(No Model.)

J. J. GEARY.

CIRCUIT CLOSING DEVICE.

No. 525,266. Patented Aug. 28, 1894.

Fig: 1

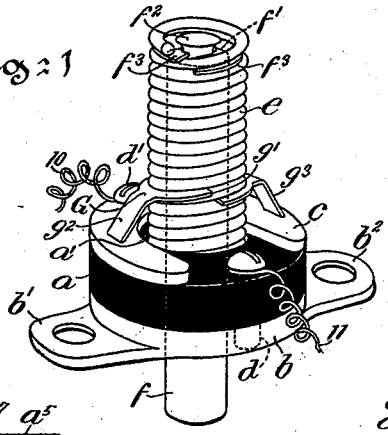


Fig: 2

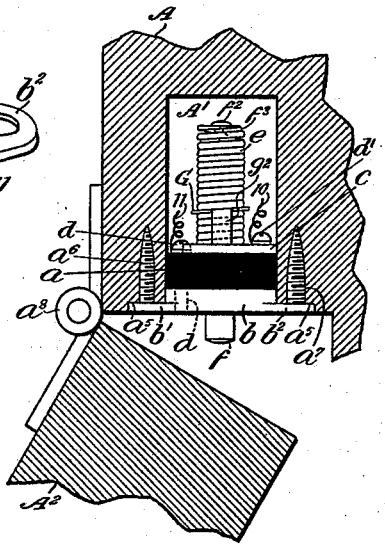


Fig: 3

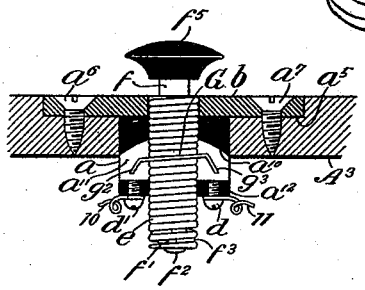


Fig: 4

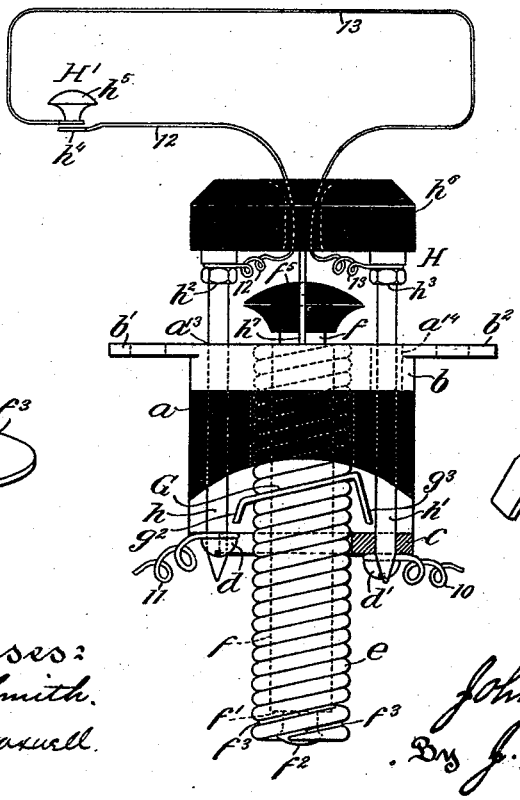


Fig: 5

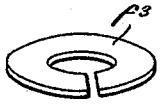
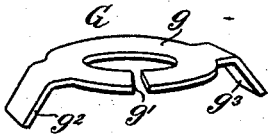


Fig: 6



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UNITED STATES PATENT OFFICE.

JOHN J. GEARY, OF CHESTER, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOHN J. MOSSOP, OF SAME PLACE.

CIRCUIT-CLOSING DEVICE.

SPECIFICATION forming part of Letters Patent No. 525,266, dated August 28, 1894.

Application filed February 5, 1894. Serial No. 499,089. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. GEARY, a citizen of the United States, residing at Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Circuit-Closing Devices, of which the following is a specification.

My invention relates in general to circuit closing devices; and more particularly to the construction and arrangement thereof.

The principal objects of my invention are, first, to provide a simple, durable, inexpensive and effective circuit closing device for application to floors for establishing a circuit to cause an audible sound or signal of a buzzer, bell or annunciator or in application to doors or the like for similar purposes; second, to provide a circuit closing device with an adjustable spring contact; third, to provide a circuit closing device with a coiled spring having a detachable contact spring strip and an adjustable push-button, stud or rod; fourth, to provide a device of simple construction and arrangement adapted to establish a circuit for actuating a buzzer, bell or annunciating device; and fifth, to provide a circuit closing device with a coiled or helical spring having a push, stud or rod arranged so as to adjustably engage therewith and a contact spring mounted in connection with the coiled or helical spring of the device and adapted to be adjusted therewith so as to compensate for the adjustment of the push, stud or rod, to establish a circuit.

My invention consists of the improvements in circuit closing devices hereinafter described and claimed.

The nature and characteristic features of my invention will be more fully understood from the following description taken in connection with the accompanying drawings forming part hereof, and in which—

Figure 1, is a perspective view of a circuit closing device embodying features of my invention. Fig. 2 is a view partly in elevation and partly in section of a circuit closing device of my invention in application to the jamb of a door and with the door swung open for establishing thereby a circuit for effecting an audible signal or sound by the connection of the device by means of a battery circuit with a buzzer, bell or annunciator. Fig. 3, is a view partly in elevation and partly in section of a circuit closing device of my invention in application to a floor and arranged so that the circuit is established by depressing the push of the device. Fig. 4, is a view partly in elevation and partly in section of a circuit closing device of my invention with a detachable plug switch connection and push in application thereto. Fig. 5, is a perspective view of the detail construction of the washer of the push, stud or rod or the circuit closing device; and Fig. 6, is a similar view of the detail construction of the contact spring of the device.

Referring to the drawings with special reference to Fig. 1, *a* is a disk of fiber, rubber or other preferred insulating material having a central opening *a'*, extending therethrough.

b, is a circular metal plate applied to one end of the disk *a*, and having integral side lugs or ears *b'* and b^2, with openings for the insertion of screws or the like for securing the same to position. The opposite end of the disk *a*, has applied thereto a horseshoe shape metal strip or a circular strip of metal *c*. The plate *b*, is held in contact with the disk *a*, by means of a binding screw *d*, extending therethrough into the metal plate *b*, and the strip *c*, is held to position in contact with the fiber or other disk *a*, by means of a binding screw *d'*, extending therethrough into the disk *a*, for purposes to be presently described.

e, is a coiled or helical spring seating with the wall of the metal plate *b*, arranged to receive the extremity thereof.

f, is a push, stud, pin or rod having a recessed rear extremity *f'*, with a flanged head f^2, and this pin or rod extends through the body of the spring *e*, and secured to the recessed portion thereof is a split coiled washer f^3, interlocking or meshing with certain of the coils of the spring *e*, in order that the stud, pin or rod may be adjusted in connection with the spring *e*, to required position.

G, is a contact spring provided with a split helix or annulus *g*, with a central opening *g'*, therein and with integral projecting arms g^2 and g^3, adapted to establish contact with the horseshoe or other shape strip *c*, of the de-

vice to establish a circuit to be hereinafter explained, with a buzzer, bell or annunciator, not shown.

10 and 11, are wires from a battery, not shown, connected with the binding screws d and d'. The circuit from one pole of the battery is by the wire 10 to the binding screw d', through the strip c, contact spring G, and the coiled spring e, to the metallic plate b, through the same and binding screws d, to the wire 11, and by the same to the other pole of the battery. The buzzer, bell or annunciator not shown, it should be borne in mind is to be included in the battery circuit.

In Fig. 2, is shown an application of the device of Fig. 1 to a door jamb A, which is mounted in a chamber A', therefor and the metal plate b, fitted into a recess a^5 adapted therefor and secured firmly to position therein by means of the screws a^6 and a^7. A^2, is a door hinged at a^8, to the frame-work A, in any well understood manner. In the closing of the door A^2 by contact of the same with the push, stud or rod f, the helical or coiled spring e, thereby is expanded to cause the contact spring G, to disengage the strip or disk c, and thus to break the circuit through the device from the battery.

In Fig. 3, is shown the application of the device to a floor for closing a circuit to a buzzer or other similar device included in a battery circuit and in this view, the face plate b, is secured into a recess provided in the floor A^3, therefor and secured to position by means of the screws a^6 and a^7. a, in this instance is a plug grooved out to form an arch a^{10}, and with a space a^{11}, and this fiber or other plug is suitably fastened to the metal plate b, and into the rear cylindrical wall thereof is secured a fiber washer a^{12}, provided with binding screws d and d', extending therethrough and to which are attached the wires 10 and 11 connected with a battery, not shown. The contact spring G, in this instance, is reversed as to its position in adjustable engagement with the coiled or helical spring e, and so that by the depression of the stud, pin or rod f, provided with a rubber or other push button f^5, the arms g^2 and g^3, of the contact spring G, will respectively contact with the upper ends of the binding screws d and d', and thereby to establish a circuit from the battery with a buzzer, bell or the like included therein.

In Fig. 4, the circuit closing device at the base thereof is provided with a strip c, similar in shape or form to that of Figs. 1 and 2, and having binding screws d and d', and wires 10 and 11 connected therewith. The screw d, extends into the fiber or other plug or disk a, while the screw d', extends into the metal face plate b. Extending through the body of the device are vertical openings a^{13} and a^{14}, of preferably different diameters for the insertion therethrough of the arms or pins h and h', of a detachable circuit switch device H, provided with binding screws h^2 and h^3, and with which are connected wires 12 and 13, provided with a contact h^4, and push h^5, constituting a circuit push device H'. The pins or arms h and h', of the switch H, are provided with a tapering insulating disk or ring h^6, with a central opening for leading the wires 12 and 13 from the binding screws h^2 and h^3, to the circuit push device H', for establishing a circuit with a buzzer, bell or annunciating device to be included in the battery circuit. The disk or ring h^6, is provided with a distance pin or rod h^7, adapted to engage the face plate b, and thereby to limit the extent of movement of the pins or rods h and h', of the switch H, in engagement with the circuit closer embodying the main features of my invention and also to prevent the disk or ring h^6, being brought into contact with the button f^5, of the device which would if permitted, establish a circuit through the spring G, the strip c, screws d and d', and lines 10 and 11, with the battery and buzzer or the like included therein.

The circuit is established through the devices in Fig. 4, as follows:—From one pole of the battery the current passes through the wire 11, to the binding screw d, through the arm h, and the wire 12 to the contact h^4, then to the push h^5, when in engagement with the contact h^4, and wire 13 to the pin or arm h', then by the metal strip c, and the wire 10 to the other pole of the battery, in order to actuate the buzzer or similar device, included in said circuit.

From the foregoing description it will be observed that the device of my invention is susceptible of many uses for establishing a circuit; and therefore, I do not wish to be understood as limiting myself to any of the precise arrangements of the same as hereinbefore explained.

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

1. A circuit closing device provided with a helical or spiral spring having a push, stem or rod with a washer seating with said spring and a split helix or ring having arms and said helix or ring adjustably engaging said spring, substantially as and for the purposes set forth.

2. A circuit closing device provided with a spiral spring having a push, stem or rod adjustably seating with said spring, and a split ring or helix having projecting arms and adjustably engaging with said spring and said arms adapted to establish a circuit, substantially as and for the purposes set forth.

3. A circuit closing device, comprising a metallic plate or disk with ears or lugs, an insulating plate or hollow plug, a helical or spiral spring, a push stem or rod with a washer seating with said spring and contacts adjustably engaging said spring, substantially as and for the purposes set forth.

4. A circuit closing device provided with a push stem or rod having one end recessed and flanged and having engaging therewith a split

washer seating with a spiral or helical spring, a strip having a split helix or ring with contacts, binding screws and a battery circuit, substantially as and for the purposes set forth.

5. A circuit closing device provided with a push, stem or rod seating with a spiral or helical spring having an adjustable contact, a detachable circuit switch provided with projecting arms secured to an insulating plug or ring with an opening therein, a distance rod, binding screws connected with said arms, a battery circuit, and means for establishing a circuit through the device therewith, substantially as and for the purposes set forth.

6. The combination with a recessed member and a hinged member, of a device provided with metallic and insulating plates, plugs or disks and strips and binding screws, a push, stem or rod adjustably seating with a helical or coiled spring, a contact provided with a split helix or ring detachably engaging said spring and having flaring metal arms, and a battery circuit provided with an audible signal device, substantially as and for the purposes set forth.

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

JOHN J. GEARY.

Witnesses:
RICHARD C. MAXWELL,
LOUIS WINTERBERGER.