W. A. BEHRENS.

MECHANICAL MOVEMENT FOR ELECTRIC SWITCHES, &c.

APPLICATION FILED DEC. 6, 1919.

1,368,228. **Patented Feb. 8, 1921.**

Fig. 1.

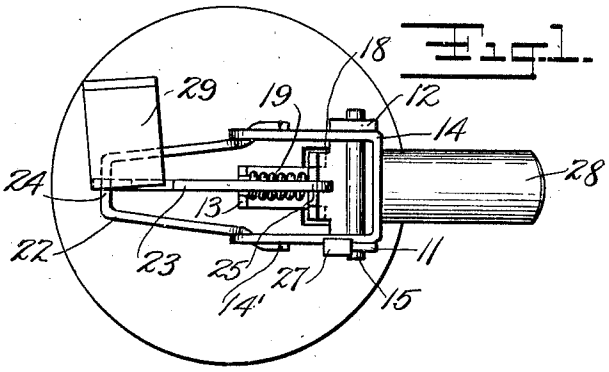


Fig. 5.

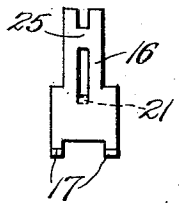


Fig. 2.

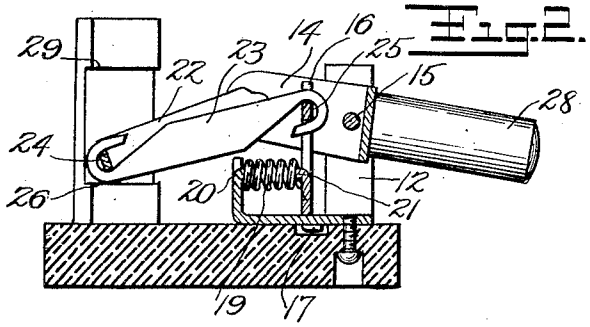


Fig. 3.

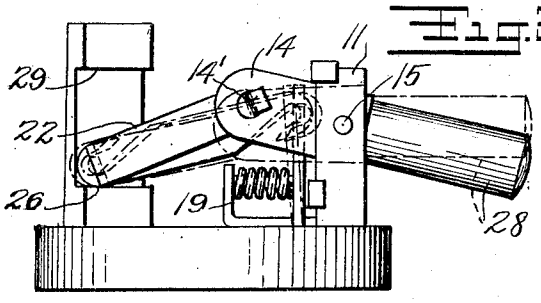


Fig. 4.

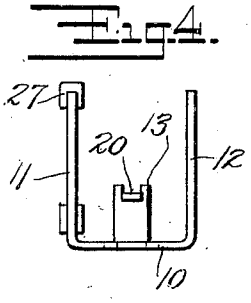
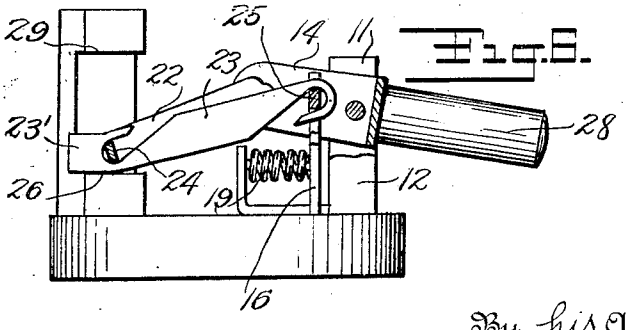


Fig. 6.



Inventor

W. A. Behrens

By his Attorneys

Mitchell & Allyn.

UNITED STATES PATENT OFFICE.

WALTER A. BEHRENS, OF BROOKLYN, NEW YORK, ASSIGNOR TO W. R. OSTRANDER & COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

MECHANICAL MOVEMENT FOR ELECTRIC SWITCHES, &c.

1,368,228. Specification of Letters Patent. Patented Feb. 8, 1921.

Application filed December 6, 1919. Serial No. 343,057.

To all whom it may concern:

Be it known that I, WALTER A. BEHRENS, a citizen of the United States of America, residing at Brooklyn, New York, have invented a new and useful Mechanical Movement for Electric Switches, &c., of which the following is a specification.

My invention has for its primary object the provision of a simple form of mechanism by which a snap action may be produced suitable for electric switches, particularly of the snap type.

In the preferred form the swinging contact member also has a sliding movement which precedes the swinging movement and not only tends to prevent the parts from sticking, but also serves to keep the contacts clean.

Figure 1, is a plan view of mechanism embodying the improvements of my invention.

Fig. 2, is a side view and partial section of the same.

Fig. 3, is a side view showing the parts in full lines in one of the positions in which they normally lie when at rest, and showing in dotted lines the relative position of the parts when moving them from one of their normal stationary positions to the other normal stationary position.

Fig. 4, is an end view of the frame which supports the moving parts.

Fig. 5, is a detail view of the movable abutment.

Fig. 6, is a side view and partial sectional view showing a modification.

The supporting frame consists of a base plate 10 with the two posts 11 and 12 and the lug 13. A yoke 14 is pivotally supported at 15 by the posts 11 and 12. An abutment member 16 is provided with feet 17, 17 which hook under the corners 18 of the base plate 10. A spring 19 has its ends positioned by lugs 20 and 21 carried respectively by the members 13 and 16 so that the abutment member 16 is pressed toward the pivot 15 of the operating yoke 14.

A swinging member 22 has its opposite ends inserted in holes 14′ in the ends of the arms of the yoke 14. Another swinging member 23 has its ends hooked about cross-pieces 24 and 25 carried by the swinging member 22 and the abutment member 16 respectively. As a result of this construction and arrangement the pressure of the spring 19 pulls the swinging link 23 toward the right as viewed in Fig. 2 and tends to pull link 23 and the swinging member 22 down against the stop 26, one arm of the yoke 14 being stopped against the shoulder 27 on the post 11. When the yoke 14 is tilted from the position shown in full lines in Figs. 2 and 3 in the direction of the dotted lines of Fig. 3 for instance, by means of an operating handle or lever 28, the hinged ends of the swinging member 22 are moved downward into alinement with the pivot 15, thus forcing the free end of the swinging member 22 away from the axis 15 until the hinged connection between the swinging member 22 and yoke 14 passes below the center line at which time the pressure of the spring 19 against the abutment 16 is sufficient to throw the free ends of the swinging members 22 and 23 upward with a snap action against the stop shoulder 29.

This mechanism is especially adapted to use as a snap switch where the swinging member 22 would act as the main switch arm which would thus have a sliding movement at the start of its snap action so as to keep the contacts clean and also prevent them from sticking.

In the form shown in Fig. 6 the swinging link 23 has one end extended as at 23′ beyond the swinging member 22 so that the end 23′ could act as a contact arm of the switch instead of the member 22. The construction and operation however is otherwise exactly the same as in the previously described form.

I claim:—

1. Mechanism of the character described, comprising a pivoted yoke, a spring-pressed abutment independent of said yoke and two swinging members hinged together near one end and having their opposite ends respectively hinged to said abutment and to said yoke.

2. Mechanism of the character described, comprising a frame having posts and a lug, a yoke pivotally supported by said posts, an abutment hinged to said frame, a spring interposed between said abutment and said lug and two swinging members hinged together and hinged respectively to said yoke and to said abutment.

3. Mechanism of the character described, comprising a pivoted yoke, a swinging member pivoted to movable parts of said yoke, a spring-pressed abutment and a swinging

link connected to said abutment and to the free end of said swinging member.

4. In a device of the character described, a base, a pivoted member, a spring-pressed abutment on said base, a member pivoted to said first mentioned member, and a link pivoted to said second mentioned member and to said abutment.

5. Mechanism of the character described, comprising a hinged abutment, a link pivoted thereto, a pivoted operating member, and a swinging member pivoted at one end to said link and pivoted at the opposite end to said operating member, and stops to limit the throw of said swinging member.

6. In a device of the character described, a frame having an arm, an operating member pivoted to said arm, a swinging arm connected to said operating member, a resiliently pressed abutment, and a link connecting said abutment and said swinging arm.

7. In a device of the character described, a frame, a yoke pivoted to said frame, a swinging member pivoted to said yoke, a resiliently forced abutment, and a link connecting said swinging member and said abutment.

8. In a device of the character described, a frame having an arm, an operating member, a swinging member, one of said members being pivoted to said arm, a resiliently forced abutment, and means for connecting said abutment to said swinging member so that the latter will be moved with a snap action.

9. In a device of the character described, a frame having an arm, an operating member pivoted to said arm, a swinging member pivoted to said operating member, and resilient means far causing said swinging member to be moved with a snap action.

10. Mechanism of the character described, comprising a swinging member, a hinged abutment therefor, a pivoted operating member, a link connecting said operating member with said swinging member, and a support whereby when said operating member is tilted the end of said swinging member adjacent the connection with said link is moved away from said abutment along said support, and a spring for snapping the end of said swinging member away from said support.

WALTER A. BEHRENS