

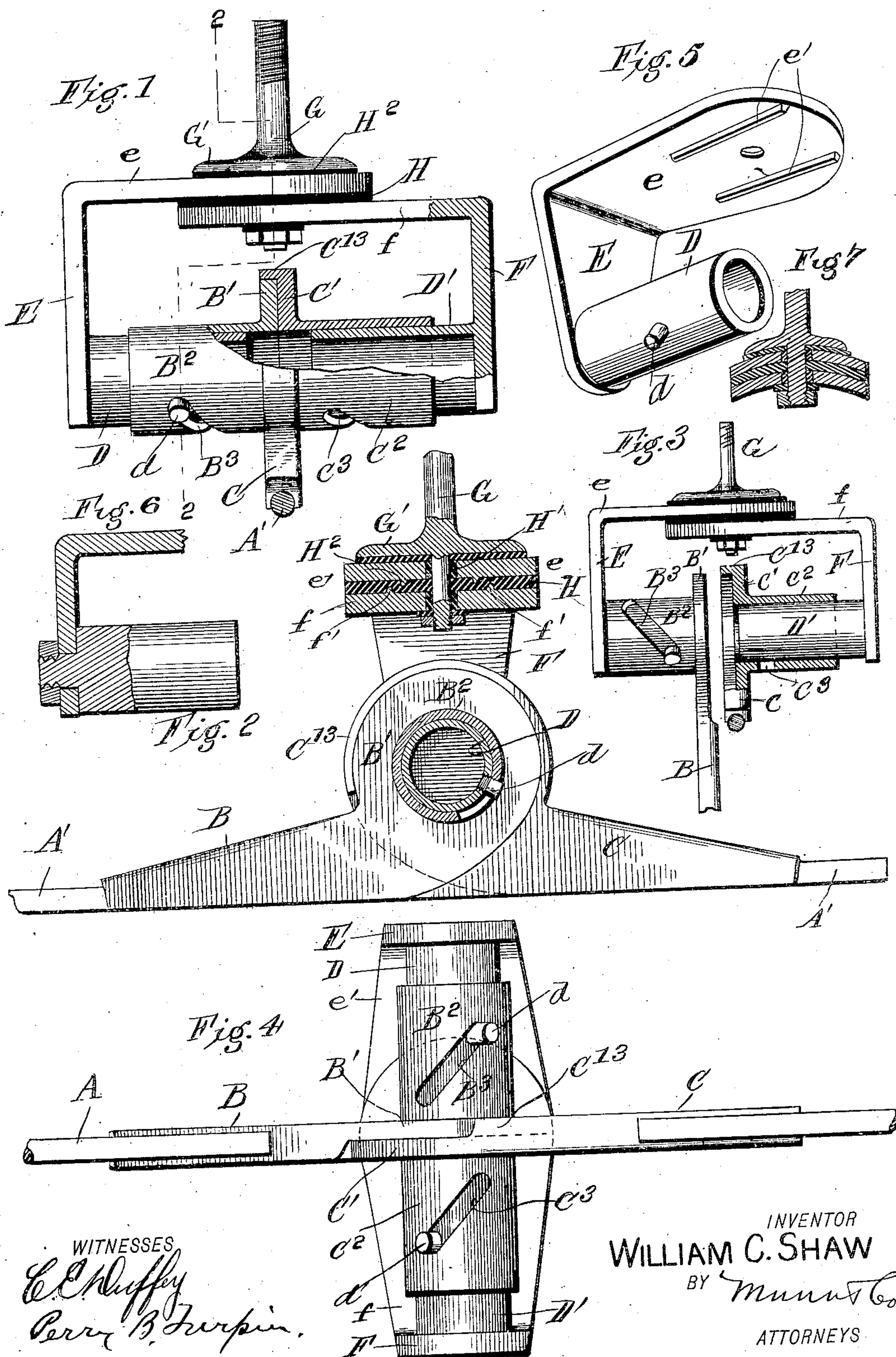
No. 844,961.

PATENTED FEB. 19, 1907.

W. C. SHAW.

CIRCUIT BREAKER FOR ELECTRICAL CONDUCTORS.

APPLICATION FILED AUG. 2, 1906.



WITNESSES  
*E. C. Muffey*  
*Perry B. Turpin*

INVENTOR  
**WILLIAM C. SHAW**  
 BY *Munn & Co.*  
 ATTORNEYS



# UNITED STATES PATENT OFFICE.

WILLIAM COLUMBUS SHAW, OF WHITE PLAINS, MARYLAND, ASSIGNOR TO  
JOHN M. BOARMAN, OF FAULKNER, MARYLAND.

## CIRCUIT-BREAKER FOR ELECTRICAL CONDUCTORS.

No. 844,961.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed August 2, 1906. Serial No. 328,839.

*To all whom it may concern:*

Be it known that I, WILLIAM COLUMBUS SHAW, a citizen of the United States, and a resident of White Plains, in the county of Charles and State of Maryland, have invented certain new and useful Improvements in Circuit-Breakers for Electrical Conductors, of which the following is a specification.

My invention is an improvement in circuit-breakers for electrical conductors, and is particularly designed for use on overhead wires forming parts of a circuit; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a front elevation, partly in section, of a device embodying my invention. Fig. 2 is a vertical section on about line 2 2 of Fig. 1. Fig. 3 is a view similar to Fig. 1, but showing the parts with the circuit broken. Fig. 4 is a bottom plan view of the construction shown in Fig. 1. Fig. 5 is a detail perspective view of one of the brackets, and Figs. 6 and 7 show slightly different constructions.

By my invention I provide, in connection with the sections A and A' of the line-wire, independent circuit making and breaking sections B and C, which, except for the fact that they are rights and lefts, may be made substantially alike, and in connection with these sections B and C, to which the wire sections A and A' are respectively attached, I provide means whereby as one of the independent sections B and C drops with the breaking of its respective wire said section is moved laterally away from the opposite section in such manner as to break the electrical connection between the two.

In the construction shown I make the sections B and C with the circular heads or disks B' and C', which are concentric and are journaled, respectively, on the stub-shafts D and D', being for such purpose provided with the thimbles B<sup>2</sup> and C<sup>2</sup>, which encircle their respective shafts and are provided with cam-slots B<sup>3</sup> and C<sup>3</sup>, into which project pins *d* and *d'* from the respective stub-shafts D and D'. These cam-slots C<sup>3</sup> and B<sup>3</sup> are so formed relatively to their pins *d* and *d'* that when the respective sections drop they will be caused to move, as will be understood from Figs. 1 and 3, from the position shown in Fig. 1 to that shown in Fig. 3, in which latter

figure it will be noticed the section B is adjusted laterally away from the opposite section, breaking the electrical connection which is established when the parts are in the position shown in Fig. 1. By preference one of the sections B and C (shown as the section C) is provided, surrounding its head, with the laterally-projecting circular flange C<sup>13</sup>, which when the parts are in use overlaps the head B' (see Fig. 1) and operates to shield and interlock the parts in the direction of the line-wires A and A', so the strain of the line-wire will be borne by both of the circuit making and breaking sections.

The stub-shafts D and D' may be parts of bracket-sections E and F or bolted thereto to facilitate removal of sections B and C, as shown in Fig. 6, said sections being made L shape, with the upright wings having the stub-shafts D and D' on their inner sides and projecting toward each other and also having the horizontal wings *e* and *f*, which overlap at their extremities and are united by a bolt G, suitable insulation being made between the horizontal wings E and F at H and surrounding the bolt G at H' and also at H<sup>2</sup> between the flange G' on the bolt G and the upper horizontal wing *e* of the bracket-section E, as best shown in Figs. 1, 2, 3 of the drawings. The bolt G may be connected in any suitable way with the overhead support, as will be understood by those skilled in the art. The horizontal wings *e* and *f* may be curved, as shown in Fig. 7, provided on their adjacent faces with ribs *e'* and *f'*, as will be understood from Figs. 2 and 5, to prevent any twisting of the bracket-sections, and in practice I find it desirable to screw the pins *d* and *d'* into their respective stub-shafts, as best shown in Fig. 2.

It will be noticed in Fig. 1 that the stub-shafts are spaced apart at their inner adjacent ends, so that when the sections B and C are in contact, as shown in Fig. 1, they alone complete the electrical connection, and when one or the other of the said sections drops in case its section of wire is broken or detached in any manner and drops the said circuit making and breaking section will by the action of its cam-slot be adjusted laterally out of contact with the opposite section, as will be best understood from Fig. 3 of the drawings. Thus it will be noticed that the circuit making and breaking sections are sustained



in contact by their respective line-wire sections, and when such wire sections become detached they will drop and automatically adjust their circuit making and breaking sections laterally to break the circuit as desired. It will be noticed that the stub-shafts are concentric and in alinement and form supports for the circuit making and breaking sections in the operation of the invention.

I claim—

1. The combination substantially as herein described of the bracket-sections having the horizontal wings, the bolt connecting the same and insulating devices at the connection between the horizontal wings of the bracket-sections, the said sections being also provided with depending wings, and with stub-shafts extending thence inward toward each other and spaced apart at their inner adjacent extremities, the circuit making and breaking sections having heads movable laterally into and out of contact and provided with thimbles fitting on their respective stub-shafts, and provided with cam-slots, and pins projecting from the stub-shafts into the cam-slots of their respective thimbles, substantially as set forth.

2. In a circuit maker and breaker for electrical conductors, the combination of a pair of making and breaking sections movable laterally into and out of contact with each other and having extensions for connections with line-wire sections, supports on which said making and breaking devices are supported to turn and move laterally, and means operated by the turning movement of said section or sections to effect a lateral movement thereof, substantially as set forth.

3. The combination of the independent line-wire sections, the independent making and breaking sections to which said line-wire sections are respectively connected, a support on which said making and breaking sections are mounted to turn, and means operated by the relative turning of the sections to move the same laterally, substantially as set forth.

4. The combination with the stub-shafts spaced apart at their inner adjacent ends, of circuit making and breaking sections having thimbles journaled on their respective shafts and provided with cam-slots and pins projecting from the stub-shafts into the slots of their respective thimbles, substantially as set forth.

5. The combination with the stub-shafts and the circuit making and breaking de-

vices mounted on their respective stub-shafts, of cam operating devices whereby the said sections may be caused to move along their shafts when turned thereon, substantially as set forth.

6. The combination in a circuit-breaker for electrical conductors, of the bracket having depending side wings and stub-shafts projecting inwardly therefrom, the circuit making and breaking sections supported on their respective stub-shafts and adapted to turn thereon, and cam devices whereby the turning of either of said sections on its stub-shaft will cause it to move laterally with respect to the opposite section, substantially as set forth.

7. A supporting-bracket composed of sections having top wings, devices connecting the same and means for insulating the connection between the said wings and also provided with depending wings, and with stub-shafts projecting inwardly therefrom toward each other and spaced apart at their inner extremities and circuit making and breaking sections movable into contact with each other between the spaced-apart ends of the stub-shafts, and means whereby the said making and breaking sections as they turn on their stub-shafts may be caused to move along the said shafts, as set forth.

8. A circuit-maker for electrical conductors comprising a pair of independent making and breaking sections having concentric heads adapted to contact one with the other supporting means upon which said sections are mounted to turn and move laterally, and means operated by the turning of said sections relative to each other to effect a lateral relative movement of said sections, substantially as set forth.

9. A circuit making and breaking device for electrical conductors comprising a pair of alined stub-shafts spaced apart at their adjacent ends, connecting means between the outer ends of said shafts and provided with insulating devices, circuit making and breaking sections journaled on and movable along their respective stub-shafts and cam devices for effecting a longitudinal movement of the making and breaking sections along their respective stub-shafts, as the said sections are turned, substantially as set forth.

WILLIAM COLUMBUS SHAW.

Witnesses:

JOHN T. OWEN,  
WILLIS SPALDING.