PATENT SPECIFICATION

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Application Date (in United Kingdom): July 17, 1937. *No. 19879/37.*

Specification not Accepted

COMPLETE SPECIFICATION

Improvements in Electric Clocks

I, HENRI BUECHE, of Court, Berne, Switzerland, of Swiss Nationality, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The subject of the present invention is a switch device for direct acting electric timepieces, which switch device is specially suitable for use on clocks for automobiles since the mechanical parts of the said switch device are not affected by vibrations.

One embodiment of the improved switch device is illustrated diagrammatically by way of example in the accompanying drawing in which Fig. 1 shows the whole of the device while

Figs. 2 and 3 are diagrams explanatory of the operation of the contacting members.

Referring to the drawing, the spindle 1 of the circular balance 2 is provided with a cannon 3 on which is secured a contacting finger 4 in the form of a pallet, the inclined faces of which contact alternately with the end of a pin 5 fixed on a drum 6. The drum 6 is provided on its periphery with a notch 8 in which engages a part bent to **V**-shape of a blade spring 9 freely holding the drum in a position in which the end of the said pin is opposite the axis of the spindle 1 of the balance 2, but offset from the centre of the pallet. On oscillation of the balance 2 the pallet presents one of its inclined faces to the pin 5 imparting to it a rotary movement about its pivot 7 from position A to position B of Fig. 2, moving the drum 6 through the same angle, and as a result displacing the notch 8 from its position and causing the spring 9 to slide against one face of the said notch. The tension of the spring returns the drum to its original position, once the pin 5 is no longer in contact with the pallet 4 (see Fig. 2). This operation causes closure of an electric circuit (not indicated) in such manner as to give an impulse to an armature 15 in order to maintain the balance 2 in oscillation. On the return movement of the balance (Fig. 3) the contacting finger 4 on this occasion presents the upper inclined face to the pin 5 which is displaced from position C to position D and repeats in the opposite direction the same operations, but with a much smaller angle. On displacement from the notch 8, the spring 9 yields slightly and through the drum returns the pin to its original position. This operation, indicated by two positions of the parts shown in dotted and in full lines, produces also closure of the electric circuit, but over a very short period insufficient to produce attraction of the armature 15.

As the movable part of the switch device consists only of a pin of small size and the spring 9 presses continuously against the notch 8, the inertia of the drum 6 is just correct, that is to say even if the mechanism is subjected to great and continuous vibrations, there is no likelihood of the pin being moved away by shock at the moment it comes in contact with the contacting finger, which would affect the isochronism of the balance. This arrangement thus ensures regular operation of the contacting members and thus permits of obtaining perfect running of automobile clocks.

On the armature 15 is fixed a spring 14 which contacts with one of the teeth of the first wheel 10 of the clock mechanism (not shown) and which in one direction of oscillation of the balance 2 displaces the wheel 10 each time by the amount of one tooth. On oscillation of the balance in the other direction the spring 14 slides over the back of the tooth without entraining it (Fig. 1). This spring 14 in its position of rest bears against the base of the cannon 3 which holds it, so that the wheel

if thrown back suddenly against the said spring from any cause whatever cannot dislodge it.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An electric time piece having a switch, the movable part of which is constituted by a drum adapted to be held in position by a blade spring engaging a notch in its periphery, the drum being provided with a projecting pin adapted to be engaged by a pallet or the like to move the drum.

2. An electric time piece as claimed in claim 1, in which the actuating member for the train of wheels is constituted by a spring to which is presented an abutment restricting movement of the spring in one direction.

3. An electric time piece, the switch and actuating parts of which are constructed and arranged substantially as described with reference to the annexed drawing.

Dated this 17th day of July, 1937.

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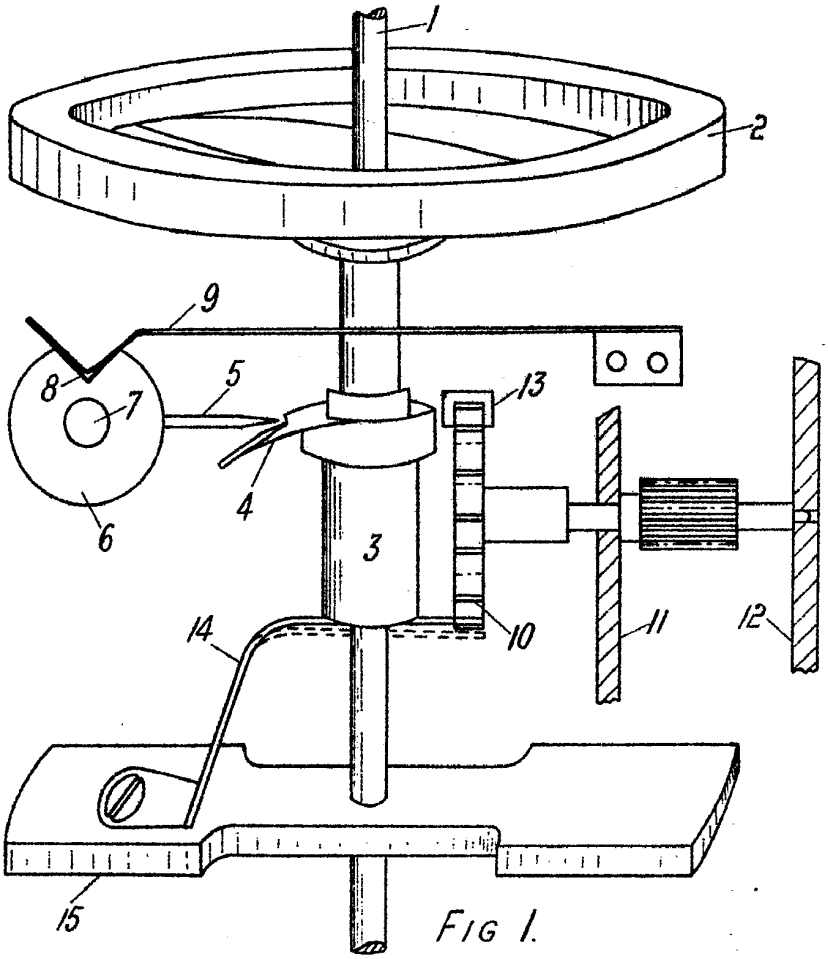

FIG 1.

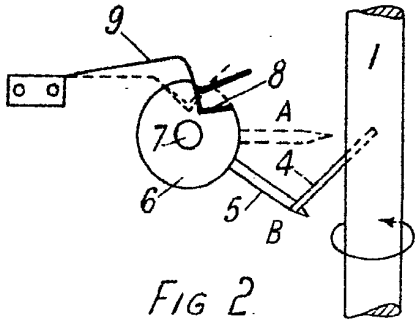

FIG 2.

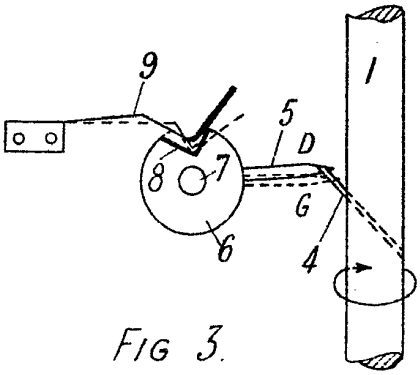

FIG 3.

Malby & Sons, Photo-Litho