
SEMPER UBIQUE IDEM
ELECTRIC CLOCKS.
THE SYNCHRONOME COMPANY,
F. HOPE-JONES & G. B. BOWELL,
BIRKENHEAD.
E. GRIFFITH & SON, CHROMO PRINTERS, BIRKENHEAD.
Popular.
The SYNCHRONOME System.
Scientific.

*"The nineteenth century with all the wonders it has wrought has one scientific disgrace. We still depend for time-keeping upon clocks which require weekly winding and all of which unblushingly tell a different lie. To expect greater success from independent pieces of complicated mechanism is perhaps unreasonable, but will not Electricity at once reduce the complication and make independence and weekly winding unnecessary * * * * "*

Electric Clocks.

IT must have occurred to many that time-keeping by the present method of independent key wound clocks is neither economical nor efficient; and the advantages of the ideal system of Electric Clocks, which never require winding and are always unanimous as to the time, are indisputable.

The application of electricity to time-keeping is a subject which has received much attention during the last half-century; but it is only now that it is being developed from its experimental condition. This is accounted for, not so much by the lack of attention on the part of Inventors,

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as by the fact that their efforts have been to a large extent diverted into wrong channels.

The earliest workers dealt with the pendulums of ordinary clocks, and sought by ingenious applications of electro magnets to their lower ends to keep them swinging. Efforts were also made to connect such pendulums electrically so that they should vibrate in sympathy, but we think we have now proved that success can never be found in this direction, and that no power should be applied to a pendulum except through the medium of an escapement.

Attention was then turned to the "synchronization," or rather the *correction* of ordinary clocks by means of an electrical "thumb and forefinger" movement, which gripped the hands and so set them right at the hour. This system has the temporary advantage of being applicable to all existing clocks, but it does not relieve one of the necessity of periodic winding of each, and as it *adds* complication instead of *reducing* it, it can never come in extensive use.

The invention of various forms of "self-winding" clocks marked a step in the right direction. These may be described as ordinary clocks in which the winding is effected by an electro-motor at regular intervals, the contact controlling the magnet being in connection with some moving part of the clock. The great difficulty has been the unreliability of this contact, owing to the small amount of power available for making it. We venture to assert, that to rob the "going train" of the clock of the power required to make the contact, is intrinsically wrong, though up to the present it has always been considered a necessity.

A further advance was made, when these self-wound clocks were used to control subsidiary dials, but as they all contain as much or more mechanism than an ordinary eight-day timepiece, they have had a limited use only.

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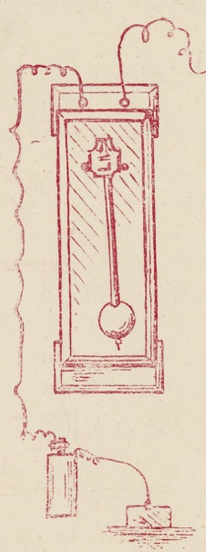

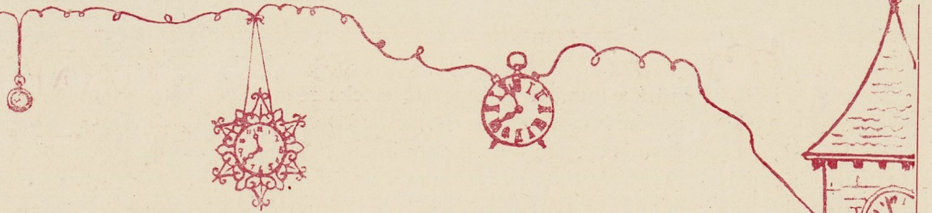

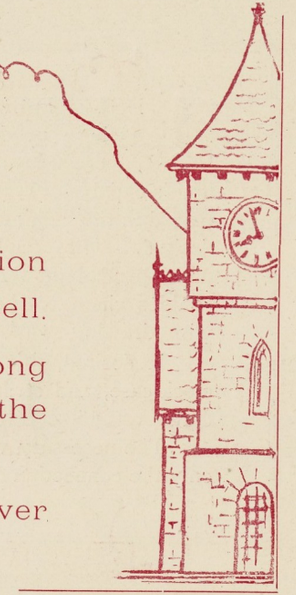

THE "SYNCHRONOME" SYSTEM consists of **ONE PENDULUM** kept in motion by means of two wheels and an electro-magnet, which derives its energy from a small dry cell.

The object of the pendulum is to transmit electrical impulses at regular periods along a single wire to **ANY NUMBER OF CLOCK FACES**, whether in House or Church Tower, the hands of which are "synchronized" forward by each of these impulses.

It thus becomes unnecessary to employ any "clock works," nor is any winding ever required.

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Scientific.

Requires

NO

Attention.

INSTEAD of a number of separate clocks requiring weekly attention, whose pendulums rarely even pretend to be accurate timekeepers, there is in this system but one pendulum, which requires no attention and is capable of keeping time to within one second per month. It is usually placed in the hall, and the time it records is indicated by clock faces wherever desired. They may be placed on the mantel-shelves of the various rooms, or suspended on the walls with flexible cord, as the absence of mechanism enables them to be treated artistically, and suggests their combination with drawing-room art-work in wrought-iron and wood-carving.

If desired, this simple electric movement can be fitted into any existing clock case, and striking or chiming may be accomplished by all or any of the dials.

The necessary wiring is far more simple than that for electric bells, being only the connection of one dial with another by a single line.

For putting forward the hands of *all* the dials a push button is provided on one of them. For setting back it is sufficient to move the hands of this dial only, and all will be altered.

When Government telegraph, telephone, or railway time signals are available the one pendulum may be automatically synchronized, and thus *every dial* will represent Greenwich mean time.

A price list of pendulums, dials, &c., now on the market will be forwarded by the Synchronome Company, Birkenhead, on receipt of 1d. stamp; it will therefore suffice to say here that under ordinary circumstances—

The cost of the Electrical Pendulum need never exceed			£3 10s.
,,	a Dial Movement	,, ,,	25/-.
,,	the Wiring between each	,, ,,	7/6.
,,	each Cell*	,, ,,	3/-.

(*) One being required for every Two Dials in the Circuit.

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Economical.

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TURRET or PUBLIC CLOCKS are worked as "Dials" off any "time-circuit" at one-third the ordinary cost.

ADVANTAGES.

Reliability of the Contact.

There is one contact only in each set of clocks on this system. Its reliability is dependent upon a new principle, by which the entire power required to drive the clock is mechanically transmitted through the surfaces of the contact itself. No power is however taken from the going train to make the contact. Any automatic contrivance for this purpose, which takes energy from the clock is in itself unreliable, and produces an uneven tension upon the going train, in this respect being even worse in its results than an ordinary spring or weight driven eight-day clock.

"Going train" not robbed of power.

Even pressure upon the Escapement.

The pressure upon the escapement for driving the pendulum on this system is perfectly uniform, and the arc of vibration being constant, the barometric and circular errors may be made to counteract one another. Compensation for the temperature error is the only remaining consideration, and this is fully dealt with in our pendulums.

Positive Action.

The duration of the contact is dependent upon the completion of the work it has to accomplish; and the action is therefore *positive*.

Putting on and Setting back.

When once the pendulum is regulated it is never necessary to touch it or open its case, as the setting back or putting on of the circuit of dials is accomplished independently. To set back the entire circuit of dials it is only necessary to move the hands on *one* of them, whereas before it was always necessary to stop the pendulum for the desired period and then re-start it.

Economy of current.

For every two dials in the circuit one dry cell only is required, and as the contact is of extremely short duration and occurs at regular intervals, the battery is subjected to a far lighter and more even treatment than an electric bell battery, and may be expected to last much longer.

Reliable.

Simple.

Scientific.

Indispensable in:

INSTITUTIONS,

HOTELS,

BANKS,

OFFICES, &c.,

FACTORIES,

And everywhere where loss of minutes means loss of pounds to the employer.

And of Great Value in Every Household.

In Schools

A SPECIAL INSTRUMENT IS ADDED FOR THE CONTROL OF BELLS WHICH ARE AUTOMATICALLY RUNG IN THE CLASS-ROOMS AT PRE-ARRANGED TIMES.