

C. E. HAIN.
ELECTRIC SWITCH.
APPLICATION FILED FEB. 29, 1912.

1,049,296.

Patented Dec. 31, 1912.

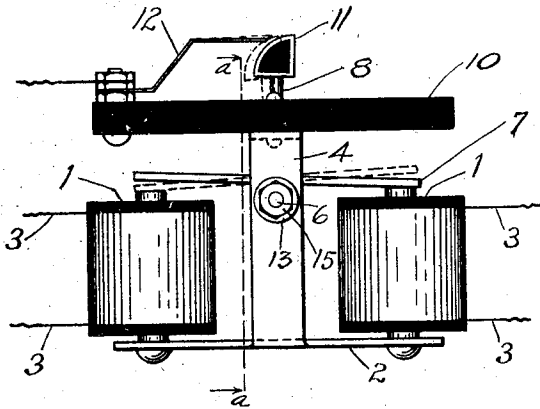


Fig. 1.

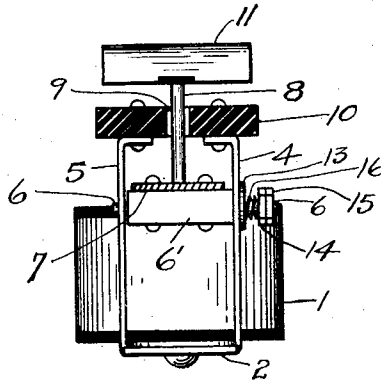


Fig. 2.

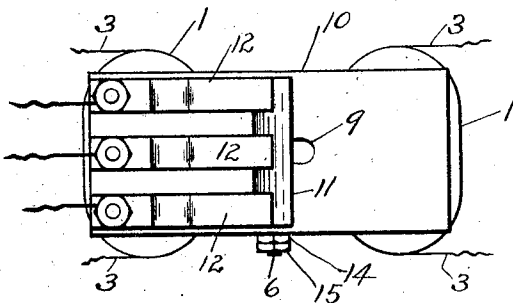


Fig. 3.

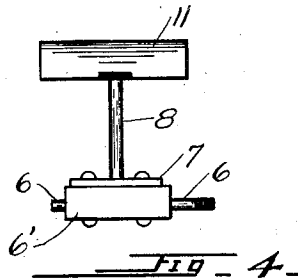


Fig. 4.

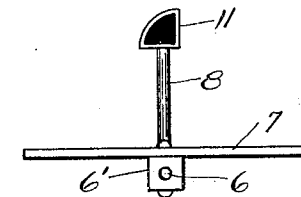


Fig. 5.

WITNESSES:

A. R. Mitchell
Eva Carley

INVENTOR:

Clifford E. Hain,
BY
Millard Eddy,
ATTORNEY.

UNITED STATES PATENT OFFICE.

CLIFFORD E. HAIN, OF OMAHA, NEBRASKA.

ELECTRIC SWITCH.

1,049,296.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed February 29, 1912. Serial No. 680,685.

To all whom it may concern:

Be it known that I, CLIFFORD E. HAIN, of Omaha, in Douglas county, in the State of Nebraska, have invented certain new and useful Improvements in Electric Switches, and have described the same in the following specification, illustrated by the accompanying drawings.

My invention relates primarily to switches commonly used in incandescent lighting for controlling the admission of current from main lamp circuits to their individual branches, and comprising an electromagnet controlled from a convenient distance by a push-button or the like, an armature lever actuated by that magnet, an insulated conductor carried by the armature lever and spring fingers for contacting with the insulated conductor.

It is the object of the invention to make sure in switches of this kind a deadbeat movement of the armature lever; to increase the persistence and reliability of slight contacts between the contact fingers and the insulated conductor; to regulate the facility with which the insulated conductor may be moved by the magnet; to avoid making the contacts unnecessarily forcible or extensive; to hold the insulated conductor securely in its off and on positions without the aid of a throwing-off spring and independently of its engagement with the contact fingers; and in general to produce a superior switch of the specified kind for the use referred to. For this purpose I incorporate in my improved switch a spring uniformly resisting all movements of the armature lever in either direction and means for regulating the tension of the spring in accordance with the different degrees of energy by which the armature lever is actuated under varied circumstances and conditions.

The best manner in which I have contemplated applying the principles of the invention, is shown in the drawings; yet the invention itself is not restricted to any specific arrangement or construction of parts, excepting in so far as limitations of that kind are either expressed or necessarily implied in the subjoined claim.

Figure 1 of the drawings is a side elevation of an electric switch of the specified kind, embodying the principles of this invention. Fig. 2 is a vertical cross-section of the same on the section line *a-a* of Fig. 1. Fig. 3 is a plan of the same switch. Figs. 4 and 5 are details.

In this illustrative switch the numerals 1 denote a pair of electromagnets mounted on the connecting iron plate and pole-piece 2, and controlled separately by unseen push-buttons or the like in the independent circuits 3. Bearings in the midway vertical arms 4 and 5 of this polepiece support the horizontal rockshaft 6, which is composed of soft iron and has an enlarged middle portion or block 6' to which the teetering armature 7 is bolted. This armature has a rigid perpendicular stem 8, oscillating in the slot 9 in the insulating plate 10 to which the arms 4 and 5 are bolted; and carries the insulated conductor 11 on the free end of that stem. The spring contact fingers 12 are mounted within reach of the conductor 11 on the same insulation plate 10. On one end of the rockshaft 6 are placed the washer 13 which contacts with the outer face of the arm 4, the nut and the jam-nut, 14 and 15, and the coiled spring 16 under adjustable tension between the washer and the nuts. From this construction it results that the arm 4 is continually gripped between the washer 13 and the adjacent end of the block 6' with a degree of pressure varying with the compression of the spring 16. Accordingly the friction between the same contacting members, being a function of that pressure, is regulable by adjustment of the nuts on the rockshaft. By such adjustment a brake varying in efficiency with the requirements of the varied situations and conditions in which the switch is used, is operatively applied to the armature in all its movements and positions. Thereby the insulated conductor is stabilized, and the object of the invention is accomplished in each of the several other particulars above specified.

I claim as my invention—

An electric switch comprising a pair of 100

independently energized electromagnets
having a polepiece common to both of them,
a double armature pivoted to the common
pole-piece, an oscillating stem carried by the
5 pivoted armature, an insulated conductor
carried by the oscillating stem, contact fin-
gers within reach of the insulated conductor,
and an adjustable friction brake operating

upon the pivoted armature in all its posi-
tions and pivotal movements.

In testimony whereof I subscribe my name
in the presence of two witnesses.

CLIFFORD E. HAIN.

Witnesses:

EVA CAYLEY,

WILLARD EDDY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."