

(No Model.)

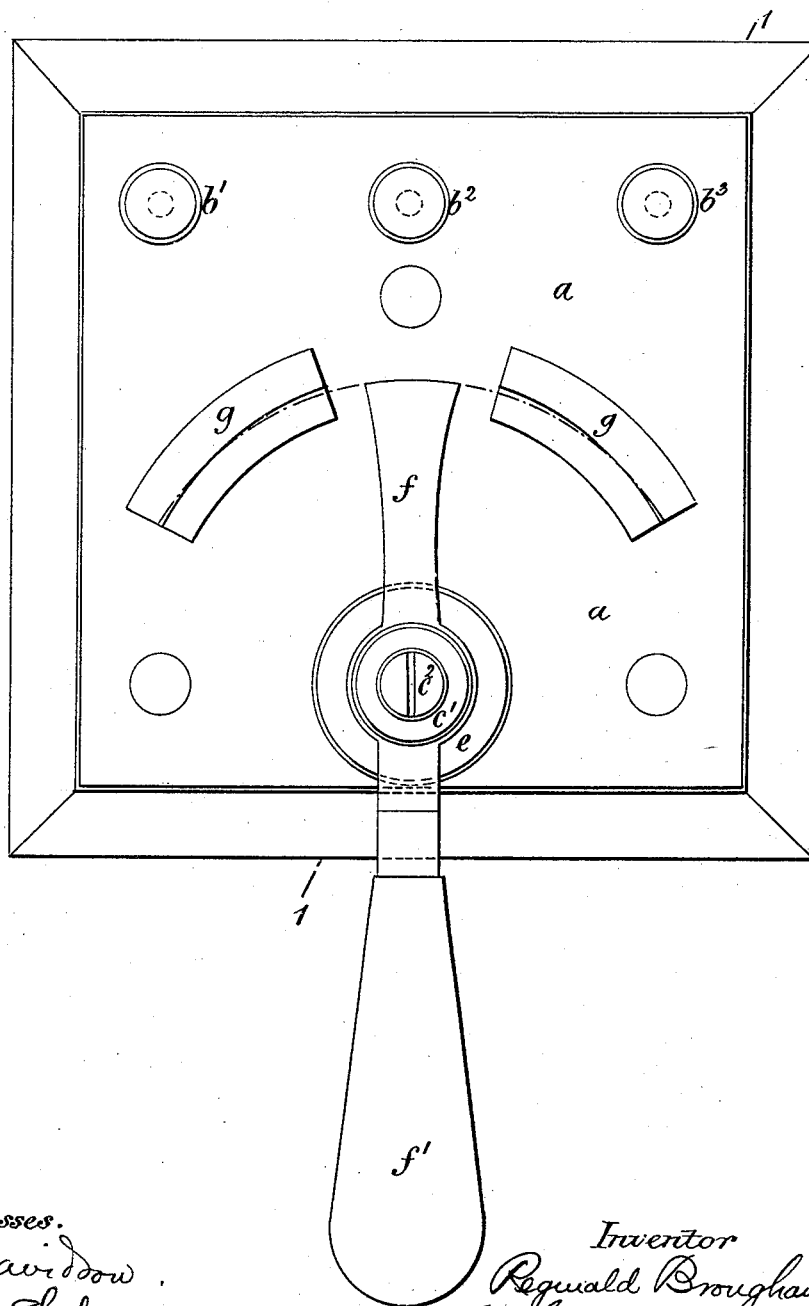
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R. BROUGHAM.
TELEGRAPH SWITCH.

No. 267,144.

Patented Nov. 7, 1882.

Fig. 1.



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Kellie Holmes.

Inventor
Reginald Brougham
By his Attorney
Baldwin, Hopkins, & Potts.

(No Model.)

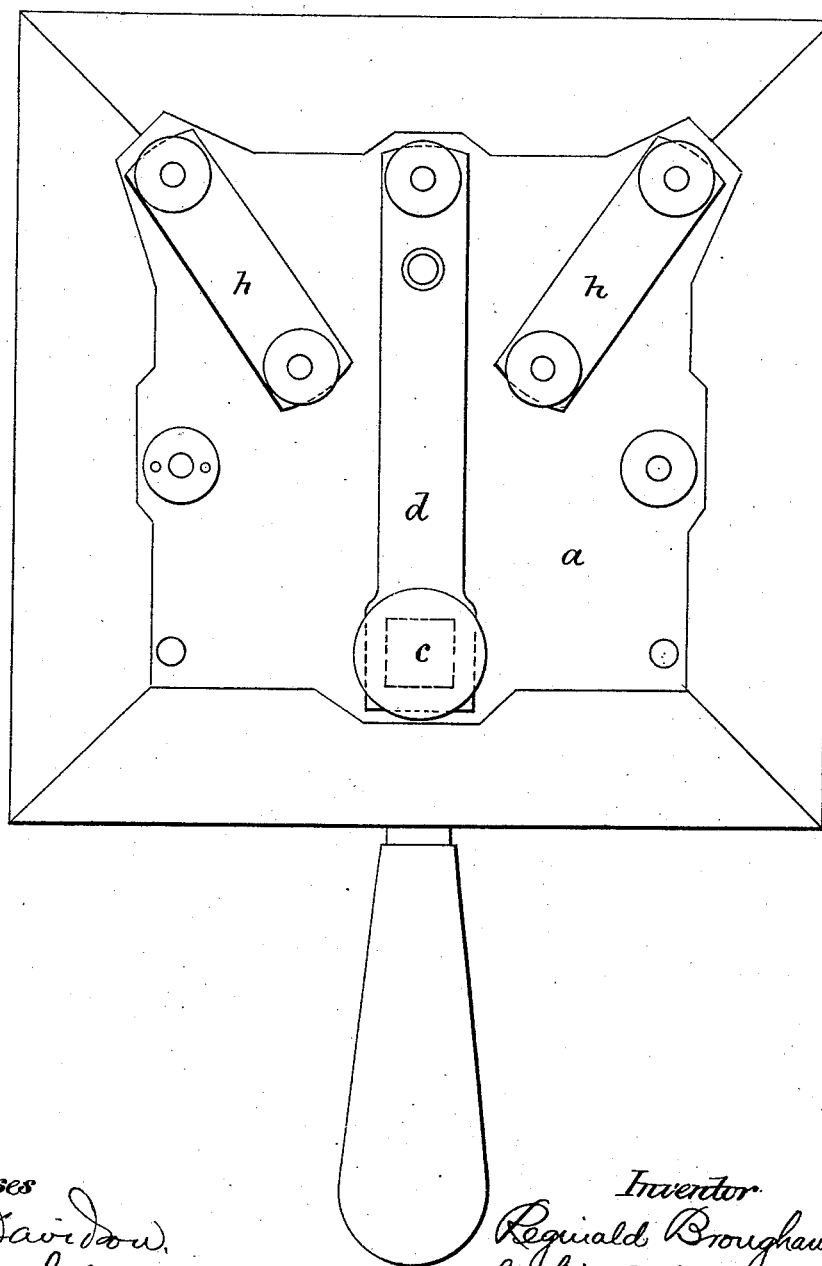
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TELEGRAPH SWITCH.

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Patented Nov. 7, 1882.

Fig. 2



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(No Model.)

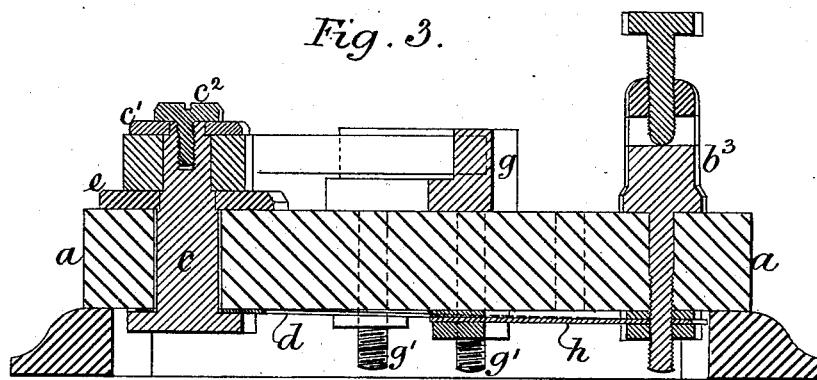
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TELEGRAPH SWITCH.

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Fig. 3.



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UNITED STATES PATENT OFFICE.

REGINALD BROUGHAM, OF HEDDON STREET, REGENT STREET, COUNTY OF MIDDLESEX, ENGLAND.

TELEGRAPH-SWITCH.

SPECIFICATION forming part of Letters Patent No. 267,144, dated November 7, 1882.

Application filed September 21, 1882. (No model.) Patented in England April 28, 1882, No. 2,030.

To all whom it may concern:

Be it known that I, the honorable REGINALD BROUGHAM, a subject of the Queen of Great Britain, residing at Heddon Street, Regent Street, in the county of Middlesex, England, have invented certain new and useful Improvements in Electrical Switches or Circuit-Changers, (for which I have received Letters Patent in Great Britain, No. 2,030, dated 28th April, 1882,) of which the following is a specification.

This invention has for its object improvements in electrical switches or circuit-changers. The result which I desire to attain is to be able very easily and by a simple mechanism to establish good electrical contact between any conductor and either one or other of two other conductors, and to change the contact instantaneously whenever required from one to the other.

My apparatus consists of a base, of wood or other non-conductor, having a metal stud projecting from its face. This stud, by means of a binding-screw and a permanent metallic connection therefrom, is placed and remains in connection with the conductor first above mentioned. A lever, which, with the exception of its handle, is of metal, is mounted upon the stud and is capable of turning freely around it. The wooden or non-conducting base also has fixed upon it two metal arcs, and each of these is, by means of a binding-screw and a permanent metallic connection, coupled with one of the conductors, with which the first-mentioned conductor is required to be placed in good electrical contact. These metallic arcs are nearly, but not quite, concentric with the stud or axis of the lever; and the arrangement is such that when the lever is moved around the stud to change the contacts the lever, leaving the first arc, travels along the second arc until it arrives at a position in which its end jams against the second arc. Thereby a strain is brought to bear upon the parts, with the result of causing a very firm contact between, on the one hand, the eye of the lever and the stud, and on the other the outer end of the lever and the metal arc. In passing from one contact to the other, if any sparking take place it is not between the surfaces between which the contacts are ultimately estab-

lished, and consequently these surfaces remain clean and in good order.

In order that my said invention may be most fully understood and readily carried into effect, I will proceed to describe the drawings hereunto annexed.

In the drawings, Figure 1 is a plan of my improved circuit-changer. Fig. 2 is an under side view, showing the connections; and Fig. 3 is a section on the line 1 1 in Fig. 1.

a is a wooden base.

b' *b*² *b*³ are three binding-screws upon it to receive the ends of three wires or electric conductors.

c is a brass stud. This stud is passed through the wooden base *a*, and also through a strip of sheet-copper, *d*, which establishes electrical connection between the binding-screw *b*² and the stud.

e is a collar, which is pinned securely to the base *a*, and through this also the stud *c* passes.

f is a brass lever, furnished with a wooden handle, *f'*. The lever is mounted on the stud *c*, and can turn freely upon it.

c' is a cap, and *c*² is a screw by which the lever is secured upon the stud.

g g are two similar metal pieces or arcs, each formed with a longitudinal notch, in which the end of the switch-lever moves. The arcs are held down upon the base *a* by the screws and nuts *g' g'*. Copper strips *h h* are nipped between the nuts and the under side of the base. These serve to place the arcs in electrical communication with the binding-screws *b'* and *b*³. The end of the lever *f* is a portion of a circle, and it is concentric with the stud *c*. The vertical faces of the arcs *g g* are similarly curved, but they are set eccentrically to the stud *c*, as is shown in Fig. 1. The amount of eccentricity is here somewhat exaggerated. The result of this construction is that when the lever is turned to one or other side its end abutting against the inclined surface of one of the arcs or pieces *g* exerts a strong thrust against this surface, and this thrust reacts radially upon the stud or fulcrum *c* of the lever and establishes at each point a contact suitable for carrying a powerful electric current. This end is attained with certainty, notwithstanding any wear which may occur at the contact-surfaces. The

apparatus is useful wherever it is required to direct powerful currents into different circuits. For example, the binding-screws b' and b^3 may be connected with two dynamo-electric machines and b^2 with the lead to electric lamps. 5 With the end of the switch-lever placed centrally between the inner ends of the two arcs $g g$ both circuits will be opened. In this arrangement the circuit-changer will admit of 10 either dynamo-machine being employed to supply the lamp or lamps; or b' and b^3 may be connected with separate lamp-leads, and b^2 may be connected with a dynamo-electric machine. Then the apparatus affords the means 15 of applying the dynamo-electric machine to either lamp-circuit at pleasure. These examples are given by way of illustration. There

are many other cases in which circuit-changers suited to powerful currents are necessary.

Having thus described the nature of my said invention and the manner of performing the same, I would have it understood that I claim— 20

The combination, substantially as set forth, of the pivoted switch-lever f and the arcs $g g$, the contact-faces of which are arranged eccentrically to the pivot of the lever, for the purpose described. 25

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