No. 663.695. Patented Dec. 11, 1900.

J. M. DAVIDSON.

ELECTRICAL INTERRUPTER.

(Application filed June 7, 1900.)

(No Model.)

Fig: 1.

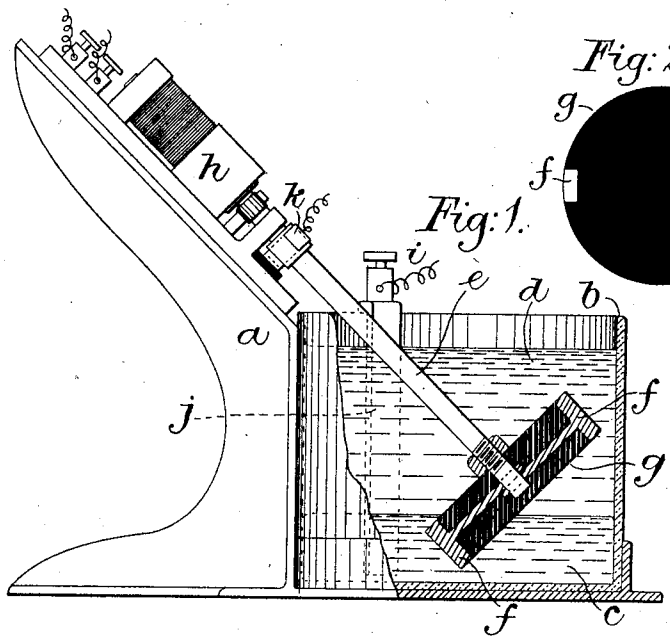


Fig: 2.

Fig: 3

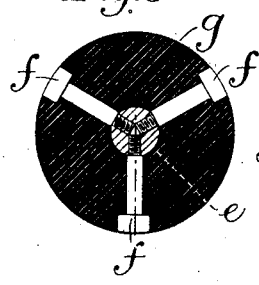


Fig: 4.

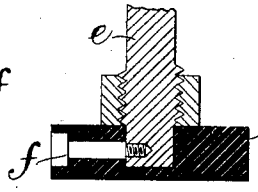
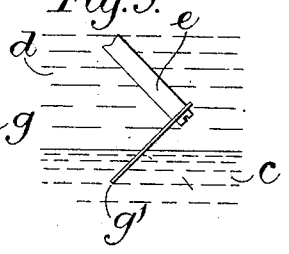


Fig: 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES MACKENZIE DAVIDSON, OF LONDON, ENGLAND.

ELECTRICAL INTERRUPTER.

SPECIFICATION forming part of Letters Patent No. 663,695, dated December 11, 1900.

Application filed June 7, 1900. Serial No. 19,461. (No model.)

To all whom it may concern:

Be it known that I, JAMES MACKENZIE DAVIDSON, a subject of Her Majesty the Queen of Great Britain, residing at London, in the county of Middlesex, England, have invented certain new and useful Improvements in Electrical Interrupters, of which the following is a specification.

My invention relates to electrical interrupters of the mercury type; and it has for its objects to simplify their construction, to obviate or lessen the disturbance of the conducting fluid when the interrupter is in operation, and generally to effect the improvements hereinafter indicated.

In the accompanying drawings, Figure 1 is a sectional elevation of an interrupter embodying my improvements. Fig. 2 is an under side view of the break-disk shown in Fig. 1. Figs. 3 and 4 are sections in different planes, showing a modified form of break-disk; and Fig. 5 illustrates another modified form of contact.

a is a framework or support for the parts of the interrupter.

b is a glass or like tank containing mercury or other fluid conductor *c* and a fluid dielectric *d* of lower specific gravity than the fluid conductor *c*.

Rotatably mounted upon the frame *a* is an inclined shaft *e*, carrying at its lower end a desired number of contacts *f*. These contacts may, as shown in Figs. 1, 2, 3, and 4, pass through a disk *g* of insulating material, making contact with the shaft *e* at the center and with the mercury *c* at the periphery, or, as shown in Fig. 5, one or more bare contact-blades *g'* may be employed. The disk *g* and contacts *f* are completely immersed in the fluids *c d*, the lower stratum *c* of which alone is the conductor.

As will be clearly seen from Figs. 2, 3, and 4, the contacts *f* are preferably so applied to the disk *g* as to be flush with it in order that the disturbance produced in the fluids by the rapid rotation of the contacts may be reduced to a minimum, and it is for the same reason that the disk *g* and contacts *f* are completely immersed in the fluids *c d*.

Rotation is imparted to the shaft *e*. The drawings show an electromotor *h*, which is a very convenient means, and, as shown, the shaft *e* may with advantage be a continuation of the motor-armature shaft.

One terminal *i* may be clamped to the tank *b*, and from it extends a rod *j*, that dips into the mercury *c*. The other terminal may have a brush connection *k*, adapted to bear upon the shaft *e*.

It will be apparent that the period of "make" and "break" may be adjusted by varying the quantity of fluid conductor *c* at the bottom of the tank *b* and that the speed of rotation of the shaft *e* may be varied by adjusting the resistance of the motor-circuit.

By mounting the shaft *e* in an inclined manner I am enabled to completely immerse the contacts *f* in the fluids *c d* and at the same time avoid the use of stuffing-boxes, which would be necessary in the case of a horizontally-mounted shaft.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. An electrical interrupter comprising, in combination, a tank, a fluid conductor and a fluid dielectric in said tank, one or more contacts completely immersed in said fluids, an inclined shaft carrying said contacts, and means to rotate said shaft.

2. An electrical interrupter comprising, in combination, a tank, a fluid conductor and a fluid dielectric in said tank, a disk of insulating material and contacts carried thereby completely immersed in said fluids, an inclined shaft carrying said disk and its contacts, and means to rotate said shaft.

In testimony whereof I have hereunto subscribed my name.

JAMES MACKENZIE DAVIDSON.

Witnesses:

A. F. SPOONER,

J. S. WITHERS.