No. 836,808. PATENTED NOV. 27, 1906.

J. GUNNING.

ELECTRIC TIME SWITCH.

APPLICATION FILED DEC. 16, 1905

Fig. 2.

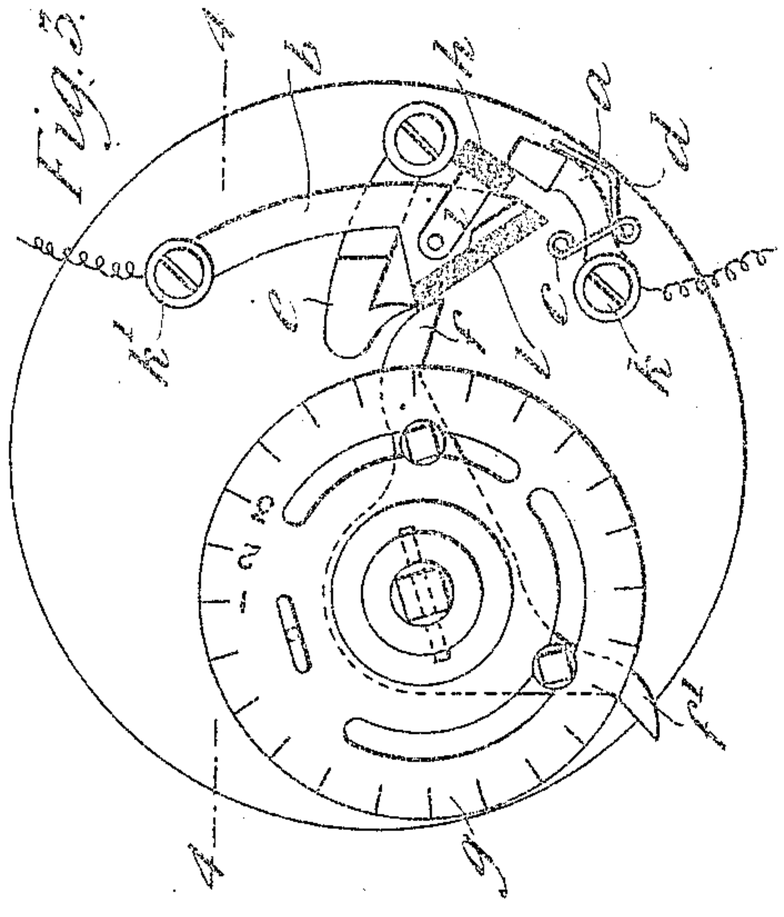


Fig. 4.

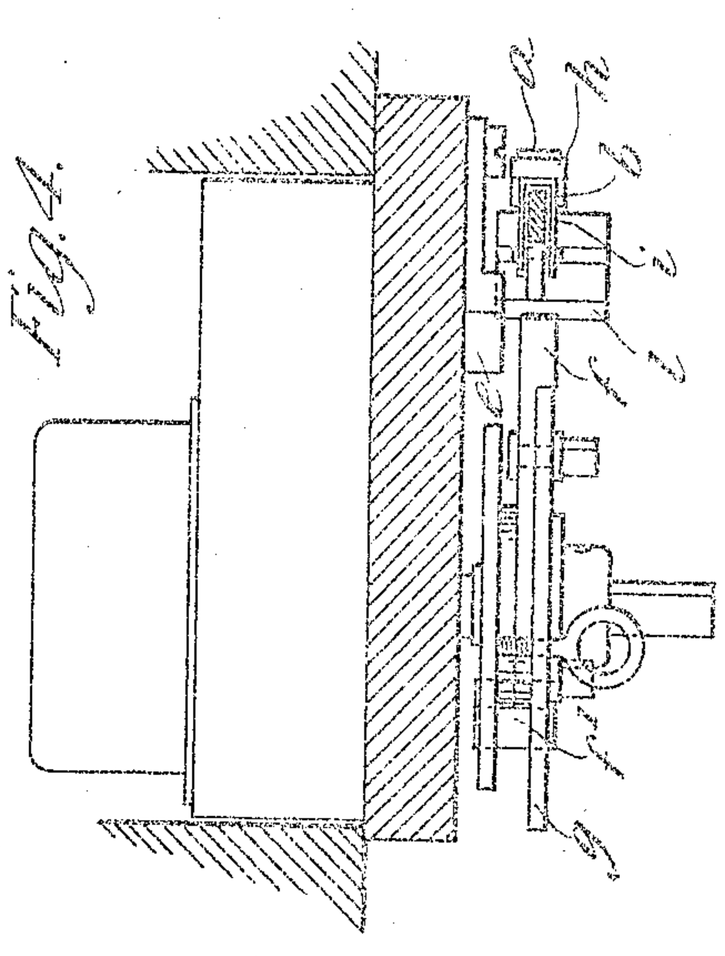


Fig. 1.

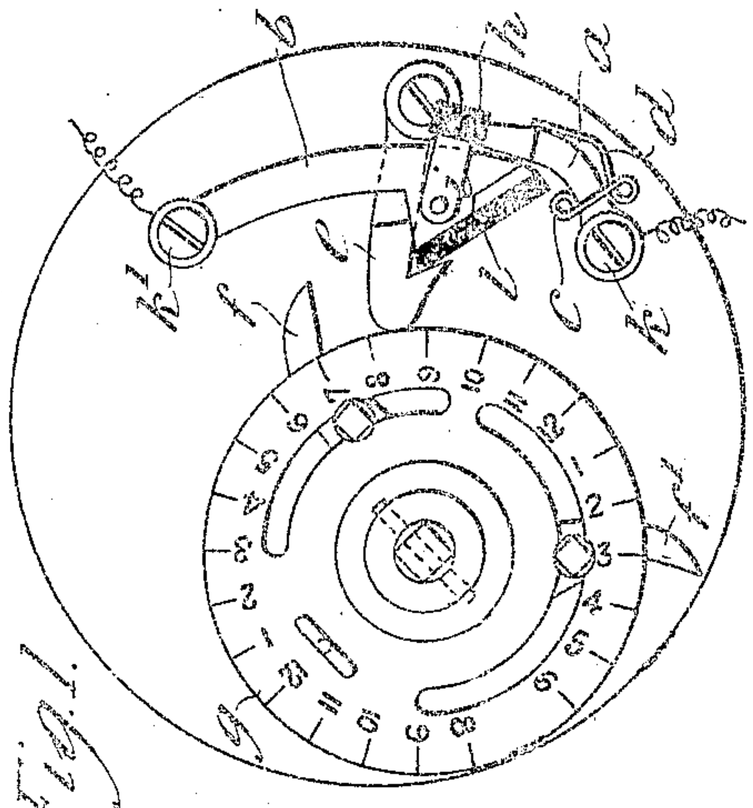
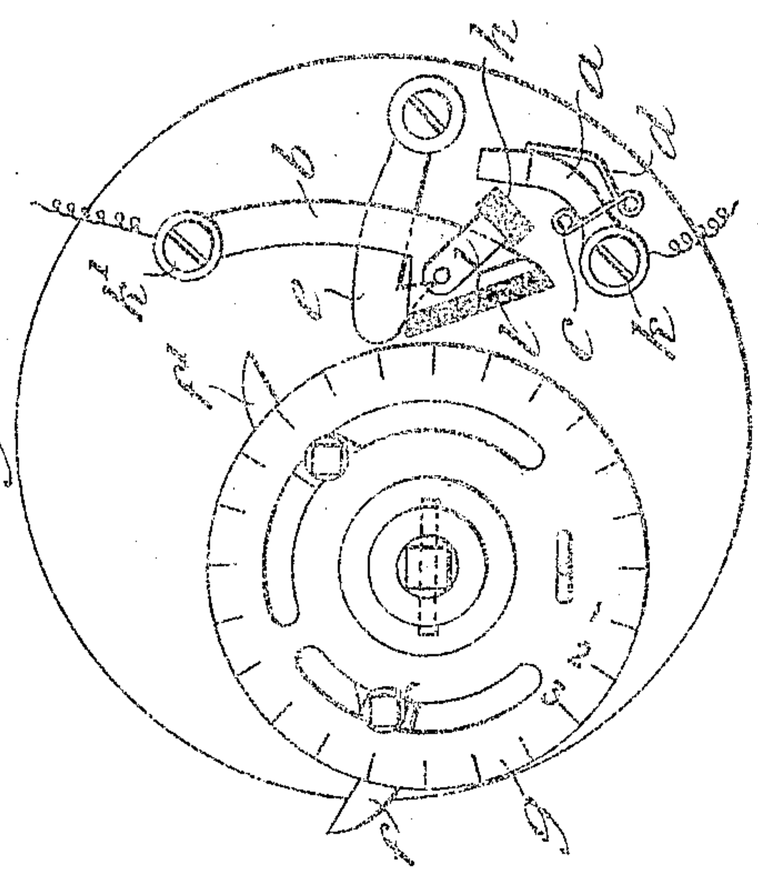


Fig. 3.



WITNESSES

R. F. Baldwin

Warren W. Swartz

INVENTOR

John Gunning

by Barnes & Byron

his Attys

UNITED STATES PATENT OFFICE.

JOHN GUNNING, OF BOURNEMOUTH, ENGLAND.

ELECTRIC TIME-SWITCH.

No. 838,608. Specification of Letters Patent. Patented Nov. 27, 1906.

Application filed December 16, 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 b*, one of which, *a*, is urged into contact with the other arm when the switch is closed or against a step *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 engagement 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 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 coöperating 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 coöperating 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 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.