened to be out of sight or hearing when one of these bells was rung, it was a difficult matter to tell which apartment to respond to; and the object of this invention is to construct an electric call-bell and indicator which may be connected to and operated by the aid of pull-wires, and by a combination of levers and a circuit-block to effect the dropping and holding of the drop-indicators and completing the bell-circuit.

In the drawings, Figure 1 is a view, partly in section, showing the internal mechanism, &c. Fig. 2 is a view showing the end casing removed. Fig. 3 is a detail view of spindles and push-rod.

Like letters of reference refer to like parts through the specification and drawings.

The electric call-bell and indicator consists of a box A of any suitable design or size, having a front *a*, provided with spaces for the indicator-drops B. These indicator-drops B are arranged on one or more spindles C, as is most convenient to the size and design of the box and the number of indicator-drops used. These indicator-drops B are each provided with a side extension *b*, against which abuts a lifting-pin D, rigidly connected to the spindles C. The spindles C are journaled in pivot-collars E, connected to the walls of the box A. When two or more spindles C are employed in one box, they are provided at one end with lugs *d*, extending at right angles from their vertical axes, rigidly connected by means of a coupling-bar *c*, which is shown in the drawings as a continuation of the lift-rod F, connected to the lower spindle C. The purpose of this lift-rod is to turn the spindle C, which turns the indicator-drops B into a horizontal position, where they are held by latch-levers G to await their next summons. The latch-levers G are pivoted on a frame H and connected by link-bars *h* to the pull-levers I, suitably pivoted in a frame J. Extending across the back of these pull-levers I is a circuit-lever K, pivoted in the same frame H and at the same point as the pull-levers I. A circuit-pin L, fitted with a spring *l*, is connected to the circuit-lever K by a wire *k*. This circuit-pin L extends across the block H and presses the circuit-closer N from the conducting-plate O. Connected to the circuit-closer N is a battery-wire P, and from the conducting-plate O is a wire Q, leading to one of the poles of the electric bell R. To complete the circuit, another battery-wire S is connected to the second pole. Connected to the pull-levers I are pull-wires S, attached to an L-shaped lever T, pivoted at the point *t* to the wall or casing of the box and at the point *u* to the push-button lever U. By pressing on the push-button lever U the lower end of the L-shaped lever T is thrown backward and the upper end downward, which in its downward motion draws the wire S with it, and which in turn pulls the lever I backward, forcing the circuit-lever K downward, and pulling the circuit-pin L forward from the circuit-closer N allows the circuit-closer to fall upon the conducting-plate O and complete the circuit to the bell. At the back of the circuit-lever K is a spring *j* for the purpose of forcing the circuit-lever K into its normal position as soon as the pressure is removed from the push-button lever U. When the pull-lever I is thrown backward, it draws the upward or connected end of the latch-lever G with it, and consequently throws the lower end forward and from under the indicator-drops B, which drop into position in the box-front *a*. (Shown in dotted lines.)

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

1. The combination of the push-button lever U, the L-shaped lever T, pull-wire *s*, pull-

lever I, the latch-levers G, indicator-drops B, hung on suitable spindles C, circuit-lever K, circuit-pin L, circuit-closer N, conducting-plate O, and wires P, Q, and S, substantially as and for the purpose specified.

2. The combination of the latch-levers G, pivoted on a frame H and operated by pull-wires *s*, with the indicator-drops B, arranged on a spindle C, substantially as and for the purpose set forth.

3. The combination of the latch-levers G, pivoted on a frame H and suitably connected to and operated by pull-wires *s*, with the indicator-drops B, arranged on spindles C, the circuit-pin L, suitably connected to and operated by the pull-wires *s* and in conjunction with the latch-levers G, circuit-closer N, conducting-plate O, battery-wire P, and bell-magnet wire Q, substantially as and for the purpose set forth.

4. The combination of the latch-levers G, pivoted on a frame H and suitably connected to and operated by pull-wires *s*, with the indicator-drops B, arranged on a spindle C, the circuit-pin L, suitably connected to and operated by a circuit-lever K, circuit-closer N, conducting-plate O, battery-wire P, and bell-magnet wire Q, substantially as and for the purpose set forth.

5. The combination of the latch-levers G, pivoted on a frame H and suitably connected to and operated by the pull-levers I, with the indicator-drops B, pull-levers I, circuit-pin L, operated by said pull-levers, conducting-plate O, circuit-closer N, battery-wire P, and bell-magnet wire Q, substantially as and for the purpose set forth.

6. The combination of the indicator-drops B, arranged on suitable spindles C and having side extensions *b*, with the spindles C, having lifting-pins D, lugs *d*, coupling-bars *c*, and lift-rod F, substantially as and for the purpose set forth.

Toronto, February 22, 1890.

WILLIAM COX.

In presence of—
C. H. RIGGS,
H. D. BOYES.