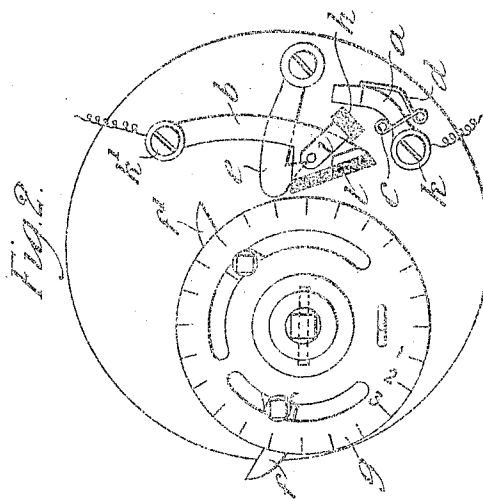
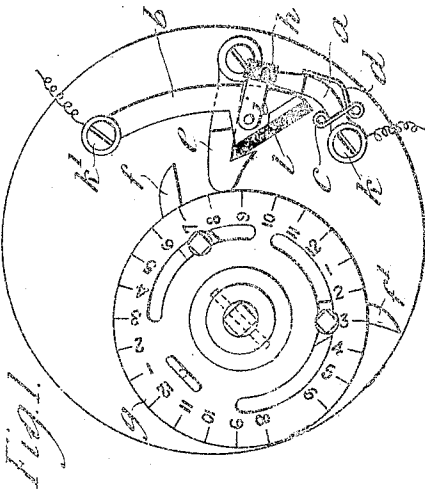
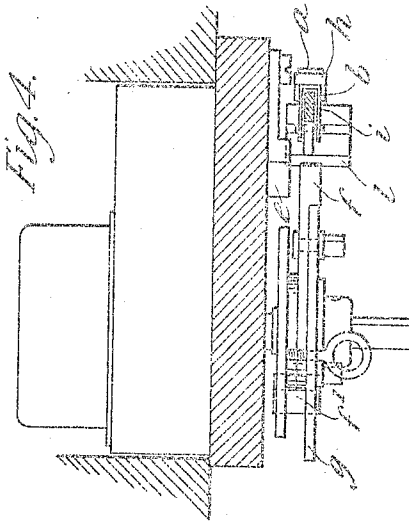
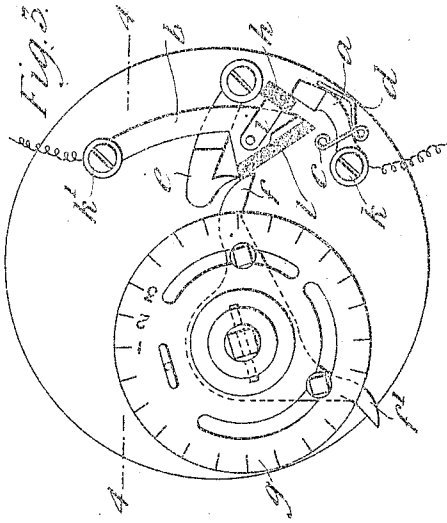


No. 836,808.

PATENTED NOV. 27, 1906.

J. GUNNING.
ELECTRIC TIME SWITCH.
APPLICATION FILED DEC. 16, 1905



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN GUNNING, OF BOURNEMOUTH, ENGLAND.

ELECTRIC TIME-SWITCH.

No. 938,038.

Specification of Letters Patent.

Patented Nov. 27, 1908.

Application filed December 10, 1905. Serial No. 292,034.

To all whom it may concern:

Be it known that I, JOHN GUNNING, gas engineer, a subject of the King of Great Britain, residing at 100 Holdenhurst road, Bournemouth, in the county of Hants, England, have invented certain new and useful Electric Time-Switches, of which the following is a specification.

This invention relates to electric switches which are arranged to be successively opened and closed at predetermined times by means of tappets driven by a timing device; and it consists in a particular construction of such switches and their actuating mechanism whereby a quick "make" or closing of the circuit and a quick and long break of the circuit are effected.

The invention will be described with reference to the accompanying drawings, in which—

Figure 1 is an elevation of the improved apparatus with the switch in the closed position; Fig. 2, a corresponding view showing the switch open; Fig. 3, a similar view showing the positions of the moving parts as displaced by the "on" tappet just before the switch closes, and Fig. 4 a section on line 4 4 of Fig. 3.

The switch itself consists of two pivoted arms *a* and *b*, one of which, *a*, is urged into contact with the other arm when the switch is closed or against a stop *c* when the switch is opened, by means of a spring *d*. The second arm *b* has a considerable angular freedom, whereby it may, under gravity or the action of a spring, be displaced quickly and through a considerable distance from the contact-point of the arm *a*.

The arm *b* is held up in the closed position against the arm *a* by means of a pivoted gravity or spring-urged detent *e*, which is arranged to be tripped at a predetermined time by a releasing-tappet *f*, adjustably secured on the timing-dial *g* of the clockwork mechanism. The arm *b* when so released drops or is urged into the path of the on or closing tappet *f'*, by which it is gradually returned to the closed position, in which it again engages with the detent *e*; the arm *a* being at the same time raised off the stop *c*, against the force of the spring *d* by engage-

ment with an insulating projection on the arm *b*.

To secure a quick closing of the circuit, the arm *b* is provided with an insulating-piece *h* near its free end, preferably carried by an arm *i*, pivoted on the arm *b*, which insulating-piece encounters the arm *a* when the on or closing tappet comes into operation, lifting the arm *a* and compressing the spring *d* until by the continued displacement of the arm *b* the insulating-piece *h* clears the arm *a*, which is then quickly urged into contact with the arm *b* and the circuit established between the terminals *k* and *k'*, connected with the contact-arms.

By pivoting the insulating-piece as shown, the pressure of the displaced spring-urged arm *a* on it displaces it suddenly when a certain position is reached clear of the path of movement of the end of arm *a*, thereby insuring the certain and quick closing of the circuit.

By attaching an insulating-block *l*, as shown, to the arm *b*, the latter may be insulated from the clockwork mechanism when the switch is not closed.

Having thus described the nature of this invention and the best means I know of carrying the same into practical effect, I claim—

1. In electric time-switches, a timing-dial having adjustable releasing and closing tappets, a pivoted switch-arm adapted to be displaced by the closing-tappet, a detent cooperating with said switch-arm and adapted to be displaced by the releasing-tappet, a second pivoted switch-arm, a spring urging said second arm to close on the first switch-arm, a stop limiting the movement of the second arm, and an insulating-piece moved by the first switch-arm to displace the second arm against its spring when the first arm is displaced by the closing-tappet; substantially as described.

2. In electric time-switches, a timing-dial having adjustable releasing and closing tappets, a pivoted switch-arm adapted to be displaced by the closing-tappet, a detent cooperating with said switch-arm and adapted to be displaced by the releasing-tappet, a second pivoted switch-arm, a spring urging said second arm to close on the first switch-arm,

a stop limiting the movement of the second arm, and a third arm pivoted on the first arm and arranged to encounter and displace the second arm, when the first arm is displaced
5 by the closing-tappet; substantially as described.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

JOHN GUNNING.

Witnesses:

E. T. GAEZE,
MOORING ALDRIDGE.