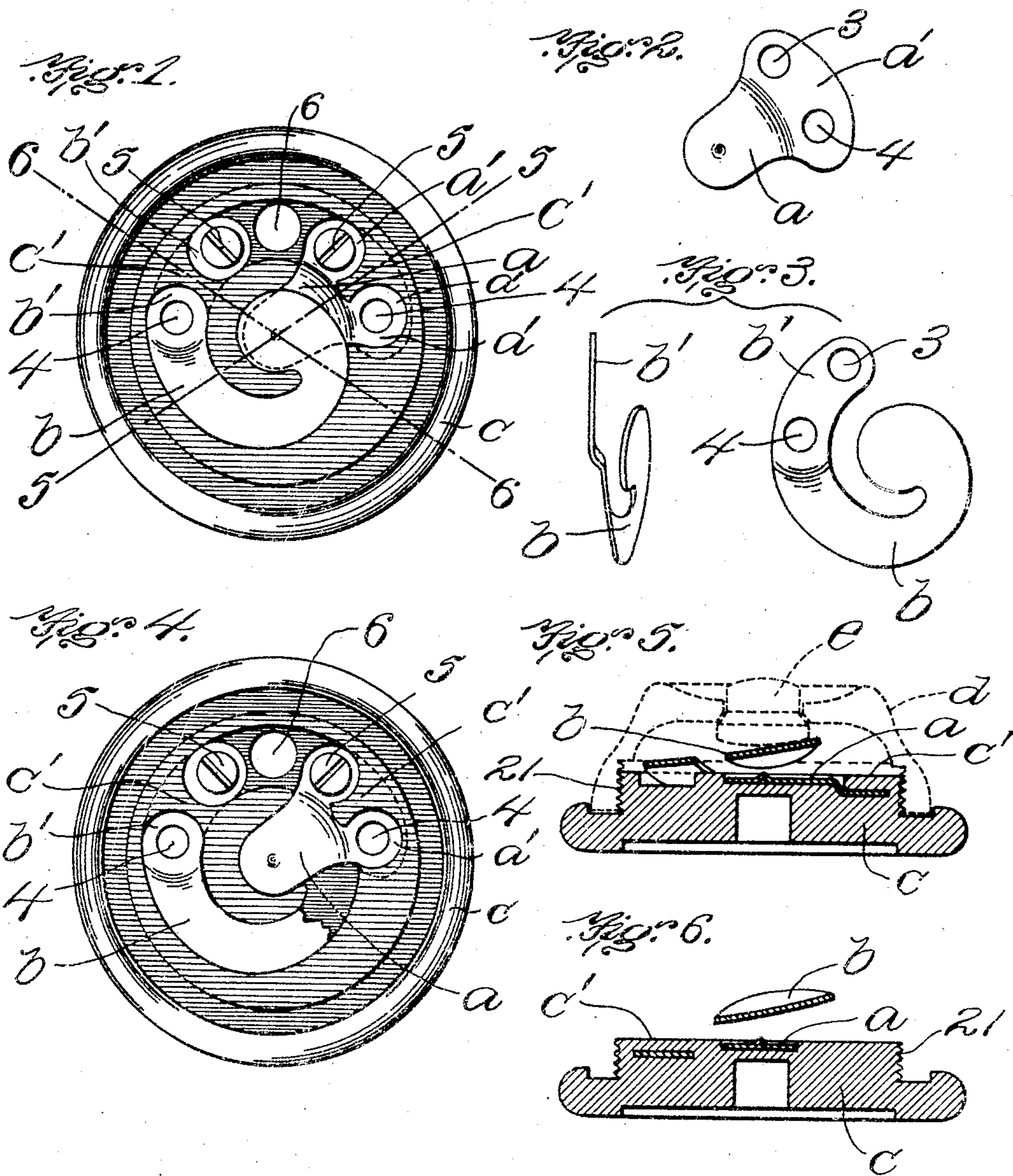


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W. J. MURDOCK.  
CIRCUIT CLOSING AND BREAKING DEVICE.

APPLICATION FILED JULY 21, 1904.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## CIRCUIT CLOSING AND BREAKING DEVICE.

SPECIFICATION forming part of Letters Patent No. 786,589, dated April 4, 1905.

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*To all whom it may concern:*

Be it known that I, WILLIAM J. MURDOCK, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Circuit Closing and Breaking Devices, of which the following is a specification.

This invention relates to a device for closing and breaking an electric circuit, the device being of the character known as a "push-button" and comprising a casing or holder of insulating material and two metallic contact-pieces attached thereto and insulated from each other thereby, said pieces being connected with the circuit-wires and normally separated from each other to break the circuit.

The invention has for its object to provide an improved device of this character of such construction as to materially reduce the expense of construction and the liability of displacement of the contact-pieces or either of them.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a plan view showing the base and the contact-pieces of a circuit closing and breaking device embodying my invention, the top portion of the casing and the push-knob being removed. Figs. 2 and 3 represent the contact-pieces separated from the holding-base. Fig. 4 represents a view similar to Fig. 1, showing a part of the outer contact-piece broken away. Fig. 5 represents a section on line 5 5 of Fig. 1, showing in dotted lines the cap portion of the casing and the push-knob therein. Fig. 6 represents a section on line 6 6 of Fig. 1.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* and *b* represent the contact-pieces of a circuit closing and breaking device or push-button, the same being of any suitable metal or material which is a conductor of electricity.

*c* represents the base or holder to which the contact-pieces are affixed, said base forming a part of a casing which is completed by the con-

nection with the base of a cap *d*. (Shown by dotted lines in Fig. 5.) The base is provided with an externally-threaded shoulder 21, which engages an internal thread formed in the cap *d*.

*e* represents the usual push knob or button, which is movable in an aperture in the cap *d* and bears against the outer portion of the spring contact-piece *b*, the resilience of said piece normally holding the knob or button *d* against the cap, as indicated in Fig. 5. When the button *e* is pushed inwardly, it forces the spring-piece *b* into contact with the anvil-piece *a*, thus closing the circuit.

In carrying out my invention I form the base *c* of a suitable plastic material or composition which is adapted to be molded and to become rigid, the said material or composition being a non-conductor of electricity. The contact-pieces *a* and *b* are provided, respectively, with shanks *a'* and *b'*, which are seated within the body of the base *c*, this being accomplished by locating the shanks *a'* and *b'* below the plane of the outer or upper surface of the base *c* and extending portions *c'* of the material of said base over the outer surfaces of said shanks. The contact-pieces are seated on or embedded in the base while the material of the latter is in plastic condition, and the portions of the base that are extended over the shanks of the contact-pieces when hardened securely confine the contact-pieces in place. The shanks of the contact-pieces are preferably offset, as shown in the drawings, so that each shank is located below the plane of the outer surface of the base, while the outer portion of the contact-piece *a* is arranged substantially flush with said outer surface, as shown in Figs. 5 and 6, the outer portion of the spring contact-piece *b* overhanging the outer surface of the base and the outer portion of the contact-piece *a*.

The shanks of the contact-pieces are provided with orifices 3 4, the orifices 3 receiving the binding-screws 5, which secure the circuit-wires to the contact-pieces, while the orifices 4 receive screws which attach the base to its support. Orifices coinciding with the orifices 4 are molded in the base *c*, and internally-threaded metallic bushings are preferably em-



bedded in the base to coincide with the orifices 3 and engage the screws 5.

6 represents an orifice formed in the base between the screws 5 for the passage of the 5 circuit-wires through the base.

I claim—

1. A circuit closing and breaking device or push-button comprising a base of insulating material, and metallic contact-pieces each hav- 10 ing a shank embedded in and covered by the base, and an exposed portion located above the base, one of said exposed portions being resilient and normally separated from the other although adapted to be moved into con- 15 tact therewith, the said base having integral shank-confining portions extending over and confining the said shanks.

2. A circuit closing and breaking device or

push-button comprising a base of insulating material, and metallic contact-pieces each hav- 20 ing an exposed portion and a shank offset from the exposed portion and embedded in the base below the outer surface of the latter, one of said exposed portions being resilient and normally separated from the other although 25 adapted to be moved into contact therewith, the said base having integral shank-confining portions extending over and confining the shanks and forming parts of the outer face of the base. 30

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

WILLIAM J. MURDOCK.

Witnesses:

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