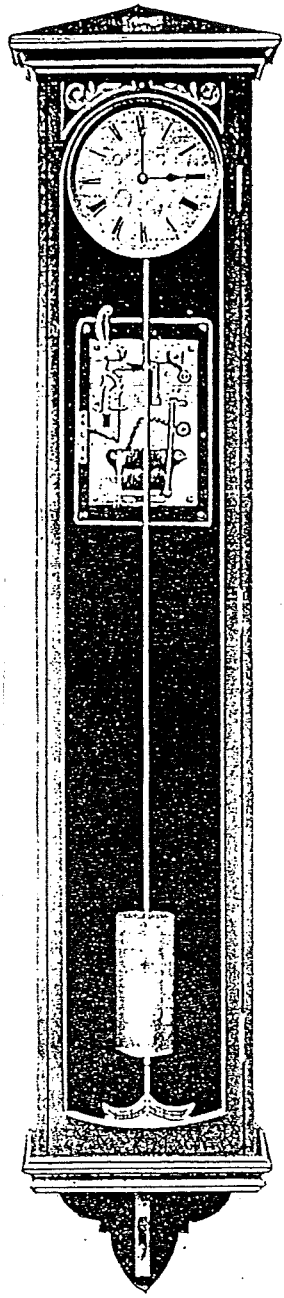


THE

"SYNCHRONOME"

MASTER-PIECE.

An electrically driven pendulum which will operate any number of electrical impulse clocks.

The pendulum is combined with a simple switch in such a manner that both the **time-keeping** and **switching** functions are performed automatically and in an ideally perfect manner.

Each dial has only a "one-wheel" movement behind it, yet this simple mechanism secures uniform and accurate time-keeping without winding up or any other attention.

THE SYNCHRONOME CO.,

(F. HOPE-JONES, M.I.E.E., ETC.)

Contractors to:

The Admiralty.
The Agents General of the Colonies.
The Great Railway Companies.
The National Telephone Co., Ltd.
The London County Council.
The Metropolitan Asylums Board, Etc.

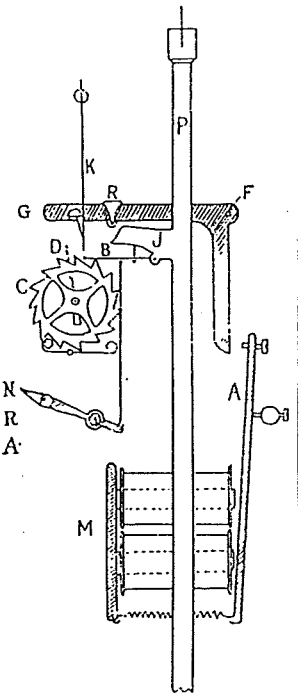
32 & 34, Clerkenwell Road,

LONDON, E.C.

Telephone No. 4643 Holborn.

THE switch consists of two moving parts: (1) the right-angled lever G centred at F and normally supported on spring catch K. Once every half-minute the lever is let down (in the act of giving an impulse to the pendulum P) upon (2) the armature A. Current from any available source then passes through the series circuit of dials and the magnet M, which attracts the armature A and throws up the lever G on to its catch again.

The pendulum releases the switch by means of the fifteen-toothed wheel C which carries a vane D engaging with the catch K at each revolution. The hook B pivoted upon the pendulum P turns this wheel once every thirty seconds. At the moment of its release the little roller R on the gravity arm G is just above the curved end of the pallet J, down which it runs, giving an impulse to the pendulum **at the moment when it passes through its zero or central position.** Thus the pendulum is free at all times except in the middle of its swing: not only is the escapement detached, but it operates at zero, thus realizing the ideal which horologists have been aiming at for centuries.

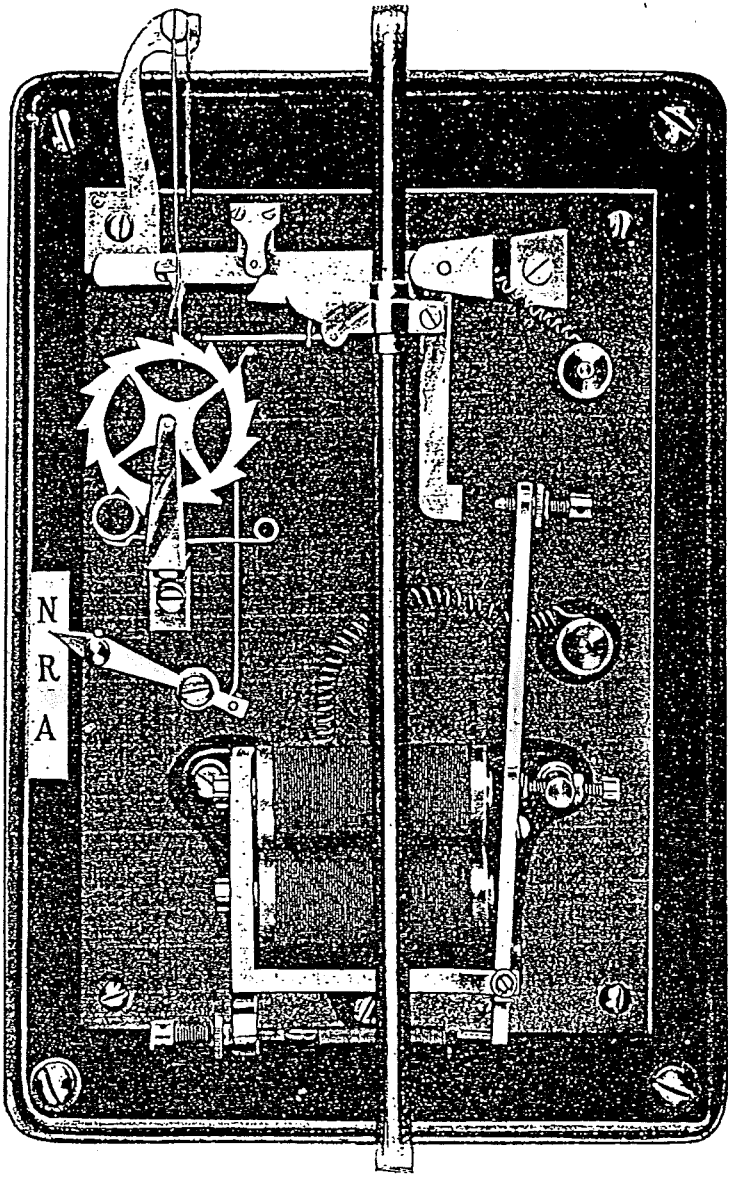


The shape of the impulse surface of the pallet J is mathematically produced to yield an impulse, beginning with extreme gentleness, increasing to a maximum at zero, and diminishing in identical ratio.

The switch cannot stop in closed circuit.

The dials can be readily set to time by merely removing the lever from Normal to Retard or Accelerate.

The Ideal Combination of a Pendulum and a Switch.



PATENTED.

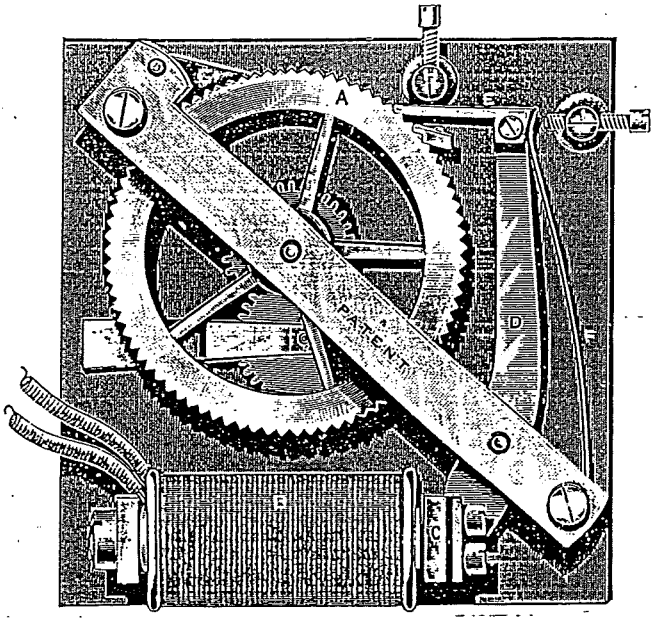
Perfectly Simple and Simply Perfect.

BATTERY WARNING.—When pallet J pushes roller R attention is required. Each contact will then be a whole second in duration, and this is clearly noticeable also on every dial.

This electrical contact, occurring at each half-minute precisely, is the only contact in the system, and it is a very perfect one; **the whole of the energy required to keep the pendulum swinging being transmitted through its surfaces.**

It is so designed that at each operation **it transmits to all the dials sufficient current to propel them.** By an entirely novel application of the phenomenon of self-induction, it becomes impossible for the switch to operate without doing so.

Thanks to these two essential principles, which were first enunciated by Mr. Hope-Jones in a lecture before the Institution of Electrical Engineers in 1899, clock dials, with ideally simple mechanism, can be electrically propelled in perfect synchronism.



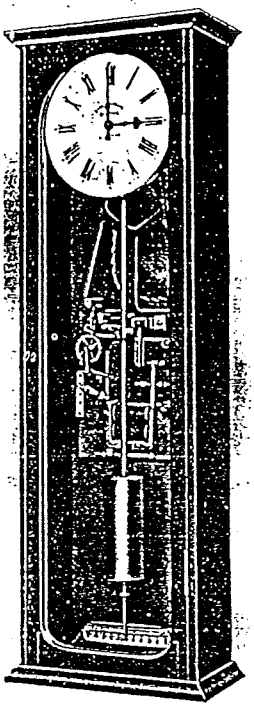
Step-by-Step Dial.

Published in this form ten years ago —Beware of Imitations.

A is a wheel having 120 rectangular teeth, and is rigidly connected with the minute hand. B is an electro-magnet with armature C and lever D carrying a pawl E at its end. F is a spring, G a backstop click, and H I are fixed stops.

The impulses from the controlling clock pass through the electro-magnet each half minute, causing it to attract the armature and allow the driving click to pick up another tooth. The spring then carries it forward, the wheel remaining rigidly locked.

The dials are almost noiseless in action, and a perpectly silent movement can be put in whenever required.

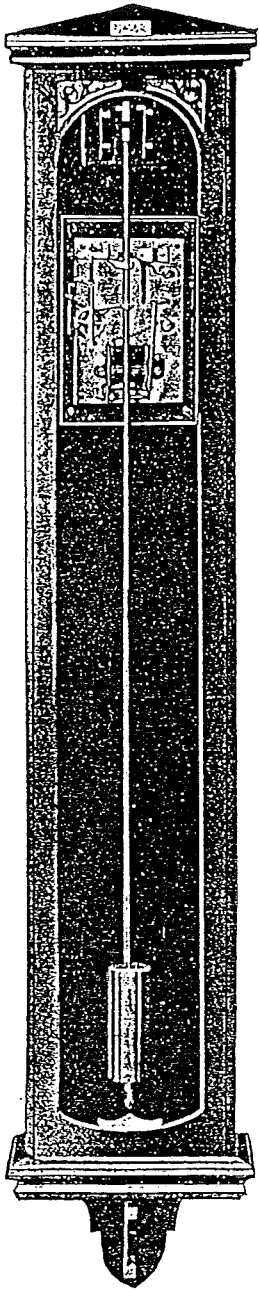


PRICE LIST.

Controlling Pendulums

With Steel Rods and Lead Bobs.

In Polished Oak or Walnut Cases, With Glass Fronts.



	£	s.	d.
CONTROLLING PENDULUMS:			
Of ¾ seconds beat (22·01 long, 80 beat) ..	6	0	0
Of seconds beat (39·14 long, 60 beat) ..	9	10	0
Or the same, but with rod of "Invar" (Nickel Steel)	12	12	0
Extra for extension at base of case to enable it to stand on the floor	1	0	0
Supplied also without case, suitable for fixing in the body of a Grandfather Clock; with steel and lead pendulum ..	7	5	0
With "Invar" pendulum	10	7	0
Extra for silvered engraved dial to either of the above as illustrated	1	7	6
PRECISION REGULATOR FOR OBSERVATORIES, with highest grade "Invar" Pendulum..	40	0	0

If desired the switching and self-winding action in this instrument can take place every two seconds instead of every thirty seconds.

The word "SYNCHRONOME" is registered as a Trade Mark, and the system known by that name is protected by numerous Patents in most countries of the world. The detached gravity escapement in the controlling pendulums above described is the recent invention of Sir H. H. S. Cunynghame, K.C.B., and F. Hope-Jones, M.I.E.E.

PRICE LIST—*continued.*

PLAIN DIALS.

Complete with Movement and Hands.

		£	s.	d.
Wood.	7″ diameter, silvered and engraved in solid turned American whitewood case, stained and polished to any colour	1	17	6
	8″ diameter, hand painted black on white in wood case, as above	1	17	6
	12″ diameter, as above	2	5	0
	18″ diameter, as above	3	18	6
Metal.	12″ diameter, dial and case, in one piece of stout iron, enamelled at high temperature, and highly finished to imitate hardwood. Dust and weather proof	2	0	0
	18″ diameter, as above	3	10	0
	24″ diameter, as above	4	17	6
	35″ diameter, hand painted black on white in rolled metal case, japanned black with gilt bands ...	11	18	0
	48″ diameter, as above	19	10	0

OPAL DIALS FOR ILLUMINATION are provided with circular movements attached to their centres by means of screw collar and rubber washers. These movements are so small that no shadow is thrown by them.

Prices of opal dials complete with movements and hands erected *in glazed openings provided by customer :*	£	s.	d.
18″ diameter	4	2	6
24″ ,,	5	8	6
30″ ,,	8	18	6
36″ ,,	12	16	0
4′ 0″ ,,	19	0	0
5′ 0″ ,,	24	0	0
6′ 0″ ,,	27	10	0

TURRET CLOCKS. Electro-magnetic release for applying to the escapement of an ordinary turret clock in place of its pendulum 5 17 6

The clock will require to be wound up as usual, but will then keep uniform time with all other dials on the circuit.