H. KOCOUREK.

SNAP SWITCH DEVICE.

APPLICATION FILED JAN. 22, 1917.

1,264,529. Patented Apr. 30, 1918.

Fig. 1.

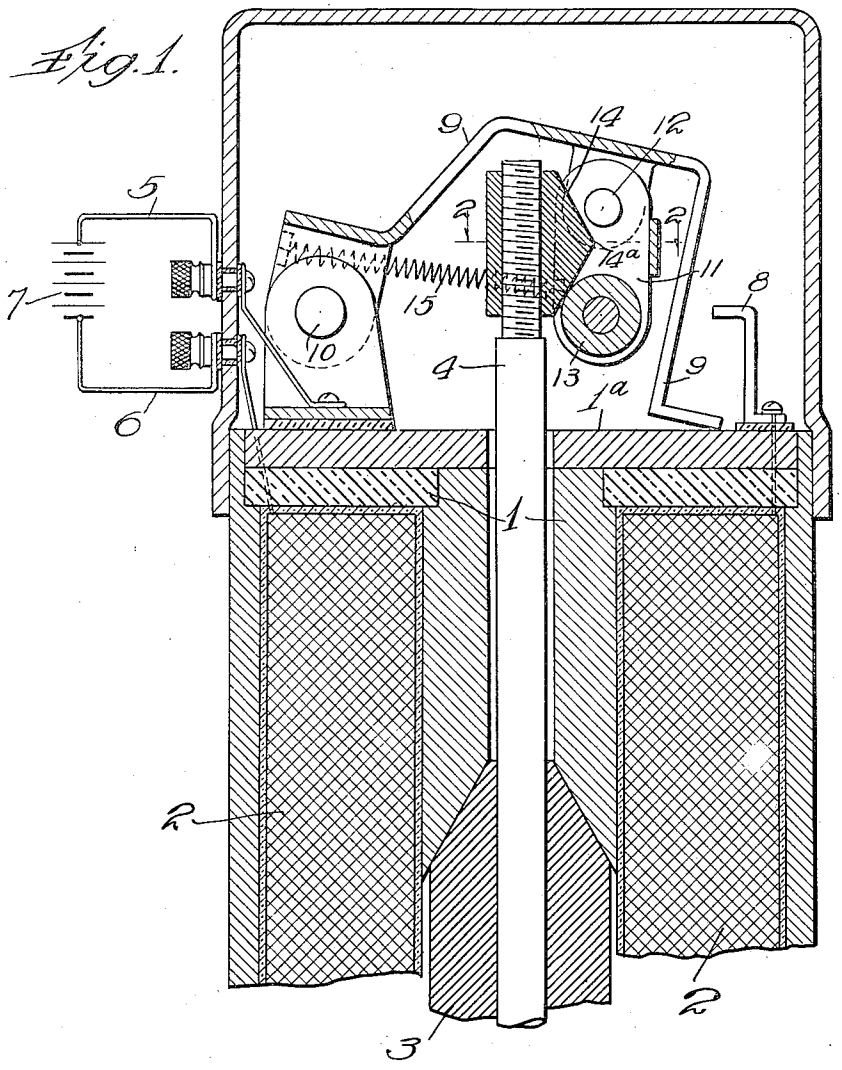
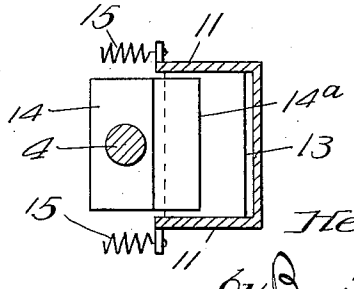


Fig. 2.



Witness:

Inventor:
Henry Kocourek.

by Burton & Burton
his Attys

UNITED STATES PATENT OFFICE.

HENRY KOCOUREK, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO JULIA B. STEWART, EXECUTRIX OF JOHN K. STEWART, DECEASED.

SNAP-SWITCH DEVICE.

1,264,529. Specification of Letters Patent. Patented Apr. 30, 1918.

Application filed January 22, 1917. Serial No. 143,571.

To all whom it may concern:

Be it known that I, HENRY KOCOUREK, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Snap-Switch Devices, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

The purpose of this invention is to provide an improved snap switch device which is particularly designed for use with a solenoid for causing the thrust of the solenoid armature in opposite directions to make and break the connection in the electric circuit in which the solenoid is energized. It consists in the elements and features of construction shown and described as indicated in the claims.

In the drawings:—

Figure 1 is an axial section of a solenoid device having the snap switch which constitutes this invention, the circuit connection of the solenoid being diagrammatically indicated.

Fig. 2 is a section at the line, 2—2, on Fig. 1.

The solenoid members are conventionally indicated, the core or spool being shown at 1, the winding at 2, and the armature at 3, said armature having a stem, 4, which constitutes the thrust member of the snap switch device for making and breaking the solenoid energizing circuit. It is indicated by the wires, 5 and 6, from the battery, 7. The break in the circuit which is to be controlled by the snap switch device occurs between the fixed contact, 8, and the movable contact member, 9. Said movable contact member is pivoted at 10, for swinging movement into and out of contact with the fixed contact, 8, against which it is stopped at its contact therewith, being stopped at the other limit by the frame bar, 1^a. 11 is a roll carrier pivoted at 12 to the movable contact member, 9, having mounted on its free end a roll, 13, which swings toward and from the line of thrust of the thrust member, 4. On said thrust member, 4, there is mounted a cam, 14, which slopes along the line of thrust in opposite directions from an apex at 14^a. 15 is a spring which has one end connected to the movable contact member, 9, and the other end to the swinging roll carrier, 11, and which reacts to stress the roll, 13, toward the line of thrust of the thrust member, 4. Said thrust member with the cam thereon is positioned with respect to the roll for movement of the cam apex past the roll in the direction in which the movable contact member is stopped; that is to say, so that when the said movable contact member is stopped upon the solenoid frame bar, 1^a, the apex of the cam is on the opposite side of the roll from said stop and the cam apex is therefore moved toward the roll by the thrust movement, which causes the cam to crowd the roll away from the line of thrust in carrying the apex of the cam past the crest of the roll, so that having passed it, the reaction of the spring causes the movable contact member to swing in the direction for carrying its contact end toward and against the fixed contact, 8, for closing the circuit, and when the said movable contact member is thus stopped against the fixed contact and the circuit is closed, the apex of the cam stands at the opposite side of the roll, and the thrust movement for carrying the cam against the roll and crowding the roll against the stress of the spring, is in the direction in which the movable contact member is thus stopped against the fixed contact member. In each case, therefore, it will be seen that the movable contact member is retracted by the action of the cam on the roll in the opposite direction from that in which it is pushed by the crowding of the cam against the roll; and this mode of action is the purpose of the arrangement of the parts as described.

I claim:—

1. In combination with a thrust member having a cam which slopes along the line of thrust in opposite directions from an apex; a fixed contact member and a pivoted contact member; a roll carrier pivoted to the pivoted contact member, and a roll thereon whose axis is in a plane with the pivot of the contact member transverse to said line of thrust; a spring reacting on said roll carrier to yieldingly stress the roll toward the line of thrust, the thrust member being positioned for thrust to carry the cam apex past the roll.

2. In combination with a thrust member having a cam which slopes along the line of thrust in opposite directions from an apex; a fixed contact member and a pivoted contact member adapted to be stopped

against the fixed member in one direction of the swinging movement of the pivoted member about its pivot; a roll carrier pivoted to the pivoted contact member and a roll thereon whose axis is in a plane with the pivot of the contact member transverse to said line of thrust; a spring reacting on said roll carrier to yieldingly stress the roll toward said line of thrust, the thrust member being positioned for thrust in the direction in which the pivoted contact member is stopped against the fixed contact to carry the cam apex past the roll.

3. In combination with a thrust member having a cam which slopes along the line of thrust in opposite directions from an apex; a fixed contact member and a movable contact member; a roll carrier pivotally mounted on the movable contact member, and a roll thereon which is carried toward and from the line of thrust by the swinging movement of the carrier about its pivot on the movable contact member; a spring reacting on said roll carrier to yieldingly stress the roll toward said line of thrust, the thrust member being positioned for thrust to carry the cam apex past the roll.

4. In combination with a thrust member having a cam which slopes along the line of thrust in opposite directions from an apex; a fixed contact and a contact member which is movable for making contact with the fixed contact and which is stopped by the latter upon making contact therewith; a roll carrier pivoted to the movable contact member for swinging toward and from the line of thrust; a roll on the swinging end of said carrier in the path of said cam, the thrust member being positioned for carrying the cam apex past the roll by movement in the direction in which the movable contact member is stopped against the fixed contact.

5. In combination with a thrust member having a cam which slopes along the line of thrust in opposite directions from an apex; a fixed contact and a movable contact member which is mounted for movement toward and from and adapted to be stopped against the fixed contact, and a stop for said movable contact member at the limit of its movement away from the fixed contact member; a roll carrier pivoted to the movable contact member for swinging toward and from the line of thrust and a roll thereon in the path of movement of the cam; a spring reacting on said roll carrier to stress the roll toward said line of thrust, the thrust member being positioned for carrying the cam apex past the roll in the direction in which the movable contact member is stopped against the fixed contact, and also in the direction in which it is stopped at the opposite limit of its movement.

In testimony whereof, I have hereunto set my hand at Jersey City, this 15th day of January, A. D. 1917.

HENRY KOCOUREK.