

R. ALKAN.
TUMBLER SWITCH.
APPLICATION FILED AUG. 2, 1920.

1,437,702.

Patented Dec. 5, 1922.

Fig. 1.

Fig. 2.

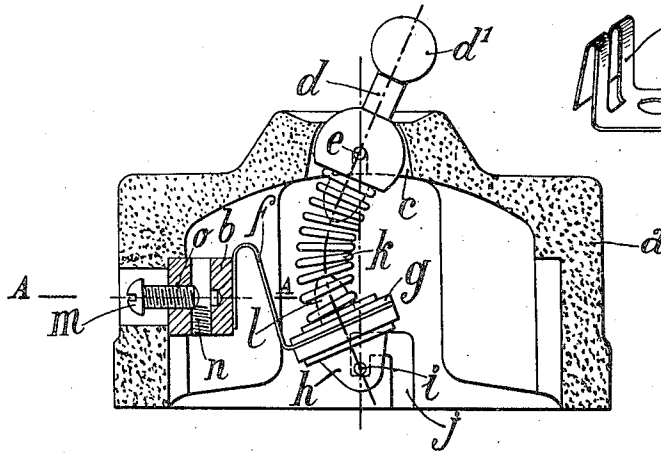
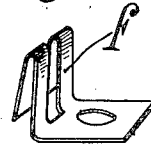


Fig. 1^a.

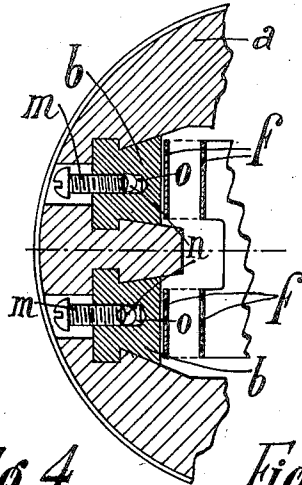


Fig. 3.

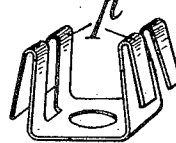


Fig. 4.



Fig. 5.



Fig. 6.



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UNITED STATES PATENT OFFICE.

ROBERT ALKAN, OF PARIS, FRANCE.

TUMBLER SWITCH.

Application filed August 2, 1920. Serial No. 400,879.

To all whom it may concern:

Be it known that I, ROBERT ALKAN, a citizen of the French Republic, residing at Paris, France, have invented certain new and useful Improvements in Tumbler Switches, of which the following is a specification.

This invention relates to a switch with oscillating lever of the type generally known as tumbler switches and it has further for its purpose to improve the construction of such switches so that it becomes very simple but compact. The improved switch can be mounted easily as, with the exception of the screws for clamping the wires in the terminals neither screws nor nuts nor threadings are used.

In the accompanying drawing the invention is shown by way of example.

Fig. 1 is a longitudinal section showing the improved tumbler switch on a larger than the natural size.

Fig. 1^a is a horizontal section on line A—A of Fig. 1.

Fig. 2 shows a simple contact blade.

Fig. 3 shows a double contact blade.

Figs. 4, 5 and 6 show various forms of the spring inserted between the handle and the support for the contact blades.

According to the invention the body of the switch consists of a porcelain block *a* in which the contact pieces, *b—b* are sealed. This block, which is hollow at its lower part has a circular opening *c* at the top from which projects the tumbling lever *d*, adapted to turn around an axle *e*. The contact blades *f* are mounted upon a support *h* adapted to pivot around a transverse axle *i* which is mounted in two bayonet-brackets *j*. Insulating washers *g* are interposed between the contact blades *f* and the support *h*.

A very strong spiral spring *k* is placed with its upper end upon the lower end of the oscillating handle *d* and with its lower end upon the head part *l* of the support *h*. This spring *k* serves exclusively to establish a mechanical connection between the tumbling handle and the oscillating support *h*, owing to its working on compression and on breaking.

In this manner there is ensured:

- (1) An energetic and constant pressure of the blades upon the contact pieces;
- (2) A very sudden breaking of the con-

tact, whereby any intermediate position becomes impossible;

(3) The stability of the two pivot axles *e* and *i*, owing to the strong axial reaction which immobilises the same upon the ground of their bearings.

The insulation of the knob *d*¹, which is the only outer metallic part, is perfectly ensured through the two insulating washers *g*.

The contact screws *m* can be easily removed from the threaded holes *n—o* which are provided for this purpose in the contact pieces *b*.

In the simple interrupter shown in Fig. 1 only simple blade springs *f* are used for establishing the contact or for interrupting the same. A reciprocating switch with double breaking can be built according to the principles which have just been described by using the double blade springs *p* (Fig. 3) and providing two supplementary terminals.

Instead of the spiral spring which connects the handle with the support of the blade springs a blade spring of steel or other elastic metal, folded or undulated as shown in Figs. 4, 5 and 6 or of other similar shape could be used.

The block and support could be made in two pieces, with or without a lid according to requirement.

I claim:—

An improved tumbler switch comprising in combination with a socket, two terminals fixed in said socket, a contact spring, a support for said contact spring pivotally mounted in said socket, an upwardly directed projection of said support, a tumbling handle pivotally fixed in the upper end of said socket, a downwardly directed projection of said tumbling handle, and a spiral spring mounted upon said projection of the tumbling handle and of the pivotable support for the contact blade so that when the tumbling handle is oscillated said spring operates said support suddenly when at the middle position and under maximum compression.

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

ROBERT ALKAN.

Witnesses:

HENRI BLOUIN,
CLEMENT S. EDWARDS.