(No Model.)

C. E. DEY.

CIRCUIT CLOSER FOR CALL SYSTEMS.

No. 388,344. Patented Aug. 21, 1888.

Fig. 1.

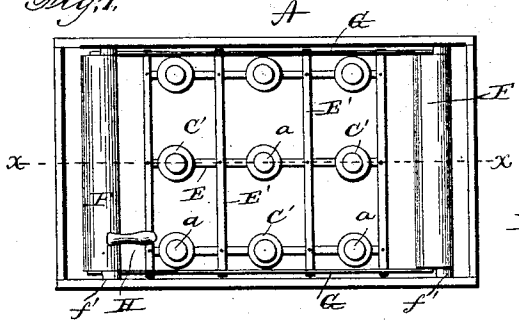


Fig. 2.

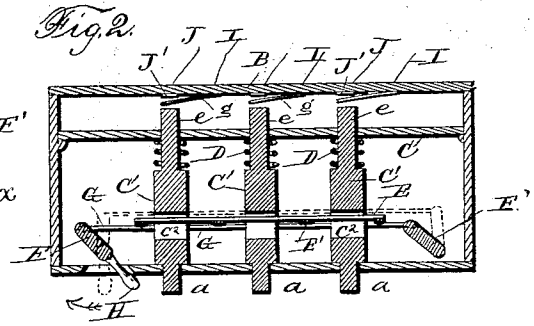


Fig. 3.

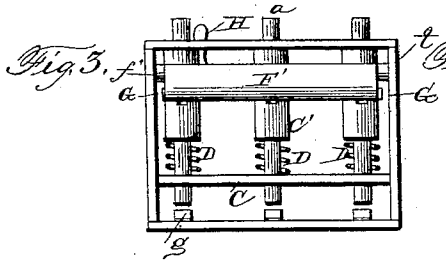


Fig. 4.

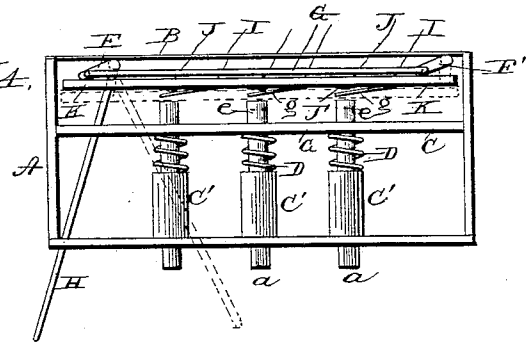
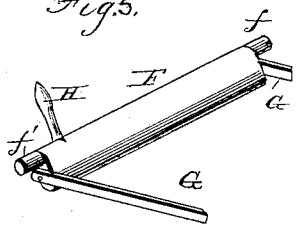


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES E. DEY, OF DENVER, COLORADO.

CIRCUIT-CLOSER FOR CALL SYSTEMS.

SPECIFICATION forming part of Letters Patent No. 388,344, dated August 21, 1888.

Application filed April 19, 1887. Serial No. 235,342. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. DEY, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Circuit-Closers for Call Systems; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to a circuit-closer for call systems.

The object of the invention is to employ electric call-boards in the offices of hotels and other large buildings for fire-alarms, whereby the electric bells in the different rooms of a building may all be rung at the same time. By my arrangement one is enabled to press in all the push-pins of the call-board at the same time. The said arrangement does not conflict with the use of each push-pin separately for ordinary call-bell purposes, except when all are in use for an alarm of fire.

In the accompanying drawings, Figure 1 represents a front elevation with the front cover removed from the box. Fig. 2 indicates a sectional elevation taken on the line X X, Fig. 1. Fig. 3 is an end view with the end of the box removed. Fig. 4 represents a top plan view of a modification; and Fig. 5 represents a perspective view of one of the two cams, its handle, and fragments of two parallel rods which connect the two cams.

Like letters indicate like parts in the several views.

The letter A indicates a rectangular box containing the operative parts of the apparatus, and B the back thereof provided with a series of circuit-closers in electrical connection with the alarm-bells in the respective rooms of the building.

C indicates a partition located within the casing in front of the back board, B.

The letter C′ indicates a series of pins. Each pin has an enlarged center part whereby a shoulder is formed on each end of a pin. The shoulders are square. The outer front ends of these pins *a* project through openings in the front wall of the casing. The rear ends, *e*, of said pins project through openings in the partition. A spiral spring, D, encircles each pin. Said spring lies between the inner shoulder of the pin and the outer face of the partition C, whereby said pin is normally pressed outward, so as to leave its circuit open. While in this position each button may be operated singly to close its respective circuit, when desired.

In Figs. 1 and 2 a movable frame-work is shown, consisting of longitudinal bars E and transverse bars E′. These bars are riveted or otherwise suitably secured together.

The main body of each pin C′ is provided with a slot, C^2. These pins are secured in the frame in rows, so that the slots in each row shall be in alignment. Each of the frame-bars E passes through the slots C^2 in one set of pins. The normal position of said bars is near the inner side of the slot C^2, so that when said frame is moved inward for the purpose of turning in a general alarm each and every pin will immediately respond and close the several circuits. For closing all the circuits simultaneously and turning on a general alarm, I employ two cam-shafts, F F′. The respective ends *f* of each of said shafts are journaled in the top and bottom of the casing. To the end of each of the cams proper is jointed one end of a bar, G. There are two of these bars G. Each bar G is secured in a like manner to the cam-shafts F F′. Said bars lie parallel and they both move in unison.

H represents a handle, which projects through an opening in the front casing. The inner end of said handle is fixed to the cam-shaft F. The parallel rods G on the cam-shafts lie across the outer ends of the transverse frame-bars E′. (See Figs. 1 and 2.) By moving the handle H in the direction of the arrow, Fig. 2, the cam-shafts F F′ are turned and the shafts G G forced inward. The inward movement of the rods G forces in the frame-bars E E′. The inward movement of the bars E forces in all the push-buttons C′. By this movement the inner end of each button is forced against a spring, *g*. This spring *g* is connected to one of the wires I.

J represents another wire, which passes

through the casing and is connected to a small plate, J'. By pressing the springs *g* against the small plates J' the several circuits are closed and a general alarm given.

When it is desired to turn in a general alarm and continue it indefinitely, the cam-shafts are moved to the position indicated by dotted lines, Fig. 2. When the shafts are in that position on a dead-center, the bars E E' and pins C' are held inward and all the circuits closed. The said shafts will remain in that position until the cams are turned and the spiral springs D given an opportunity to act and force the pins outward and open the circuits.

In Fig. 4 a slight modification is shown. In this construction the single calls are made substantially as in the construction shown in the other figures; but in said Fig. 4 the frame-bars E E', and push-pin slots C^2 are omitted. As a substitute for those features I employ a movable plate, K, to which are attached the ends of the wires I J, and the contact-pieces J' and *g*. The pieces *g* are flat springs normally out of contact with the pieces J', as in the other figures. The plate K and its connected parts may be drawn inward by moving the handle H, which actuates the cam-shafts F F' and the parallel rods G. Said shafts and rods are suitably engaged to the plate K, so that said plate may be moved inward. The inward movement of said plate forces the flat springs *g* against the inner ends of the push-pins C', whereby said springs are forced into contact with the small contact-plates J' and connection made between the several wires I J and all the circuits closed.

The dotted lines in Fig. 4 show the position of the cam-shafts and the handle H and the plate K when said plate is drawn forward and the circuits closed. When said cam-shafts and handle are in the dotted position, they are locked until released by the handle.

Having thus described my invention, I claim as new and desire to secure by Letters Patent of the United States—

1. The combination, in an electric call, of spring-actuated push-pins, a movable frame engaged to said pins, and two cam-shafts provided with connecting-rods, substantially as specified.

2. The combination, in an electric call, of slotted spring-actuated push-pins, a movable frame engaged to said pins, and two cam-shafts and connecting-rods for actuating said frame and pins, substantially as described.

3. The combination, in an electric call, of the inclosing-casing having a series of circuit-closers at its back, the partition at the rear of said casing, the shouldered push-pins and springs, a movable frame engaged to said pins, substantially as described.

4. The combination, in an electric call, of spring-actuated push-pins, a series of circuit-closers, a movable frame, cams, and connecting-rods for actuating said frame, substantially as specified.

5. The combination, in an electric call, of spring-actuated push-pins, a series of circuit-closers, a movable frame, cams provided with a handle, and connecting-rods, substantially as described.

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

CHARLES E. DEY.

Witnesses:
GEORGE C. WISE,
WM. A. WILSON.