(No Model.)

P. J. WALSH, Jr.

CIRCUIT CLOSING DEVICE.

No. 522,632. Patented July 10, 1894.

FIG. 1

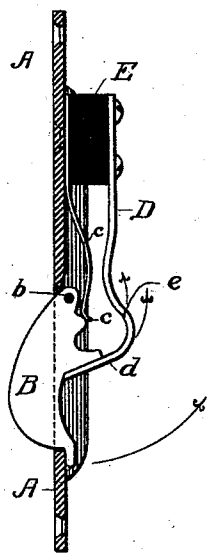


FIG. 2

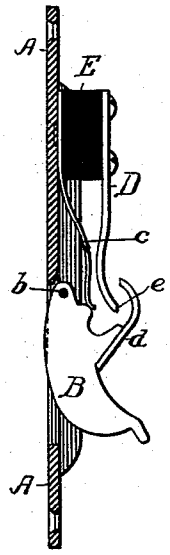


FIG. 4

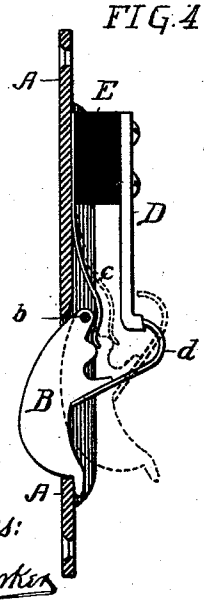
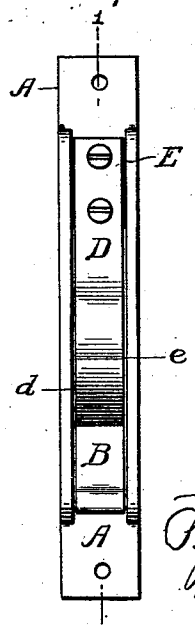


FIG. 3



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Howard Pell

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

PHILIP J. WALSH, JR., OF PHILADELPHIA, PENNSYLVANIA.

CIRCUIT-CLOSING DEVICE.

SPECIFICATION forming part of Letters Patent No. 522,632, dated July 10, 1894.

Application filed May 3, 1894. Serial No. 509,920. (No model.)

To all whom it may concern:

Be it known that I, PHILIP J. WALSH, Jr., of the city of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Circuit-Closing Devices; and I do hereby declare the following to be a full, clear, and exact specification thereof, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to certain improvements in circuit closing devices for burglar alarm systems, elevator doors and the like, and its object is to provide a contact device of simple and economical construction the contact surfaces of which will be subjected to little or no frictional wear.

In the accompanying drawings:—Figure 1 is a sectional elevation, on the line 1—1, Fig. 3, of a circuit closing device constructed in accordance with my invention. Fig. 2 is a similar view, illustrating the terminals in the position which they ordinarily assume in an open circuit system. Fig. 3 is a rear elevation of the same, with the parts in the position illustrated in Fig. 1; and Fig. 4 is a sectional elevation of a modification.

Referring to drawings, A represents a base plate adapted to be secured in position in a window or door frame. The face of this plate is recessed and projecting through the recessed portion is a tongue, B, pivoted at *b*, and having a curved outer face with which the sliding window sash or the door may come into contact, the normal position when the sash or door is in position being that shown in Fig. 2.

Secured to the base plate A is a plate spring, *c*, the free end of which is at all times in contact with the rear face of the block, B, and normally tends to force the latter into the position shown in Fig. 1. This spring, *c*, is in the alarm circuit and, being in contact with the tongue, B, brings the latter also into the circuit. The block, B, is provided with a curved plate, *d*, the outer end of which forms one terminal of the circuit, the opposite terminal being formed by a fixed plate, D, the latter being insulated from the spring, *c*, and the base plate, A, by a block, E, of hard rubber, or some equivalent material.

The terminal, D, and the terminal, *d*, form, when in contact, a practically continuous line, their meeting point being at *e*, and they are held in contact when the tongue, B, is in the position shown in Fig. 1 by the spring, *c*, and the circuit closed.

The contact end of the terminal plate, D, projects somewhat beyond its main body portion, and immediately above the point of contact the plate is curved inwardly or indented toward the base plate, A, while the terminal, *d*, is curved or shaped in the opposite direction, so that under the action of the spring, *c*, the ends will be pulled together and firmly held in intimate contact. The point of contact is slightly below the fulcrum point of the tongue, B, so that the farther this tongue moves in an outward direction, the better and more intimate will be the contact, while the inward movement of the tongue, as it gradually assumes the "open" position (Fig. 2), will cause the terminal, *d*, to gradually move away from the plate, D, the direction of travel being indicated by the arrows, Fig. 1. This inward movement of the tongue, B, will cause the contact end of the plate, *d*, to seek the space made by the inwardly curved or depressed portion of the plate, D; this feature is shown to better advantage in Fig. 4, where the plate, D, is straight and its contact point projects to some extent so as to permit the movement of the plate, *d*, to the position shown in Fig. 4, without danger of contact with any other portion of the plate.

As the contact points are on the extreme ends of rigid, or nearly rigid, plates, there is no sliding movement of either contact and no frictional wear, while all danger of failure to act from the wearing away of contacts, or of insulation is avoided.

It will be understood that various modifications of the arrangement and size and shape of contact points and terminals may be made without departing from my invention.

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

1. A circuit closing device comprising in combination with a supporting base plate and pivoted block, two terminal plates, one affixed to the base plate with intervening insulating material and the other provided upon the pivoted block, the free ends of each ter-

minal constructed to come into contact when the circuit is closed and indentation provided in each terminal plate within the free end to prevent contact as the free end of one plate travels over the other when the block is inwardly depressed and the circuit broken, substantially as described.

2. A circuit closing device comprising in combination with a supporting base plate and pivoted block, a fixed terminal provided upon said base plate and insulated therefrom, having an inwardly projecting tongue upon its free end, and a traveling terminal rigidly provided upon the pivoted block, the end of which is constructed to come into contact with the outer surface of the inwardly projecting tongue of the fixed terminal when in circuit and to travel within the line of the outer surface of the free end of the fixed terminal when the block is inwardly depressed and spring provided upon the base plate and against said block for retaining it in its normal position, substantially as described.

3. In combination with a base plate and pivoted spring actuated block, an insulated fixed electrode provided upon said base plate and indentation provided within the free end of said electrode, and movable electrode rigidly provided upon the pivoted block, indentation provided within the free end of said movable electrode said movable electrode constructed to travel in the arc of a circle, substantially as described.

4. The combination in a circuit closing device of a supporting base plate, A, a tongue or block, B, pivoted thereto, a spring, *c*, acting on said block, a terminal, *d*, carried by the block a second terminal, D, with which the first terminal is normally held in contact by the action of the spring, *c*, the point of contact of the two terminals being so disposed that in making contact they will simply abut without sliding friction, substantially as specified.

In witness whereof I have hereunto set my hand this 2d day of May, A. D. 1894.

PHILIP J. WALSH, JR.

Witnesses:
HORACE PETTIT,
JNO. A. MCCARTHY.