

SOME APPLICATIONS

. . . OF THE

“SYNCHRONOME” System

. . . OF

ELECTRIC TIME SERVICE

with opinions thereon.



SYNCHRONOME SYNDICATE, LIMITED.



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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, granted to F. Hope-Jones, G. B. Bowell, and others.

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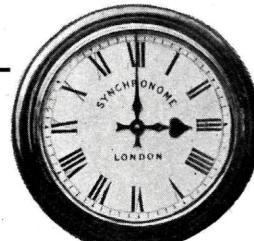
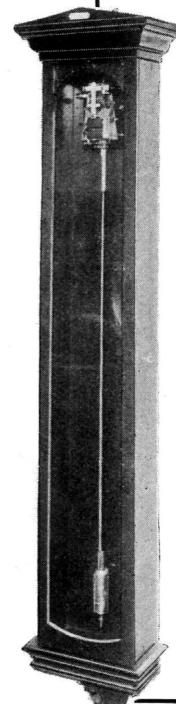
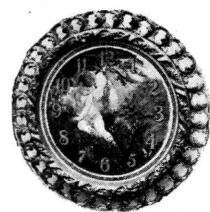
THE SYNCHRONOME

SYSTEM

consists of an
electrically-driven pendulum,
which is used to control
any number of Dials.

The pendulum is operated
by two wheels only,
and each dial by one.

This simple mechanism
suffices to secure
uniform and accurate time-
keeping, by all
dials, without
winding up or any
other 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 upon 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, brass, and wood-carving.

If desired, this simple electric movement can be fitted into any existing clock case, and striking or chiming may be accomplished wherever required.

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.

A small Leclanche battery will operate the clocks for several years, but when electric light supply is available, they may be connected to it, and the consumption of electricity is so small that the meter will not record it.

Advantages.

One pendulum only is required, and that, owing to its simplicity, is a better timekeeper than the best key-wound clock.

Every dial on the time-circuit indicates the time kept by the pendulum.

Any number of dials may be worked from one pendulum.

Existing clock cases can be readily fitted with dial movements. The dials are **unaffected by vibration**. They are sealed up to exclude dust, and cannot be tampered with.

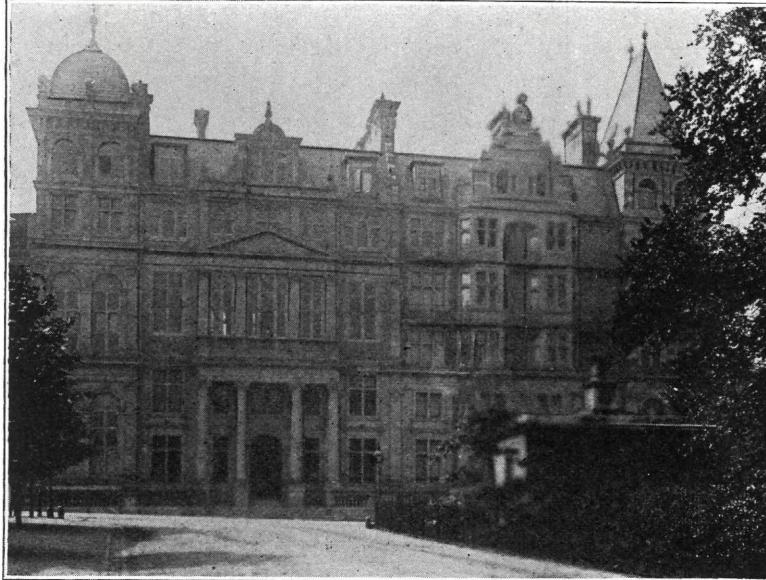
The system is economical since no winding or other attention is required, and the amount of electricity used is considerably less than that necessary for ordinary electric bells.

In Turret Clocks all cumbersome mechanism is dispensed with, the largest dial being worked off any time-current at a greatly reduced cost, and with more accuracy.

Among many large buildings throughout which the

system is used, we select a few for illustration.

Some LONDON INSTITUTIONS:



**Institution of Mechanical Engineers,
Storey's Gate, Westminster.**

Eighteen dials, varying in diameter from 8" to 24" (some being of artistic design, and incorporated with the mural decorations) were installed in this fine new building in 1898. They are controlled by a self-wound electrical pendulum of seconds beat, the whole circuit being operated from the electric light supply at an infinitesimal cost.



**Surveyors' Institution,
Great George Street, Westminster.**

The time-circuit in this new and handsome building includes 17 dials of various sizes, several of which are conversions of existing clocks. The seconds controlling pendulum is in an oak case, with plate glass front, in the central Hall, and the whole circuit is operated from the electric light supply.

Some LONDON BANKS:



Lloyd's Bank, Limited (Law Courts Branch), Strand.

The dials in this Bank are controlled by a Steel and Mercury pendulum in a case of "regulator" pattern, the circuit being operated by a small battery of Dry Cells.

After over twelve months' experience the Manager writes as follows, under date 7th Sept., 1899:

"I beg to inform you that the installation which I purchased from the Syndicate has done its work very satisfactorily. The time kept has been good, and no attention has been required to keep it in order."
(Signed) MACKWORTH PRAED.



Parr's Bank, Limited (Highgate Branch).

The time-circuit in this building is operated by a self-wound pendulum of only half-seconds beat, which though the smallest and cheapest size made, is a wonderfully accurate time-keeper. A small battery of dry cells supplies the necessary electrical energy.

The Manager writes as follows, under date 27th Sept., 1899:

"I would like to express my satisfaction with the clocks you have supplied to us, and their being electrically driven, and not requiring to be wound up, I find a great advantage."

(Signed) F. W. SANDFORD ROSS.

Public TIME SERVICES in large blocks of City Offices :



**Palmerston Buildings, Bishopsgate Street,
and Old Broad Street, E.C.**

Many suites of offices in this building are provided with "SYNCHRONOME" dials in every room, at an annual rental of £1 1s. per dial for the first year, and 10s. 6d. per annum afterwards.

One of the tenants, who had six dials installed about twelve months ago, writes as follows, under date 20th Aug., 1899:

"We are glad to state that the clocks fixed by you in our offices are working quite satisfactorily, and there being no necessity for winding or other attention, is, we find, a great convenience."

(Signed) DAVIDSON, UNWIN, & CO.



76 and 77, Cheapside, E.C.

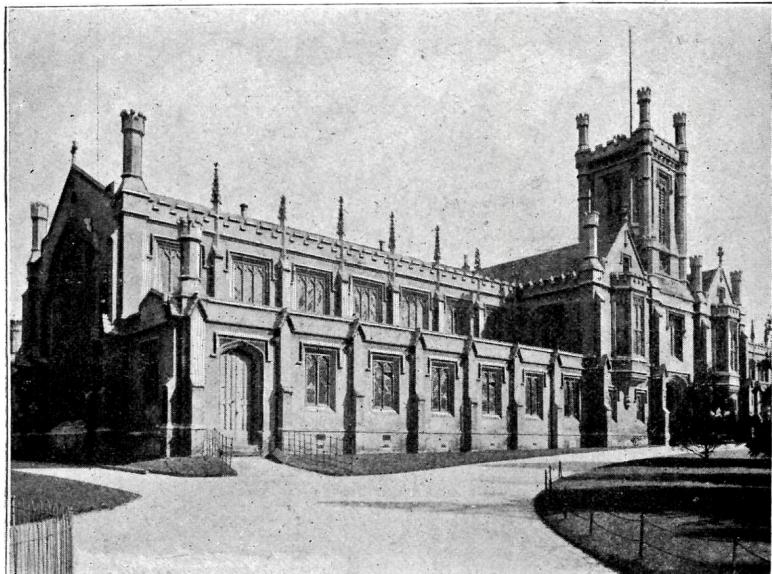
A similar Public Time Service has been in operation here for two years.

One of the tenants writes as follows, under date 3rd Oct., 1899:

"I am glad to be able to report to you that the five "Synchronome" dials which I have had in my office for nearly three years, have proved a great convenience, as I am supplied with accurate and uniform time, and I am not inconvenienced by people coming in to wind up the clocks every week."

(Signed) F. E. D. ACLAND, M.Inst.C.E., &c.

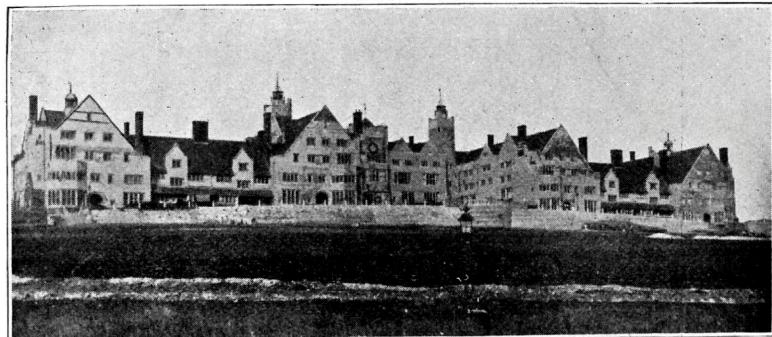
Some well-known SCHOOLS:



Cheltenham College.

An installation of "SYNCHRONOME" clocks was laid throughout the extensive premises of this College, in January, 1899.

Every class room has been provided with a dial 12" diameter, the circuit being upwards of a mile in length, and including 45 dials altogether.



Roedean School, near Brighton.

The time-circuit in this building includes 26 dials, mostly of 8 in. diameter, in the various class-rooms, dining-rooms, preparation rooms, &c., and a turret clock of 8 ft. diameter in the central tower, the whole being controlled by a self-wound pendulum of steel and mercury compensation, and obtaining the electricity from a battery of dry cells.



In **SCHOOLS** a special instrument may be included in the time-circuit for the control of bells, which are automatically rung in the class-rooms at pre-arranged times.

The system is particularly suitable for large **HOTELS**, for which purpose specially silent dials are provided for the bedrooms. The half-minute action of these dials is inaudible even when one is lying awake at night.



Hotel Metropole, Leeds.

The basement, ground floor, and first floor of this building are fitted throughout with "Synchronome" dials, and this service of uniform and accurate time is found to be a great convenience to the Management, and to add to the comfort of Visitors.

For **PRIVATE HOUSES** and domestic use generally, the system not only provides uniform and accurate time, but lends itself to the artistic treatment of clock faces in highly decorated rooms.



By the kind permission of the Right Hon. Lord Windsor, we are able to reproduce a photograph of his new house in Mount Street, Park Lane, W., which is installed with the "Synchronome" system throughout.

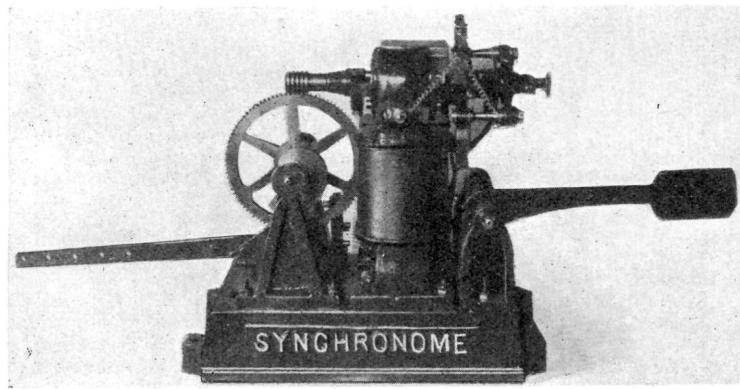
This system is found to be most useful in **Workshops, Factories, Mills, &c.**, and everywhere where loss of minutes means loss of pounds to the employer.

Owing to the largeness of the areas covered by our time-circuits in some of the most extensive works in the kingdom, it is impossible to illustrate them adequately. Some idea of the manner in which electrical time-service is applied in large works may, however, be gathered from the following description of the "Synchronome" installation of **Messrs. Nettlefolds, Limited, of Smethwick, Birmingham**:

One self-wound electrical pendulum of seconds beat is used to control a time-circuit throughout the Heath Street Works, covering an area of about ten acres. In addition to a large number of dials varying in size from 12 in. for the offices to 2 ft. 6 in. for the screw mills and a large turret clock, automatic drop shutters are provided at each of the numerous workmen's entrances, so arranged that they fall simultaneously at pre-arranged hours after a warning bell has been ringing half a minute, so cutting off the "lates" with strict impartiality. Electric bells are also automatically rung in the engine-rooms at other pre-arranged times; thus throughout the whole premises for whatever purpose "time" is required it is obtained with automatic precision from one electrical pendulum.

In TURRET AND CHURCH TOWER CLOCKS the cumbersome mechanism usually employed becomes unnecessary. The old-fashioned method consists of building an ordinary clock on a huge engineering scale, whereas on the "Synchronome" system the simple dial movement, containing but one wheel and an electro magnet is all that is required, thus reducing the cost to little more than that of the face and hands.

Striking the hours on bells up to the largest size is accomplished by means of a small electric motor, operated by either a Leclanche battery or an electric light supply, if it is available.



The above is a photograph of an electric striking gear for striking the hours upon a bell of 8 cwt.

Press Opinions.

From "LIGHTING," Aug. 3, 1899.

I rejoice to hear that Mr. Hope-Jones, of the Synchronome Company, is going ahead with his system of synchronised clocks, all driven electrically and controlled by one pendulum, to which "Lighting" has several times referred. The lately opened house of the Institution of Mechanical Engineers has nineteen of these dials; the Surveyor's Institute has seventeen, and in each case the current is taken from the electric light mains, without, of course, sensibly affecting the meter. I have a long list of other places in all parts of England where the system has been adopted, and its convenience is such that no one who has once installed these dials is likely to discard them for independent clocks—all showing different times like those at Waterloo Station in Mr. "Punch's" cartoon. Where electric light mains are not, the small current required can be got from cells, and where uncertainty of tenure or other causes make it inadvisable to buy the dials and pendulums, they can be rented at scarcely greater cost than is paid for a periodical winding and setting of the ordinary clock, and without the initial cost. I am not an ardent advocate for State control, but if only on grounds of economy and uniformity, I should like to see all the public clocks in a town, if not all in the kingdom, electrically compelled to keep together, and I know of no better method of achieving this result than that of Mr. Hope-Jones'.

From "THE DAILY GRAPHIC," Oct. 15, 1897.

For many years Paris has been familiar with "synchronised clocks" worked on the pneumatic system. They are to be found everywhere; they are part and parcel of the street life of Paris, and not the least of the accessories which make that life so pleasant. The first step which will bring London into line with the metropolis of our neighbours has at last been taken. Thanks to the Synchronome Syndicate, London has now a clock—the pioneer clock, it is to be hoped, of hundreds to follow—which tell the time of day or night without requiring winding up, being controlled by a self-wound electric pendulum in the neighbourhood, which also works a number of smaller dials on each side of Regent Street. The pioneer electric clock is fixed high up on the frontage of Piccadilly Circus adjacent to the Criterion. The hands move forward with each half-minute of Greenwich mean time, and the entire mechanism consists only of the dial, the hands, and a single wheel, with an electric magnet to work it.

REPORT OF PROF. SILVANUS P. THOMPSON,

D.Sc., F.R.S., etc., ON THE

SYNCHRONOME SYSTEM OF ELECTRIC CLOCKS.

For some two years I have been conversant with the "Synchronome" method of operating clocks by electricity, and for more than twelve months I have had an installation under my eyes daily. This method of controlling and driving clocks by electric currents has, in my opinion, several distinct advantages over all methods hitherto suggested for electric clocks or for the electric distribution of time.

I have for years been acquainted with the various proposals of English and Continental Electricians, and do not hesitate to say that in respect both of the electrical arrangements, the mechanical devices, and the general simplicity of the system, the Synchronome method of electric horology is ahead of anything hitherto devised.

Amongst the technical advantages possessed by the system are the following features :

- (1) In the controlling self-driven pendulum the excellent method of procuring the regular periodic electric contact without robbing any mechanical power by friction or otherwise from the driving mechanism of the clock; thereby ensuring absolutely uniform impulses independent of the strength of the electric current.
- (2) In the controlled dials the propulsion of the hands in perfect synchronism, by mechanism which is at once simple and secure.

I have recently inspected several of the electric-time services that have been installed in London by the Synchronome Syndicate, Limited, including those at the Institution of Mechanical Engineers, at the Surveyors' Institute, and at Palmerston Buildings, Bishopsgate Street. In each case I found that the dials distributed about the buildings in different rooms were in absolute agreement with one another. In no case was there as much as one half-minute's difference between any of the dials; and in each case the controller appeared to be running with absolute uniformity. Such is also the case in the smaller installation in the buildings of the City and Guilds Technical College, Finsbury, where the dials in the Lecture Theatres are operated from a controller with perfect satisfaction.

I know of no system of electric clocks, nor indeed of clocks of any kind, that could with equal simplicity and certainty of action be applied for the municipal distribution of time, or for the provision of time-services throughout large industrial establishments.

(Signed)

SILVANUS P. THOMPSON.

August 30, 1899.