

(No Model.)

G. E. ELY.
PUSH BUTTON.

No. 412,845.

Patented Oct. 15, 1889.

Fig. 1.

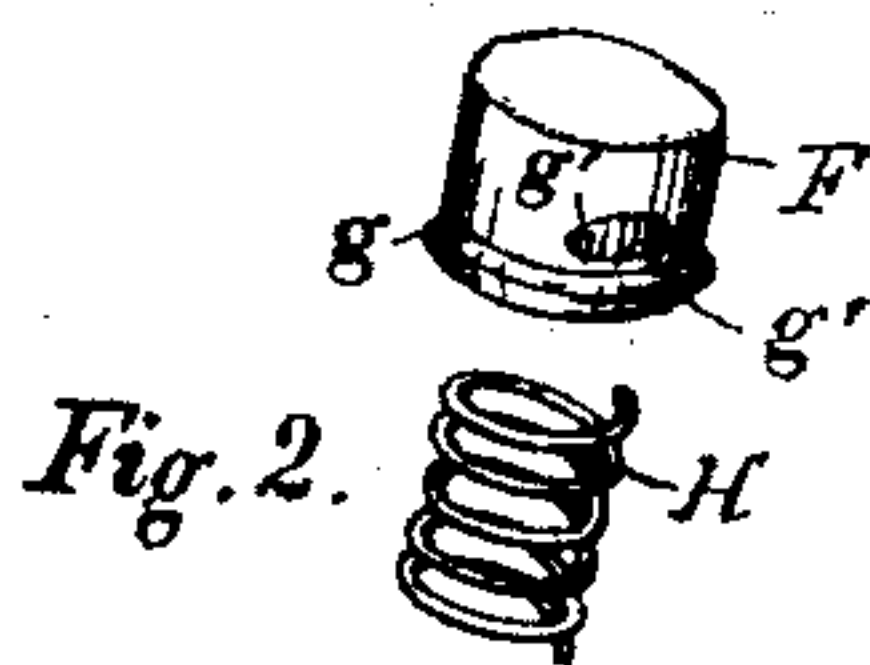
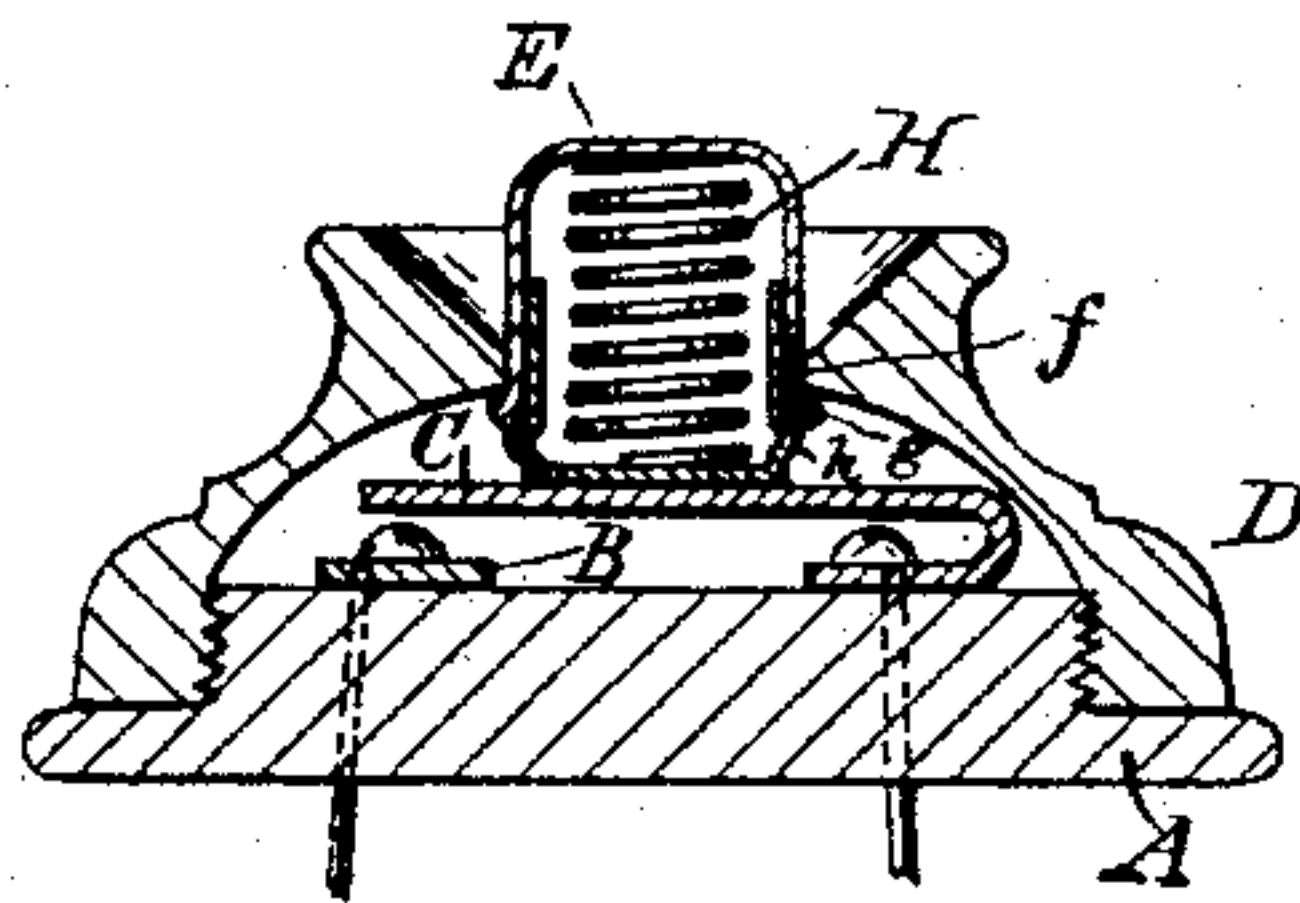
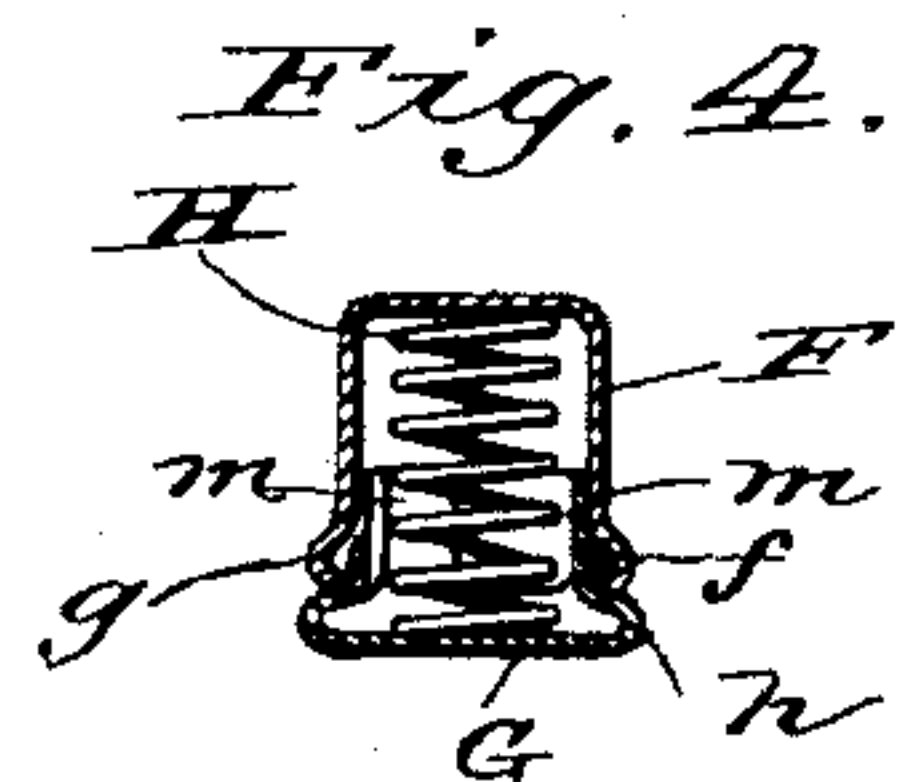
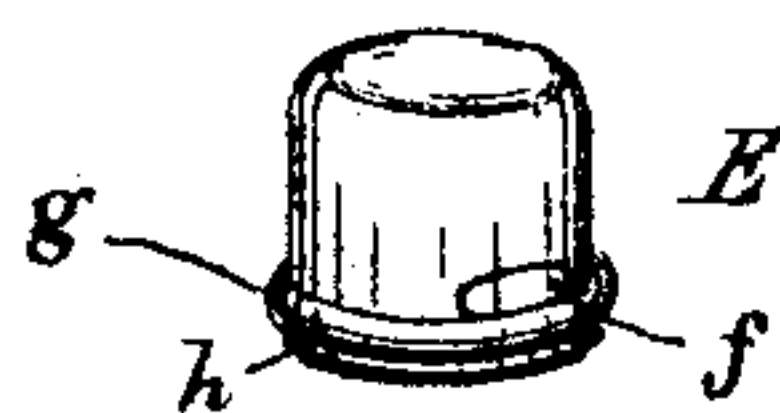


Fig. 3.



WITNESSES

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GEORGE E. ELY, OF ROCHESTER, NEW YORK, ASSIGNOR TO LOUIS T. RIGGS' OF SAME PLACE.

PUSH-BUTTON.

SPECIFICATION forming part of Letters Patent No. 412,845, dated October 15, 1889.

Application filed March 6, 1889. Serial No. 302,058. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. ELY, of Rochester, county of Monroe, and State of New York, have invented certain new and useful
5 Improvements in Push-Buttons; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to figures and letters of reference marked thereon.

My present invention relates to improvements in that class of push-button attachments adapted to be applied to the ordinary buttons now in use in hotels, and generally
15 for signaling purposes, without changing in any way the circuit connections or contacts, that will automatically operate the circuit-connections and send a signal whenever there is an abnormal rise in temperature, caused,
20 for instance, by a fire at the point where the button is located.

To this end the invention consists in an improved form of button consisting of two sections with a compressed spring between
25 them connected by readily-fusible solder, the solder-connection being so located that no strain will come upon it in the operation of the button by hand, nor will it be liable to be melted or broken accidentally; and it further consists in the novel constructions and combinations of parts, all as will be herein-
30 after described, and the novel features pointed out in the claims.

In the drawings, Figure 1 is a sectional view
35 through an ordinary push-button casing, showing the application of my invention thereto; Fig. 2, a view of the portions of the button separated; Fig. 3, a view of the complete button forming the subject-matter of the present
40 invention. Fig. 4 is a sectional view of a modified form of button.

Similar letters of reference in the several figures indicate similar parts.

A represents the base of an ordinary push-
45 button, having upon it a stationary contact-point B, and a movable contact C, consisting of a spring normally pressed out of contact, and to these the circuit-wires are connected in the usual manner.

50 The casing D is in the present construction secured to the base, as shown, but is adapted

to be removed when desired to afford access to the interior.

E represents the manually-operated portion, which I will designate the "button," similar in external appearance to the button usually employed, but constructed of two telescoping sections F and G, connected by solder
55 f, fusible at a comparatively low temperature—say 150° Fahrenheit—and with a spring H between them under compression when they are connected. The outer section F, which projects through the aperture in the casing, is provided with an annular rim or bead g, preferably of greater diameter than said aperture,
65 and on one side below the top with a slight recess g'. The inner section G is slightly smaller and projects into section F, being provided with a small rib or bead h, against which the end of F operates, and the spring H is adapted
70 to be contained in the space between the section ends, so that when the sections are telescoped the spring can be compressed, and a drop of readily-fusible solder placed in recess g' will adhere to section G and serve as a stop,
75 holding them firmly together. When in the casing, the spring-contact C will operate to press the button outward, holding its annular collar against the edge of the aperture, and it can then be operated as an ordinary
80 signaling device by pressure on the button, as usual. The pressure on F will be transmitted directly to G by the bead h, and will not be brought upon the solder, which might tend to fracture it and release the section.
85 Should there be a rise in temperature in the vicinity of the button caused by a fire, the solder f would melt, and the two sections F and G being disconnected the spring H would
90 force section G down and the points B and C into contact, completing the circuit and sounding an alarm, the circuit being kept closed until the call is attended to.

If desired to employ the button for use in connection with closed circuits, no alterations need be made in the construction of the push, as the circuit will be broken instead of closed, the arrangements of the contacts insuring this. It is not essential that the lower section G be as long as shown, as a series of
100 small lugs or arms m could be provided, extending in proximity to the sides of the outer

section, serving as the points of connection by solder, as in Fig. 4, nor need the recess be formed in the side of F in which the solder is located; but these constructions are preferred.

It will be noted that by making the parts of the button of sheet metal they are all rendered very light, and the mass to be heated before the melting-point of the solder is reached is so small that the release of the parts and the sending of the signal can take place at a temperature readily ascertained without taking into consideration the mass of metal to which the solder is connected.

The construction of the button is such that it can be applied to the push-buttons in use in hotels at present at a very slight cost, merely substituting it for the ordinary porcelain ones, thus rendering them in effect thermostats.

I am aware that it has been proposed to employ thermostatic buttons in which the solder connecting the sections is located at the front of the button in such position that the operator's finger comes in contact with it every time the button is used; but in this arrangement as the solder is very soft it is liable to be melted or broken by the operator and the circuit permanently closed when it is not desired to do so. Further, the projection of the solder beyond the button end renders it unsightly, and is apt to excite curiosity on the part of a hotel guest, resulting in closer examination and the probable sending of a fire-alarm by breaking the solder. These objections, however, are not present in my construction, as there is nothing to show from the exterior that the button is other than an ordinary call, and the liability of breaking the solder and causing accidental operation is reduced, as the pressure on the outer section is brought directly on the inner one through bead *h*, and the solder has only to withstand the pressure of the spring.

I claim as my invention—

1. As an article of manufacture, a button

adapted for use in electrical push-buttons, constructed of two sheet-metal sections, one having a rib or projection at the sides for co-operating with the casing, and the other sliding within the former and secured to it at the side below the operating portion by readily-fusible material, and a spring under compression contained within and between said sections, substantially as described.

2. As a new article of manufacture, a button adapted for use in electrical push-buttons, constructed of two telescoping sections, the outer one having a projection or rib for co-operating with the casing, and having a slot in the side, a spring under tension between the sections, and fusible solder connecting the sections placed in the slot in the outer one, substantially as described.

3. The combination, with the stationary and spring contacts forming the terminals of an electrical circuit and the casing for the same having an opening therein, of the button constructed in two parts, the outer one having a projection on its sides arranged to co-operate with the sides of the casing-aperture, and the inner one operated upon by the contact-spring and connected to the side of the other by fusible solder, and a spring under compression between the two sections, substantially as described.

4. As an article of manufacture, a button for use in electrical push-buttons, consisting of the two sections, one having a projection at the sides for co-operating with the casing, and the other adapted to slide within it having the rib or projection with which the first-mentioned section co-operates, said sections being connected at the side by fusible solder, and a spring under compression arranged within and between said sections, substantially as described.

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Witnesses:

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