

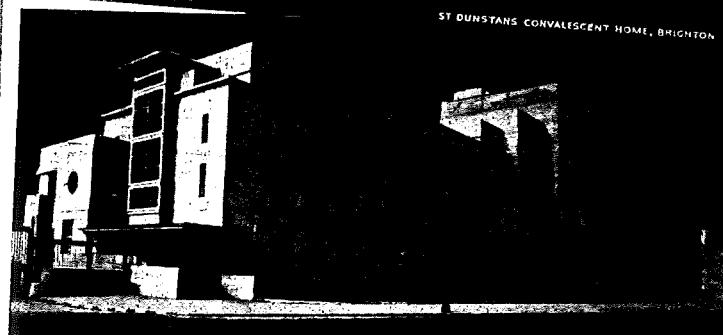
BOOK 5 SECTION 1a



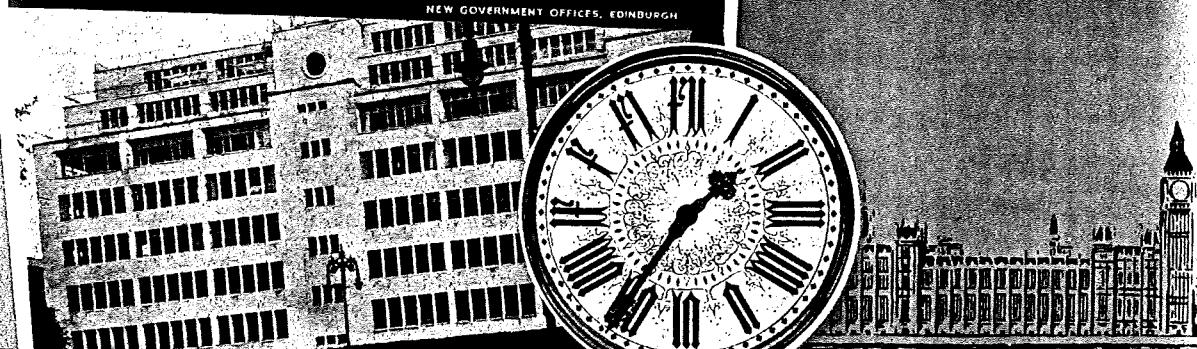
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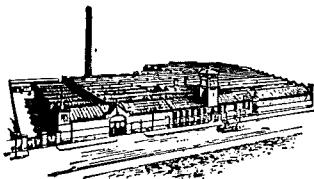
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GENTS' "PUL-SYN-ETIC" SYSTEM OF ELECTRIC CLOCKS & TIME DISCIPLINE APPARATUS

BOOK 5 SECTION 1Q

1940 - 41
EDITION

INDEX

	Page		Page		Page
Transmitters ("Master Clocks")	4, 5, 7	Staff Locator Clocks	18	Test Boxes	35
Impulse Movements	6	Case Designs	19	Sub-Control Apparatus	36, 37, 38
Impulse Wall Clocks, Indoor	8 to 19	Impulse Bracket Clocks	24 to 29	"Reflex" Pendulum Control	38
Impulse Wall Clocks, Outdoor	11, 12	Impulse Drum Clocks	30	Charging Boards	39
Insertion Impulse Clocks	13 to 17, 22, 23	Caseless Clocks	31	Accumulators	40
Impulse Calendar	19	Bell Ringing Apparatus	32, 33	Dry Cells	40
Suspension Impulse Clocks, Indoor	18, 19, 23	Automatic Lighting Switch	33	Service Mains	41
Cinema Type Impulse Clocks	23	Duration Contacts	34	Weak Battery Warning Bell	40
Illuminated Clocks, Indoor	23	Relays	34	Connection Diagrams	41, 42
Hospital Type Impulse Clocks	23	Auto Cut-outs	35	Some Prominent Users	43 to 48
Impulse Mantel Clocks	20, 21, 22				

FIGURE No. INDEX

Fig. No.	Page	Fig. No.	Page	Fig. No.	Page	Fig. No.	Page	Fig. No.	Page		
C6	7	C102	32	C163	19	C239	17	C320/A	21	I432	34
C7	7	C104	38	C164	19	C241	24	C323	8	I434	34
C8	40	C106	37	C165	19	C242	26	C324	12	C2164	39
C9	6 & 33	C107/A	6	C167	27	C243	26	C325	12	C6543	40
C10	8	C108	38	C168	25	C270	25	C326	16	C6543a	40
C11	13	C109	9	C169	25	C276	17	C327	16	C6551	40
C15	9	C109/A	9	C171	14	C277	22	C328	19	C6552	40
C20	11	C110	10	C172	13	C278	20	C329	19		
C24	11	C110/A	10	C173	16	C279	15	C330	29		
C32	30	C110/B	11	C174	21	C280	27	C334	28		
C33	30	C120	35	C175	14	C284	17	C335	18	Diag. No.	Page
C36	10	C125	35	C186	26	C285	13	C359	38	C510	37
C36/A	10	C128	20	C188	24	C286	14	C360	8	C519	4
C36/C	10	C129	20	C189	24	C287	13	C361	25	C526	23
C37	7	C129/A	20	C221	21	C288	18	C362	26	C528	5
C38	12	C135	21	C222	18	C290	18	365	33	C610	35
C49	31	C137	21	C223	15	C291	27	C366	29	NS11	37
C63	37	C140	14	C224	15	C292	28	C367	29	NS12	13
C64	33	P145	33	C228	23	C293	28	C368	29	NS33	41
C68	32	C147	19	C229	23	294	18	C391	22	NS34	41
C69	32	C148	19	C230	23	C307	27	C392	27	NS35	41
C76	12	C150	39	C234	21	C310	20	C393	15	NS36	42
C79	32	C151	39	C235	23	C312	20	C394	14	NS37	42
C88	9	C152	39	C236	24	C316	22	C395	14	NS38	42
C95	19	C153	39	C237	15	C318	20	C399	22	NS39	42
C101	34	C154	40	C238	17	C320	21	C401	23	NS40	42

SECTIONS OF "BOOK 5"

ELECTRIC IMPULSE CLOCKS	...	Section 1	OBSERVATORY CONTROL OF ELECTRIC CLOCKS	Section 4
ELECTRIC TURRET CLOCKS	...	Section 2	DAC-CHRONOMETER	Section 6
MARINE ELECTRIC IMPULSE CLOCKS	...	Section 3	SYNCHRONOUS ELECTRIC CLOCKS	Section 7
			PROCESS TIMING CLOCKS	Section 8

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If, within 12 months from date of despatch, any defect or fault is discovered in any instruments of our manufacture, due to faulty material, or bad workmanship, we undertake to make good the defect without charge, provided that notice is given to us immediately on the discovery of the defect, and the defective instruments, or parts thereof, are forwarded to us carriage paid.

This Guarantee does not apply to defects caused by ordinary wear and tear, misuse, or neglect, or by circumstances over which we have no control.

PAYMENT. Accounts are opened with responsible people upon the receipt of approved Trade References. Payment is due during the month following date of invoice, unless other terms are specially quoted.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

THE IMPULSE TRANSMITTER.

In the "Pul-syn-etic" System of Electric Impulse Clocks is embodied the experience of over 30 years.

The "Pul-syn-etic" Time Transmitter which gave the lead in Modern Time Transmitter construction is—Imitated but not Excelled. We were first in 1904 to employ the roller on incline plane for giving the half-minute constant gravity impulse to Pendulum. Up to our introducing this feature, if for any reason the pendulum failed, due to a weakening current, the battery ran down through the contacts.

TRANSMITTER SPECIFICATION.

CASE.

Of designs illustrated, in sound well-seasoned hardwood, properly finished and polished. Full length front glazed panel forming door with strong hinges, auxiliary bolts, and lock and key.

MOVEMENT.

Formed of rigid cast-metal bedplate, with correctly proportioned electro-magnet, improved quick-break sparkless half-minute automatic adjusting impulse contact, with heavy platinum-silver surfaces, escapement and repeating mechanism robustly constructed on Standard Clock Makers' principles. Inclined plane gravity impulse mechanism giving constant drive independent of battery strength and variation of circuit. Hardened steel arbors working in suitable bearings. Seconds Pendulum Fully Compensated. Rod of "Si-ne-var" non-expanding alloy (coefficient of expansion 0.0000008 per 1°C). Heavy steel cylindrical bob and toothed rating nut, each tooth representing approximately one second per day adjustment, and Platform for Regulating Weights. All guaranteed capable of being regulated to keep time within one second per day, plus or minus. Half this small error is often obtained by careful regulation in position.

TRANSMITTER OPERATION.

The Pendulum of the Transmitter is kept in vibration by absolutely constant mechanical impulses imparted to it at half-minute intervals by a weighted lever termed the Gravity Lever (see Diagram C519).

The Gravity Lever is provided with a Roller which rolls down the Inclined Face of the Impulse Pallet, thus giving the Pendulum Crutch a gentle push.

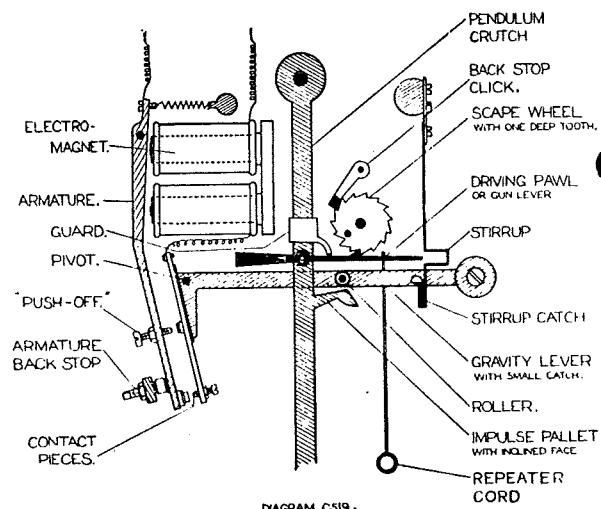
This continues until the Contact pieces meet, when the Electro-Magnet is energised by the flow of current through it.

The Armature is attracted and at once replaces the Gravity Lever on to the Stirrup Catch. Meanwhile the Clocks which are connected in circuit with the Battery are advanced half-a-minute.

The action is brought about in the following manner: The Pendulum Crutch in vibrating, carries with it the Driving Pawl which pushes around the 'Scape Wheel tooth-by-tooth. The Back Stop Click prevents its backward movement.

At each complete revolution of the 'Scape Wheel (which occurs every half-minute), the Driving Pawl engages a Deep Tooth and its right hand extension, instead of passing through the Stirrup, engages the Stirrup Catch just above the Stirrup, pushing the Stirrup catch and releasing the Gravity Lever.

The Roller drops on to the dead face of the Impulse Pallet, then runs down the Inclined Face, giving it an Impulse. Contact is then made as above described for the dual purpose of operating the Impulse Clocks and replacing the Gravity Lever. The Guard shown just above the driving pawl prevents two teeth being taken by the driving pawl in case the Pendulum swing is exaggerated by any means.



GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

THE TRANSMITTER—continued.

ADVANCE LEVER.

An advance lever with cord is fitted to the movement, by which all impulse clocks in the circuit can be advanced one impulse every two seconds when required, as for instance in Daylight Saving change.

THE CONTACTS.

As detailed on page 4 the contacts indirectly serve the dual purpose of energising the pendulum and impulsing the clocks.

The Contacts are fitted with an anti-spark device and experience has shown that they have a life of many years without attention.

Reproduced herewith is an actual oscillograph record of the half-minute impulse which is passed through all the clocks.

Note the low current consumption and the short period of contact which means a saving of Battery Power.

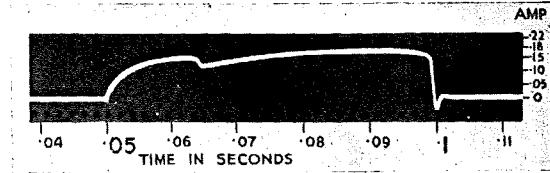


DIAGRAM C528.

CURRENT CONSUMPTION.

In the "Pul-syn-etic" System this is negligible—see the oscillograph curve above. The setting figure is 0.22 amp., while the operating figure is only 0.18 amp. for 1/20th sec. every half minute.

FITTINGS.

Substantial terminals, and fixing plates for four fixing screws are provided.

DIMENSIONS.

Size overall, 53-in. x 13-in. x 8-in.; weight, without time dial, approx. 44 lbs. Fig. C37 slightly exceeds these dimensions and weight.

NOTE.—The three Transmitters shown on page 7 at Figs. C6, C7 and C37 are identical except that the latter two have a time dial with its impulse movement fitted on the door of the case. The Transmitter mechanism is fully visible on opening the door.

For positions where a time dial separate from the Transmitter is desired, the Fig. C6 type is recommended.

NUMBER OF CLOCKS IN CIRCUIT.

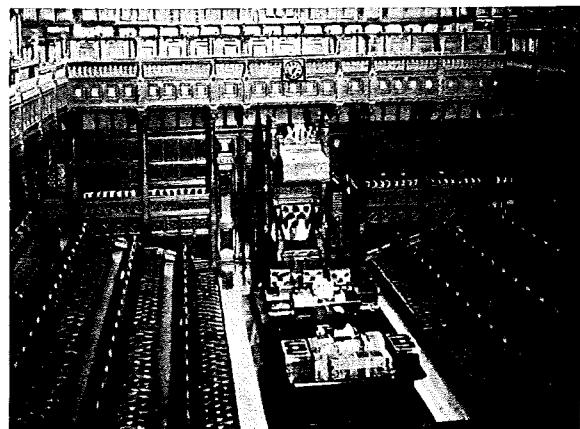
A "Pul-syn-etic" Transmitter will impulse any reasonable number of Impulse Clocks.

We have installations where over 100 are on one Circuit controlled by one Transmitter. It should be remembered however, that the Voltage of such a circuit is high, and it is this voltage and the responsibility of having so many clocks in one circuit in case wires are carelessly cut, that is the controlling factor. We particularly draw your attention to pages 36 and 37—Sub-Transmitters and Sub-Transmitting Relays.

BATTERY POWER.

The simplicity of this is dealt with independently on pages 39, 40, 41 and 42. Where Service Mains are available, the "Pul-syn-etic" System may be termed Mains operated, without the disadvantage that should such mains fail, all clocks are rendered inoperative.

For full details of "See-Saw" and Observatory Control,
—see Book 5, Section 4.



HOUSE OF COMMONS
Clock over the Speaker's Chair

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

IMPULSE CLOCK MOVEMENTS.

"PUL-SYN-ETIC" IMPULSE MOVEMENTS.

As Fig. C9 are manufactured and standardised in three distinct sizes, viz:—

"S" TYPE.

Standard locked Movement built up on brass base for Clocks having glazed (protected) dials for all sizes up to approximately 24-in. diameter.

"B" TYPE.

Double locked standard Movement, built up on brass base, and of more robust construction than "S" Type, for glazed (protected) dials, up to approximately 36-in. diameter.

"W" TYPE.

Powerful double locked Movement, built up on metal base, suitable for large Turret Dials, which are arranged behind glass, or, for slightly less large Clocks with exposed hands.

"SILENT" TYPE.

See below—Fig. C107/A.

The "S" Type Movement is the size which we fit with Contacts for ringing bells, or operating Hooters at pre-arranged times, and contacts for other purposes. (See illustration on page 33).

Each Movement of Types "S" and "B" consists of heavy wrought brass plate, machined, finished and lacquered ; accurate machine-cut ratchet wheel with 120 teeth ; pawls of steel, hardened and tempered ; balanced aluminium hands running on bridged motion work ; highly efficient electro-magnet. All the moving parts are designed to resist wear, the driving and backstop pawls being of stainless steel to avoid rust. The design of the pawls and stops is such that it is absolutely impossible for them to advance the ratchet wheel more than one tooth at each impulse. The armature of the impelling magnet is designed to operate with a contact of exceptionally short duration, and with a very weak current, one cell only being required for every two 12-in. dials in a circuit.

In the "B" Type Movement, the motion work is constructed to carry larger but light hands.

For larger Clocks with hands exposed to the weather, there is nothing equal to a "Waiting-Train" Movement. (See Book 5, Section 2). Where silence is required, see below.

"PUL-SYN-ETIC" SILENT MOVEMENT.

It is understood by some, quite incorrectly, that a "click" or "thump" every half-minute is inseparable from electric impulse clocks. This is not so, with the "Pul-syn-etic" System. Most "Pul-syn-etic" Impulse Clocks can be supplied fitted with inaudible movements, which cannot be heard even during the quietness of the night. For Hotel Bedrooms, Private Offices, etc., where a half-minute "click" would be objectionable, they claim consideration.

The "PUL-SYN-ETIC" Silent Movement does not depend upon a spring suspension or padded case for silence. The special action is such that the usual percussion or knock is absent, and therefore, does not have to be absorbed or masked. The Movement need not be nursed into position or humoured into keeping in step with its fellows, it takes practically the same energy to operate it, and is as permanently reliable as an ordinary Impulse Movement.

The "PUL-SYN-ETIC" Silent Movement is manufactured in quantities and fitted into all ordinary cases, Wall or Mantel, up to 24-in. in diameter—glazed fronts, and the cost permits its general use.

Hotel Bedrooms can be fitted with the Silent Impulse Clock, giving the Guests the advantage of true time without fear or annoyance to the most nervous occupants, many objecting to even the tick of a watch.

A mechanism so inaudible has never been available in quantity until the introduction of this "Pul-syn-etic" Silent Movement, and it commands special consideration.

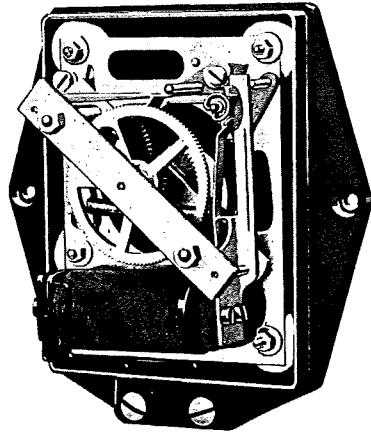


FIG. C9 "S" Type.
Standard Locked Movement.
In modern moulded Bakelite Case.
Code word : zoemp.

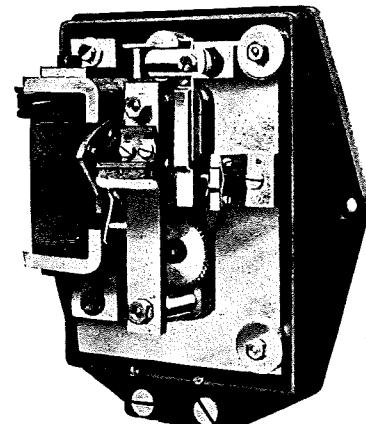


FIG. C107/A SILENT MOVEMENT.
In modern moulded Bakelite Case.
Code word : zyggy.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

THE IMPULSE TRANSMITTER.



FIG. C6.

FIG. C6.

Exactly as Fig. C7,
but without Pilot
Dial.

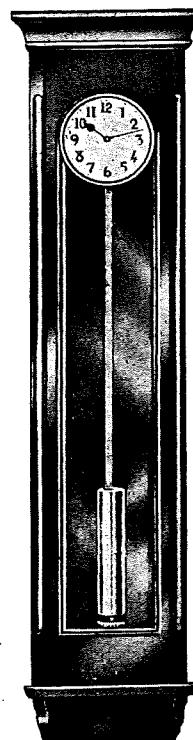


FIG. C7.

FIG. C6 TRANSMITTER.

In polished Teakwood case with glass front panel, door secured with substantial hinges, auxiliary bolts, lock and key, giving access to movement and pendulum. Substantial fixing plates and alignment studs to enable case to be fixed in a vertical position, complete with current balancing adjustable resistance (To Specification on pages 4 and 5).

PRICE, each ... £15 - 0 - 0 Code word ... zilik (E)

FIG. C7 TRANSMITTER.

Generally as Fig. C6 above, but with 7-in. time dial.

PRICE, each ... £17 - 10 - 0 Code word ... zilje

FIG. C37 TRANSMITTER.

Generally as Fig. C6 and C7 but in Ornamental solid hardwood case, highly finished.

PRICE Without Time Dial, each ... £19 - 0 - 0 Code word ... zillo

With Silvered Time Dial, as illustrated, each ... £22 - 10 - 0 Code word ... zilny

Figs. C6 and C7 can be supplied in framed case, if desired, at a cost of £2 - 4 - 0 extra. Special cases can be made to architect's designs, or to match existing furniture, at extra cost.

"See-Saw Observatory Control" fitted to any Standard Home Transmitter with Impulse Dial (such as Fig. C7)

Add ... £5 - 0 - 0 Code word ... zojno

Relay fixed in Clock Case and wound to 200 ohms for receiving observatory current (if required).

Add ... £1 - 5 - 0 Code word ... zojon

Transmitters and the majority of Impulse Clocks may be fitted with Seconds Contacts and Hands.

Prices on application.

Where space of wall will not permit the long case necessitated by Seconds Pendulum and where Time controlled A.C. is available, such may be used as the Transmitter. See Book 5, Section 6.

For Sub-Control Transmitting Systems, see pages 36 and 37. For full details of such Observatory Control, see Book 5, Section 4.

ELECTRIC IMPULSE CLOCKS

IMPULSE WALL CLOCKS—FOR INTERIOR USE.

WOOD CASES.

FIG. C10 IMPULSE WALL CLOCK.

In polished Wood Case, solid hardwood front, glazed bezel and matt finished white silver-like Dial up to 18-in. diameter. Above that size white enamelled.

"PUL-SYN-ETIC" standard locked movement enclosed in dust-proof cover, concealed terminals and fixing plate.

Standard finishes, polished Oak, Mahogany or Walnut, but other finishes are available.

Double faced clocks—see page 18.

PRICES, each :—

Diameter of Dial	6-in.	8-in.	9-in.	10-in.
Overall diameter (approx.)	9-in.	11-in.	12-in.	13-in.
	£2 - 18	£3 - 2	£3 - 4	£3 - 6 (E)
Code word	zilol	zonpa	zilum	zonut
Diameter of Dial	12-in.	16-in.	18-in.	24-in.
Overall diameter (approx.)	15½-in.	20½-in.	23½-in.	29½-in.
	£3 - 8	£5 - 6	£6 - 8	£10 - 10
Code word	zilyn	zimaj	zimek	zimja

FIG. C323 IMPULSE WALL CLOCK.

Alternative pattern to Fig. C10 above and with octagonal polished hardwood case. (Oak, Mahogany and Walnut, or special woods).

Strong glazed metal bezel and matt finished white silver-like Dial up to 18 inches diameter. Above that size white enamelled.

Specification generally as Fig. C10 above.

PRICES, each :—

Diameter of Dial	8-in.	9-in.	10-in.	12-in.
Overall dimensions across flats (approx.)	11-in.	12-in.	13-in.	15½-in.
	£3 - 4	£3 - 6	£3 - 8	£3 - 10 (E)
Code word	zwugy	zwuhz	zwuld	zwumf
Diameter of Dial	16-in.	18-in.	24-in.	
Overall dimensions across flats (approx.) ...	20½-in.	23½-in.	29½-in.	
	£5 - 14	£6 - 16	£10 - 18	
Code word	zwuph	zwurk	zyabt	

FIG. C360 IMPULSE WALL CLOCK.

Polished Oak case, raised lacquered brass Arabic chapters, and hands of same finish. Concealed fixing plates. "PUL-SYN-ETIC" standard locked movement. Approximate dimensions, 12" x 10" x 2¾".

PRICE	£3 - 16	(E)
Code word	zyedy	

Roman or Arabic chapters—except Fig. C360—as required.

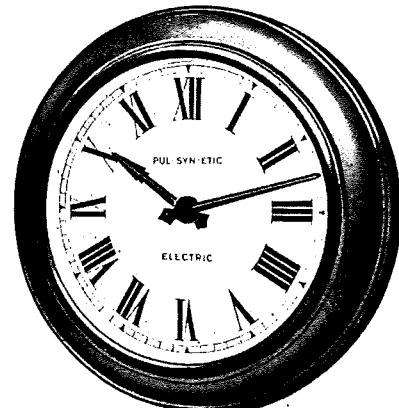


FIG. C10.

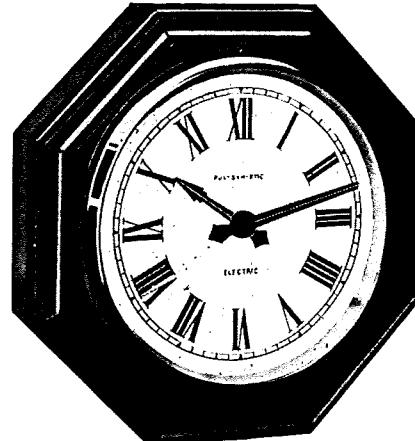


FIG. C323.

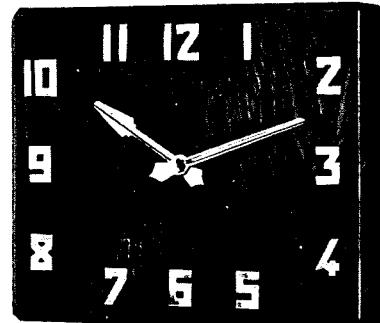


FIG. C360.

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

ELECTRIC IMPULSE CLOCKS

IMPULSE WALL CLOCKS—FOR INTERIOR USE.
ALL METAL CASES.

FIG. C15 METAL IMPULSE WALL CLOCK.

In enamelled case, incombustible and dust-proof. Case construction forms a suitable moulding to the wall. Strong glazed bezel and matt finished white metal dial. "PUL-SYN-ETIC" standard locked movement. Terminals available without opening case, complete with fixing plate.

To special order, these Clocks can be made, and are practical and serviceable up to 60-in. diameter, and are often used for Railway platforms.

PRICES, each:—

Dia. of Dial	16-in.	18-in.	24-in.	30-in.	36-in.	42-in.
Dia. overall (approx.)	21½-in.	23½-in.	30½-in.	37-in.	43½-in.	51½-in.
	£4 - 4	£5 - 8	£6 - 12	£11 - 10	£16 - 0	£20 - 0 (E)
Code word	zofko	zofmy	zofok	zoful	zogah	zyelg

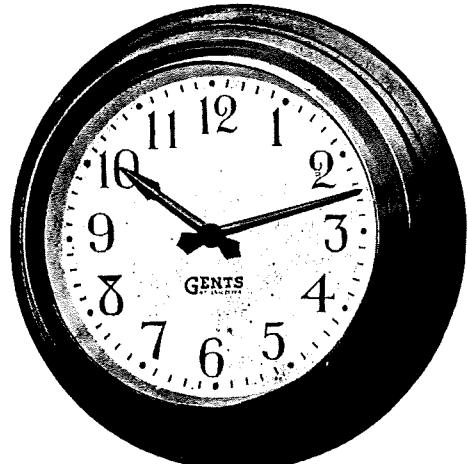


FIG. C15.

FIG. C88 METAL IMPULSE WALL CLOCK

Bronzed metal case, incombustible, and dust-proof. Strong glazed bezel and matt finished white silver-like dial. "PUL-SYN-ETIC" standard locked movement. Enclosed Terminals, but available to the fixer without opening case. No wiring need be visible. Complete with fixing plate. (The clocks may be mounted back to back. See page 18).

PRICES, each:—

Diameter of Dial...	8-in.	10-in.	12-in.	18-in.
Diam. overall (approx.)...	9½-in.	11½-in.	13½-in.	19½-in.
	£2 - 7	£2 - 9	£2 - 12	£4 - 5 (E)

Code word zomyt zoood zonap zyfib

These Impulse Clock Cases are available chromium plated or enamelled in colours to match decorations at small extra charge.

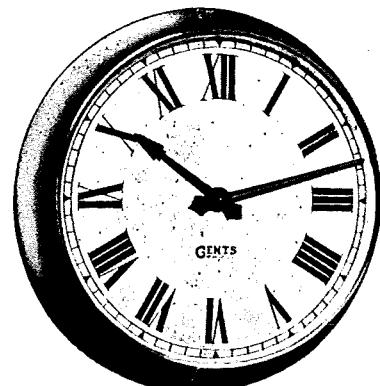


FIG. C88.

BAKELITE CASES.

FIG. C109/A BAKELITE IMPULSE WALL CLOCK.

Moulded Bakelite Case and Bezel, standard finish Walnut, but other finishes available. Matt finished white silver-like Dial, with raised red Arabic chapters, affording a very pleasing appearance. Similar Mantel Clock, see page 20. One size only, 6-in. diameter Dial.

PRICES, each:—

Diameter of Dial	6-in.
Overall Dimensions (approximately)	7½-in.
	£3 - 0
Code word	zyjenj (E)

FIG. C109 As Fig. C109/A but in brown Bakelite Case and with standard Dial ... £2 - 10
Code word zokem

See also overleaf.

Roman or Arabic Chapters as required.

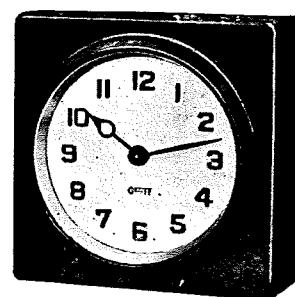


FIG. C109/A.

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

IMPULSE WALL CLOCKS—FOR INTERIOR USE.

BAKELITE CASES—continued.

For Damp or Corrosive Situations.

Bakelite Cases have the advantage of being Uninflammable, Heat-resisting and Damp-proof. The Bezels containing the Glasses are of Bakelite also, and so not subject to tarnish in any ordinary vitiated atmosphere.

Dials are of matt white finish.

The terminals are inside the case, and at the same time available to the fixer without opening same. No wiring need be visible. The hanging plate or plates are arranged inside the case, and so also are not visible, but can be reversed if desired. "PUL-SYN-ETIC" standard locked movement.

These Bakelite cases may be cellulose enamelled in colours to be in keeping with decorative schemes, at small extra charge.

The 12-in. size is suitable for having a Bell-Ringing Contact Device added thereto—see pages 32, 33 and 42.

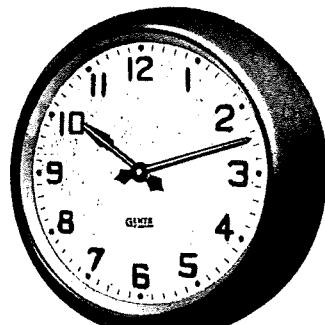


FIG. C36.



FIG. C36/A.



FIG. C36/C.

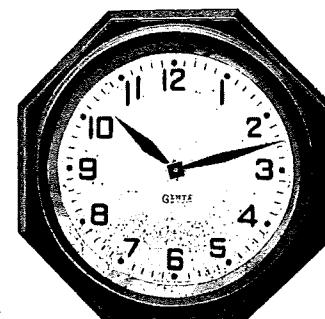


FIG. C110.

FIG. C36 BAKELITE IMPULSE WALL CLOCK.

With glazed bezel. This Clock is made in two sizes, with 9-inch and 12-inch dial. Double faced clocks see page 18. With Standard movements.

PRICES, each :—

		9-in.	12-in.
Diam. of Dial ...	...	...	...
Overall Diameter (max. depth 2½ in.)	...	11-in.	14-in.
FIG. C36	Brown or Walnut Finish	£2 - 10	£2 - 12 (E)
	Code word ...	zozup	zoity
FIG. C36/A	Walnut Finish	£2 - 10	£2 - 12
	Code word ...	zwosk	zworj
FIG. C36/C	Walnut Finish, Raised Symbols	£2 - 16	£2 - 18
	Code word ...	zwown	zwotl

FIG. C110 BAKELITE-CASED IMPULSE WALL CLOCK.

Best quality moulded Bakelite octagonal case combined with anti-dust collecting bezel. Concealed hanging plate. Matt finished white silver-like dial and Arabic Chapters.

"PUL-SYN-ETIC" standard locked movement.

One size only—6-inch dial.

PRICES each : Dark Brown or Walnut £2 - 8 Code word : zyhyh (E)

FIG. C110/A.

Exactly as Fig. C110 but with raised red Arabic chapters similar to C109/A, page 9 £2 - 18 Code word : zyicy

Other Bakelite-Cased Clocks—see pages 9 and 11.

Roman or Arabic Chapters as required.

The above Impulse Clocks may be fitted with Silent Movements—
add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

BAKELITE CASES—continued.

FIG. C110/B

Exactly as Fig. C110—page 10—but with white case and black dial.
PRICE each £2 - 8 Code word : zyijf



FIG. C110/B.

HERMETIC IMPULSE WALL CLOCKS

For exterior or damp interior use.

WROUGHT-METAL CASES.

FIG. C20 IMPULSE WALL CLOCK.

Hermetically sealed, for exterior and exposed positions. Strong wrought metal lead coated case, water and air-tight. White enamelled metal Dial with glazed bezel, all hermetically sealed. "PUL-SYN-ETIC" standard locked movement. Can also be supplied with parallel sides of special dimensions to fit into openings or recesses in walls. Roman or Arabic chapters as required.

Diameter of Dial	18-in.	24-in.	30-in.	36-in.
Overall diameter (approximately)	25½-in.	31½-in.	37½-in.	43½-in.
PRICE, each *	£9 - 0	£13 - 10	£20 - 0	£24 - 0 (E)
Code word	ziror	zirpe	zirro	zirty

* These prices are for opaque faces. Opal dials for internal illumination can be supplied when desired, at extra cost.

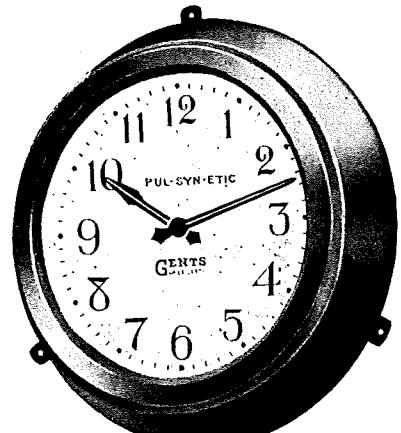


FIG. C20.

CAST-METAL CASES.

Fume & Vapour-proof.

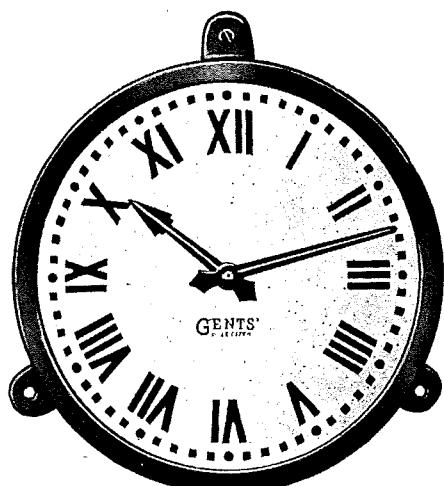


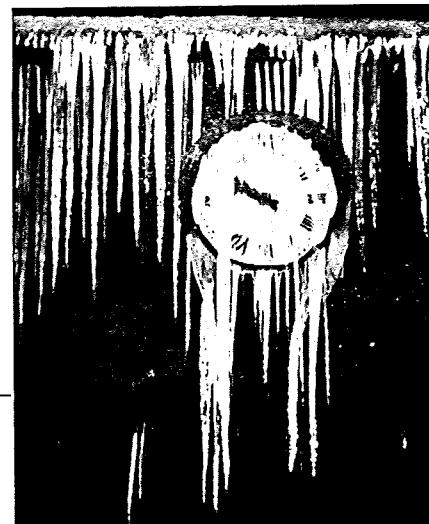
FIG. C 24.

FIG. C24 THE
"UNDERGROUND"
PATTERN IMPULSE
WALL CLOCK.

For outdoor and exposed positions. Cast-Metal Case, water and air-tight, steam and fume-proof. Dial of Cast-Metal, enamelled white with raised black Chapters and minute marks. Strong glazed bezel, hermetically sealed, "PUL-SYN-ETIC" standard locked movement. Substantial terminals in separate compartments.

This type of clock CANNOT BE SUPPLIED WITH OPAL DIALS, and the dial, being cast, cannot incorporate customer's name. For further illustrations, see page 12

Diam. of Dial ...	9-in.	12-in.	16-in.	18-in.	20-in.	24-in.	30-in.
PRICE, each ...	£3 - 2	£3 - 4	£4 - 10	£5 - 10	£7 - 0	£8 - 0	£14 - 0 (E)
Code word ...	zipla	zipme	zipop	zippo	zipry	zipyr	ziran



The above Impulse Clocks may be fitted with Silent Movements—
add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC"
ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

HERMETIC IMPULSE PILLAR CLOCKS.

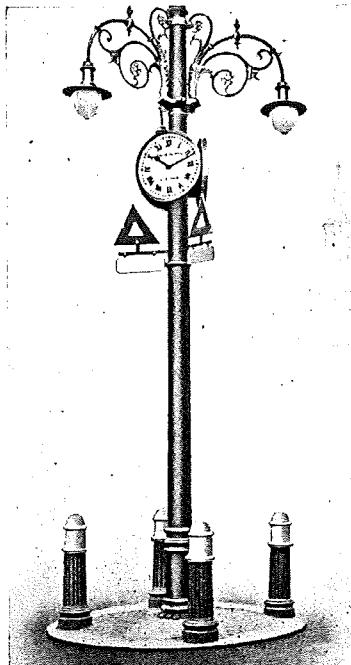


FIG. C76.

FIG. C38.

Shows a nest of four Clocks as Fig. C24 with the necessary ironwork for holding them together and clipping to a Tramway Standard or other pillar.

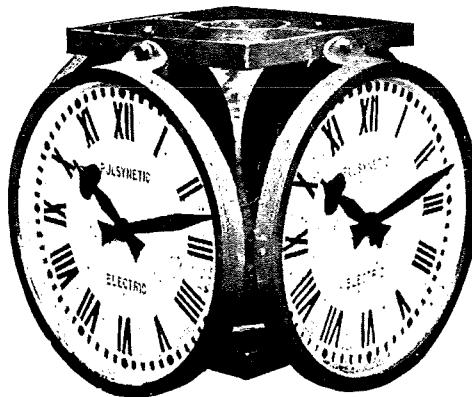


FIG. C38.

FIG. C76 shows a nest of three such Clocks fixed on a steel pillar which is incidentally used :—

1. To support Trolley Wires.
2. Lamps for illuminating the roadway.
3. Road signs.

Obviously the variations of the requirements are so great that prices can be quoted only on receipt of details, from when we shall be pleased to give all information available.

SPECIAL SURFACE WALL CLOCKS.

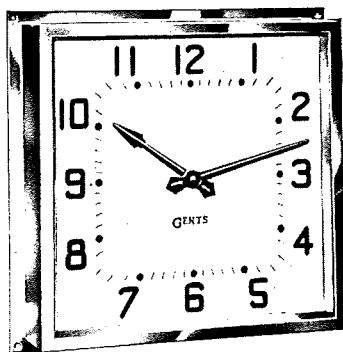


FIG. C324.

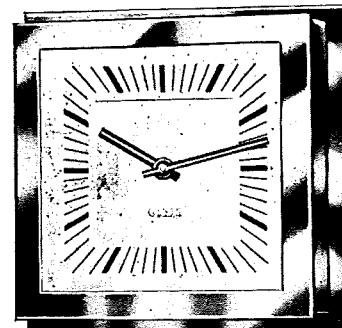


FIG. C325.

Square back-flange Surface Mounting Wall Clocks of modern design. Metal cases and bezels in various finishes such as Chrome or Bronze.

Raised silvered chapter zones and hands of design shown. Obtainable in varying sizes from 5-in. square dial and upwards.

PRICES :—upon application.

Code words : FIG. C324 zyafy

FIG. C325 zyagz

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

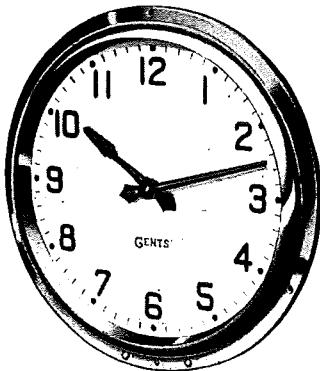


FIG. C11 INSERTION CLOCK.

■ ■ ■ INSERTION CLOCKS.

ALL METAL. FOR INTERIOR USE.

Adaptable for easy and immediate insertion into existing or prospective panelling or customers' own cases, mantel or wall pattern, or in positions where a protruding clock is undesirable.

Insertion Clocks are daily becoming more popular, undoubtedly on the score of unobtrusiveness and pleasing appearance. Tropical use—the case being entirely of metal permits of its use in humid or anti-infested regions and we particularly draw the attention of overseas customers to this particular design. It has proved itself extremely satisfactory in the Tropics.

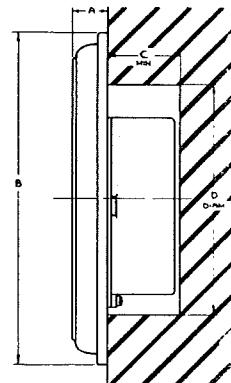


DIAGRAM NS12

FIG. C11 INSERTION IMPULSE CLOCK.

"PUL-SYN-ETIC" standard locked movement completely enclosed in metal or Bakelite dust-proof cover with sealed joint. Matt finished white silver-like metal Dial up to 18" diam., above that size white enamelled. Strong glazed cast brass bezel, bronzed, bevelled plate glass. Other designs and finishes of Dial and bezel to order. Roman or Arabic chapters as desired.

Diameter of Dial	6-in.	7-in.	8-in.	9-in.	10-in.	12-in.	14-in.	16-in.	18-in.
PRICE, each	£2 - 16	£3 - 0	£3 - 5	£3 - 10	£3 - 15	£4 - 0	£5 - 0	£6 - 12	£6 - 17(E)
Code word	... zinno	... zooch	... zinon	... zinup	... zioxy	... zipal	... zurco	... zomus	... zipem
Dimension A	... 5-in.	... 18-in.	... 18-in.	... 18-in.	... 18-in.	... 1-in.	... 1-in.	... 1½-in.	... 1½-in.
" B	... 6½-in.	... 8½-in.	... 9½-in.	... 10½-in.	... 11½-in.	... 13½-in.	... 15½-in.	... 17½-in.	... 19½-in.
" C	... 2½-in.	... 2½-in.	... 2½-in.	... 2½-in.	... 2½-in.	... 2½-in.	... 2½-in.	... 2½-in.	... 2½-in.
" D	... See Blue Print	... 7-in.	... 7-in.	... 7-in.	... 7-in.	... 7-in.	... 7-in.	... 7-in.	... 7-in.

Antique Brass, Silver-plated, Oxidised Silver, Chromium-plated; these finishes can be supplied at small extra price.

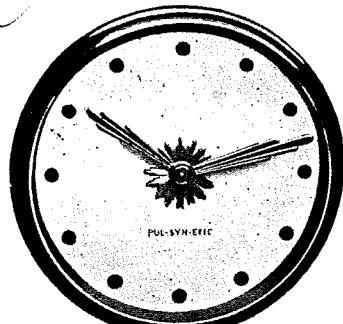


FIG. C285 INSERTION CLOCK.

Cast bezel, silvered dial with raised circular symbols, ornamental boss in centre and ornamental hands.

Bezel, hands and symbols finished to match, in bronze or antique brass.

Code word zwevk

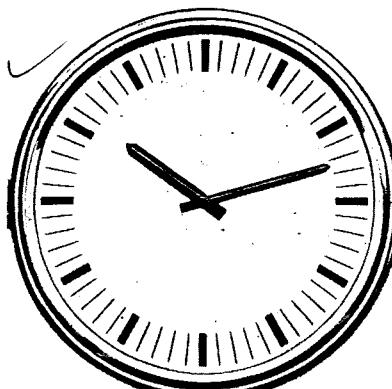


FIG. C172 INSERTION CLOCK.

Chromium-plated, Bronze or Antique Silver cast Bezel, matt finished white silver-like Dial, dark blue or black symbols and hands with red line down centre.

(Architect, R. McGrath, Esq., B. Arch. A.R.I.B.A.)
PRICES: With bronzed bezel, add 3/- to prices of Fig. C11 above. Chromium or antique silver extra.

Code word ... zoret, followed by diam.

Prices upon application.

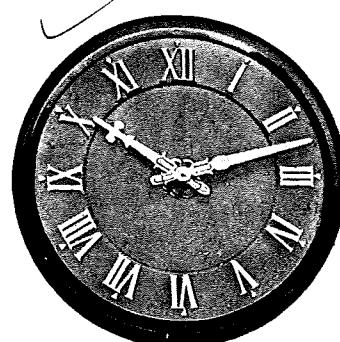


FIG. C287 INSERTION CLOCK.

Cast metal bezel, bronze dial, raised white-metal chapters and cast centre to dial, cast white-metal exposed hands, engraved ball design inside chapter-ring.

Code word zwezn

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

INSERTION & SURFACE FIXING IMPULSE CLOCKS.

The modern trend in architectural design of Buildings calls for a correspondingly modern tendency in interior fixings. Below are illustrated a number of "PUL-SYN-ETIC" Electric Clocks which fulfil such requirements. (See also page 15).

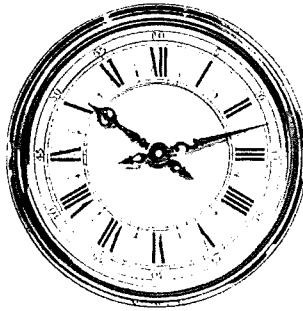


FIG. C395.

Special design with heavy Tompion style Dial, Roman chapters on silvered zone upon matt brass ground. Cast bezel with bevelled plate glass and hands of design shown.

PRICE, each :—

With 12-in. diam. Dial, £10 - 10 - 0 (E)

Code word ... zyjif

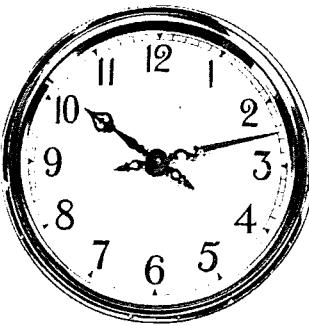


FIG. C394.

Special design, Arabic Chapters on engraved Convex Silvered Dial, cast Bezel with Convex glass front, ornamental Hands.

PRICE, each :—

With 6-in. diam. Dial, £6 - 15 - 0

Code word ... zyjgo

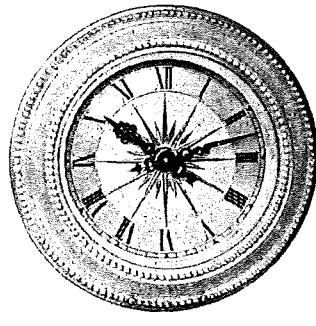


FIG. C140.

Special design, Roman Chapters, ornamental engraved Silvered two-piece Dial with Sunray centre, ornamental Hands and Bezel in pearl-pattern, with plate glass front in any art finish.

PRICE, each :—

With 6-in. diam. Dial, £7 - 10 - 0 (E)

Code word ... zosta

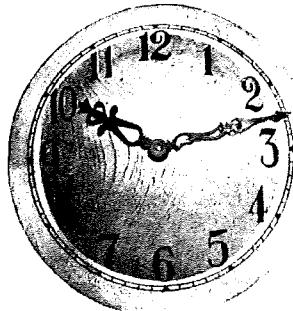


FIG. C171 SURFACE WALL CLOCK.

Polished Light or Dark Oak Convex Dial with black or gilt Arabic Chapters and ornamental Hands. This clock becomes semi-insertion below 12-in. Dial.

Code word ... zoras

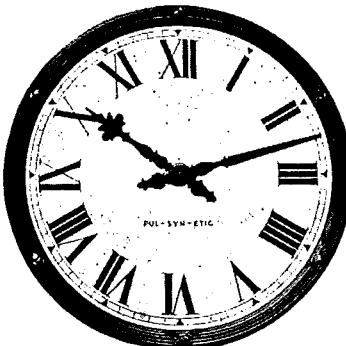


FIG. C286 INSERTION CLOCK

Cast reed and ribbon design bezel, engraved silvered dial, special Roman Chapters, ornamental hands. Bezel art-metal finished.

Code word ... zwewl

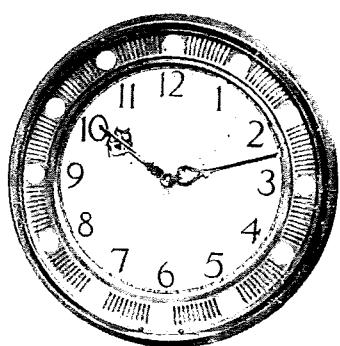


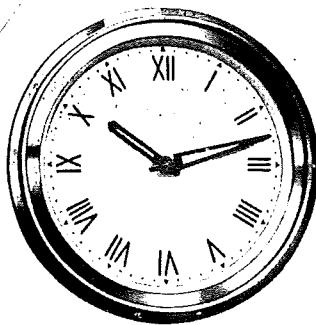
FIG. C175 INSERTION CLOCK

Cast brass Frame, finished matt gold, raised blue enamel Paterae, carved dentils, dull silver convex Dial with raised matt gilt Chapters.

Code word ... zoriv

Other Special Designs made to Order or Customers' own cases can be fitted.

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

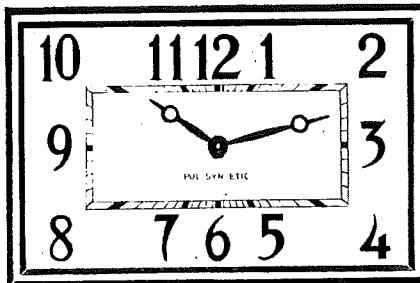
ELECTRIC IMPULSE CLOCKS**INSERTION AND SURFACE FIXING IMPULSE CLOCKS.****FIG. C393.**

Special design, Roman Chapters on engraved Silvered Dial, cast-metal Bezel of art finish, and of wide proportion with bevelled plate glass front, hands of design shown.

PRICE, each :—

With 6-in. diam. Dial, £9 - 5 - 0

Code word ... zyjed

**FIG. C223.**

Square and rectangular insertion clocks, chromium-plated bezels, matt finished white silver-like Dials.

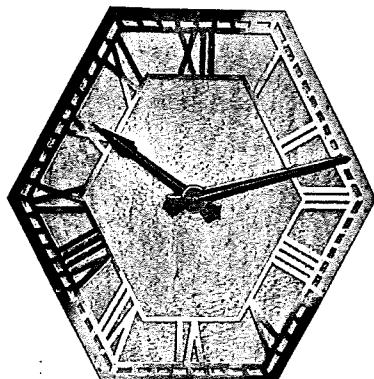
Can also be arranged for suspension either singly or in pairs (i.e., back to back) Upon receipt of particulars relative to size required, we shall be pleased to submit prices.

FIG. C224 10-in. Dial ... £3 - 10 - 0 (E)
12-in. Dial ... £3 - 14 - 0

Code word : zyepk
Code word : zyerm

FIG. C223. Upon application.

Code word : yopre

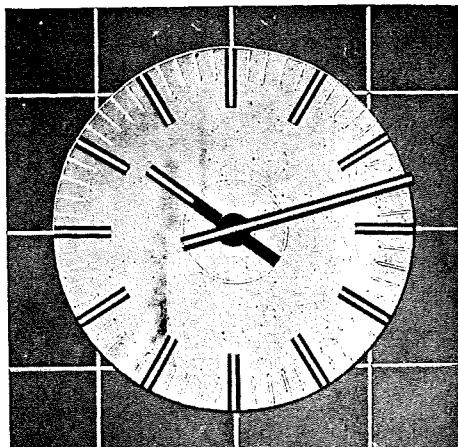
**FIG. C279. INSERTION CLOCK.**

Bronzed brass Skeleton Dial, backed by white opal, and arranged for internal illumination. Ornamental hands as illustrated, finished either white or bronzed.

Movement housed in dustproof cover, suitable for recessing into wall or panelling.

PRICE : upon application.

Code word ... zwids

**FIG. C237. INSERTION CLOCK.**

Chromium-plated metal Dial, with raised 5 minute symbols, finished red and white. Engraved minute marks. Red and white Hands, generally as illustrated. Code word, zusic Prices upon application.

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

SKELETON DIAL IMPULSE WALL CLOCK.



FLUSH FIXING.
FOR INTERIOR USE.

FIG. CI73 SKELETON DIAL.

Real Bronze or Bronzed Brass Skeleton Dial suitable for direct mounting on a wall or wood panelling.

In the case of the wall type, the Impulse Movement is mounted on a separate circular removable dished centre plate attached to the Dial, with the Movement recessed into the wall. This dished centre plate is filled in with plaster and coloured to match the existing wall. Access to the Movement at any time, therefore, does not entail removal of the Dial from the wall.

Where the situation is wood panelling, the movement is mounted on to a circular wood centre taken from the actual panelling.

PRICES, upon application.

Diam. of Dial	8½-in.	9-in.	11-in.	12-in.	15-in.	16-in.	18-in.
Code words	zurez	zurib	zuroc	zurud	zurya	zurze	zusaz



FIG. CI73 Skeleton Dial in position on Wall.

SPECIAL WOOD-CASED CLOCKS.

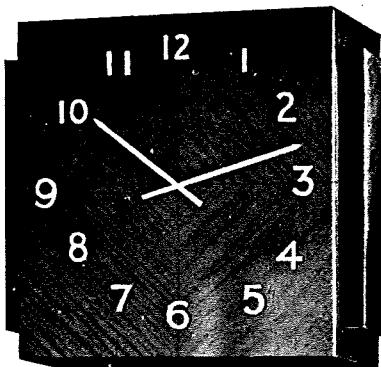


FIG. C327.

Case of quartered Walnut, Ebony Wings, raised Arabic chapters and hands of design shown, either Ivory white or Chrome.

Code word ... zyahb, followed by diam.

PRICES, each :

Dial diam.	Fig. C326.	Fig. C327.
8-in.	£2 - 8	£2 - 16
10-in.	£2 - 14	£3 - 6
12-in.	£3 - 0	£4 - 0
16-in.	£4 - 18	£6 - 0

(E)

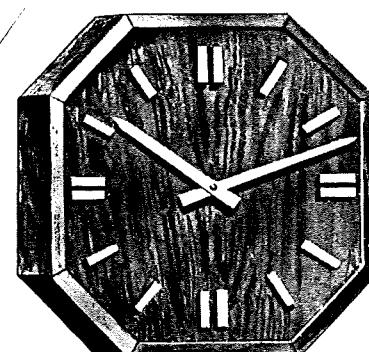


FIG. C326.

Octagonal framed wood case, raised symbols and hands of design shown. Finished to requirements.

Code word ... zyakd, followed by diam.

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

ELECTRIC IMPULSE CLOCKS

INSERTION TYPE OR PANEL CLOCKS.

Representative styles of panel clocks specifically designed for this purpose to conform with the modern trend of architectural design.

The Movements are enclosed in dust-proof cases, "let-in" to the panelling itself.

In most instances customers prefer to send us a portion of the actual panelling to be used in order that we may fix the movement and chapters thereto.

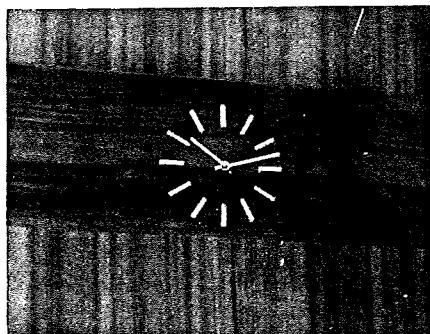


FIG. C238.

Panel Clock, raised chromium-plated 5 minute symbols mounted directly on paneling. Chromium-plated hands with movement housed in metal case in recess in paneling. Access to movement by removal of centre portion of paneling.

PRICES :—upon application. Code word : zusod

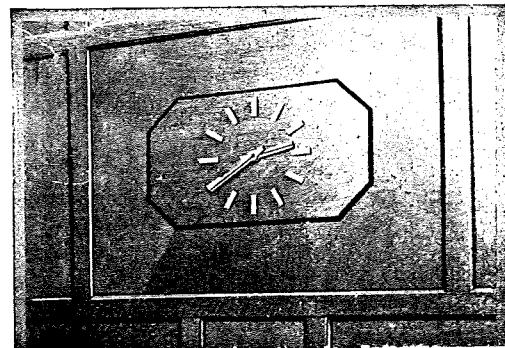


FIG. C284.

Panel Clock, raised ivory white symbols on raised waxed oak panel with ivory black surround. Hands finished in ivory white with black line down centre. Movement recessed into paneling.

PRICES :—upon application. Code word : swift

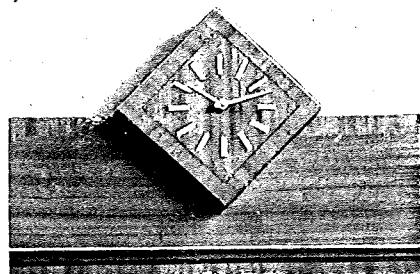


FIG. C239.

Panel Clock, generally as Fig. C238, but mounted in separate wood case which houses the movement (no cutting away of paneling required).

PRICES :—upon application. Code word : zusuf

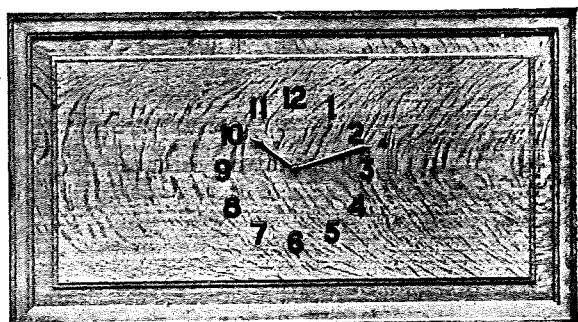


FIG. C276.

Panel Clock, raised metal chapters, exposed hands, with movement recessed into paneling at back.

PRICES :—upon application. Code word : zwijy

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

SUSPENSION CLOCKS.

See also page 23.

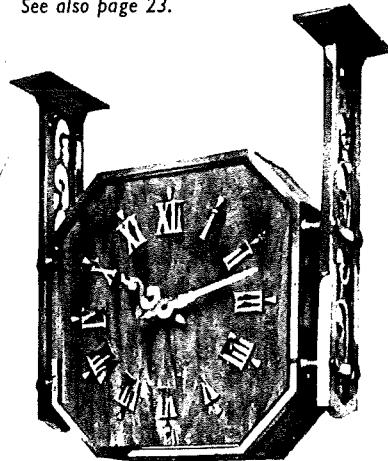


FIG. C222.

Suspension Clock, cast brass case, finished antique silver, amber opalescent dial and sides, raised chapters in antique silver finish.

PRICES : upon application.

Code word ... zopuv

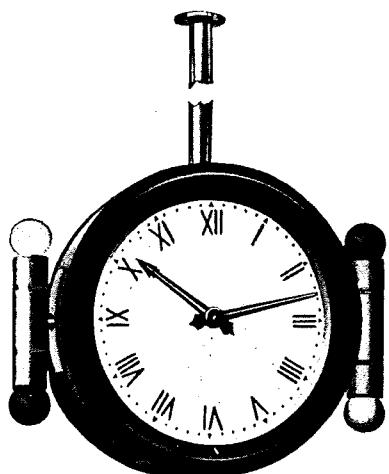


FIG. 294.

Customers occasionally consider it desirable to combine Staff Locator Lamp Signal Units with an Electric Clock, and illustrated herewith is a typical arrangement.

As manufacturers also of Electric Clocks and Staff Locators, we have many alternative suggestions to put forward.

Staff Locator Systems—see Book 1, Section 5.

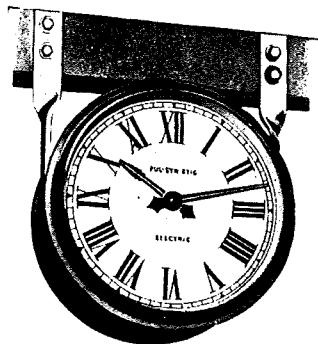


FIG. C288.

Weather-proof Suspension Clock. Two dials, arranged back to back, polished brass case and bezels. Brass suspension brackets, can also be arranged for wall fixing.

PRICES : upon application.

Code word ... zwilb



FIG. C335.

Impulse Clocks such as C10 (page 8) and C88 (page 9) can be mounted back to back, with chain or rod suspension.

Code word ... zyalf

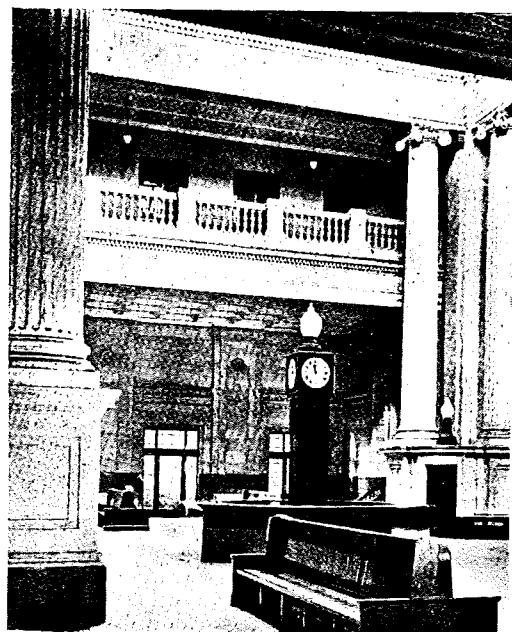


FIG. C290 INDOOR RAILWAY STATION CLOCK.

An example of a small 4-faced Turret Clock fixed under cover in the "Concourse" of the Railway Station at Sydney, N.S.W. A large 4-faced Turret, Platform Clocks and a number of other Clocks are distributed on the same circuit throughout the Station Buildings.

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

It is impossible to illustrate in this Publication the vast quantity of alternative designs that we have in the form of Photographs or Drawings. This page merely endeavours to offer suggestions—Actual Photographs of further alternatives will gladly be submitted upon request.

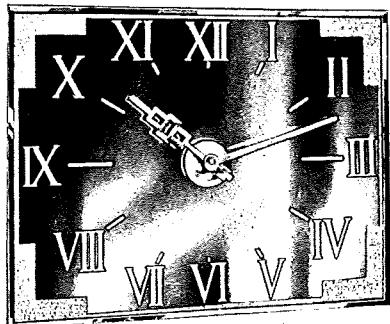


FIG. C148
MIRROR CLOCK

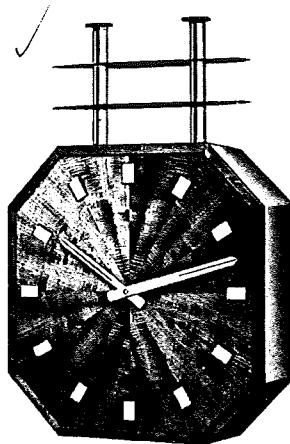


FIG. C328

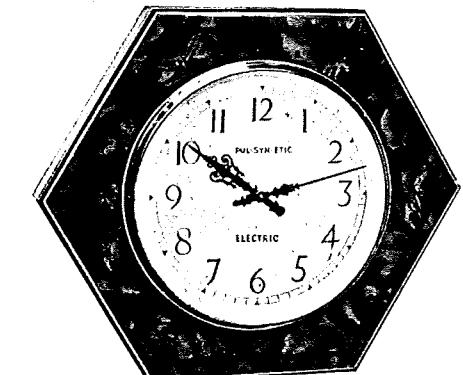


FIG. C163

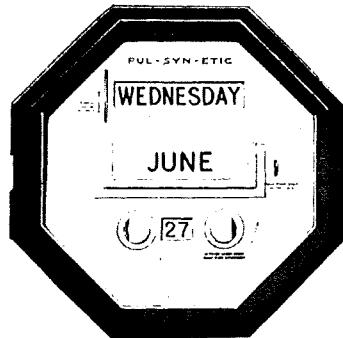


FIG. C95 IMPULSE CALENDAR.

Our own Cabinet shop is available for the building of clock cases to the specification of the Architect.
We have special facilities for fitting Impulse Movements to clock cases of the Architect's individual design.

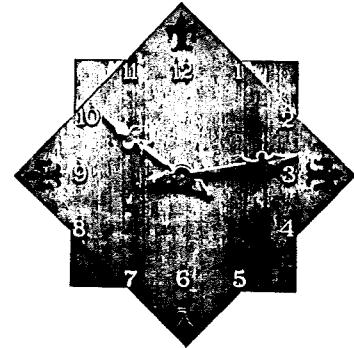


FIG. C164 SPECIAL WALL CLOCK

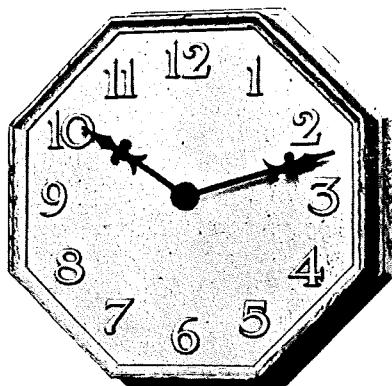


FIG. C147
PANEL CLOCK

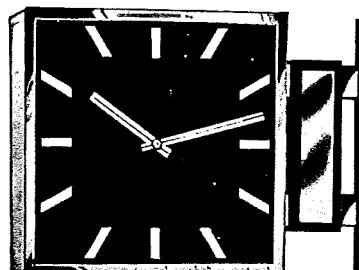


FIG. C329

Bracket or Suspension Clock, metal dial enamelled in colours as desired, raised symbols, metal surround bronzed or chrome to match symbols and hands.

SEE ALSO BOTTOM PAGE 16.

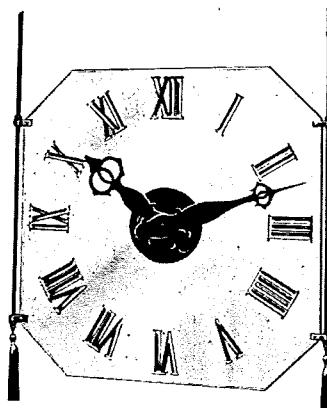


FIG. C165
MIRROR CLOCK
SUSPENSION TYPE

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC"

ELECTRIC IMPULSE CLOCKS

IMPULSE MANTEL CLOCKS.

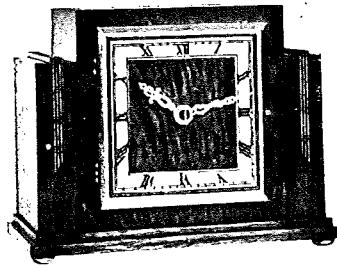


FIG. C310.

Oak case of ornamental design with chromium plated bezel and convex glass. Raised square silvered chapter zone having Roman Chapters as shown. Ornamental hands of suitable design.

PRICE, each : £3 - 14 - 0 (E)

Code word : zwodt

Approx. dimensions $11\frac{1}{2}'' \times 8\frac{1}{2}'' \times 4\frac{1}{2}''$

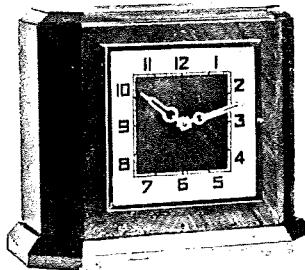


FIG. C318.

Square modern style Mantel Clock in veneered walnut or other hardwoods. Chromium plated bezel and convex glass. Raised square chapter zone with Arabic chapters and ornamental hands of suitable design.

PRICE :—upon application.

Code word : zwonf

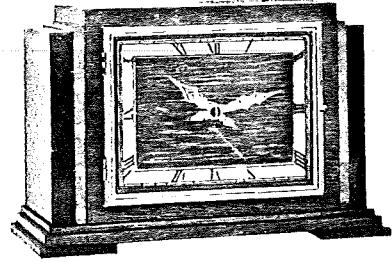


FIG. C312.

Oak case of ornamental design with chromium plated bezel and convex glass. Raised rectangular silvered chapter zone having Roman Chapters as shown, Ornamental hands of suitable design.

PRICE, each : £3 - 16 - 8 (E)

Code word : zwohy

Approx. dimensions $8\frac{1}{2}'' \times 13\frac{1}{2}'' \times 6\frac{1}{2}''$

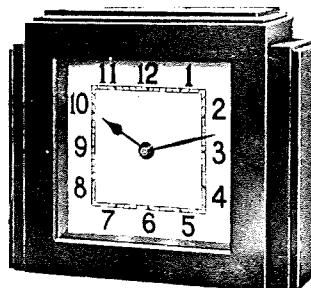


FIG. C128.

Polished Walnut Case and ornaments, square 5-in. matt finished white silver-like dial. Arabic chapters and hands of design shown.

PRICE, each : £2 - 4 - 0 (E)

Code word ... zoopt

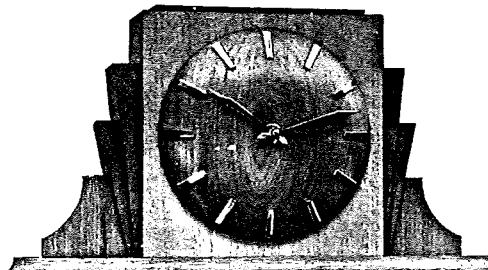


FIG. C278.

Ornamental Mantel Clock, waxed oak case with chrome finished or stainless steel symbols and hands.

Architects :

Baily & Eberlin, M.C., A.R.I.B.A.

PRICE :—upon application.

Code word : zwipf

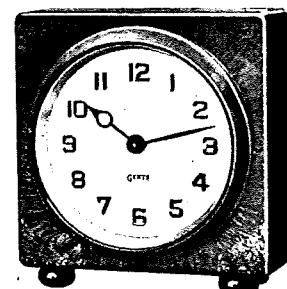


FIG. C129/A

Moulded Bakelite Case and Bezel, standard finish walnut, but other finishes available. Matt finished white silver-like Dial, with raised red Arabic chapters. Similar Wall Clock see page 9. One size only, 6-in. diam. Dial.

PRICE, each : £3 - 2 - 0 (E)
Code word : zyewr

FIG. C129

A cheaper pattern is available in brown Bakelite and standard Dial.

PRICE, each : £2 - 12 - 0
Code word : zokyr

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

ELECTRIC IMPULSE CLOCKS

IMPULSE MANTEL CLOCKS—contd.

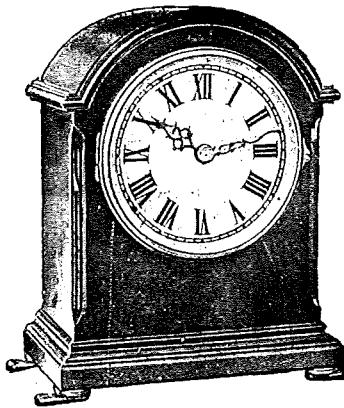


FIG. C135. PERIOD CLOCK.

Old-English pattern, various woods to match surroundings, silvered dial, 6-in. diameter, Roman chapters, ornamental hands, art metal bezel, bevelled plate glass front.

PRICE, each : £8 - 13 - 6 (E)

Code word : zwenc
Followed by kind of wood.

OTHER PERIOD DESIGNS
UPON REQUEST.

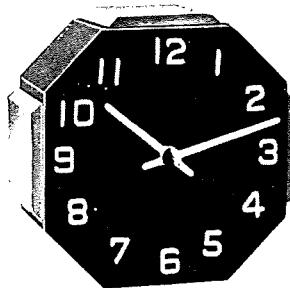


FIG. C320.

Modern design of Mantel Clock of simple yet striking appearance. Solid hardwood octagonal case finished ebony black with Arabic chapters, chromium plated. Chromium plated metal ornaments and hands.

Approx. dimensions $5\frac{1}{2}'' \times 5\frac{1}{2}'' \times 2\frac{1}{4}''$

PRICE, each : £3 - 18 - 0 (E)

Code word : zawyb

FIG. C320/A.

Can be supplied also in quartered Walnut and black ornaments.

PRICE, each : £3 - 14 - 0 (E)

Code word ... zyezt

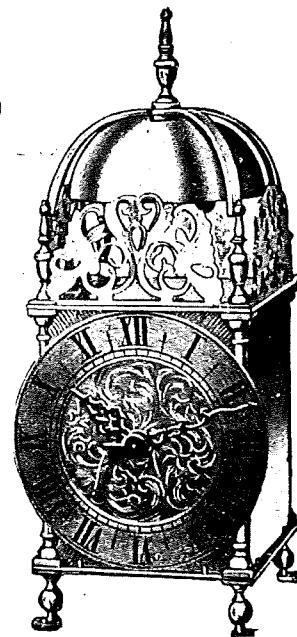


FIG. C137. PERIOD CLOCK.

Cromwellian pattern in all lacquered brass of design shown, flat brass dial, approximately 5-in. diameter, ornamental exposed hands, friction-tight on spindle. The gong does not strike.

PRICE, each : £15 - 0 - 0 (E)

Code word : zovye

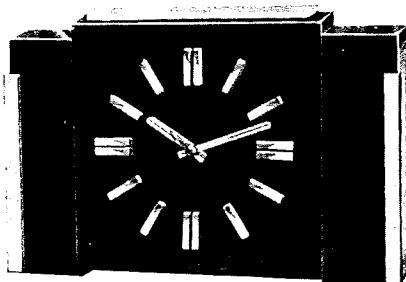


FIG. C234.

Solid Ebony finished black wood case with body 8-in. square. Raised chromium finished symbols 7-in. overall diameter, and chromium finished hands. The metal-work at sides and top of case is likewise chrome finish.

PRICE, each : £3 - 18 - 0 (E)

Code word : zusbe

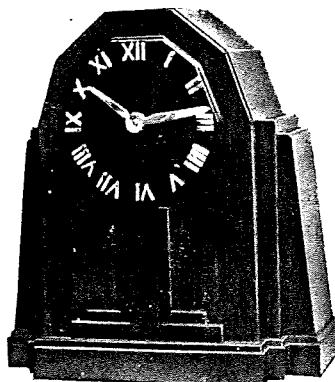


FIG. C221.

Solid Oak Case, raised chromium plated Roman chapters, and generally as illustrated.

Code word : zorte

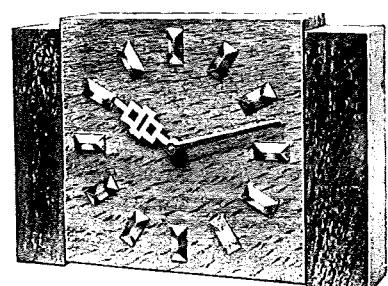


FIG. C174.

Solid Fumed Oak Case with body 8-in. square. Exposed 7-in. dial and ornamental hands. Either raised Arabic chapters or symbols as shown.

PRICE, each : £3 - 18 - 0 (E)

Code word : zorsa

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

IMPULSE MANTEL CLOCKS—continued.

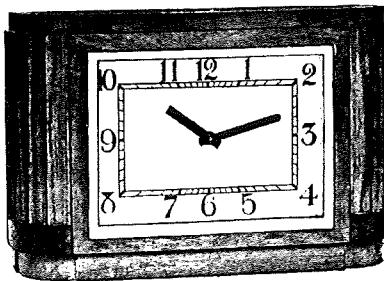


FIG. C316.

Modern design Mantel Clock in solid hardwood rectangular case. Chromium plated or other art metal finish bezel, silvered insertion and dial. Arabic chapters and hands of design shown.

Approx. dimensions 8½" x 12½" x 3½"

Architects :

Ivor Jones & Percy Thomas,
A/F.R.I.B.A.

PRICE :—upon application.

Code word ... zwomd

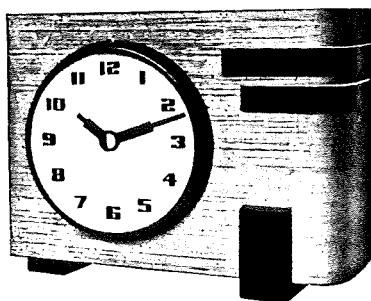


FIG. C399.

Polished light Oak case, black side ornaments and feet. Black-bronzed bezel and 4-in. cream Dial with black arabic chapters and hands. Convex glass.

PRICE, each £2 - 14 - 0 (E)

Code word zyirn

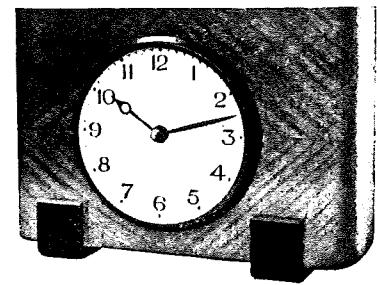


FIG. C391.

Polished quartered Walnut case with black ornamental feet. Black-bronzed bezel and 4-in. cream Dial with black arabic chapters and hands. Convex glass.

PRICE, each £2 - 14 - 0 (E)

Code word zyixt

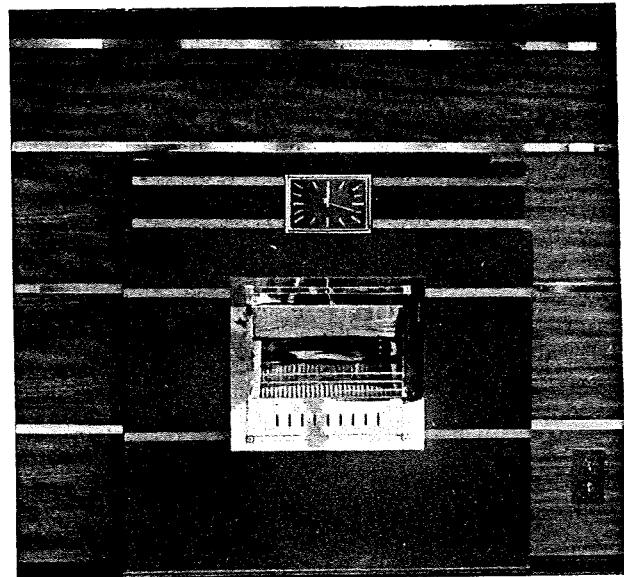


FIG. C277.

Representative type of insertion clock suitable for fireplace or other special mounting.

The Movement is encased in a metal dust-proof cover recessed into the panelling, thereby bringing the dial and bezel flush with the surface. Bezel, symbols and hands of chrome finish on black dial.

Architect :—L. G. EKINS, F.R.I.B.A.

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.

ELECTRIC IMPULSE CLOCKS

ILLUMINATED CINEMA, THEATRE & RESTAURANT CLOCKS.

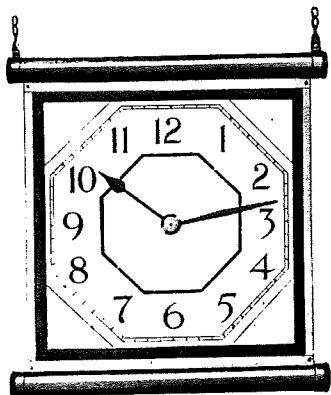


FIG. C228.

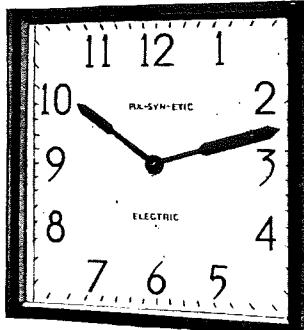


FIG. C230.

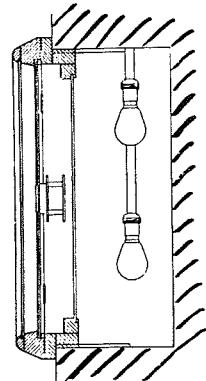


DIAGRAM C526.

FIG. C228.

The illumination of these Dials is very effective, the Dial only being visible without glare through the light being projected along the surface of the glass.

18-inch chains, all fittings bronzed and with strip lamps.

PRICES, each :

DIAL SIZE 12-ins. x 12-ins.

Strip Lamp top only.

£6 - 10 - 0

Code word : *zorzy*.

Strip Lamp top and bottom.

£9 - 6 - 0

Code word : *zosat*.

DIAL SIZE 18-ins. x 18-ins.

Strip Lamp top and bottom.

£10 - 5 - 0 (E)

Code word : *zupcy*.

FIG. C230.

Flush fixing. See also diagram C526.

Code word : *zorwo*.

FIG. C229.

Generally as Fig. C230, but surface fixing—no cutting away.

Code word : *zorux*.

FIG. C401.

Suspension Clock, with or without internal illumination, enamelled wrought metal case with metal down tubes and ceiling plates.

Code word : *zyjog*.

Prices upon application dependant on Dial Size.

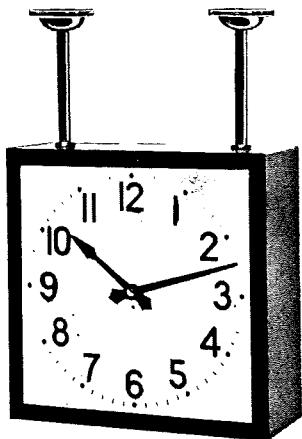


FIG. C401.

HOSPITAL WALL CLOCKS.

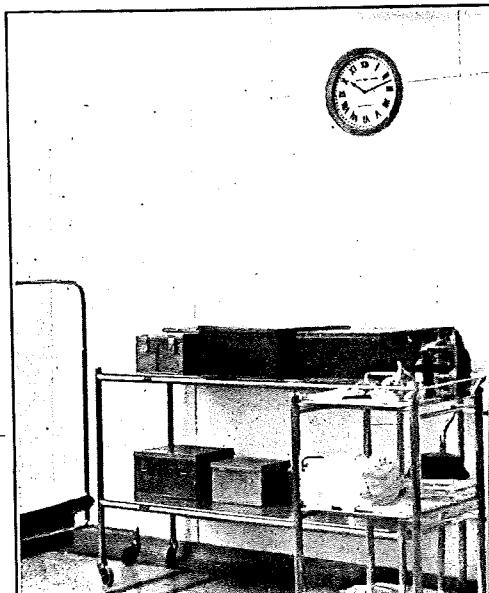
Clocks for Hospital work must be of hygienic construction and several types illustrated in this catalogue have been designed with this view in mind, and as the result of considerable experience.

FIG. C235.

FLUSH FIXING water-proof wall clock.

For other types particularly suited to Hospital service reference should be made to Figs. C10 (p. 8), C88 & C15 (p. 9), C36 (p. 10), C11 (p. 13), etc.

The above Impulse Clocks, up to 24-in. diam., may be fitted with Silent Movements—add 15/- each and zusza to code word.



GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

Below are illustrated three figured Ornamental Bracket Clocks in real Bronze, designed by us in conjunction with the Architect, to be strictly in keeping with the structural design of the building in which they are situate.



FIG. C241
Bronze Bracket Clock. Two 3-ft. Opal Dials. Internal Illumination.

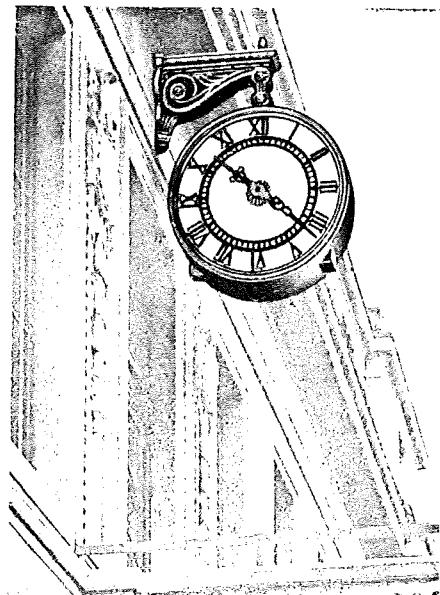


FIG. C188
Internally illuminated Ornamental 3-ft. Bracket Clock of striking design. The fixing bracket, it will be observed, in no way interferes with the legibility of the Dials.
Architects : Bradshaw Gass & Hope, F.R.I.B.A.

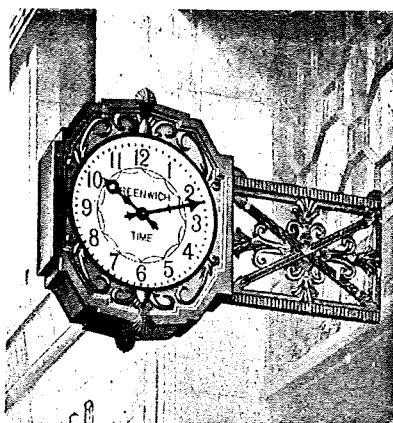


FIG. C189
A Standard "PUL-SYN-ETIC" Impulse Movement, driving two 3-ft. Dials with glazed fronts, provision being made for Internal illumination.



FIG. C236
The illustration depicts an unusual yet particularly pleasing form of Outside Clock.
The Dial, which is 4 feet in diameter, is mounted flush into the stonework, with the customer's trade-mark or emblem in true colours, standing proud.

For further information regarding Bracket and Turret Clocks, reference should be made to Section 2 of this Book 5.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

IMPULSE BRACKET CLOCKS.

FURTHER EXAMPLES OF "PUL-SYN-ETIC" BRACKET CLOCKS AFFORDING A LASTING AND COMPELLING ADVERTISING MEDIA.

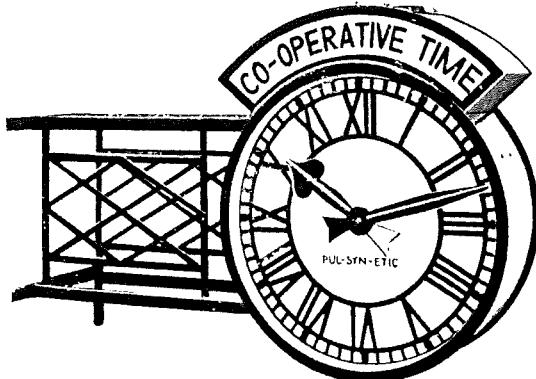


FIG. CI68

Simple two-faced Drum Bracket Clock (Dials 2' 6" in diameter), with Name-plate (burnt-in letters) mounted on top surface.

Cast Skeleton Dial with sections of translucent Opal, the whole (with Name-plate) arranged for internal illumination.

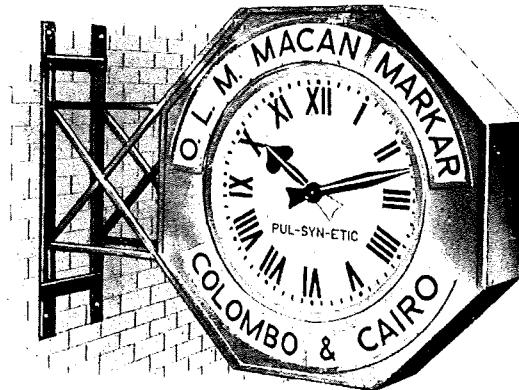


FIG. C270

Alternative design of simple two-faced Bracket Clock with name panels.

Dial and lettering burnt-in on sheet Opal and internally illuminated.

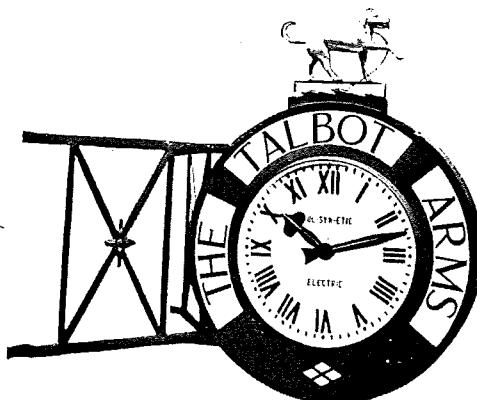


FIG. CI69

Two-faced Drum Bracket Clock (Dials 2' 6" in diameter), of extremely neat appearance. Dial and lettering burnt-in on Sheet Opal and internally illuminated. Enamelled Coat-of-Arms in true colours.

Our experienced Staff of Designers and Draughtsmen is at your disposal, and complete drawings will be sent, such drawings incorporating your own wording or designs.

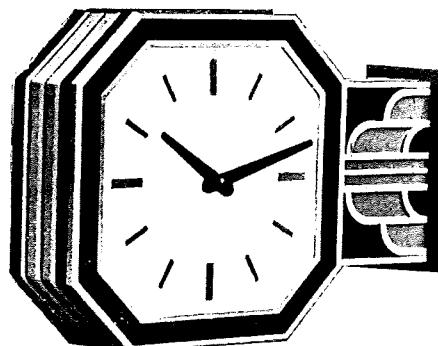


FIG. C361

Two faced Bracket Clock. Front frames of extruded brass section, edge of case ornamented with raised metal strips.

Fixing girders encased in ornamental metal box with cast ornaments.

Opal dial with embossed or sandblast chapters, suitable for internal illumination.

The whole suitably enamelled in two or three colours, (the illustrated clock was red, green and black).

For further information regarding Bracket and Turret Clocks, reference should be made to Section 2 of this Book 5.
Automatic Lighting Switch see page 33.

ELECTRIC IMPULSE CLOCKS

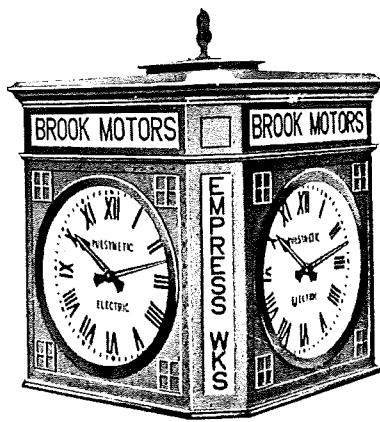


FIG. C186.

Two faced angle bracket clock, wrought metal enamelled case with cast ornaments, extruded brass mouldings, opal dials and name panels suitable for internal illumination.



FIG. C362. CRESTA GARAGE, WORTHING.

Modern type 2-ft. 6-inch Skeleton Dial, arranged for mounting directly on to the building. Plain stroke symbols, the quarters being diamond shaped, and the whole suitably enamelled in colour.

Powerful WI type Impulse Movement. The Transmitter, which is housed in the Garage itself, also operates a number of smaller Secondary Clocks distributed throughout the building.

Architects :
A. J. Seal & Partners, L.R.I.B.A.

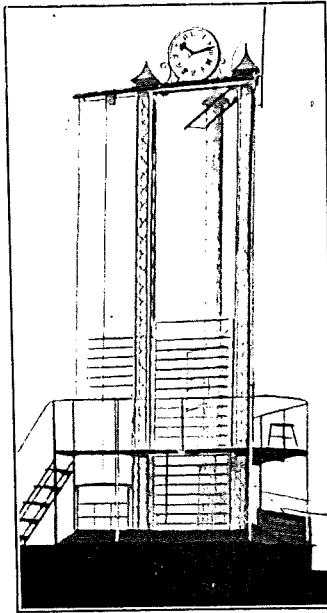


FIG. C242.

Our experienced Staff of Designers and Draughtsmen is at your disposal and complete drawings will be sent, such drawings incorporating your own wording or designs.

PEDESTAL CLOCKS.

FIG. C242 KEMPTON PARK RACECOURSE.

Single-faced Drum Clock, with 36-in. diameter dial, glazed front, and arranged for special mounting as illustrated.

FIG. C243 WHITLEY BAY PROMENADE.

Two - faced Octagonal Clock, wrought bronze case, cast bronze dials—36-in. diameter, fitted with sections of Opal for internal illumination.

Special fixings arranged for, to suit customer's terra-cotta pedestal.

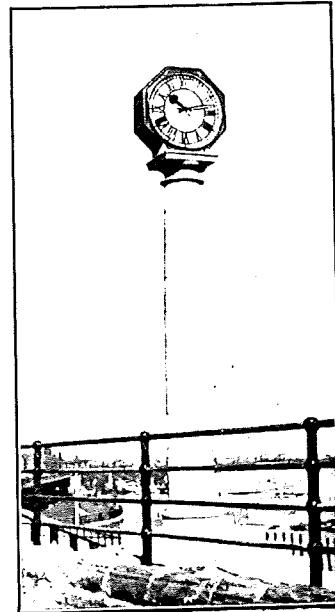


FIG. C243.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

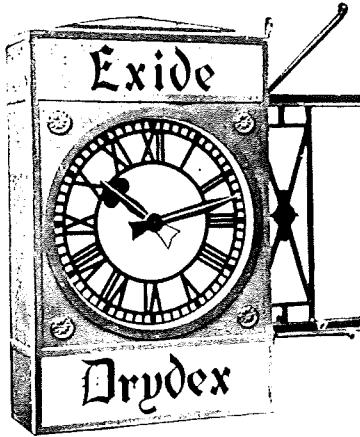


FIG. C167.
This type of Clock (and C291 below), which can be supplied and erected at a minimum of cost, remains attractive and bold in appearance, which is the essence of good advertising.
The illustration is of two 2-ft. 6-in. Opal Dials, arranged for internal illumination.

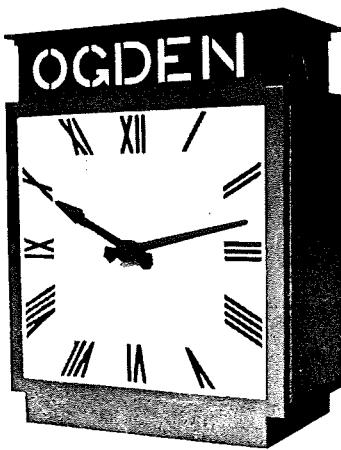


FIG. C392.
Two faced clock adaptable for either bracket or suspension mounting as ordered. Enamelled wrought metal case, opal dials, stencil name panels, all for internal illumination.

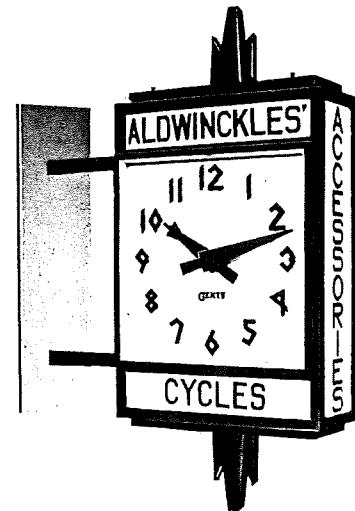


FIG. C280.
Two faced Bracket Clock of modernistic design. Wrought metal lead coated case, suitably enamelled. Cast ornaments enamelled in contrasting colours.
One piece opal dials arranged for internal illumination. Chapters embossed and filled in with colours to suit.

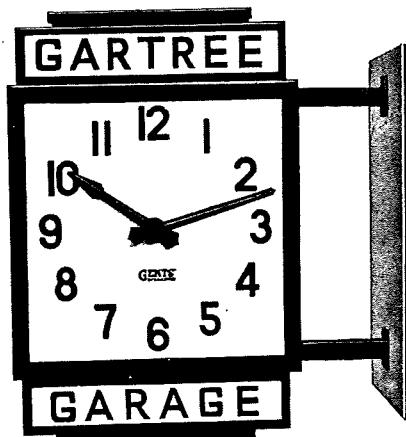


FIG. C291.
Two faced Bracket Clock. Wrought metal lead coated case suitably enamelled. White opal dials and chapters of design shown. Separate opal name panels. The whole including name panels arranged for internal illumination.

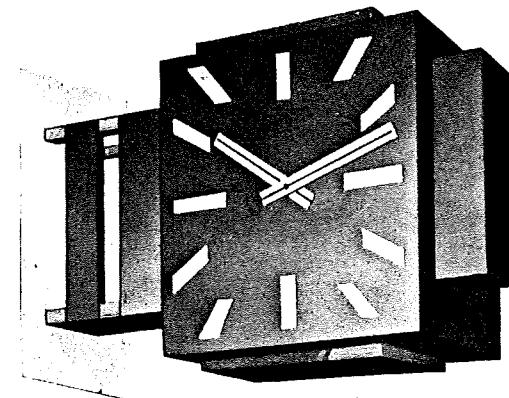


FIG. C307.
Two - faced Bracket Clock. Wrought metal lead coated case suitably enamelled. Raised metal chapters enamelled a contrasting colour, hands to match.
Extension at front may be fitted with raised letters to form customer's name, or alternatively, with stencil backed by opal suitable for internal illumination.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 15
Section 1q

FIG. C292.

Two-faced Bracket Clock to conform with modern architectural design.
One piece opal dials and name panel, all suitable for internal illumination.
Wrought metal case suitably enamelled in colours. Case outlined in black, black ornaments on green background, chapters, hands and name in green on white background.

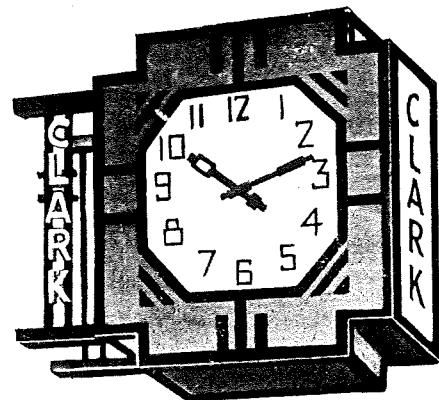


FIG. C334.

Two-faced publicity clock of novel and arresting appearance. Wrought metal case enamelled in colours, with dial, name panels and windows backed by opal and arranged for internal illumination.

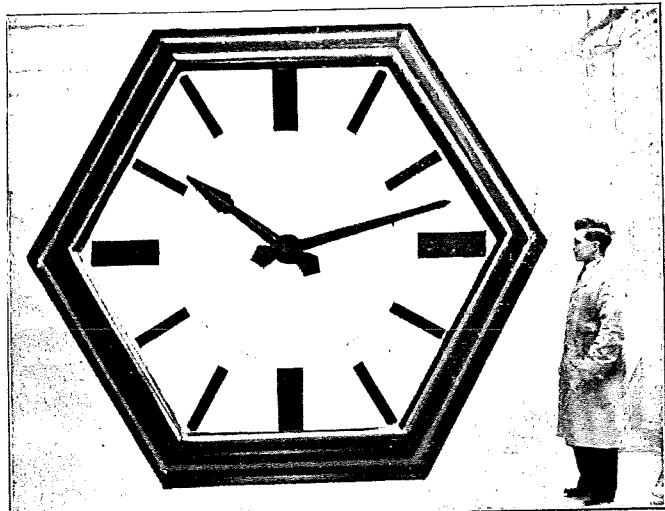
Architect P. J. J. Panter, L.R.I.B.A.

For further information regarding Bracket and Turret Clocks, reference should be made to Section 2 of this Book 5.

FIG. C293.

Surface mounting illuminated Wall Clock in polished wood hexagonal case. Solid teak front and five piece opal dial arranged for internal illumination.

(Size of dial in illustration, 7 ft. 6 inches across flats).



GENTS' "PUL-SYN-ETIC"
ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

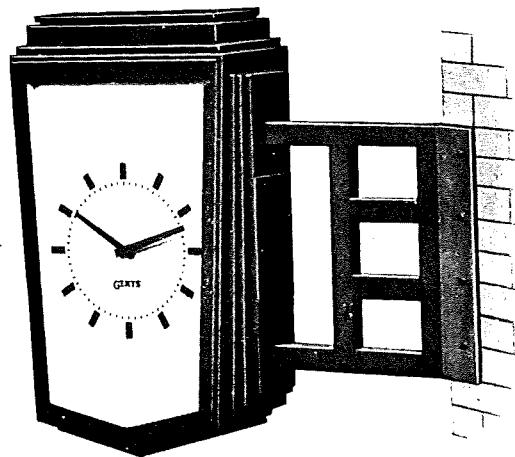


FIG. C330.
Two-faced Bracket Clock of design shown—internally illuminated or otherwise, as desired. Enamelled in two or more colours.
Space on Dial for name panel top and bottom. If not required, case will be reduced in height accordingly.
Illustration shows wall corner fixing.

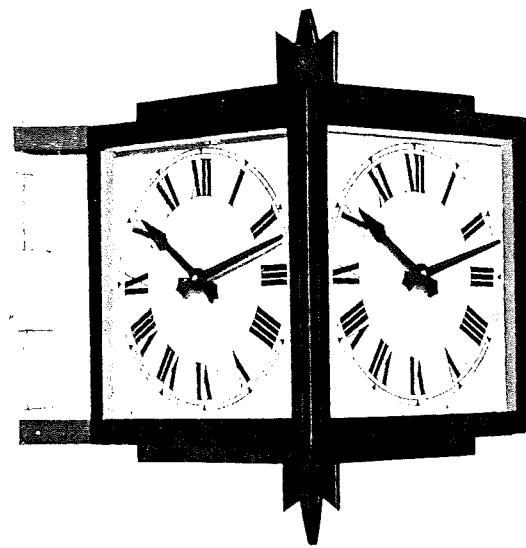


FIG. C366
Four-faced Bracket clock, suitable for corner fixing—overlooking junction of 4 Roads for example. Enamelled metal Dials of design shown, and with glazed fronts. Enamelled wrought metal case and cast ornaments.

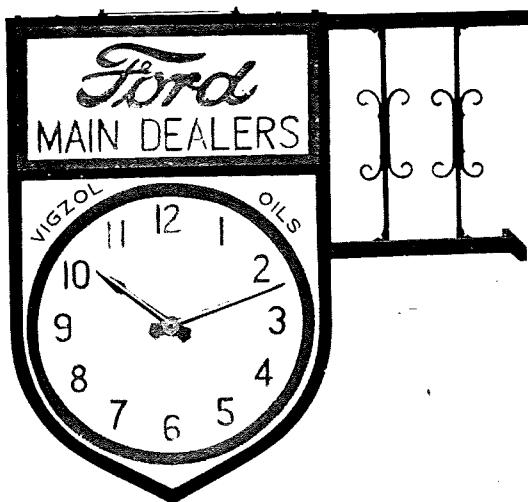


FIG. C367
Two-faced Bracket clock comprising enamelled wrought metal case, embossed opal Dials and Name Panels.
Lettering and Chapters in blue or other contrasting colour.

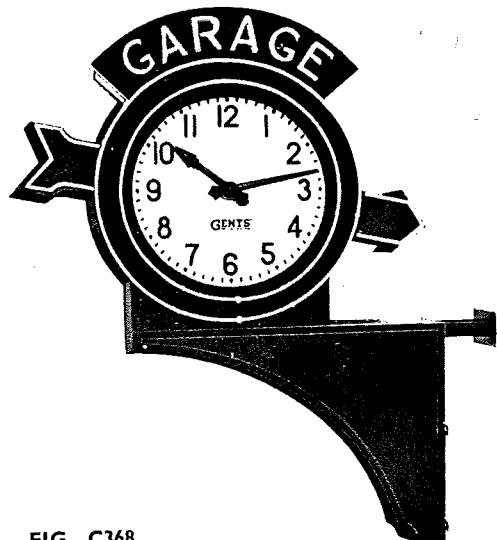


FIG. C368
Two-faced Bracket Clock, built to customer's special design in enamelled wrought metal case, as illustrated, opal dials arranged for internal illumination. Case, Arrow and Sign outlined in Neon.

Design by Voss Motor Car Co. Ltd., Liverpool.

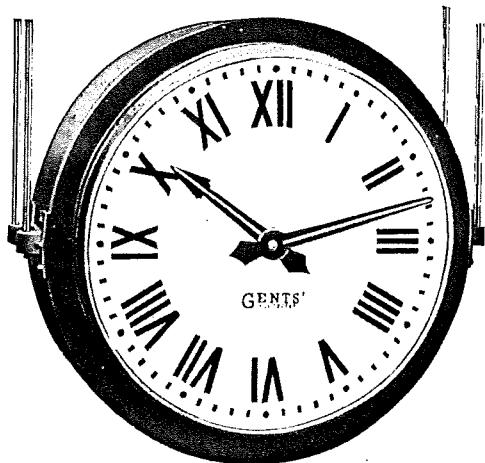
NEON ILLUMINATED BRACKET CLOCKS. The majority of the Bracket Clocks illustrated on this and the preceding pages lend themselves to the fitting of Neon illuminated Dials and Hands. We shall be pleased at all times to submit coloured drawings and detailed estimates for Neon illuminated Clocks to meet the special requirements of customers.

ELECTRIC IMPULSE CLOCKS

IMPULSE DRUM CLOCKS.

DOUBLE FACED—FOR EXTERIOR USE.

Illuminated or Opaque.



SPECIALLY
SUITABLE
FOR
FRONT OF
BUILDINGS,
YARDS
STATIONS,
AND OTHER
PUBLIC
POSITIONS.

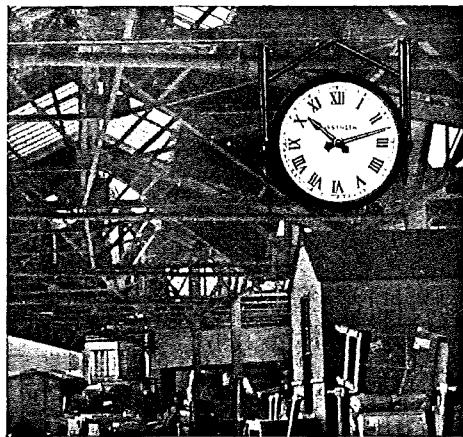


FIG. C32 and C33. TWO-FACED DRUM CLOCK.

A Fig. C32 as fitted in Paddington Railway Station.

Owing to its design and comparatively light construction, it is specially suitable for Bracket suspension. Typical designs of ornamental supports are shown in the illustrations, pages 24 to 29.

Nothing is sacrificed in the way of durability, reliability and efficiency.

The fact that it has been adopted in various sizes by some of the leading Railways and Tramways in this country is sufficient guarantee of its value and permanent utility. When supplied with Opal Dials, Fig. C32, provision is made for illuminating the clock internally. Wiring and Lamp Holders are provided, but Lamps are not included.

The Dials are of Opal, Fig. C32, or of enamelled metal, Fig. C33, as ordered. A detachable door or manhole is provided, usually at the side, to give access for the fitting of new Lamps, etc.

Plates, lugs or eyes are provided approximately in positions opposite chapters 9 and 3 complete with suspension rods or chains—as ordered—up to 24" in length.

FIG. C32 or C33 IMPULSE DRUM CLOCK (Two Dials).

Consisting of standard pattern Impulse Movement in heavily galvanized or lead-covered wrought-metal Drum Case, suitably painted. Opal or enamelled Metal Dials and Aluminium Hands (black finish) protected by heavy glass fronts, all hermetically sealed, with tapped bolting pieces or rings for securing or hanging.

PRICES, each:—

Diameter of Dials	12-in.	16-in.	18-in.	24-in.	30-in.	36-in.	42-in.
Overall diameter (approx.) ...	15½-in.	21-in.	23-in.	29-in.	35-in.	41-in.	47-in.
FIG. C32 With Opal Dials fitted for internal illumination	—	£13 - 10	£14 - 10	£17 - 0	£26 - 0	£35 - 0	£46 - 0 (E)
Code word	zogik	zogje	zoglo	zogny	zogol	zogum	
FIG. C33 With Metal Dials (for outside illumination)	£9 - 0	£12 - 10	£13 - 10	£16 - 0	£22 - 0	—	—
Code word	zogyn	zohaj	zohek	zohil	zohja	zohke	zohmo

Automatic Lighting Switch, see page 33.



Shows a FIG. C32 arranged for an internal illumination, and illustrates how this standard Clock may be adopted to illuminate any legend that it is desired to advertise. Price for legend extra.

ELECTRIC IMPULSE CLOCKS**IMPULSE CLOCKS WITHOUT CASES.**

FOR INSERTING IN OPENINGS IN WALLS, PARTITIONS, ETC. SUITABLE FOR INTERNAL ILLUMINATION.

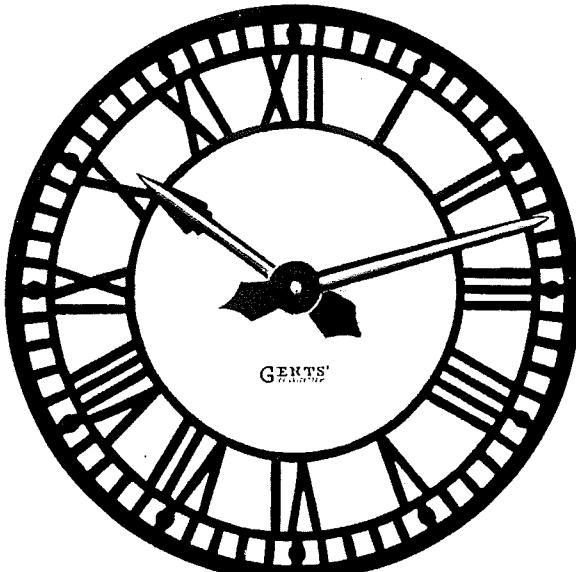
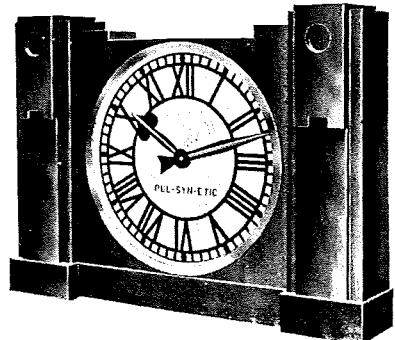


FIG. C49 CASELESS CLOCK.



Shows how a Caseless Clock can be inserted into a Wooden Case if desired. In the instance illustrated, a number of such Caseless Clocks, 48" in diam., were supplied, and were fixed in Solid Teak woodwork designed by the purchaser's architect.

This range of Impulse Clocks may be fitted with three types of Movements. Types "S" and "B" where the hands are protected from the wind and weather by a glazed front, or if exposed hands are employed where such are in protected positions as the "Concourse" of a Railway Station (page 18).

Type "W" Movement is employed where the Dial and Hands are definitely subjected to weather conditions.

It cannot be emphasised too strongly that the "PUL-SYN-ETIC" Impulse Movement developed for this purpose must not be confused with our own or any other Manufacturer's standard Movement.

In addition to the fact that they are so proportioned to develop power giving an adequate factor of safety under service conditions, these Movements have special features such as a Phosphor Bronze centre Spindle instead of steel, thus rendering them immune from corrosion due to dampness.

Owing to the varying requirements of Customers, prices cannot readily be catalogued, but upon receipt of full details we should be pleased to quote accordingly.

If not already in existence, suitable glass fronts can be supplied at a small extra cost. These are mounted in angle iron rings made to fit within the opening and in front of the Dial.

These Clocks are designed to fix into openings in walls, etc., the sides of the opening form the housing for the Movement. We list below Clocks in various sizes from 18 inches to 60 inches Dial diameter, and special sizes are often made to order. Sizes 18-in. to 30-in. have one-piece Opal glass Dials, mounted in angle-iron ring, with chapters of the design shown at Fig. C32 (page 30). Sizes 36-in. to 60-in. (inclusive) have skeleton cast-iron Dials with Opal glass sections (generally as illustrated at Fig. C49, above).

Being fitted with Opal glass, these Clocks may be illuminated internally by simply fixing Lamps behind the Dials. Clocks to suit square, octagonal or other shapes of openings can be supplied where necessary, at extra cost.

Diameter of Dial	...	18-in.	24-in.	30-in.	36-in.	42-in.	48-in.	54-in.	60-in.
Code word	...	ziugh	ziuhj	ziujk	ziulm	ziumn	ziurs	ziust	ziuzb

Prices upon application.

Automatic Lighting Switch, see page 33.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

IMPULSE CONTACT MAKERS.

FOR AUTOMATICALLY OPERATING "START-AND-CEASE-WORK" SOUND SIGNALS FOR FACTORIES, BUSINESS HOUSES, SCHOOLS, AND THE LIKE.

These CONTACT MAKERS may be included in the "PUL-SYN-ETIC" System and operated by the Time Transmitter in the usual manner. Bells, Hooters, or Syrens distributed throughout the building are thus automatically operated to a pre-arranged programme. (See diagrams—page 42).

FIGS. C79 & C69 CONTACT MAKERS (Adjustable programme)

An Impulse Movement drives a wheel, revolving once in 24 hours, containing a graduated scale and pin holes. By inserting the contact pins provided, into the appropriate holes, any programme of signals may be operated, arranged at 5 or 15 minute intervals.

All contained in well-finished hardwood Case, with glazed front panel and provided with lock and key.

PRICES, each:—

		Code words
Fig. C79	For 15 minute intervals	£12 - 0 zomep (E)
Fig. C69	For 5 minute intervals	£16 - 0 ziwas
EXTRA FOR 7-day wheel to automatically cut out Saturday afternoon and Sundays, and other reasonable time in C79...	... ...	£1 - 10 zygaz
Ditto in C69	... ...	£2 - 10 ziwit

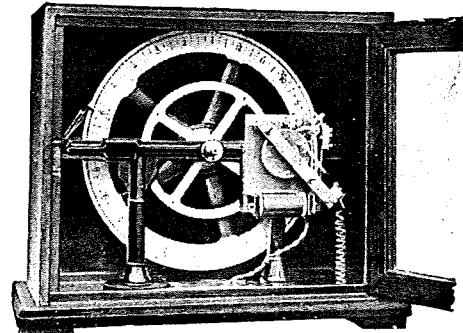


FIG. C69 ADJUSTABLE CONTACT MAKER. Any 5 minutes.

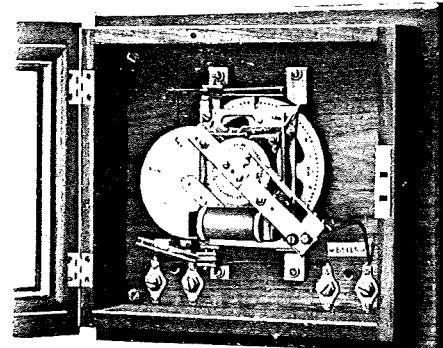


FIG. C79 ADJUSTABLE CONTACT MAKER. Any 15 minutes.

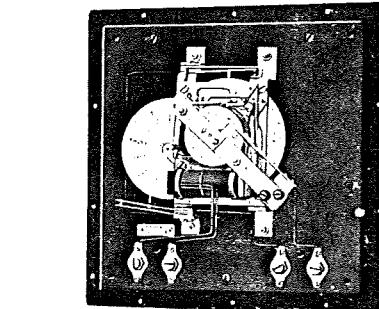


FIG. C102 NON-ADJUSTABLE CONTACT MAKER. Any $\frac{1}{2}$ minute.
Illustrated without Case.

FIG. C102 & C68 CONTACT MAKERS (Fixed programme).

Where a fixed programme is adhered to, or where times requiring odd half-minutes are involved, the Fig. C102 contact maker is recommended. The signal contacts are operated by means of notches cut into a disc, and therefore cannot be varied except by alteration at these works. The programme of times must therefore be stated when ordering. For complicated programmes, two or even three movements may be mounted in one case.

The standard Contact Maker here illustrated at Fig. 102 consists of an Impulse Movement and Contact Movement with Setting Dial and Terminals, all mounted in metal case with glazed front panel, lock and key. (Fig. C68 is as above, but in wood case).

PRICES:—

		Code words
FIG. C102	One Impulse Contact-Movement and one (the first) Contact	£6 - 10 zolen (E)
Extra for each additional Contact	... ...	£0 - 6 zivyx
If with two Impulse Contact-Movements and two (the first two) Contacts	... ...	£13 - 0 zivvo
Extra for each additional Contact	... ...	£0 - 6 zivyx
Extra for 7-day Wheel (generally sufficient for one or all Impulse Movements, to automatically cut out Saturday afternoon and Sundays and other reasonable times) ...	... ...	£1 - 10 zivse
FIG. C68	Better quality model, in polished teak case, with one impulse contact movement and one (the first) Contact	£7 - 10 zivra

Additional Contacts, etc., the same prices as Fig. C102.

Where Mains voltage Sound Signals are to be employed or where the Signals are numerous and the current comparatively heavy, then a Relay (Fig. 1434, page 34) must be introduced and either low voltage A.C. (Fig. 1132 Transformer) or D.C. employed on the contacts of the above contact makers.

Diagrams of Connections—page 42.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

FIG. C9.

A Standard "S" Type Impulse Movement fitted with 24-hour Wheel and Bell-ringing Contacts. Such a movement may be fitted into a standard Impulse wall clock such as Fig. C10, (page 8), or Fig. C36 (page 10).

PRICE, upon application.
Code word

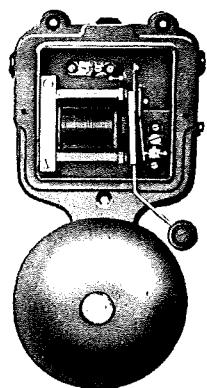
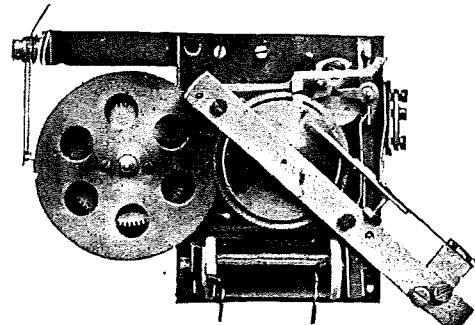


FIG. P145 POWER BELL

For direct connection to A.C. or D.C. Mains up to 250 volts, as ordered.

All sizes of gongs up to 12-in. diameter.

See Book 1.

SOUNDERS FOR "START-AND-CEASE-WORK" SIGNALS.

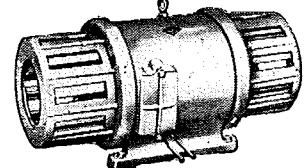
FIG. 365
"TOUCHTONE"
HORN.

A water-tight, incombustible, industrial Hooter, in cast-metal case. Can be supplied to work off Batteries or direct from Service Mains up to 250 volts, A.C. or D.C., as ordered.

See Book 1.



FIG. C9 Fitted with Bell Ringing Contacts.



"TANGENT" ELECTRO
MOTOR SYREN.

For working direct on A.C. or D.C. Service Mains up to 500 volts. Sizes varying from $\frac{1}{10}$ -h.p. to 8-h.p.

The small $\frac{1}{10}$ -h.p. is designed for and can be heard above the din of, the workshop.

See Book 1, Section 3.

These Sounders, by means of the Relays shown on page 34, can be operated by the Contact Makers, Fig. C68, etc., shown on page 32, or by the Bell Ringing Contacts as detailed above at Fig. C9. If a half minute signal is considered too long then the duration can be adjusted by the Duration Contact, also shown on page 34—Connections page 42.

For fuller details of such Sounders, see the Catalogues referred to.

FIG. C64 AUTOMATIC LIGHTING SWITCH

Designed to automatically switch on Lamps behind Illuminated Dials at dusk, and switch off at dawn or before if desired. The Time Cams are adjustable by hand so that changes may be made to suit the gradual changes of the Seasons. The mechanism consists of the necessary 24-hour Cams with Time Dial for setting, Switching Gear with Mercury Contacts of special design, all being mounted in Cast-metal incombustible case, with glazed front securely fastened. The apparatus is driven from the Time Circuit of the Clock System. It is sometimes found desirable for the sake of economy to switch off lights for some hours during the "small hours of the morning" and switch on again before dawn. A special set of Cams can be provided for this economical purpose, if desired.

PRICE:—

FIG. C64 Capable of carrying 10 amps, at up to 250v.
A.C. or D.C. non-inductive £4-10-0 (E)
Code word

AUTOMATIC LIGHTING SWITCH.

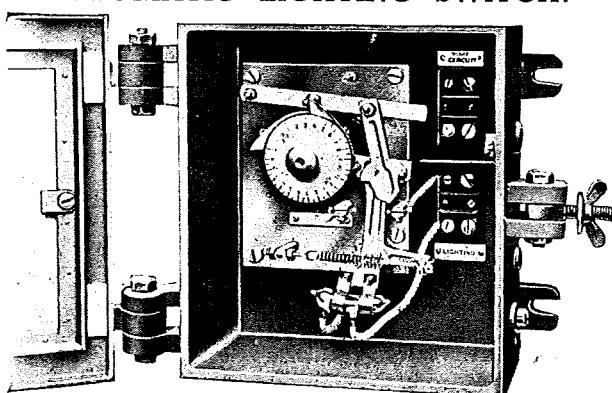


FIG. C64 AUTOMATIC LIGHTING SWITCH.

ELECTRIC IMPULSE CLOCKS**DURATION CONTACTS****For operating "Start-and-Cease-Work" Sounders.**

For working in conjunction with Contact Makers shown on page 32.

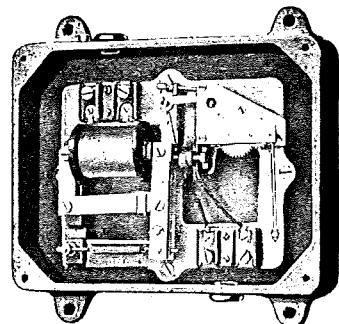
When the Sound Signals illustrated on page 33 are operated by the Contact Makers, illustrated on page 32, the duration of the contact is for half-a-minute.

Where this period is too long, a Duration Contact may be used to deal with shorter periods of from five to twenty seconds by adding it to the Sound-Signal Circuit—Connections page 42.

FIG. C101 DURATION RELAY.

A momentary energising current on the coil which may be wound A.C. or D.C. up to 250 volts, will cause the contacts to close for between 5 or 20 seconds adjustable. Gold silver contacts rated at 50 watts at up to 250 volts A.C. or D.C. non-inductive—enamelled metal case.

PRICE ... £4 - 10 - 0 (E) Code word : zoiry

**FIG. C101.****FIG. 1432 DURATION RELAY.**

Generally as Fig. C101 but provided with mercury contact rated at 10 amp. at up to 250 volts A.C. or D.C. non-inductive.

PRICE ... £5 - 10 - 0 (E) Code word : yefid

RELAYS**For operating "Start-and-Cease-Work" Sounders.**

Service Mains may be employed for operating Sound Signals provided that low voltage is maintained on the Contact Maker itself. A Relay, as below, is therefore introduced whose contacts are capable of handling the high voltage and current—A.C. or D.C. as specified. Connections page 42.

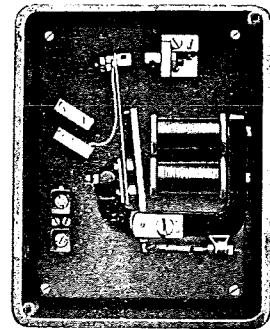
FIG. 1434 CONTACTOR RELAY.

The Control Magnet Coils may be wound for Battery or for A.C. or D.C. up to 250 volts.

For use on A.C. the pole pieces are laminated with a view to reducing the energising current to a minimum.

The contact pieces of the Relay are adapted for circuits connected to the Service Mains and are of the solid type and give a single-pole break. They are protected against burning, sparking, etc., by their heavy copper blocks.

The Mechanism is mounted on an insulated base with the necessary four terminals all contained in a non-inflammable Metal Case tapped in two places for conduit and fitted with earthing screw. Approx. size 8" 8 $\frac{1}{2}$ " 2 $\frac{1}{2}$ " deep single-pole. If double-pole is required, twice the width.

**FIG. 1434.**

Coils wound	10 amp.	25 amp.
D.C. up to 100v. Code word*	36/- yerep	68/- (E) yerna
D.C. 100/250v. Code word*	45/- yerep	78/- yerna
A.C. up to 250v. Code word*	41/- yeror	73/- yerpe

*Code word must be followed by voltage.

EXTRAS : (a) Self-holding catch 7/6 extra
 (b) Pair of auxiliary contacts to "make" or "break" as ordered and rated at 50 watts at up to 250 v. 7/6 ..
 (c) Back and Front Contacts may be fitted but the rating is then reduced to 5 amps. 15/- ..
 (d) Relays can be arranged "break" instead of "make" when energised No extra.

An ordinary Push can be employed in addition to the Auto-Contact-makers C68 or C69, to energise these relays for sounding Signals at special times or in case of emergency.

ELECTRIC IMPULSE CLOCKS

AUTO. CUT-OUT FOR GUARDING CLOCK CIRCUITS.

AUTO. CUT-OUT FOR LOOP CIRCUITS.

When the layout of the building is such that the wiring takes a form shown in Diagram No. C610, an Auto. Cut-out, as Fig. C125 shown at X in the Diagram, should be employed. Normally, the Clocks of Section No. 1 and of Section No. 2 are in series, both sections being driven by the Transmitter shown.

In the event, however, of a break occurring in the wiring of Section No. 2, this section is automatically cut-out, and Section No. 1 operates as usual. The Auto. Cut-out is particularly useful in cases where Section No. 2 is across a street and overhead wiring risks are present. See Leaflet 246 for further hints on wiring.

By connecting this Auto. Cut-Out across any such looped Section, interruption of the Main Circuit is prevented in the event of a dislocation of the looped Section.

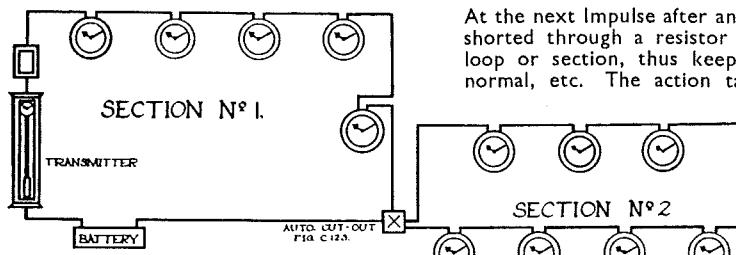


DIAGRAM C610

At the next Impulse after an accident, the loop affected is shorted through a resistor equal to the Clocks in that loop or section, thus keeping the current strength at normal, etc. The action takes place instantly without the loss of half-a-minute impulse. A red disc appears in the indicator as a warning that the loop is out of operation.

FIG. C125 AUTO CUT-OUT.

For Time Circuits consisting of Relay Movement, Indicator with Hand Replacement. Relay armature operating contacts controlling special equivalent resistor. All mounted in polished hardwood case with glazed front, for use in bottle-neck wiring as shown above.

PRICE, each ... £3 - 8 - 0 Code word : ziye (E)

NOTE.—When ordering, the number and size of Clocks in each Circuit must be given, so that an equivalent resistor can be fitted.

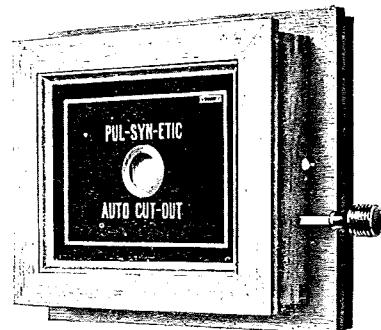


FIG. C125 AUTO CUT-OUT.

TEST BOX.

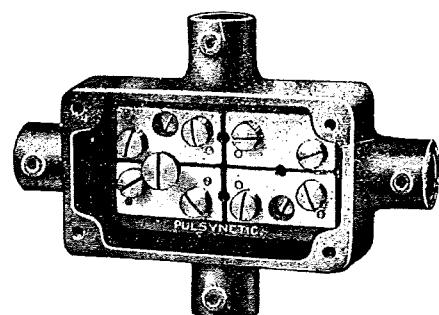
In some large installations it is often desirable that the wiring is led off in loops (an example of this is shown at Diagram No. C610 above), and for this purpose the Junction Box shown at Fig. C120 can advantageously be employed.

If it is desired to cut out a Circuit, the Screwed Plugs shown can be inserted, so that any particular Circuit can be shorted out.

PRICE :—

FIG. C120, as illustrated ... 14/- Code word : zyjac

For General Diagrams of Clock Circuits, see pages 37, 41 and 42.

FIG. C120 JUNCTION TEST BOX.
(One feed and 3 sub-circuits).

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

SUB-CONTROL OF GROUPS OF IMPULSE CLOCKS.

The Standard "Pul-syn-etic" Transmitter is actually capable of controlling, not only an installation of 50 or even 100 Impulse Clocks, but also of dealing with scattered buildings over a large area, such as are found in some modern works. The "Transmitter" will control all the Public Clocks for example in a large city in a similar manner, by the use of Sub-Transmitters.

In any such large area however, or where there are a large number of Impulse Clocks, it is desirable, on account of risks to lines—often fixed overhead—to isolate the Installation into a number of Sub-circuits. This procedure also ensures that the voltage on the circuit is not unduly high, if the System as a whole is large.

All Sub-circuits or groups are controlled by one Transmitter—the "Prime Transmitter."

The individual sub-circuits are then dealt with by means of either Sub-Transmitters or Sub-Transmitting Relays as below.

"A"—By means of Sub-Transmitters which consist of a Standard Transmitter with its Pendulum governed by "Reflex Control." Diagram C510—page 37.

"B"—By mean of Sub-Transmitting Relays. Diagram NSII—page 37.

With System "A" using Sub-Transmitters, a Prime Transmitter is employed, and in its time circuit, in addition to the usual Impulse Clocks, is inserted a Reflex Control, fixed in the Case of, and controlling the Pendulum of, another Transmitter. This second Transmitter then becomes what is known as a Sub-Transmitter.

If therefore, the circuit of the Sub-Transmitter is interrupted, it will affect only the Clocks in that circuit, and not the Prime circuit. Conversely, should the Prime circuit be interrupted, the Sub-Transmitter circuit will be virtually unaffected, although ungoverned for the time being.

Where overhead lines are being employed, we strongly advocate the use of Sub-Transmitters. Rather than carry the Prime Time Circuit overhead, a Sub-Transmitter is employed to control the other section, and a Fig. C106 Overhead Line Relay is inserted in the Prime circuit. (See diagram C510 on the opposite page).

The Sub-Transmitters, by means of Reflex Control, are under the direct control of the Prime Transmitter, as far as time keeping is concerned. Should a break however occur in the overhead lines, these Sub-Transmitters carry on, although ungoverned, and the circuit is not interrupted.

The purpose of the overhead line Relay, which is placed in the Prime circuit, is to prevent damage to overhead lines interrupting this Prime circuit also. It will be seen that in a layout of this nature, even although all overhead lines be carried away, the three circuits remain virtually unaffected.

With System "B" employing Sub-Transmitting Relays, the operation is generally the same. It will be observed however, that with this scheme, failure of the sub-circuit overhead lines—if any—will certainly interfere with that particular Sub-circuit, but with no other.

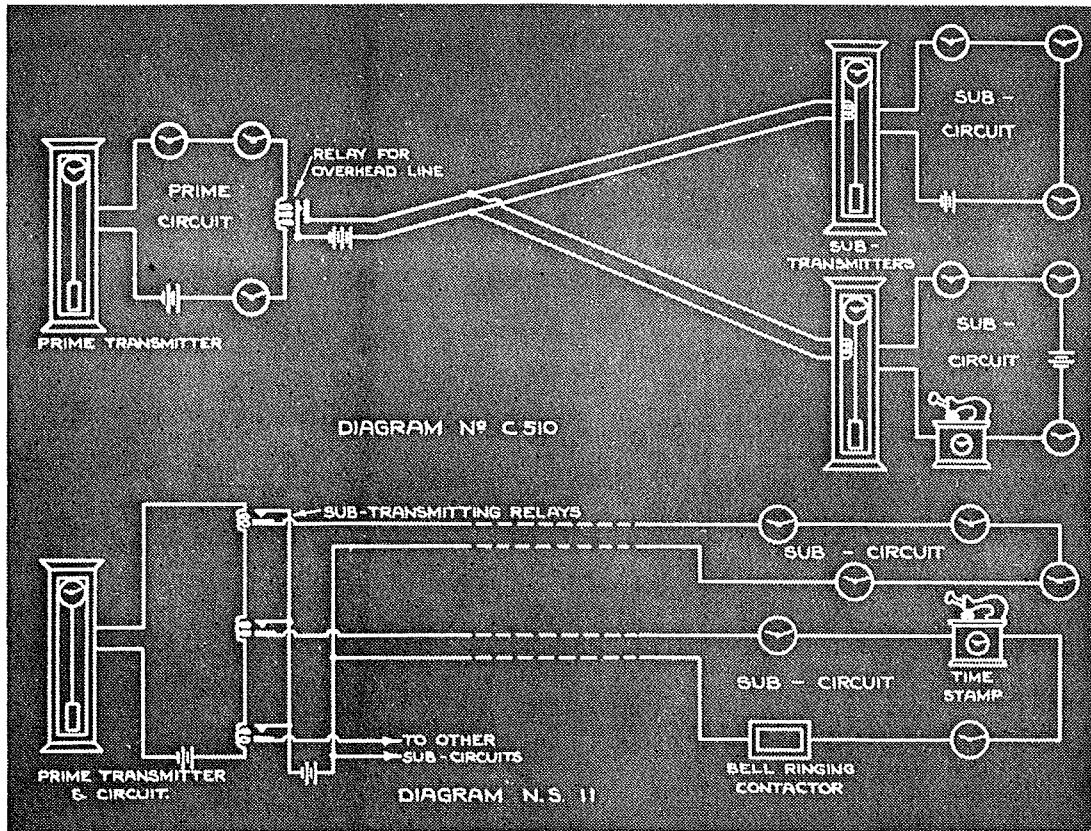
It is also usual, again to prevent interference, to localise the Prime Circuit as far as possible. With these points in mind, System "B" is to be strongly recommended on the score of simplicity and ease of supervision.

For the sake of clarity, 2 Batteries are shown in Diagram NSII, page 37, but it will be appreciated that one central Battery will suffice.

It is suggested that the layout of an Installation is dependant upon the proportion of Clocks in each group and upon the geography of the building, or buildings which are to be served, and we are only too pleased to advise.

GENTS' "PUL-SYN-ETIC"
ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q



SUB-TRANSMITTER (System A, page 36)

"Reflex Control," as Fig. C104, page 38, fitted to the pendulum of any standard Transmitter, rendering it thereby a Sub-Transmitter to operate as System "A," Diagram C510.

PRICE, each: Add to price of Transmitter chosen ... £5 - 12 - 6

Code word ... zoeln (E)

FIG. C63 SUB-TRANSMITTING RELAY (System B, page 36).

For impulsing a Sub-Time Circuit. Special Relay with heavy platinum-silver contacts, condenser resistance anti-spark device, variable resistance for current adjustment, the whole enclosed in metal case with glazed front. The Relay is so constructed that the current in the Sub-Circuit has a slightly longer duration than that of the Time Circuit operating it.

To operate as System 'B', Diagram NSII.

For use when required for guarding Prime Transmitter Time Circuit, as shown in Diagram No. C510 above.

PRICE, each: £4 - 4 - 0

Code word: zoebd

FIG. C106 OVERHEAD-LINE RELAY

For guarding Prime Transmitter Time Circuit, as shown in Diagram No. C510 above.

Specification and illustration generally as Fig. C63 above.

PRICE, each: £5 - 4 - 0

Code word: zoecf

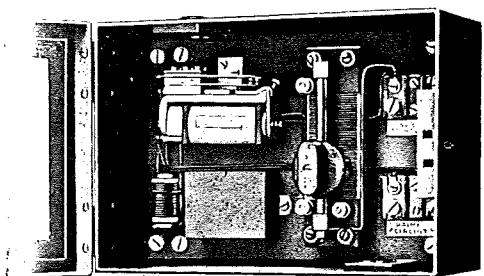


FIG. C63.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

"REFLEX" PENDULUM CONTROL.

For Workmen's Recorders or any type of Clock with Pendulum.

N.B.—We do not make Workmen's Time Recorders, but can fit "REFLEX" Control to those you now have and use.

The introduction of the "Pul-Syn-Etic" Electric Impulse Clock for industrial purposes has resulted in universal and accurate time being available throughout the factory, works, etc., where installed. The bringing in line of Workmen's Time Recorders with such a system was originally accomplished by fitting an impulse driven escapement to the time gear in lieu of the spring driven escapement.

With the Patent "Reflex Control," the clock mechanism of such Recorders remains intact, the controlling device operating on the pendulum.

As will be seen from the illustration, the "Reflex Control" consists of a small attachment secured to the existing pendulum which is engaged by a rack attached to an electro-magnet energised by the half-minute impulse of the system.

The "Reflex Control" can be fitted to existing or new Recorders of any modern make using a pendulum.

You can fit the "Reflex."

FIG. C104. REFLEX CONTROL FITMENT.

Including "Stator" for fixing to case and "Vibrator" for clipping on existing pendulum rod.

PRICE	... ...	... ...	... ...	... ...	... ...	... ...	... ...	£4 - 10 - 0	Code word: ziybd	(E)
If Recorder or Clock is sent to these Works for fitting									£5 - 12 - 6	Code word: zoejl

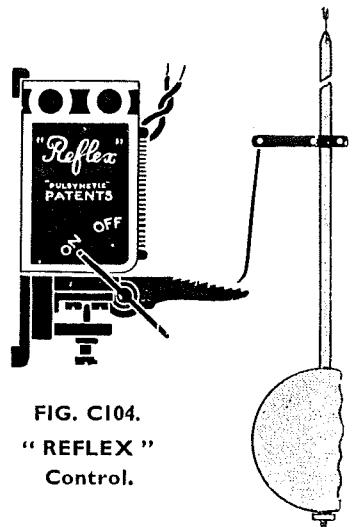


FIG. C104.
"REFLEX"
Control.

APPLICABLE TO ALL TYPES OF RECORDERS.

Where it is desirable to entirely dispense with winding on all types of Recorders, such Recorders may be fitted by us with Electrical Propellers.

These propellers work directly in the Impulse Clock circuit, and take the place of the mechanical movement. Such Recorders are then virtually automatically operated, and register the same time as the remaining Clocks in the Building.

PRICE. FIG. C359 (inclusive of fitting at these works) £7 - 10 - 0 each (E)
Code word : zydye followed by make and type of Recorder.

SPECIAL REGULATION OF TRANSMITTER PENDULUM.

Where "Reflex Control" obtains on the Pendulums of Sub-Transmitters, of Workmen's Recorders, or of other Clocks, the time of the Prime Transmitter must not be altered suddenly as by "stopping" for the few seconds necessary, or "advancing" by pulling the "half-minute cord" (otherwise the "Reflex Control" will not function properly until reset), but the regulation of the Prime Transmitter Pendulum must be made by an adjusting weight.

Such properly designed adjusting-weight is illustrated at Fig. C108. To increase the Pendulum rate, place the weight on the top of the Pendulum Bob, in the space provided. To decrease the Pendulum rate, the weight should be placed on the rating nut below the Pendulum Bob until the system is brought to time. Then remove and hang the weight on the hook provided for its reception in the Transmitter Case.

PRICE, each : 1/- (E) Code word : zohpy

OBSERVATORY CONTROL.

Weight may be added, or deducted Automatically to the Pendulum by a local or other "Observatory Signal." For "See-Saw" Observatory Control, see page 7 and Book 5, Section 4.

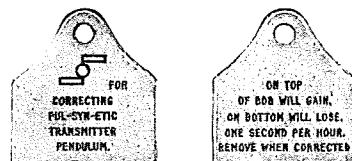


FIG. C108.

GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

BOOK 5
Section 1q

CURRENT SUPPLY—SERVICE MAINS.

Where Supply Mains are available, we strongly recommend their use. The modern method is to employ a small sealed Accumulator—page 40—and to Trickle Charge this from the A.C. supply—diagrams page 41.

Beyond an occasional topping up with distilled water, no other attention whatsoever is required.

In the case of a D.C. supply, a duplicate Accumulator is required—one being on charge whilst the other is in use.

Our reasons for advocating a floating Accumulator are:—

1. In the event of Supply Mains failure, all Clocks do not stop and would actually continue for a matter of weeks if required.
2. Where it is customary in Industrial Concerns to "switch off" the Mains during the night or during holiday periods, then no interference or stoppage occurs.

Connections page 41.

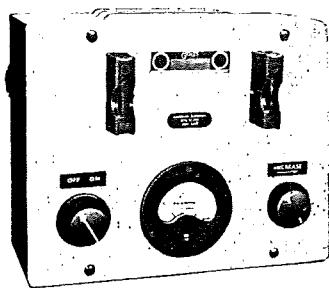


FIG. C151
Trickle Charging Board (A.C.)

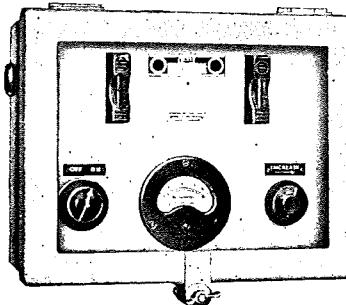


FIG. C150
Trickle Charging Board (A.C.)

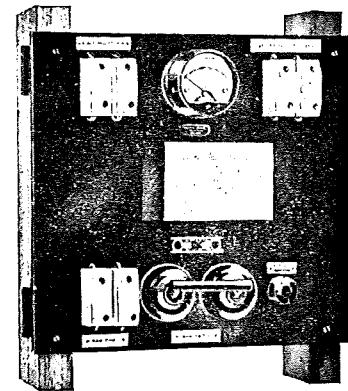


FIG. C2164.
Trickle Charging Board (A.C.)

FIG. C151 TRICKLE CHARGING BOARD (A.C.)

Complete with Transformer, All-Metal Rectifier, Adjustable Resistance, Milliammeter and adequately fused, the whole enclosed in enamelled wrought metal case, and generally as illustrated—see diagram NS 34, page 41.

For Trickle Charging and Accumulator up to 80 volts at 15 mA. £4 - 0 - 0 each. Code word: zomna (E)
 " " " " 50 volts at 25 mA. £6 - 0 - 0 each. Code word: zompe
 " " " " 80 volts at 75 mA. £6 - 18 - 0 each. Code word: zygb
 " " " " 50 volts at 100 mA. £6 - 18 - 0 each. Code word: zygd

FIG. C150 TRICKLE CHARGING BOARD (A.C.)

Generally as Fig. C151, but the whole enclosed in wrought-metal case with glazed hinged front, and screw-down fastening. For Trickle Charging an Accumulator up to 80 volts at 15 mA. £5 - 0 - 0 each. Code word: zompe

" " " " 50 volts at 25 mA. £7 - 18 - 0 each. Code word: zygd
 " " " " 80 volts at 75 mA. £7 - 18 - 0 each. Code word: zygd
 " " " " 50 volts at 100 mA. £7 - 18 - 0 each. Code word: zygd

FIG. C152 TRICKLE CHARGING BOARD (D.C.)

Generally as Fig. C151, but without Transformer, and provided with twin Rectifiers to prevent back current, double pole Main Switch, adequately fused, and complete with Twin Battery Change-Over Switch—see diagram NS 35, page 41.

For Trickle Charging an Accumulator up to 60 volts at 25 mA. £5 - 8 - 0 each. Code word: zomor
 " " " " 80 volts at 100 mA. £9 - 15 - 0 each. Code word: zyjca

FIG. C153. TRICKLE CHARGING BOARD (D.C.)

Generally as Fig. C152, but the whole enclosed in wrought-metal case with glazed hinged front and screw-down fastening.

For Trickle Charging an Accumulator up to 60 volts at 25 mA. £6 - 8 - 0 each. Code word: zupzo
 " " " " 80 volts at 100 mA. £10 - 15 - 0 each. Code word: zyjde

FIG. C2164 TRICKLE CHARGING BOARD (A.C.)

Consisting of full-wave All-metal Rectifier, Transformer, Adjustable Resistance, Double Pole Main Switch, best quality Milliammeter, Double Pole Main Fuses, Double Pole Charge Fuses, Double Pole Discharge Fuses. Mounted on panel with fixing battens. Generally as illustrated, approximately 16-in x 16-in.

For charging an accumulator up to 150 volts at 25 mA. £14 - 0 - 0 each. Code word: zolma

Standard input 200/250 volts 50 cycles—other voltages or periodicities at slight extra cost.

Where current is "switched off" every night, the 100 mA. type must be used. Multi-circuit Installations, with Sub-Transmitting Relays, may also need larger Chargers.

In all these Chargers arrangements can be made for providing a "Boost-charge"—a useful feature when the load on the accumulator is unusually irregular. Prices upon application—please state battery voltage, and rate required.

ELECTRIC IMPULSE CLOCKS

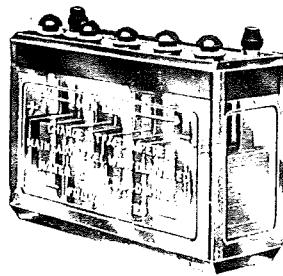
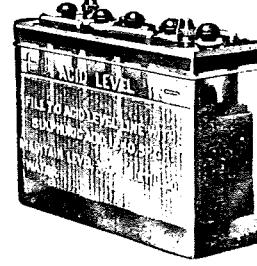
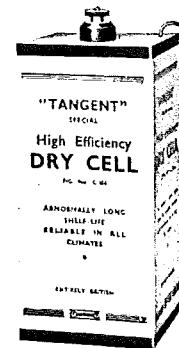
FIG. C6543
2-volt block.FIG. C6551
10-volt block.FIG. C6552
10-volt block.

FIG. C154

ACCUMULATORS.

As dealt with on pages 39 & 41 we strongly recommend as Battery Power for the "Pul-syn-etic" System, continuously trickle charged Accumulators.

The Accumulators are of the non-sulphating type, and in glass cases and sealed. (Trickle charging does not cause gassing, consequently "topping-up" is necessary only very rarely).

Fig. C6551 Accumulator is the usual type employed—3 such blocks are sufficient to drive an installation of 35 12-inch Clocks.

Fig. C6552 Accumulator is of the "multi-plate" type and therefore capable of providing a greater discharge rate. It is particularly suitable when the same Battery has to operate a "Waiting-Train" Movement (see Book 5, Section 2), or to ring Bells. It is also the ideal battery in multi-circuit Installations—please see Diagram NS11, page 37.

Types C6543 or C6543a should only be used where periodical, not trickle charging, is being used.

FIG. C154 HIGH EFFICIENCY DRY CELL.

An alternative method of operating the Clock System especially where Supply Mains are not available. They have been developed to provide against "shelf life" failure, and have a tested life of some $2\frac{1}{2}$ to 3 years when used with our System. Ordinary dry cells are not to be recommended.

GENERAL.

To estimate Accumulator required:—Total resistance of Clocks+line resistance $\times 0.22$ = voltage of Accumulator necessary.

To estimate Primary Battery required:— $\frac{\text{Total resistance of Clocks+line resistance}}{7} + \frac{1}{3}$ = No. of Cells required.

The following resistances of standard clocks are given for estimating purposes:—

Fig. C6 Transmitter 26 ohms. Fig. C7 Transmitter 30 ohms.

Impulse Clocks up to 12" diam., standard movements 3 ohms.

Impulse Clocks 16" & 18" diam., standard movements 6 ohms, 20" & 24" diam., 8 ohms.

Catalogue Fig. No.	C6543	C6543a	C6551	C6552	C154
Voltage per cell, or block	2	2	10	10	1.5
Capacity in A.H., intermittent discharge ...	20	45	5	7	Dry Cell
Normal discharge not to exceed in amps. ...	0.25	0.5	—	—	
Recharge current should not exceed in amps. ...	0.5	1	0.25	0.5	
Approximate dimensions	$2\frac{3}{4}'' \times 2\frac{3}{4}'' \times 5\frac{3}{4}''$ H.	$3\frac{1}{4}'' \times 3\frac{1}{4}'' \times 7\frac{1}{2}''$ H.	$2\frac{7}{16}'' \times 7'' \times 5\frac{1}{4}''$ H.	$2\frac{3}{4}'' \times 7\frac{3}{4}'' \times 6\frac{1}{8}''$ H.	$7\frac{3}{4}'' \times 3\frac{1}{4}'' \times 3\frac{1}{4}''$ H.
Weight in lbs., including acid...	$3\frac{3}{4}$	7	6	$9\frac{1}{2}$	$5\frac{1}{2}$
PRICE, per cell (excluding acid)	4/6	8/6	6/3	10/6	5/- (E)
Extra for acid and preliminary charge ...	6d.	9d.	6d.	8d.	
Code words	zohyp	zoljm	zokal	zygeb	zuray

FIG. C6543 LEAD STRAPS for connecting-up cells and units, as illustrated

PRICE, per dozen 1/- Code word ... zoljs



FIG. C8 WEAK BATTERY WARNING BELL.

For providing immediate warning that the Clock Battery requires attention. To be recommended where the Battery consists of Primary Cells such as C.154. Warning Bells are not necessary if trickle charged Accumulators are employed. Overall size approximately 12" x 8" x 4".

PRICE, each ... £2 - 0 - 0 (E) Code word ... zlymp

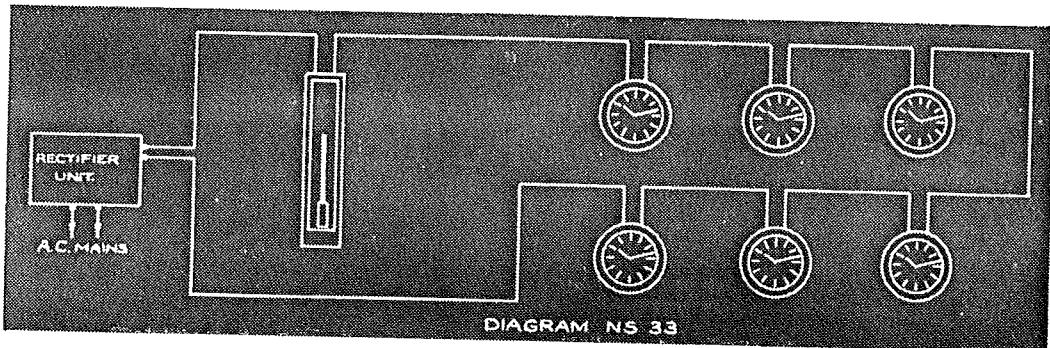
ELECTRIC IMPULSE CLOCKS

CURRENT SUPPLY AND SERVICE MAINS.

A.C. SERVICE MAINS.

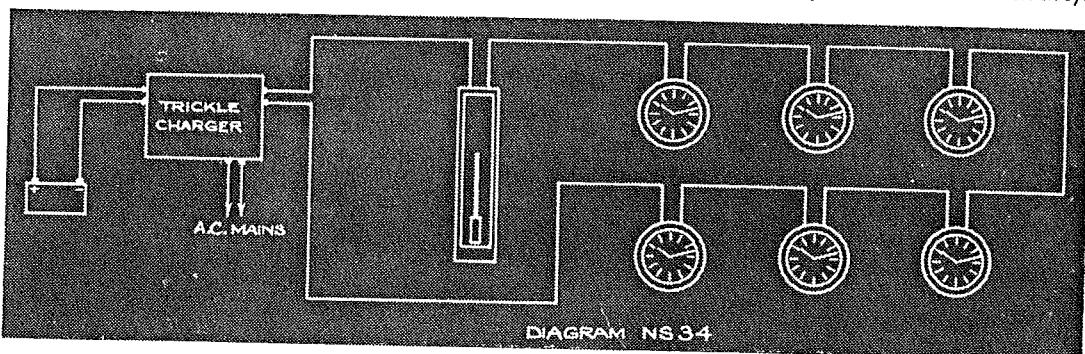
(1)—DIRECT. Diagram NS 33.

By introducing a Transformer to ensure the voltage being suitable for the Clock Circuit and an All-metal Rectifier (full wave). Should the Mains fail, then all Clocks will stop.



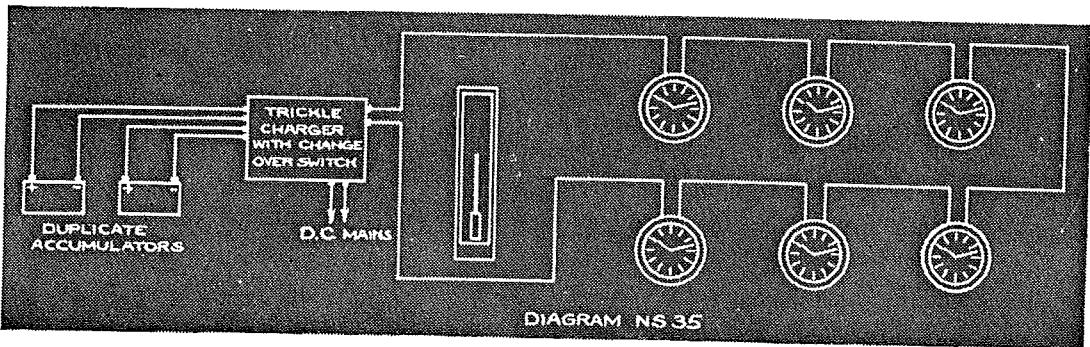
(2)—BY TRICKLE CHARGED ACCUMULATOR. Diagram NS 34.

This method is strongly recommended in every way—see page 39. Mains failure in no way interferes with the clock system.

D.C. SERVICE MAINS.

(3)—BY TRICKLE CHARGED ACCUMULATORS. Diagram NS 35.

This method is strongly recommended. Mains failure or surges due to heavy loads in no way interfere with the Clock System. Duplicate accumulators are advised—one in use, the other "on charge"—to isolate the clock circuit from the D.C. mains.



GENTS' "PUL-SYN-ETIC" ELECTRIC IMPULSE CLOCKS

CLOCK CIRCUITS, SIMPLE SERIES.

All Clocks must be connected in simple series as illustrated at Diagram **NS 36** and the method shown of running a single wire round the Building should be followed.

The layout of the building however, sometimes renders it more convenient to run the return wire as shown at Diagram **NS 37**, but it will be observed that the principle of series wiring is still maintained.

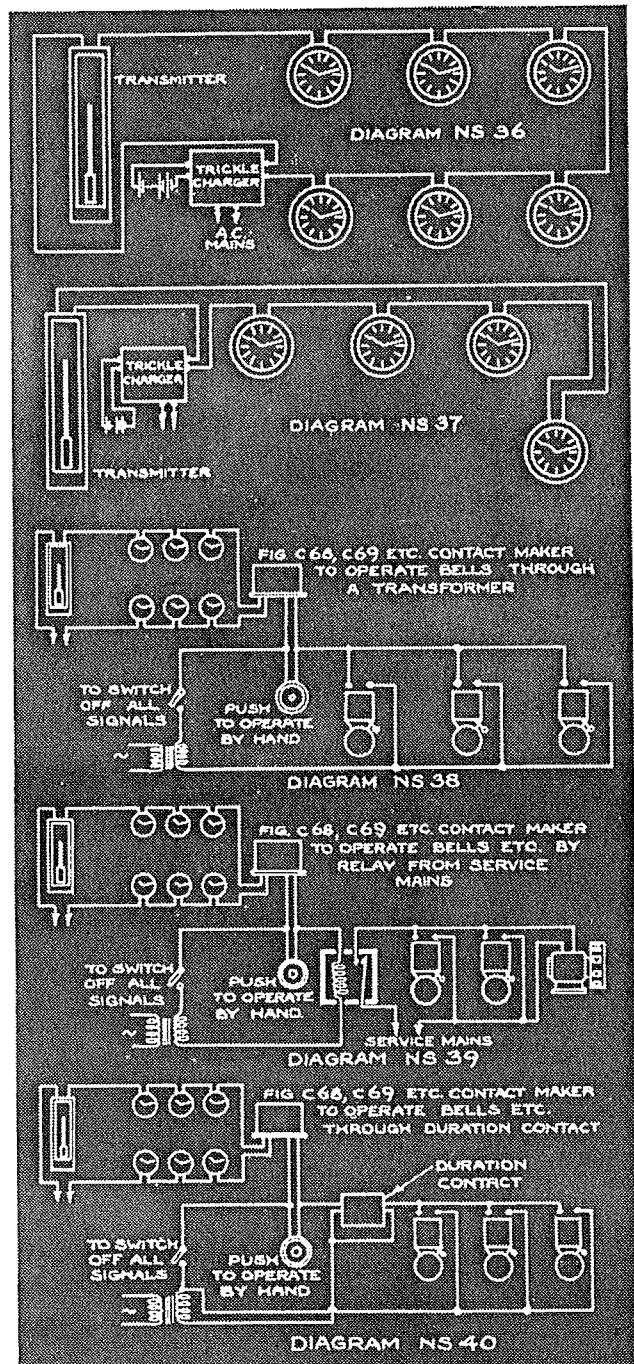
WITH TIME SIGNALS.

Time Signal Sounders may be added to any simple Clock circuit. Suitable Contact Makers are described on page 32 or one of the Clocks in the circuit may be fitted with a Bell ringing Movement —Fig. C9, page 33—and Diagram **NS 38** shows the general connections.

Diagram **NS 39** is a modification of **NS 38** above and in this instance the Bells and/or Syren are operated from the Service Mains through a suitable Relay. The coils of this Relay, which are connected to the Contact Maker, are at low voltage through a Transformer.

Mains voltage on the Sound Signals is to be advocated when the number of Bells is large or where the Sound Signals employ Syrens or other Instruments taking an appreciable current.

The standard period of sound with a standard Contact Maker is $\frac{1}{2}$ minute. Where this period is considered too long, a Duration Contact may be used to deal with shorter periods of from 5 to 20 seconds or so. The connections would then be as Diagram **NS 40** and suitable Duration Contacts are illustrated on page 34.



" PUL-SYN-ETIC " SYSTEM.

SOME PROMINENT USERS.

SOME NAMES YOU KNOW.

GOVERNMENT WORKS, Etc.

House of Commons, London.
Admiralty.
War Office.
Air Ministry.
Crown Agents for the Colonies, London
Royal Military College, Sandhurst.
H.M. Dockyard, Chatham.
H.M. Dockyard, Portsmouth.
H.M. Dockyard, Rosyth.
H.M. Dockyard, Woolwich.
H.M. Office of Works, London.
H.M. Post Office, London.
H.M. Prison, Dartmoor

Bells United Asbestos Co., Ltd., Rickmansworth.
Boots Pure Drug Co., Ltd., Bath.
Boots Pure Drug Co., Ltd., Nottingham.
Boots Pure Drug Co., Ltd., Southampton.
Brand & Co., Ltd., London.
British Celanese Ltd., Spondon, Near Derby.
British Enka Art Silk Co., Aintree, Liverpool.
Bryant & May Ltd., Liverpool.
Bryant & May, Ltd., London.
Cadbury Bros., Ltd., Bournville (3 Sys.) (P & S)
Cadbury Bros., Ltd., Blackpole.
Carborundum Co., Ltd., Manchester.
Chilprufe Ltd., Leicester.
Columbia Graphophone Co., Ltd., London.
Cooper, McDougall & Robertson Ltd.,
Corah, N. & Sons, Ltd., Leicester.
Berkhampstead.

EDUCATIONAL ESTABLISHMENTS, Colleges, Schools, Churches, Etc.

Aldershot Park Schools.
Arbroath High School.
Ardingley College.
Aston Church, Birmingham.
Bablake School, Coventry.
Ballymena Academy.
Belfast Glengormley School.
Belfast Limestone Road School
Belfast St. Kevin's School.
Birmingham Schools Centre.
Bootham School, York.
Bournemouth Boys High School.
Bradford Girls' Grammar School.
Braehead Street School, Glasgow. (S)
Bristol University.
Bulck Memorial School, Antrim.
Burnage High School, Manchester.
Cambridge University Old Library.
Cardiff University College.
Chase Farms School, Enfield.
Chequer Rd. Girls' High School, Doncaster.
Church House, Westminster, London.
Coldcotes Senior & Junior Schools, Leeds. (S)
Corby New Council School.
Cork School of Commerce.
Cranford Junior School, Middlesex. (S)
Dame Allan's School, Newcastle.
De Asten Grammar School, Market Rasen.
Donbury Grammar School.
Doncaster Technical College.
Dudley Technical College, Worcs.
Dundee Training College Hostel.
Durham University.
Edinburgh University.
Elston Hall Schools, Wolverhampton.
Farnworth New Central School.
Fawdon and St. Bede's Schools,
Newcastle-on-Tyne. (S)
Finaghy School, Belfast.
Glasgow Corporation Education Committee.
Gleed Senior Schools, Spalding.
Glenavy Parish Church, Belfast.
Greencastle Elementary School, N. Ireland.
Greenock High School.
Gulval Church, Penzance.
Halesowen Grammar School.

Albion Motor Car, Ltd., Glasgow.
Armstrong Siddeley Motors, Ltd., Coventry.
Arrol Johnston, Ltd., Dumfries.
Austin Aero Factory (2 Install.),
Daimler Co., Ltd., Coventry.
Dennis Bros., Guildford, London.
Ford Motor Co., Ltd., London & Dagenham,
Hulley's Industrial Motors, Ltd., Glasgow.

India Office, London.
India House, London.
India Store Depot, London.
New Parliament Buildings, Stormont, Belfast.
New Government Buildings, Edinburgh.
School of Engineering, Chatham.
Geological Museum, London.
National Physical Laboratory, Teddington.
Bovington Camp, Dorset.
Brompton Barracks, Chatham.
Canterbury Barracks.
Lincoln Barracks. (S)

PROPRIETARY FIRMS.

Cosmos Lamps Works, Enfield.
Courtaulds, Ltd., Coventry & Wolverhampton.
Courtaulds, Ltd., Flint. (S)
Crawford, W. & Sons, Liverpool.
Crosse & Blackwell, Ltd., London.
Dunmore, W. & Son, Wigston and London.
Fairy Dyes, Ltd., Glasgow.
Fry & Sons, Ltd., Bristol.
Genatosan, Ltd., Loughborough.
Gossage, Wm. & Sons, Ltd., Widnes.
Guinness', Dublin.
Horlicks Malted Milk Co., Slough.
Huntley & Palmers, Reading.
Jacob, W. & R. & Co., Dublin and Liverpool.
Lucas, Joseph, Ltd., Birmingham (13 Systems)
Lyons & Co., Ltd., Cardiff Bay.

Gordon Barracks, Wilts. (S)
Halton Camp, R.A.F.
Catterick Camp, Yorkshire.
Vehicle Reserve Depot, Chilwell.
Royal Ordnance Factory, Chorley.
Royal Ordnance Factory, Blackburn.
Naval Ordnance Insp. Laboratory, Sheffield. (S)
River Ouse Catchment Board, Leeds. (S)
Metropolitan Police, London,
 New Section House, Tooting,
 and various other Police Premises. (S)
Coal Commission, London.

Macfarlane, Lang & Co., Ltd., Glasgow.
Mansion, Glasgow.
McVite and Price, Limited, Edinburgh. (S)
Oxo, Ltd., London. (S)
Palethorpe's Ltd., Tipton.
Pascall & Co., Ltd., Mitcham.
Planter's Margerine Co., Ltd., New Ferry.
Reckitt & Sons, Ltd., Hull.
Singer Mfg. Co., Ltd., Clydebank.
Spillers, Ltd., Cardiff.
Symington, W. & Co., Ltd., Market Harborough.
Synthetic Ammonia, Ltd., Stockton-on-Tees.
Terry & Sons, Ltd., York.
Tootall, Broadhurst, Lee & Co. Ltd., Manchester.
Willis, W. D. & H. O., Bristol and Glasgow.
Wolsey, Ltd., Leicester, Keighley & Coalville.

ESTABLISHMENTS, Colleges, Schools

Harryville School, Ballymena.
"Henry Melluish" County Sec. School, Basford
Heriot Watt College, Edinburgh.
Herts. C.C. School, Boreham Wood.
Herts. Training School, Ltd., Ware.
High Storrs School, Sheffield.
Holy Trinity Church, Southport.
Hull New Grammar School.
Institut Francais.
Kinnoull Church, Perth.
Kings Park School, Glasgow. (S)
King's School, Pontefract.
Kingston High School, Hull.
Lancaster Girls Grammar School. (S)
Larne Grammar School, Northern Ireland.
Leicester University College.
Leith Academy, Edinburgh.
Leytonstone County High School for Girls.
Lisburn School.
Liverpool Friends Meeting House. (S)
Liverpool University. (S)
Lurgan School.
Manchester College of Technology.
Manchester Grammar School.
Manchester Masonic Temple. (S)
Mansfield Girls' High School.
Marlborough College.
Mayesbrook School Clinic, Ilford.
Newark Girls' Secondary School, Leicester.
Newry School.
Newton Abbott Secondary Schools.
Northampton Polytechnic Inst., London.
Northgate School, Ipswich.
Omagh School.
Oratory School, Reading.
Oxford University, New Physics Block.
Pipworth Rd. School, Manor Estate, Sheffield.
Portadown Technical School.
Portadown Presentation Convent.
Preston Parish Church.
Radcliffe New Central School.
Ralph Gardner Senior School, North Shields.
Reading University.
Redditch Grammar School, Redditch.
Riverside Advanced Central School, Glasgow.
Royal High School, Edinburgh.

MOTOR CAR MANUFACTURERS.

Humber, Ltd., Coventry.
James Cycle Co., Birmingham.
Lanchester Motor Co., Ltd., Birmingham.
Morris Motors (1926), Ltd., Radiator Branch,
Oxford : Recreation Ground, Coventry.
Morris Motors, Pressings Branch, Birmingham.
Raleigh Cycle Co., Nottingham.

Rolls-Royce, Ltd., Derby.
Singer Cars, Ltd., Birmingham.
Standard Motor Co., Coventry.
Sunbeam Motors, Wolverhampton.
Sunbeam Cycles (I.C.I.), Wolverhampton.
Swift Motor Co., Ltd., Coventry.
Vauxhall Motors, Ltd., Luton.

" PUL-SYN-ETIC " SYSTEM.

HOSPITALS, INFIRMARIES, HOTELS, Etc.

Aberdeen City Hospital. (S)
 Addenbrooke's Hospital, Cambridge.
 Aged & Infirm Homes, Bristol.
 "Airmen's Rest" Hotel, Leicester.
 Aldingham Hall, Lancs.
 Angleton Mental Hospital, Bridgend.
 Ballymoney Hospital.
 Barrow Gurney Mental Hospital, Nr. Bristol.
 Barrow Mental Hospital.
 Berrywood Mental Hospital, Northampton (2 Ins.)
 Biddulph Orthopaedic Hospital Exts., Preston.
 Birch Hill Hospital, Rochdale.
 Birmingham Hospital Centre.
 Bracebridge Mental Hospital, Lincs.
 Bradford Royal Infirmary.
 Brentwood Mental Hospital.
 Calderstones Certified Institution.
 Cardiff Mental Hospital.
 Central Middlesex Hospital, London.
 Chadwick Manor.
 Chelsea Hospital.
 City Lodge Hospital, Cardiff.
 Clock Hotel, Hebburn-on-Tyne.
 "County Arms," Blaby, Leicestershire.
 Derby Infirmary.
 Dunfermline Maternity Hospital.
 East Grinstead Hospital.
 Edinburgh Royal Infirmary, Nurses' Home.
 Faire's Hospital, Leicester.
 Foundling Hospital, Berkhamstead.
 Foundling Hospital Recreation Ground, London.
 Gateshead Mental Hospital.
 Glamorgan Mental Hospital, Bridgend.
 Glyn Ely Sanatorium, Glamorgan.
 Grand Hotel, Bristol.
 Grand Hotel, Leicestershire.
 Green Lane Hotel, Acomb, York. (S)
 Grove Park Hospital, Woolwich.
 Halifax Royal Hospital.
 Hacton Mental Hospital, Warwickshire.
 Haven Hotel, Sandbanks.
 Health Centre, St. John's Wood, London.
 High Wood Hospital, Brentwood.

Hospital for Crippled Children, Fairmilehead, Midlothian.
 Hospital for Sick Children, London.
 Hospital for Sick Children, Tadworth Court.
 Hortham Colony, Bristol.
 Ingham Infirmary, South Shields.
 Institute of Crippled Children, Edinburgh.
 King's College Hospital, London.
 King George Hospital, Ilford.
 King Edward Memorial Hospital, Ealing.
 Lady Ednam Memorial Hos., Stoke-on-Trent.
 Lancaster & District Joint Isolation Hospital.
 Langham Hotel Co., Ltd., London.
 Leasowe Children's Hospital.
 Leeds Royal Infirmary.
 Leicester City General Hospital.
 Leicester City Isolation Hos. & Sanatorium.
 Leicester Mental Hospital.
 Leicester Institution for Blind.
 Leicester Poor Law Institution.
 Leicester and Rutland Mental Hospital.
 Leicester Royal Infirmary.
 Liverpool Maternity Hospital.
 Loughborough Hospital, Leicestershire.
 Manor House Hotel, Moretonhampstead.
 Markfield Sanatorium, Leicester.
 Marland Hospital, Rochdale.
 Metropolitan Asylums Board, London.
 Midland Hotel, Bradford, (L.M.S.R.) (S)
 Monkwearmouth & Southwick Hospital.
 Motherwell Maternity Hospital, Glasgow.
 National Childrens Home, Harpenden. (S)
 New Palace Hotel, Paignton.
 Newcastle General Hospital. (S)
 North Riding Mental Hospital, York. (S)
 Overstrand Hall, Nr. Cromer.
 Park Prewett Mental Hospital, Basingstoke.
 Plymouth City Hospital.
 Preston Royal Infirmary.
 Prestwich County Mental Hospital. (S)
 Queen's Hotel, Leeds, (L.M.S.R.)
 Ratcliffe Mental Hospital, Notts.

Rauceby Mental Hospital, Lincs.
 Relgate Institution, Redhill.
 Rex Hotel, Whitley Bay.
 Rochdale Poor Law Infirmary.
 Royal Hotel, Paddington (G.W.R.).
 Royal Masonic Hospital, London.
 Royal Victoria Hotel, Belfast.
 Royal Victoria & West Hants. Hos., Boscombe
 Rushbrook Hall.
 Ryhope Mental Hospital.
 School for the Blind, Bridgend.
 Seamen's Hospital, Greenwich.
 Selly Oak Hospital, Birmingham.
 Shenley Mental Hospital, Herts.
 Shotleigh Bridge Mental Colony, Durham.
 Sisters' Hospital, St. Albans, Herts.
 Smethwick Children's Home.
 Southmeads Hospital, Bristol.
 St. Catherine's Hospital, Doncaster.
 St. Dunstan's Convalescent Home, Nr. Brighton
 St. Luke's Hospital, Bradford.
 St. Luke's Hospital, Lowestoft.
 St. Mary's Hospital, London.
 St. Thomas's Hospital, London.
 Stallington Hall, Leeds.
 Statutary Hospital, Weston-Super-Mare.
 Stoke-on-Trent Hospital.
 Storthes Hall, Huddersfield.
 Sunderland & Durham County Eye Hospital.
 Three Counties Hospital, Arlesey, Beds.
 Tooting Bec Hospital, London.
 Uffculme Mental Hospital, Birmingham.
 University College Hospital, London.
 Vale Hotel, Daybrook.
 Wadsley Mental Hospital.
 War Memorial Hospital, Woolwich.
 West Riding Hospital, Wakefield.
 Weavers' New Convalescent Home,
 Poulton-le-Fylde.
 Winsor Green Mental Hospital, Birmingham.
 Winsor Green Mental Hospital Annex.
 Wishaw Hospital, Glasgow.
 Workshop for the Blind, Fenton, Staffs.
 Yorks. Institute for Deaf, Doncaster. (S)

CORPORATIONS, POWER STATIONS, TRAMWAYS, Etc.

Aberavon Town Hall.
 Aberdeen New Public Baths.
 Aberdeen Town House.
 Aberystwyth Pavilion.
 Accrington Fire Station.
 Acton Town Hall.
 Ashton-under-Lyne New Dispensary.
 Astley Ainslie Institute, Edinburgh.
 Ballymena Town Hall.
 Barking Power Station.
 Belfast Fire Brigade (5 Transmitters).
 Bere Alston Electricity Showroom, Devon.
 Birkenhead Fire Station.
 Birmingham Civic Centre.
 Birmingham Corporation Trams & Bus Dept.
 10 Installations:—
 Birchfield Road.
 Wellhead Lane.
 Tyburn Road.
 Coventry Road.
 Liverpool Street.
 Acocks Green.
 Yardley Wood.
 Tennant Street.
 Highgate Road.
 Hockley.
 Birmingham Police Station.
 Blackburn Corporation Tramways.
 Blackpool Electricity Dept.
 Blackpool Fire Station.
 Blackpool Transport Department.
 Blackwood Electricity Dept., Mon.
 Blyth Harbour Commissioners.
 Bognor Regis Council Offices.
 Bolton Corporation.
 Bournemouth & Poole Elec. Sup. Co., Ltd. (S)
 Bradford City Tramways Offices.
 Bradford St. James Abattoir. (S)
 Bradford Town Hall.
 Brighton and Hove Airport.
 Brighton Fire Station.
 Bristol Gas Works.
 Bristol Tramways & Carriage Co., Ltd., Bristol
 Burton-on-Trent Town Hall.
 Cambridge Electricity Supply Co.
 Cardiff County Hall.

Cardiff Public Assistance Committee. (S)
 Carlisle New Police and Fire Stations.
 Carville Power Station, Wallsend-on-Tyne.
 Carville Power Station, Sutton Coldfield.
 Chesterfield Corp. Tramways & Elec. Works.
 Chesterfield Gas Co., Chesterfield.
 City and County of Lichfield.
 Coalville Memorial Tower.
 Coventry Council House.
 Coventry Electricity Dept.
 Danson Park Swimming Pool.
 De Montfort Hall, Leicester.
 Derby Airport.
 Dundee Corporation.
 Deptford Power Station (London Power Co.)
 East Ham Town Hall Annexe, London.
 Erdington New Fire Station, Birmingham.
 Essex County Council, Chelmsford. (P & S)
 Fulham Town Hall, London.
 Gas Light & Coke Co., Brentford.
 Gateshead Police Station.
 Glasgow City Electricity Department. (S)
 Glasgow City Electricity Works.
 Glasgow Corp. Transport Dept., Undergr'd Sec.
 Glasgow Transport Department.
 Hackney Town Hall.
 Hamilton Burgh Electricity Department. (S)
 Hammersmith New Police Station.
 Hammersmith Town Hall.
 Hinckley Police Station.
 Hull City Tramways.
 Ilkeston & Heanor Water Board, Whatstandwell
 Ipswich Electric Supply & Transport Dept. (S)
 Island Baths, Poplar.
 Isleworth Central Fire Station.
 Leamington City Tramways.
 Leeds New Library, Crossgates. (S)
 Leeds Transport.
 Lee's Memorial Tower.
 Leicester Electricity Works.
 Leicester Fire Station.
 Leicester Municipal Offices & Elec. Showrooms.
 Leicester Police Station.
 Leicester Town Hall.
 Leicestershire C.C. Offices, Leicester.
 Littlebrook Power Station, Kent.

Liverpool Gas Company, Liverpool.
 Liverpool Percival Lane Power Station. (S)
 Liverpool Police College. (S)
 Marylebone Town Hall Extensions, London.
 Morecombe Town Hall.
 Newcastle & Gateshead Gas Co., Northumb'land
 Newcastle City Police Station.
 Newport Civic Centre.
 Northampton Fire Station.
 North Eastern Electricity Supply Co., Ltd.
 Nottingham Corp. Tram & Bus Garage.
 Nottingham Electricity Dept.
 Nottingham New Exchange.
 Nottingham New Market Building.
 Nuneaton Municipal Buildings.
 Oxford Electric Supply Department. (S)
 Oxford 4-faced Public Clock. (S)
 Oxford Market Hall. (S)
 Oxford Temple Cowley Baths. (S)
 Oxford Temple Cowley Library. (S)
 Oxford Town Hall & Library. (S)
 Pavilion, Sheffield.
 Perth Airport.
 Poplar Baths.
 Porthcawl Pavilion.
 Portishead Power Station, Bristol.
 Ramsgate Swimming Pool.
 Reading Public Convenience.
 Reddish Memorial Tower.
 Rochdale Fire Station.
 Rochdale Public Baths.
 Rotherham Town Hall & Police Offices.
 Salford Corporation Aigecroft Power Station.
 Salisbury Municipal Offices.
 Sheffield Graves' Park Pavilion.
 Shrops., Worcs. and Staffs. Electric.
 Smethwick Corporation Gas Offices.
 Southall Town Hall.
 St. Wales Elec. Power & Dis. Co., Pontypridd.
 South Shie's Municipal Buildings.
 South Wales Power Co., Treherbert.
 Spenny Moor U.D.C. Offices.
 St. Helen's Town Hall.
 St. Pancras Town Hall, London.
 Stanley Abattoir, Liverpool.
 Stanley U.D.C.

" PUL-SYN-ETIC " SYSTEM.

CORPORATIONS, POWER STATIONS, TRAMWAYS, Etc.—continued.

Stirling Town Hall.
S. Metropolitan Gas Co., London.
Swansea Civic Centre.
System Memorial Tower, Leicestershire.
Taunton Shire Hall.
Thornaby-on-Tees Swimming Baths.
Tir John Power Station, Swansea.
Tir Phil Institution, Glamorgan.
Torquay Town Hall.

Tunbridge Wells New Civic Centre.
Twickenham Swimming Bath.
Walthamstow Borough. (S)
Wembley Corporation. (S)
Wembley Town Hall.
West Ham Electricity Department.
West Middlesex Disposal Wks., Isleworth (3 Ins.)
Westminster New Central Depot.
Westminster Public Library.

Westmorland County Hall, Kendal.
Weston-Super-Mare Town Hall.
Whitley & Monkseaton U.D.C. (Prom. Clock)
Wimbledon Town Hall.
W. Mid. E.P. Station, Wolverhampton.
Wolverhampton Corp. Electricity Showrooms.
Wolverhampton Gas Co. (S)
Worthing Borough Cricket Pavilion.

RAILWAYS, BUS COMPANIES, GARAGES, FERRIES, DOCKS, Etc.

Aberdeen Joint Station.
Ashburton Motor Garage, Devon.
Birkenhead Corporation Ferries.
Cavendish Motors Ltd., Chesterfield.
Cresta Motor Co., Worthing.
Dublin, Amiens Station.
Eastern Counties Bus Co., Ltd., Norwich. (P & S)
G.W.R., Birkenhead Station.
" Bristol Goods Station.
" Bristol Temple Meads Station.
Cardiff Station.
" Exeter Station.
" Leamington Spa Station.
" Newport, (Mon.) Station.
" Newton Abbot Station.
" Paddington Station (over 500).
" Plymouth Station.
" Pontypridd Station.
" Reading.
" Slough Station.
" Swansea.
" Taunton Station.
" Wolverhampton Station.
Hants & Dorset Motor Services, Bournemouth.
Hull Docks.
Jackson's Garage, Aberdeen.

Kingsthorpe Garage Co., Ltd., Northampton.
Liverpool Overhead Railway.
L.M.S.R. Camden Town Goods Station.
" Crewe Station.
" Leeds City Station.
" Leeds Office Building.
" Locomotive Works, Derby.
" New Offices, Westminster, London.
" Nuneaton Station.
" School of Transport, Derby.
" Southend Station.
" St. Marys Goods Shed, Derby.
" St. Pancras Station.
" Stoke-on-Trent Station.
" Tilbury Docks Station.
" Upminster Station.
" Walsall Station.
" Watford.
" Willesden Junction.
L.N.E.R. Berwick Station.
" Bridlington Station.
" Hull Riverside Station.
" Managate Station.
" Manors Station, Newcastle-on-Tyne.
" West Monkseaton Station.
" Whitley Bay Station.

L.N.E.R. York Station.
" York Offices.
" Meadow Road Garage.
Mersey Railway, Liverpool.
Midland "Red" Motor Services, B'ham, etc. (7 Garages)
Port of London Authority.
Quicks Motor Garage, Manchester.
Ribble Motor Services, Ltd., Blackpool,
Barnsley, Preston, and many others.
Southern Rly. Brighton Station.
" Clapham Junction Station.
" Exeter Station.
" New Warehouse (Bricklayer's Arms).
" Richmond Station.
" Southampton Central Station.
" Southampton Docks.
" Surbiton Station.
" Woking Station.
Sutton Coldfield Garage, Birmingham.
Trent Motor Traction Co., Notts. and Derby.
Trent Motor Traction Co., Ltd., Belper.
Wallasey Ferries, Liverpool.
West Yorks. Road, Car Co., Keighley.
Wilts. & Dorset Motor Services Ltd., Salisbury.

OTHER PROMINENT USERS

Abbott, J. C. & Co., Ltd.
Adamson, G. L., Ltd., Rochdale.
Adelphi Buildings, London.
Adie Bros., Ltd., Birmingham.
Adolph Scott, Birmingham.
Advance Laundries, Ltd., Dagenham.
Advance Laundries, Ltd., Becontree (2 Inst.).
Alfred Herbert, Ltd., Coventry.
Ambler, Thos. & Sons, Wakefield.
Ancient Order of Foresters, Leicester.
Anderson's (Jewellers), Newcastle-on-Tyne.
Andrew Reid & Co., Ltd., Newcastle.
Anglo Enameware, Ltd., Stourport.
Ansell's Brewery, Ltd., Birmingham.
Appleby-Frodingham Steel Co., Ltd., Lincs.
Arch. Kenrick & Sons, Ltd., W. Bromwich. (S)
Arch. Watson & Dundas, Glasgow. (S)
Archdale, James & Co., Ltd., Worcester.
Arks Publicity, Ltd., London.
Armstrong Whitworth, Sir W. G. & Co.
(Shipbuilders), Ltd.
Arthur Cozens Esq., Racing Stables, Berks.
Arts Theatre Club, London.
Asquith, W., Ltd., Halifax.
Aston Chain & Hook, Ltd.
Atkins Bros., Ltd., Hinckley.
Automatic Standard Screw Co., Halifax.
Avery, W. & T., Ltd., Birmingham.
B. A. Collieries, Ltd., Nottingham.
Babcock & Wilcox, Ltd., Renfrew. (S)
Baburizza & Co., London.
Bairstow, T. & M., near Keighley.
Bank of England, Southampton.
Barclay Curle & Co., Ltd., Glasgow, (2 Inst.).
Barlow, E. G. & Sons, London.
Barlow & Jones, Ltd., Bolton.
Barrows Stores, Ltd., Birmingham. (S)
Bastard, J. & W., Keighley and Leicester.
Bates, W. & A., Ltd., Leicester.
Battery Service Co., Nottingham.
Baxter, J. E. & Co., Leyland.
Bedford Cinemas, Ltd., Birkenhead.
Beech & Chamberlain Enamels Ltd., Birmingham.
Belling & Co., London.
Bemrose & Sons, Ltd., Derby.
Bennett Bros., Ltd., Bristol.
Bentley, James, Ltd., Wilmington.
Beresford, J. & Sons, Ltd., Salterley, Birmingham.
Bernes & Co., Ipswich.
Berry & Co., Ltd., Smethwick.

Bestwood Colliery, Nottingham.
Beswick Co-operative Society.
Birmingham Small Arms Co., Ltd., Birm'ham.
Birm'ham Municipal Bank (Erdington Branch).
Birmingham Municipal Bank, Head Office.
Blackpool Pleasure Beach, Ltd. (S)
Blackwood Morton & Sons, Ltd., Kilmarnock.
Blakeborough, J. & Sons, Ltd., Brighouse.
Bletchley Co-operative Society, Northants.
"Blue-Bird" Toffee, Huntingdon.
Bolton, T. & Son, Leicester.
Bolton, J. A., Leicester.
Bolton Eagle Spinning Co., Ltd., Bolton.
Bond, A. E. Esq., Blakedown.
Boosey & Hawkes, Ltd., London.
Boot, E., Esq., Thanbridge Hall.
Boulton & Paul, Ltd., Norwich.
Bourne, S. & Co., Ltd., Chadderton.
Bowry, W. & Co., Melton Mowbray.
Boxfoldia, Ltd., Birmingham.
Bradford Dyers Association, Manchester.
Bradley & Co., Ltd., Bilston.
Brecknell, Ltd., Birmingham.
Brecknell, Munro & Rogers, Ltd., Bristol.
Brighouse District Industrial Society Ltd.
Brighton Co-op Laundry.
Brilliant Sign Co., Ltd., London.
Bristol Aeroplane Co., Filton.
Bristol Goldsmith's Alliance.
Britannia Assurance Co., Ltd., Birmingham.
British Aluminium Co., Ltd., Milton,
Stoke-on-Trent.
British Aluminium Co., Ltd., Newport.
British Art. Silk, Ltd., Kirkcudbright.
British Broadcasting Corp., many stations.
British Electrical & Manufacturing Co., Glasgow.
British Bemberg, Ltd., Doncaster.
British Electrical Engineering & Machinery Co.
British Engine, Boiler and Electrical Insurance.
British Glues & Chemicals, Ltd., Herts. (S)
British Oil & Cake Mills, Ltd., Hull.
British Oxygen Co., Ltd., Birmingham.
British Pens Ltd., Birmingham.
British Quilting Co., Waterfoot.
British Sangamo Co., Ltd., Enfield.
British Thomson-Houston Co., Ltd., Birm'ham.
British Thomson-Houston Co., Ltd., Rugby.
British United Shoe Machinery Co., Leicester.
Brockhouse & Co., Ltd., West Bromwich.
Bromford Tube Co. Ltd., Birmingham.

Brookhirst Switchgear, Ltd., Chester.
Brooks, J. B. & Co., Ltd., Birmingham.
Brooks & Doxey, Limited, Manchester. (S)
Broom & Wade, Ltd., High Wycombe.
Brown, John & Co., Ltd., Clydebank.
Brown, T. & Co., Ltd., Leicester.
Bruton Club, Berkeley Square.
B.S.A. (Small Tools), Birmingham.
Burndep Ltd., London.
Burntisland Shipbuilding Co., Ltd.
Burrel, A. G. & Co., Ltd., Sheffield.
Burton, Delingpole & Co., Ltd., Birmingham.
Burton Latimer Co-op. Society.
Butlin, J. T. & Son, Ltd., Rothwell.
Butterley Co., Ltd., Alfreton.
Callenders Cable & Construction Co., Ltd., Leigh. (S)
Calverton Colliery.
Cammell Laird & Co., Ltd., Birkenhead.
Cargo Fleet Iron Co., Ltd., Middlesbrough.
Cassiobury Park, Watford.
Chadburn's (Ship) Telegraph Co., Ltd., Bootle.
Chamberlain & Hookem, Ltd., Birmingham.
Chance & Hunt, Ltd., Oldbury.
Chapman Frazer & Co., Leicester.
Charnley & Sons, Leicester.
Cherry Tree Machine Co., Blackburn. (S)
Chesil Court, Chelsea.
Chloride Electrical Storage Co., Manchester.
City Sheet Metal Works, Ltd., Leicester.
Clarke, Chapman & Co., Ltd., Gateshead-on-Tyne. (S)
Clayton Wagons, Ltd., Lincoln.
Clifford, C. & Son, Ltd., Birmingham.
Colville, D. & Sons, Motherwell.
Components, Ltd., Birmingham.
Concordia Electric Wire Co., Ltd., Nottingham.
Cook, Troughton & Simms, York.
Cooper Roller Bearing Co., Kings Lynn.
Cooper's Stores, Ltd., Edinburgh, Oban & Hawick.
C.W.S., Ltd., Cardiff.
C.W.S., Ltd., Manchester (New Bank & Offices).
C.W.S., Ltd., Newcastle-on-Tyne (3 Ins.).
C.W.S., Ltd., Macclesfield.
C.W.S., Ltd., Penrith.
C.W.S., Ltd., Bristol.
C.W.S., Ltd., Nuneaton.
C.W.S., Ltd., Leicester (4 Install.).

" PUL-SYN-ETIC " SYSTEM.

OTHER PROMINENT USERS—continued

C.W.S., Ltd., Oxford (2 Install.).
 C.W.S., Ltd., Kettering (3 Install.).
 C.W.S., Ltd., London (Main Office).
 C.W.S., Ltd., Coalville.
 C.W.S., Ltd., Lowestoft.
 C.W.S., Ltd., Stinchley, Birmingham.
 C.W.S., Ltd., Dartford.
 C.W.S., Ltd., Bakery, Blackpool.
 C.W.S., Ltd., Mantle Factory, Manchester.
 C.W.S., Ltd., Wrexham.
 C.W.S., Ltd., Northampton. (S)
 C.W.S., Ltd., Confectionery Works, Reddish, Stockport. (S)
 C.W.S., Ltd., Broughton. (S)
 Cosmopolitan Club, Birmingham.
 Coventry Colliery and Keresley Sports Club.
 Coventry Electrical & Engineering Co., Coventry.
 Coventry Swaging Co., Ltd., Coventry.
 Cox, Wilcox & Co., Birmingham.
 Crowther, W. & E., Ltd., Slatchwaite.
 Croftorhine Engineering Co., Reddish.
 Crook & Thompson, Blackburn.
 Cunningham Holiday Camp, I.O.M.
 Dartford Industrial Co-operative Society.
 Davies, A., Ltd., Manchester.
 Davies & Mason, Ltd., Birmingham.
 Denny, Wm. & Brothers, Ltd., Dumbarton.
 Derby Evening Telegraph.
 Derry's, Plymouth.
 Dickens & Jones, Ltd., London.
 District Bank, Spring Gardens, Manchester.
 Donovan & Co., Birmingham.
 Dorman Long & Co., Ltd., Middlesborough.
 Douglas James Esq., 4-Oaks, Birmingham.
 Drover, O. P., & Son, Ltd., Kettering.
 Dunlop Cotton Mills, Rochdale.
 Dunlop Rim & Wheel Co., Ltd., Foleshill, Coventry.
 Dunlop Rubber Co., Ltd., Fort Dunlop & Manchester.
 Earle Bourne & Co., Ltd., Birmingham.
 Eatoughs, Ltd., Earl Shilton.
 Eaves, T. A. & Co., Ltd., Birmingham.
 Eide, J., Esq., Bergen, Norway. (S)
 Elders Walker & Co., Ltd., Gateshead-on-Tyne (S)
 Electric Power Installations, London.
 Electroline Motors, London. (S)
 Empress Hall, Earl's Court, London.
 English Electric Co., Ltd., Preston. (S)
 Equitable Building Society, Bradford.
 Evans, G. & Sons, Leicester. (S)
 Ever-Ready Co., London.
 Evington Cinema, Leicester.
 Excelsior Wire Rope Co., Ltd., Birmingham.
 Excelsior Wire Rope Works, Cardiff.
 Fare Bros. & Co., Ltd., Leicester.
 Fairfield Shipbuilding & Eng. Co., Ltd., Govan.
 Fisher & Ludlow, Birmingham. (S)
 Forthvale Rubber Works, Stirling.
 Foulkes, A. D., Ltd., Birmingham.
 Frear's & Black's Bread Co., Leicester.
 Freeman, Hardy & Willis, Ltd., Leicester.
 Friends' Trust Corporation, London.
 Frisby, J., Ltd., Wells. (S)
 Fryer & Hartley, Ltd., Rochdale.
 Furness Shipbuilding Co., Ltd., Haverton on Hill on Tees.
 Galleries Lafayette, Ltd., London.
 Gardiner, Sons & Co., Bristol.
 Garner, James & Sons, Ltd., Bermondsey.
 Garrington, J. & Sons, Darlaston.
 General Electric Co., Ltd., Birmingham. (2 Install.).
 Gibson A. B., Ltd., Nottingham.
 Gimson & Co., Ltd., Leicester.
 Glasgow Co-operative Society.
 Glasgow New Cinema. (S)
 Golden Valley Paper Mills Ltd., Bristol.
 Grainger Cinema, Newcastle-on-Tyne.
 Grant & Son, South Shields.
 Greenwood & Co., Ltd., Leicester.
 Grieve, T. & Co., Ltd., Leicester.
 Grove Laundry Ltd., Walsall.
 Guard Bridge Paper Co., Ltd., Fife.
 Guest, Keen & Baldwins, Cardiff.
 Guest, Keen & Nettlefolds, Ltd., Newport, Mon.
 Gummed Paper Manufacturing Co., Ltd., Narborough.
 Haddon Hall, Derbyshire.
 Hall & Hall, Ltd., Hampton.
 Hall St. Metal Rolling Co., Ltd., Birmingham.
 Harvey, G. A. & Co., London.

Harvey, Jewellers, Paignton.
 Hawthorn Leslie & Co., Ltd., Newcastle-on-Tyne.
 Heenan & Froude, Ltd., Worcester. (S).
 Henry, A. & S., Manchester.
 Herbert Morris, Ltd., Loughborough.
 Hodgson, I. A. & Co., Ltd., Newcastle.
 Hoffman Manufacturing Co., Essex.
 Holcroft Steel Co., Ltd., Bliston.
 Hollins, Wm. & Co., Ltd., Pleasley.
 Holloway Bros., London.
 Holt & Willets, Ltd., Cradley Heath.
 Home Brewery, Daybrook, Notts.
 Horton & Garrett, Birmingham.
 Houghtons, Birmingham.
 Huddersfield Industrial Society, Ltd.
 Hudson, J. & Co., Birmingham.
 Hunt & Winterbottom, Dursley.
 I.C.I., Ltd., Alkali, Cornwall. (S)
 I.C.I. Ltd. (Fertilizer & Synthetic Products), Billingham.
 I.C.I. Ltd., New Research Block, Manchester.
 I.C.I. Metals Ltd., Smethwick.
 I.C.I. Metals Ltd., Witton, Birmingham.
 Iliffe & Sons, Ltd., Publishers, London.
 India Tyre & Rubber Co., Ltd., Inchinnan.
 International Biscuit Co., Ltd., Manchester.
 International Holidays & Investment Co.
 Ioco Rubber & Water-proofing Co. Ltd., Glasgow
 Iron Trades House, London.
 Jackson, H. D., Buckle Co., Ltd., Walsall.
 James, A. & Co., Bristol.
 Jenner & Co., Ltd., Birmingham.
 Joblin, J. A. & Co., Ltd., Sunderland.
 Johnson, Ben & Co., York.
 Johnson, Joseph & Co., Ltd., Leicester.
 Johnson & Barnes, Ltd., Leicester & Stapleford.
 Johnson & Tanner Ltd.
 Jones & Attwood, Ltd., Stourbridge.
 Kempton Park Racecourse.
 Kendall & Son, Ltd., Liverpool.
 Kettering Industrial Society.
 Kettering Co-operative Clothing Society.
 Knupfer Bros., Salford.
 Kynoch, Ltd., Birmingham. I.C.I. Metals, (4 Install.).
 Laird & Co., Ayrshire.
 Lansdowne House Club, London.
 Larmuth & Bulmer, Ltd., Salford.
 Laycock Engineering Co., Ltd., Sheffield. (S)
 Lea Recorder Co.
 Leeds Provincial Building Society.
 Lees Paper Staining Co., Ltd., Oldham.
 Legge, J. & Sons, Ltd., Willenhall.
 Leather Cloth Co., London.
 Leicester Co-operative Society, Braunstone, Leicester Mail, Leicester.
 Leicester Mercury, Leicester.
 Leicestershire Club, Leicester.
 Lennards Shoe Factory, Bristol.
 Lewis, J. B. & Sons, Ltd., Nottingham.
 Lewis, John, Ltd., London.
 Lewsbury Club, Teddington, Middlesex.
 Linoleum Co., Ltd., Staines.
 Lister, H. & Sons, Ltd., Pudsey.
 Lloyds Bank, Ltd., Leicester. (S)
 Lloyds Bank, Paignton.
 Lobnitz & Co., Renfrew.
 Longmore Bros., Darlaston.
 Macintosh & Co., Ltd., Manchester.
 Madame Tussaud's, Baker Street, London.
 Maidenhead Golf Club.
 Marconi-Eko Instruments, Southend-on-Sea. (S)
 Mardon, Sons & Hall, Ltd., Bristol.
 Marston, J. (I.C.I.) Wolverhampton.
 Marston Valley Brick Co. Ltd., Lidlington, Beds.
 Martin Black & Co., Ltd., Coalbridge. (S)
 Martin's Bank, Ltd., London & Liverpool.
 Manchester & Salford Equitable Co-operative.
 Mason, Geo. & Co., Birmingham.
 Mather & Platt, Ltd., Manchester.
 Matthews, J., Esq., Stourton Court, Stourbridge.
 McWhirter Ltd., Cardiff.
 Measurement, Ltd., London.
 Merry & Minton, Ltd., Birmingham.
 Merry, T. & Co., Birmingham.
 Metal Agencies, Bristol.
 Metallic Seamless Tube Co., Ltd., Birmingham.
 Metro-Vick New Aircraft Wks., M'chester. (S)
 Mid-Southern Utility Co., Aldershot.
 Midland Electric Manufacturing Co., Ltd., Birmingham, (2 Install.).
 Midland Woodworking Co., Ltd., Melton Mowbray.
 Mitchells & Butlers, Ltd., Bir'mham (2 Install.).
 Mitchell, J. & W., Ltd., Birmingham.
 Mobbs & Lewis, Ltd., Kettering.
 Model Laundry, Fordingbridge.
 Mole & Son, Ltd., Birmingham.
 Mond Nickel Co., Ltd., Swansea.
 Monochrome, Ltd., Redditch. (S)
 Moore & Osborne, Hinckley.
 Morgan, G., Ltd., Selly Oak, Birmingham.
 Morley, T. & Sons, Leicester.
 Moscow Fur Trading Co., London.
 Mowbray, A. R. & Co., Ltd., Oxford.
 Murray, C. P. & Co., Ltd., Leeds.
 N.A.T.S.O.P.A., London (2 Install.).
 Napier, D. & Son, Ltd., Acton, London.
 National Deposit Friendly Society, Ltd., London
 National Provincial Bank, London.
 Nelson's Silk Ltd., Leeds.
 New Merton Board Mill, Ltd., London.
 Newton & Co., Ltd., Salford.
 Nitrogen Fertilizers, Ltd., Scunthorpe.
 Northfield Cinema, Birmingham.
 Novabax, Ltd., London.
 Northern Coachbuilders, Ltd., Newcastle.
 Northern Press, Ltd., S. Shields.
 Odhams Press, Ltd., London.
 Oram Brothers Ltd., Nuneaton.
 Overseas League, London.
 Patehorpe, J., Esq., Blakelawn.
 Palfreyman, F. J. & Co., Leicester.
 Parker, Winder & Achurch, Ltd., B'ham (Flats).
 Partridge, Wilson & Co., Ltd., Leicester.
 Pasoldi, Ltd., Langley. (S)
 Pattroiuex, J. F., Ltd., Manchester.
 Pearce, W. & Co., (Northampton) Ltd. (S)
 Peck, H. T. H., Ltd., Leicester.
 Perry & Co., Ltd., Lancaster St., Birmingham.
 Phyllis Earle, Ltd., Dover St., London.
 Pirie, Appleton & Co., Ltd., Chadwell Heath.
 Platt Bros. & Co., Ltd., Oldham.
 Plaza Picture House, Swansea.
 Pollard & Co., Ltd., Leicester.
 Pontifex & Co., Ltd., Birmingham.
 Premier Clothing Co., Swansea.
 Preston North End Football Ground.
 Prices (Tallors) Ltd., Leeds.
 Princes Golf Club, Sandwic.
 Provident Clothing & Supply Co., Ltd., Bradford.
 Purnell & Son, Paulton, Bristol.
 Pye, Ltd., Cambridge.
 Queen's Hall Cinema, Newcastle-on-Tyne.
 R. M. P. Co., Birmingham.
 Rae Arnot Co., Cupar, Fife.
 Ramsbottom, J. S. & Co., Ltd., Keighley.
 Ratcliffe Aerodrome, Leicester.
 Regent Cinema, Leyland, Lancs.
 Reid & Sons, Ltd., Newcastle-on-Tyne.
 Reynolds Rolling Mills Ltd., Oldbury.
 Reyrolle, A. & Co., Ltd., Hebburn-on-Tyne.
 Richards, Ltd., Aberdeen.
 Richardson & Co., Chemical Mfrs., Leicester.
 Ringtons, Ltd., Newcastle-on-Tyne (2 Install.).
 Ritchie, James & Sons, Edinburgh.
 River Plate House, London.
 Robinson, E. S. & A., Ltd., Bristol.
 Rodham, Dent & Son, Ltd., Middlesbrough.
 Rootes Securities Ltd., Coventry.
 Roper Bros., Dublin.
 Rossiter, G., Teignmouth.
 Rothwell, F., Ltd., Rochdale. (S).
 Rouse, Bros., Keighley.
 Rowley, R. & Co., Ltd., Leicester.
 Royal Liver Friendly Society, Liverpool.
 Royal Mail Steam Packet Co., Ltd., London.
 Rugby Football Union, Twickenham.
 Rylands & Sons, Ltd., Manchester.
 Sandil's Manor, Fordingbridge.
 Satchwells, Ltd., Birmingham.
 Saunders, Phillips & Co., Ltd., London.
 Scottish Automobile Club, Glasgow.
 Scottish Daily Express, Glasgow.
 Scribbans & Co., Ltd., Smethwick, B'ham.
 Scribbans & Co., Ltd., Hockley, Birmingham.
 Scribbans, J., Esq., Little Aston Hall, B'ham.
 Seven Kings Laundry.
 Shaw, M. & Sons, Huddersfield.
 Shaw, A. & Co., Ltd., Willenhall.
 Shaw Foundry, Ltd., Willenhall.
 Short Bros., Rochester.
 Shield Laundry, Bristol.

"PUL-SYN-ETIC" SYSTEM.

OTHER PROMINENT USERS—continued

Shields Daily News Office.
 Shields Ice & Cold Storage Co., Ltd., N. Shields.
 Siddons, J. & J., Ltd., West Bromwich.
 Smedley, John, Ltd., Lea Mills, near Matlock.
 Smith, W. H. & Sons, Gloucester.
 Southall Bros. & Barclay, Ltd., Birmingham.
 South British Insurance Co.
 South Durham Steel & Iron Co., Stockton-on-Tees.
 South Staffs. Permanent Building Society, Wolverhampton.
 South Suburban Co-op Society, Redhill.
 South Wigston Laundry.
 Spratts Patent Ltd., London.
 St. Anne's Board Mills, Bristol.
 St. Thomas' Club, Birmingham.
 Standard Building Society, N. Shields.
 Standard Telephones & Cables, Ltd.
 Staveley Iron & Coal Co.
 Steel & Busks, Ltd., Leicester.
 Steel Parts Ltd., West Bromwich.
 Steel Radiators Ltd., Southall.
 Stewarts & Lloyds, Ltd., Corby (2 installations).
 Sumriles, C. & M., Ltd., Leeds.
 Sunray Dyeing Co., Leicester.
 Sun-Life Assurance of Canada, London.
 Sun Engraving Co., Ltd., London.
 Swindon & Sons, Birmingham.
 T.U.C., Transport House, London.
 Taylor, Yielding & Co., Ltd., Birstall.

Taylor, D. F. & Co., Ltd., Birmingham.
 Taylor, J. & Co., Loughborough.
 The New Library, Orange Street, London.
 The Times Publishing Co., London.
 Thompson Bros., Bilton.
 Thompson & Norris, Ltd., London.
 Thrift Stores, Leeds.
 Thrissell Engineering Co., Ltd., Bristol.
 Tileman & Co., Ltd., London.
 Tiles, R., Ltd., Tunstall.
 Toon, J. & Sons, Earl Shilton.
 Tomkinsons, Ltd., Kidderminster.
 Tottenham Court House, London.
 Trickets, Sir H. W., Ltd., Waterfoot.
 Triplex Foundry, Tipton.
 Triplex Safety Glass Ltd., Birmingham.
 Trocadero Cinema, Leicester.
 Tube Equipment, Ltd., Oldbury.
 Tubes, Ltd., Birmingham.
 Tucker, Eyelet Co., Ltd., Birmingham.
 Tunnel Cement (Pitstone) Ltd.
 Turner Bros. Asbestos Co., Ltd., Rochdale.
 Tyler & Freeman, London.
 Ulster Weaving Co., Ltd., Belfast.
 Union Club, Birmingham.
 United States Metallic Packing Co., Ltd., Bradford. (S)
 United Welsh Mills, Cardiff.
 Universal Woodworking Co., Ltd., B'ham.
 Valor Ltd., Birmingham.

Veritys, Ltd., Aston.
 Vernon's Pools, Aintree (2 Ins.).
 Vickers-Armstrongs Ltd., Barrow-in-Furness.
 Vickers-Armstrongs Ltd., Naval Yard, Walker-on-Tyne.
 Wade & Co., Nottingham.
 Wales, Ltd., Birmingham.
 Walsall Conduits, Ltd., West Bromwich.
 Warwickshire Coal Co., Ltd., near Coventry.
 Wealdstone Court House, Wealdstone.
 Wellingborough Building Society.
 Wesleyan & General Assurance Society, Birmingham.
 Westminster Bank, Ltd., London.
 West, P., Esq., near Chester.
 West Yorks. Road Car Co., Keighley.
 Wiggins, Davies, Ltd., Birmingham.
 Wild & Co., Ltd., Leicester.
 Wilkes, J. Sons & Maplebeck, B'ham, (2 Ins.).
 Wilkinson & Warburton, Ltd., Leeds.
 Willmott, A., Esq., Weatheroak Hall.
 Willowbrook Motors, Loughborough.
 Wilson, J., & Sons, Birmingham.
 Wilson, Ltd., Grange Shed, Bradford.
 Wilts. & Somerset Savings Bank, Bristol.
 Windmill Club, Kettering.
 Windsor Cinema, Bearwood, Birmingham.
 Wolverhampton Steam Laundry.
 Woodward, H. & Son, Formby.
 Yote, Ltd., Four Oaks.
 Y.W.C.A., London.

SOME OVERSEAS INSTALLATIONS

AUSTRALIA.

Abbotsford Brewery, Melbourne.
 Adelaide Railway Station.
 Adelaide Electricity Supply Co., Ltd.
 Adelaide Town Hall.
 "Age" Office, Melbourne.
 Allcars Service Station, Sydney, N.S.W. (S)
 Blacks, Ltd., Adelaide. (S)
 Bolton, Geo., Dulwich, S. Australia. (S)
 Bryant & May, Match Factory, Richmond, Vic.
 Buckley & Nunn, Ltd., Melbourne.
 Cadbury, Fry & Pascall, Ltd., Tasmania.
 Camberwell Town Hall, Vic.
 Carlton's Hotel, Melbourne.
 Caulfield Racecourse, Vic.
 Central Railway Offices, Melbourne.
 Cessnock High School, N.S.W. (S)
 David Jones, Ltd., Sydney.
 Dimelow & Gaylard, Richmond, Vic.
 Fallick & Sons, Queanbeyan F.C.T. (S)
 Flemington Racecourse, Vic.
 Geelong Grammar School, Corio, Vic.
 Gerard & Goodman, Ltd., Adelaide. (S)
 Harbour Trust Offices, Devonport, Tas.
 Hydro-Electric Dept., Hobart, Tas.
 Inverell Municipal Council, Inverell. (S)
 M.L.C. Building, Sydney.
 Marine Board, Burnie, Tas.
 Marshall Boot Factory, Melbourne.
 Mayborough Railway Station, Vic.
 Melbourne Harbour Trust Offices, Vic.
 Mildura Town Hall, Vic.
 Milne & Co., Ltd., Adelaide. (S)
 Moonee Valley Racecourse, Vic.
 Moore's Department Store, Perth.
 Myers' Emporium, Melbourne.
 P.M.G. Department, Perth.
 Point Heathcote Hospital, Perth.
 Port Darwin Hotel.
 Post Office, Newcastle, N.S.W.
 Prest, Ltd., Port Pirie, S. Australia. (S)
 Richmond Town Hall, Vic.
 Royal Automobile Club, Sydney.
 Scott's Hotel, Melbourne.
 Soldiers' Memorial, Canterbury, Vic.
 Soldiers' Memorial, Young, N.S.W.
 South Australian Gas Co., Adelaide. (S)
 State Savings Bank of Victoria, Melbourne.
 Stratfield Town Hall, N.S.W. (S)
 Sydney Railway Station.
 "Sydney Morning Herald" Office, Sydney.
 Tamworth High School, N.S.W. (S)
 Thebarton, Town Hall.
 United Dental Hospital, Sydney.

CANADA.

Aluminium Company of Canada, Arvida, P.Q.
 Ash Signs, Inc., Montreal, P.Q.
 Ashbury College (Bell Program), Ottawa.
 Assumption Street School, Windsor.
 Atwater Market, Montreal, P.Q.
 Bank of Canada, Montreal, P.Q.
 Bank of Canada, Ottawa, Ont.
 Barrett & Co., Montreal, P.Q.
 Beaverbrook Residency, Fredericton, N.B.
 Bruck Silk Mills, Cowansville, P.Q.
 Canadian Broadcasting Corp., Montreal, P.Q.
 Canadian Celanese Ltd., Drummondville, P.Q.
 Canadian Copper Refineries, Montreal, E., P.Q.
 Canadian Marconi Co., Ltd., Montreal.
 Canadian National Railway Stn., London, Ont.
 Canadian National Railway Stn., St. John, N.B.
 City of Drummondville City Hall, P.Q.
 City of St. Hyacinthe Town Hall, P.Q.
 Claude Neon Gen. Advertising, Montreal, P.Q.
 Claude Neon General Advertising, Quebec.
 Club Laval sur le Lac, Laval sur le Lac, P.Q.
 Confederation Buildings, Ottawa, Ont.
 Department of Aviation, Montreal, P.Q.
 Department of Public Works, Ottawa, Ont.
 Distillers' Corporation, Ltd., Quebec.
 Dominion Textile Company, Magog, P.Q.
 Dominion Textile Company, Montreal, P.Q.
 Dupuis Freres, Ltd., Montreal, P.Q.
 Eastern High Schools, Toronto.
 Ecoles des Hautes Etudes Commerciales, Montreal, P.Q.
 Foxboro Ltd., Ville La Salle, P.Q.
 Frost & Co., Charles E., Montreal.
 Garden City Press, Gardenvale, P.Q.
 General Public Hospital, St. John, N.B.
 Gordon McGregor School, Windsor.
 Imperial Tobacco Co., Montreal, P.Q.
 Industrial & Education Co., Quebec.
 International Power & Paper, Newfoundland.
 Jarvis Collegiate, Toronto.
 Jewish General Hospital, Montreal.
 Kimberley Post Office, Kimberley, B.C.
 Kitchener & Waterloo Memorial Schools.
 Limoli Church, Limoli, Que.
 Lisgar Street Collegiate, Ottawa.
 Montreal City & District Savings Bank, P.Q.
 Montreal City Hall, Montreal, Que.
 Montreal Pharmacy, Montreal, P.Q.
 Mount Royal Hotel, Montreal, P.Q.
 Mount Sinai Sanatorium, Prelontaine, Que.
 Moncton General Hospital, Moncton, N.B.
 New Brunswick Electric Power Commission.
 New Brunswick Telephone, St. John, N.B.

CANADA—continued.

New Verdun High School, Verdun, P.Q.
 North End Chalet, Montreal, Que.
 Nu-Way Tobacco Shops, Montreal, P.Q.
 Post Office Departments, Ottawa, Ont.
 Post Office Departments, Quebec, P.Q.
 Post Office Departments, Toronto, Ont.
 Protestant Board of School Commissioners, Quebec, P.Q.
 Parliament Buildings, Ottawa.
 Provincial Normal School, Fredericton, N.B.
 Price Brothers, Ltd., Quebec, P.Q.
 Quebec Electric Power, Quebec.
 Queens School, Westmount, Que.
 Regent Knitting Mills, At. Jerome, P.Q.
 Robert Simpson Co., Ltd., Montreal.
 Rothesay Village, Rothesay, N.B.
 Royal Bank of Canada, Montreal, P.Q.
 Royal Bank of Canada, Quebec, P.Q.
 Senate, The, Ottawa, Ont.
 Shaar Hashomayim Synagogue, Montreal, P.Q.
 Sherwin Williams Co. of Canada Ltd., Montreal, P.Q.
 Simonds (Canada) Saw Co., Montreal, P.Q.
 St. Catherine's Collegiate, Toronto.
 St. Peter's Church, Shawinigan Falls, Que.
 Star Sign Company, Montreal, P.Q.
 Steel Company of Canada, Montreal, P.Q.
 Toronto Station, C.P.R.
 Town of Montreal East, (Town Hall), P.Q.
 Town of Mount Royal, (Town Hall), P.Q.
 Town Hall, Stellarton, N.S.
 Union Station, St. John, N.B.
 United Watch Repairs, Montreal, P.Q.
 University of N. Brunswick, Fredericton, N.B.
 Verdun Board of School Trustees, Verdun.
 Victor, T.C.A. Co. Ltd., Montreal, P.Q.
 Victoria School, Windsor.
 Williams, J.B. Co., Ltd., Montreal, P.Q.
 Wyandotte School, Windsor.
 Young Men's Hebrew Association, Montreal.

SOUTH AFRICA.

A.C.F. Camp, Snell Parade, Durban, S.A. (Mech.)
 African Oxygen & Acetylene (Pty) Ltd., Germiston.
 Athlone High School, Johannesburg (S)
 Barclay's Bank, Cape Town.
 Bremthurst School, Brakpan.
 Cape Times, Ltd.
 Cape Town Corporation.

"PUL-SYN-ETIC" SYSTEM.

SOME OVERSEAS INSTALLATIONS—continued

SOUTH AFRICA—continued

Central News Agency, Johannesburg.
Darragh House, Johannesburg. (S)
Ermelo Town Hall.
Gatooma Municipality, Gatooma, Rhodesia (S)
Germiston Sewage Disposal Works.
Goldfields Native Hospital, Sub Nigel.
Grey Institute High School.
Hostel, Pietersburg.
Jeppé Railway Station, Johannesburg.
Johannesburg Central Fire Station.
Johannesburg, New G.P.O.
Johannesburg, New Public Library.
Johannesburg Rosebank Fire Station.
Johannesburg Tramway Offices.
Lewis & Marks Buildings, Johannesburg.
Liberan Native Hospital.
Matabelo Clothing Factory, Bulawayo (S)
Mayfair Railway Station, Johannesburg.
Murenzburg Railway Station.
New Lion Match Factory, Johannesburg.
Pietersburg Municipality, Natal, S.A.
Police Barracks, Bloemfontein (S)
Postmaster General, Cape Town.
President Brand School, Brakpan.
Pretoria, New City Hall.
Pretoria Railway Station.
Pretoria Union Buildings.
Rand Airport, Johannesburg.
Randjeslaagte Jubilee Memorial, Johannesburg.
Rhodesia Railways, Ltd., Umtali, S.A.
Roan Antelope Copper Mines, Ltd., Bulawayo (S)
S.A. Township, Mining & Finance Co., Ltd., Johannesburg.
South Africa Railways.
South African Iron & Steel Industrial Corp., Ltd., Pretoria. (S)
Stewarts & Lloyds S.A. Ltd., Johannesburg (S)
The Nigel Gold Mining Co., Ltd., Nigel.
Victoria Fall & Transvaal Power Co., Ltd. (S)
Y. W. C. A., Johannesburg.
Z.A.S.M. House, Pretoria. (S)

NEW ZEALAND.

Ballantyne, J. & Co., Ltd., Christchurch.
Bryant & May, Bell & Co., Wellington.
Christchurch Jubilee Tower.
Colonial Mutual Life Assurance, Auckland.
Colonial Mutual Life Assurance, Wellington.
Cox, Geo. E., Wellington.
"Dominion" Building, Wellington.
Dunedin Railway Station.
"Evening Post" Building, Wellington.
"Evening Star," Dunedin.
Gisborne Borough Council.
Hastings Borough Council.
Hawera Public Hospital.
Hobsonville Aerodrome. (S)
Howden, H. H., Hamilton.
Invercargill Railway Station.
Kelburn Railway Co., Wellington.
Kingseat Hospital, Auckland. (S)
Lewisham Hospital, Wellington.
Napier Borough Council.
Napier Telephone Exchange.
Nelson Harbour Board.
New Brighton Borough Council.
Ohakea Aerodrome, Palmerston. (P & S)
Petone Borough Council Chambers.
Pidgeon, F. W. & Co., Ltd., Christchurch.
Piny, F. J., Ltd., Piano Merchants, Wellington.
Post Office, Invercargill.
Post Office, Napier.
Post Office, Palmerston North.
Post Office, Tauranga.
Post Office, Thames.
Prudential Assurance Co., Wellington.
Railway Workshops, Auckland.
Railway Workshops, Christchurch.
Railway Workshops, Dunedin.
Railway Workshops, Wellington.
Ratana Pa, Ratana. (S)
St. Patrick's College, Heretaunga.

NEW ZEALAND—continued

St. Patrick's College, Silverstream.
Sumner Borough Council.
Timaru Public Hospital.
Trentham Racecourse.
Union Steamship Co., T.V.S. Rangatira.
University of Otago, Dunedin.
Waipukurau Borough Council.
Wanganui City Council.
Wellington Centennial Exhibition.
Wellington Municipal Mills Depot.
Wellington Public Hospital.
Wellington Public Trust Office.
Wellington Publishing Co. ("The Dominion").
Wellington Technical College.
Wellington Tramways Overhead Dept.
Wellington Tramways Workshops.
Whenuapai Aerodrome. (P & S)
Whitcombe & Tombs, Ltd., Christchurch.
Whitcombe & Tombs, Ltd., Wellington.
Wigram Aerodrome, Christchurch.
Yorkshire Insurance Co., Auckland.

DIPLOMA 1929
INDIA
Abbassia Chest Hospital.
Abbassia Technical School.
Abdine Courts.
Assiut Station, Upper Egypt.
Atf Pumping Station, (S)
Cairo City Fire Brigade.
Central Post Office, Cairo.
Dawawin Post Office, Egypt.
Egyptian State Broadcasting, Cairo
Fouad 1er Hospital.
Gordon School, Kilkis, Egypt.
H.M. Post Guard, Abdine.
Heliopolis Sporting Club.
Ministry of Justice.
Ministry of Public Health.
Mixed Courts.
Montazah Palace, Alexandria.
Parliament House and Senate.
Physical Department, Cairo.
Public Library, Cairo.
Public Works Ministry.
Tanta Station, Lower Egypt.
Twelve Squares in Cairo.
Zoo.

EGYPT

SPAIN.

Barcelona General Omnibus Co.
Barcelona Terminal Station, M.Z.A. Rail way.
Barcelona Tramways (Workshops).
Compania Nacional de Explosivos, Cardona.
Hotel Ritz, Barcelona.
Orfelinato Ribas (Orphan's School, Barcelona).
Plaza Espana Station, Ferrocarriles Catalanes.
Port-Bou Frontier Station, M.Z.A. Railway.
Puigcerda Station, Northern Railway.
KENYA COLONY.
Kenya Omega War Memorial.
Kenya Government.
Korda Mosque.
Nairobi Municipal Market.
Nakuru School.
Prince of Wales School.
Standard Building.
Stanley Hotel, Nairobi.
Tanganyika Government.

STRAITS SETTLEMENTS.

Govt. of Johore Electrical Dept., Johore Bahru.
Hume Pipe (Far East) Ltd., Singapore.
Public Works Department, Singapore.
Singapore Turf Club.
Straits Settlements Police Barracks, Singapore.
The General Post Office, Singapore.
The Mental Hospital, Singapore.
United Engineers, Ltd., Singapore.

OTHER OVERSEAS INSTALLATIONS

Admiral Simpson, Valparaiso, S.A.
Anglo-Iranian Oil Co., Ltd., Abadan.
Archaeological Museum, Jerusalem.
Barbados Electric Supply Corp. (P & S)
Ceylon Turf Club, Colombo.
Ge. Southern Railway, Buenos Aires.
Lourenco Marques Station, East Africa.
Nuwara Eliya Racecourse, Colombo.
Oy. E. Sarlin, A.B. Helsingfors.
United Oilfields Trinidad.