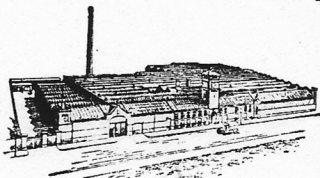


**WATCHMAN'S**  
**ELECTRIC TELL-TALE**  
**CLOCKS**

**GENTS'**  
**OF LEICESTER**  
ESTAB. 1872

# "TANGENT" ELECTRICAL PRODUCTS

BELLS AND BUZZERS (Wood and Bekelite-Cased).  
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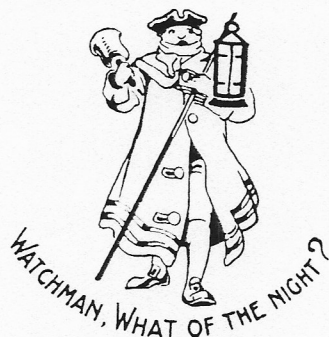
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# TANGENT WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

For Checking Movements of NIGHT WATCHMEN in Warehouses, Factories, Mills, Hotels, etc., and for assuring the strict attention to duty of NIGHT NURSES and ATTENDANTS in Mental Hospitals, Poor Law Institutions, etc.



## FIGURE No. INDEX

Fig. No.	Page	Fig. No.	Page	Fig. No.	Page	Fig. No.	Page
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1132.....	14	4775A.....	8	4785.....	11	4792.....	11 & 13
1459.....	14	4776.....	8	4786.....	10	4800.....	13
4770.....	6	4776A.....	8	4790.....	10 & 13	Diagram T.T.3. ...	11
4771.....	7					Diagram T.T.5. ...	12

## TERMS AND CONDITIONS OF SALE

**THIS LIST CANCELS ALL PREVIOUS ISSUES**, and is subject to alteration without notice.

**THE ILLUSTRATIONS** show generally the appearance of the respective articles, but instruments may vary from the illustrations as improvements and alterations occur.

**CARRIAGE.** We pay carriage, at goods rate, on orders of the net value of £3 and upwards for delivery in England, Scotland, Wales, Northern Ireland, and to Dublin Quay. This applies to all articles except Insulators and Ironwork, Leclanche Cells, Lead-covered Cables and Iron Wire, which are despatched carriage forward, unless specially quoted for carriage paid. Supplies despatched by passenger train are sent carriage paid, the amount being charged on the invoice.

**PACKING AND CASES** are charged for, but full value is allowed for empties returned, if received in good condition, carriage paid and previously advised, within 14 days from delivery of goods. Half-price allowed for Empties kept by customers. Packing Cases made specially, as for bulky articles, not returnable.

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**TIME OF DELIVERY** is always reckoned from the date at which all particulars necessary are in our hands for executing the work. Promises are subject to the usual Strike and Accident Clauses.

**GUARANTEE** All apparatus is carefully examined and tested before leaving the works, and is sent out in perfect order and condition. We, therefore, give the following Guarantee which takes the place of any Guarantee implied by Statute, common law or otherwise:—

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.

# TANGENT

## WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

### DRY-INK MARKING

#### DESCRIPTION OF SYSTEM

For the past fifty years we have specialised in the manufacture of Electric Tell-Tale Clocks, during which period we have made and fixed such apparatus for public bodies, industrial concerns and private individuals in all parts of the world, and on page 16 we give a selected list of such installations.

**WE DEFY ANYBODY TO FALSIFY THE RECORDS**, as the interested parties never approach the Recorder, but merely operate electric contacts, or their equivalent, in various parts of the building. This closes the electrical circuit and causes the Recorder to operate and to impress an indelible record of the time and place on the chart.

The method of wiring is extremely simple, being in all respects the same as that required for an ordinary system of electric bells with an indicator, see diagrams on pages 11 and 12, and also page 9.

The Patent Dry-Ink Marking Clocks herein described, represent the embodiment of all the improvements and modifications that fifty years of their manufacture can suggest, and are offered as perfect examples of such apparatus. The Clock consists of a bold first-class English eight-day movement, (alternatively of our Electric Impulse Movement, or if Time Controlled A.C. is available, of our Synchronous Motor), which drives a cylinder or cylinders, 3 inches in diameter, on which is fixed by easily operated clips, a paper record sheet with the hours of the day and names of the stations marked thereon.

Behind the cylinder, and running parallel with its axis are the Markers, the number of these, also the length of the Cylinder, depending upon how many stations it is desired to communicate from. Each Marker is operated by an electro-magnet, so connected that when a comparatively weak current from a battery or other source of low voltage supply is passed through its coils, it moves forward and strikes the record sheet on the cylinder.

Between the markers and the cylinder is an ink ribbon which is so fixed that every time a marker strikes, a clear indication is printed on a record sheet opposite the name of station which controls the marker, and in the hour space corresponding with the time of operation.

After each night's work, the printed record is removed and a clean one put in. To make this change, the cylinder is pulled forward and removed from the case, and in re-placing it, by an automatic patented arrangement, a fresh surface of ink ribbon is given to each marker, thereby ensuring a distinct and clear printing for each night's work.

The whole apparatus is mounted in a highly polished hardwood case, with three sides glazed, and of such an appearance and design as to make a handsome ornament to the office, study or position where fixed. The cases are made in Oak, Mahogany, Teak or Walnut to suit existing furniture.

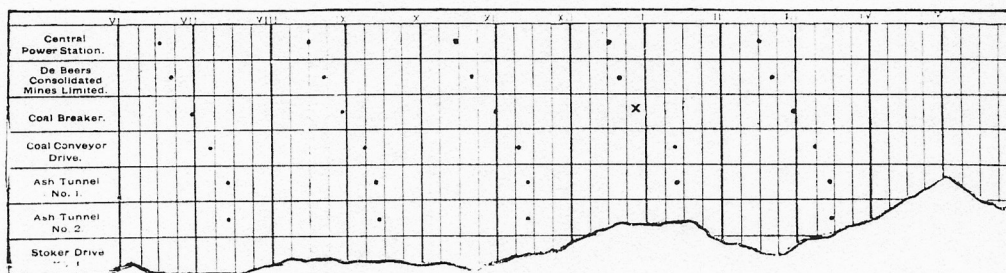
Records for 3, 5 or 7 days can be arranged for, but are not often required, it being found desirable to check the marking and deal day by day with any default.

# TANGENT WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

## DRY-INK MARKING

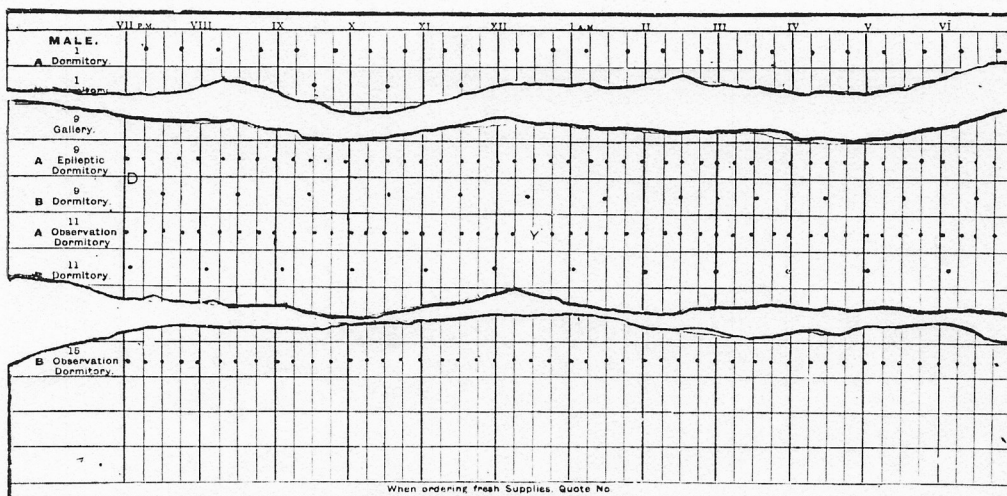
DESCRIPTION OF SYSTEM—*continued.*

### THE RECORD SHEET



The two illustrations here are photographic reproductions from actual records. From the one above, it will be noticed how clearly the movements of the night-watchman can be traced. It will be seen how he started his first round at 6-30, and subsequently made four other rounds at intervals of about two hours. He failed to mark the third station on his 12-30 round, see point "X," for which omission he had to give account when the record was examined next morning.

The record below is from a clock fixed in a Hospital. It will be noticed that some Dormitories peg every hour, others every half-hour, and some, notably the Epileptic and Observation Dormitories, record every quarter-hour. Station II, "Observation Dormitory," failed to peg at 12-30, see point "Y." The attendant or nurse has to give an explanation to the medical superintendent or superior officer in the morning.



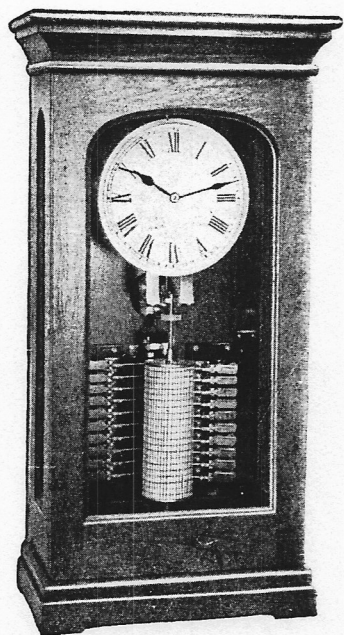
# TANGENT

## WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

### DRY-INK MARKING

**FIG. 4770 WATCHMAN'S CLOCK, SINGLE BARREL.**

Substantial solid hardwood case, three sides glazed, hinged front fitted with secure three-lever lock, separate terminal board in pediment at top of case. Cylinder 3-in. diameter, revolving once in 12 hours, fitted with clips and guides for mounting charts. Length of cylinder to suit number of stations. Cylinder driven by heavy hand-made English 8-day clock. Movement and mechanism surmounted with 9-in. enamelled dial as shown. The Markers operated by efficient double-pole electro-magnets with automatic device for ensuring clear and distinct markings on chart. The whole highly finished and designed generally in accordance with illustration. Where an electric clock system exists, or where Time Controlled A.C. is available, electric movements can be fitted to operate the hands and cylinder instead of the mechanical movement shown.



**FIG. 4770.**

**FIG. 4770 SINGLE BARREL PATTERN.**

PRICES, each :—

3 Stations	..	£32 - 0 - 0	Code word : zibiz (E)
4 "	..	£34 - 0 - 0	Code word : zibob
5 "	..	£36 - 0 - 0	Code word : zibuc
6 "	..	£39 - 0 - 0	Code word : ziewt
8 "	..	£41 - 0 - 0	Code word : zifab
10 "	..	£44 - 0 - 0	Code word : zibwa
15 "	..	£54 - 0 - 0	Code word : zibye
20 "	..	£60 - 0 - 0	Code word : zicay
25 "	..	£65 - 0 - 0	Code word : zicco
30 "	..	£70 - 0 - 0	Code word : zicez
35 "	..	£75 - 0 - 0	Code word : zifba
40 "	..	£80 - 0 - 0	Code word : zicib
45 "	..	£85 - 0 - 0	Code word : ziffo
50 "	..	£90 - 0 - 0	Code word : zifhy
55 "	..	£95 - 0 - 0	Code word : zifid
60 "	..	£100 - 0 - 0	Code word : zifof

For intermediate sizes use Code word : zicoc  
followed by number of stations.

Charts not included in above prices, see page 9.

Watchman's Tell-Tale Clocks can be arranged for charts to carry over 3, 5, or 7 days to meet holiday intervals in works or where desirable.

Prices on application.

For Contact Boxes, see pages 10 and 11.

For Diagram of Connections, see pages 11 and 12.

# TANGENT

## WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

### DRY-INK MARKING

#### FIG. 477I WATCHMAN'S CLOCK, TWIN BARREL.

Substantial solid hardwood case, three sides glazed, hinged front, fitted with secure three-lever lock, separate terminal board in pediment at top of case. Cylinders 3-in. diameter, revolving once in 12 hours, fitted with clips and guides for mounting charts. Length of cylinders to suit number of stations. Cylinders driven by heavy hand-made English 8-day clock. Movement and mechanism surmounted with 9-in. enamelled dial, as shown. The Markers operated by efficient double-pole electro-magnets with automatic device for ensuring clear and distinct markings on chart. The whole highly finished and designed generally in accordance with illustration. Where an electric clock system exists, or where Time Controlled A.C. Current is available, electric movements can be fitted to operate the hands and cylinders instead of the mechanical movement mentioned above.

#### FIG. 477I TWIN BARREL PATTERN.

PRICES, each :—

50 stations	£116 - 0 - 0	Code word	..	zicud (E)
60 „	£132 - 0 - 0	Code word	..	zicya
70 „	£148 - 0 - 0	Code word	..	zicze
80 „	£164 - 0 - 0	Code word	..	zidaz
90 „	£176 - 0 - 0	Code word	..	zidbe
100 „	£188 - 0 - 0	Code word	..	ziddo

For intermediate sizes use Code word : zideb,  
followed by number of stations.

Charts not included in above prices, see page 9.

Watchman's Tell-Tale Clocks can be arranged for charts to carry over 3, 5 or 7 days to meet holiday intervals in works or where desirable. Prices on application.

For Contact Boxes, see pages 10 and 11.

For Diagram of Connections, see pages 11 and 12.

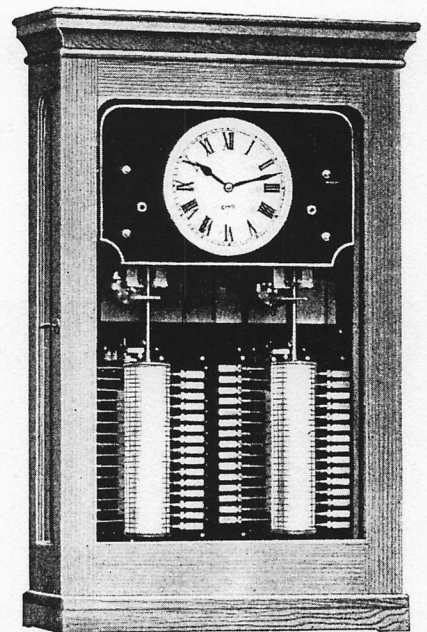


FIG. 477I

# TANGENT

## WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

### DRY-INK MARKING

#### PEDESTAL CABINETS FOR RECORDS AND BATTERIES

##### FIG. 4775.

Heavy hand-made Pedestal Cabinet for Twin Cylinder Clocks, in solid hardwood teak, mahogany, walnut or oak with double doors framed and panelled, with shelves for holding flat "used" and "unused" record sheets and receptacle for battery. Dimensions to suit requirements of clock and record sheets.

PRICE, each	..	£14 - 10 - 0 (E)
Code word	..	zidgy

##### FIG. 4775A.

As Fig. 4775, with top, front and doors of solid hardwood, but with sides and body of canary wood, stained and polished to match.

PRICE, each	..	£12 - 10 - 0 (E)
Code word	..	zidic

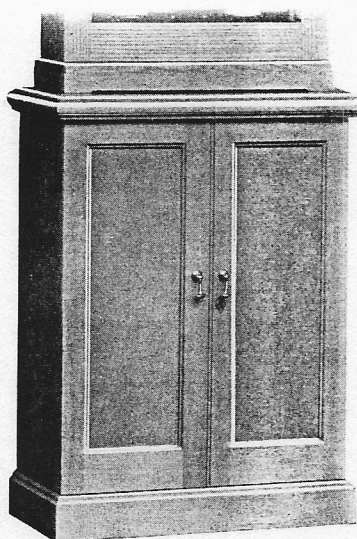


FIG. 4776 CABINET.

##### FIG. 4776.

Heavy hand-made Pedestal Cabinet, for single cylinder clocks, in solid hardwood with single door framed and panelled. Shelves for holding flat "used" and "unused" record sheets and receptacle for battery. Dimensions to suit requirements of clock and record sheets.

PRICE, each	..	£11 - 0 - 0 (E)
Code word	..	zidod

##### FIG. 4776A.

As Fig. 4776, with top, front and door in solid hardwood, but with sides and body of canary wood, stained and polished to match.

PRICE, each	..	£9 - 0 - 0 (E)
Code word	..	ziduf

*Batteries and Charts are not included in the above prices.*

The Cabinets referred to on this page are made in our own shops by skilled cabinet makers. They are not roughly made articles produced at a cheap price, but are in keeping with the cabinets of the clocks shown on preceding pages.

*Cheaper Cabinets are supplied and can be quoted for on receipt of particulars.*

# TANGENT

## WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

### DRY-INK MARKING

#### RECORD SHEET

	V	VI	VII	VIII	IX	X	XI	XII	I	II	III	IV	V
Central Power Station.	*			*			*			*			*
De Beers Consolidated Mines Limited.	*			*			*			*			*
Coal Breaker		*		*			*			*			*
Coal Conveyor Drive.		*		*			*			*			*
Ash Tunnel No. 1.		*		*			*			*			*
Ash Tunnel No. 2.		*		*			*			*			*
Stoker Drive		*		*			*			*			*

We have paid great attention to the manufacture of our Charts, and have succeeded in producing an exceedingly accurate article. Too much importance cannot be attached to these records, and the paper upon which they are printed is a specially non-absorbent type with all the spacing accurately set out to meet the requirements of each installation.

When ordering a supply of charts, in the first instance a list of the stations should be given as well as the time of commencing the record on the chart. Repeat orders for fresh quantities of charts need only be accompanied by the reference number printed on the original batch.

#### PRICES OF CHARTS

ONE COLOUR.

					In lots of 250	In lots of 500
5 Station	...	...	...	...	£2 - 5 - 0	£2 - 10 - 0 (E)
10 "	...	...	...	...	£2 - 16 - 0	£3 - 0 - 0
15 "	...	...	...	...	£3 - 0 - 0	£3 - 8 - 0
20 "	...	...	...	...	£3 - 4 - 0	£4 - 0 - 0
30 "	...	...	...	...	£4 - 0 - 0	£5 - 8 - 0
40 "	...	...	...	...	£4 - 8 - 0	£6 - 17 - 0
50 "	...	...	...	...	£5 - 2 - 0	£8 - 10 - 0

#### FIXING AND WIRING

The Clock should be placed upon a pedestal, which should stand firmly on an even floor, and the pedestal should be levelled up with a spirit level.

It is then still advisable to secure the top of the clock case to the wall behind, so as to ensure absence of movement, otherwise the instruments may be pushed out of plumb during cleaning or dusting of the room.

Only the ordinary carefulness of an intelligent workman is needed to ensure perfect operation both of clock mechanism and electrical movement.

#### WIRING.

The wiring for a Tell-Tale installation may be carried out in 250 volt class or grade cable, say 1/.044 or 3/.029 if preferred. On the other hand, the current and voltage is so small that 20 gauge I.R.D.C.C. or vulcanised Bell Wire is actually quite suitable—the latter should be used if conduit is employed. For diagram of wiring, see pages 11 and 12.

#### BATTERY.

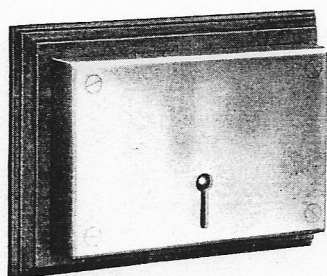
The battery may consist of Leclanche or dry cells. If the former, three-pint size are recommended. If the latter, any dry cell of good quality may be used. The Marker movements are tested with two cells (3 volts) on the test bench. Six volts should be available at the terminals of the markers when in use. To this end, on lines of usual length in an institution, eight to ten cells are generally employed, as there is no objection to a comparatively strong current passing through the coils of the markers. If A.C. or D.C. Supply Mains are available, these may be employed to replace the battery. In the case of A.C., a small transformer is necessary—see page 14. With a D.C. Supply, twin accumulators and a trickle charger. Prices upon application.

# TANGENT WATCHMAN'S ELECTRIC TELL-TALE CLOCKS DRY-INK MARKING

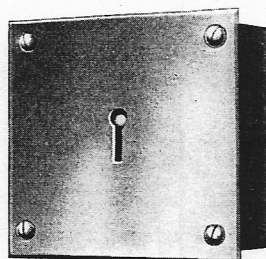
## CONTACT BOXES

In some instances ordinary electric bell pushes are used for making contact, but as these, particularly in Mental Hospitals, etc., are liable to be used by un-authorised persons, pushes in Lock-up Boxes, or contacts operated by a Key and termed "Lock Boxes," are generally used. All the Boxes here illustrated are suitable for up to 24 volts.

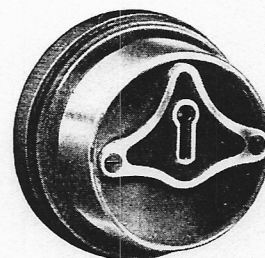
**FIG. 4786** and **FIG. 4790** are the patterns usually adopted, and where desired, the key-way can be made to fit the usual attendant's key in Hospitals, etc., or one of the keys carried by the watchman in works, factories and warehouses.



**FIG. 4786** SURFACE  
FIXING



**FIG. 4786** SUNK  
FIXING



**FIG. 4790** SURFACE  
FIXING

### **FIG. 4786 CONTACT BOX.** RECTANGULAR INDOOR PATTERN.

On solid hardwood rectangular base with heavy cast brass cover, machined finished and lacquered. Internal mechanism substantially made with heavy gold-silver contacts and entirely insulated from cover and key.

Approx dimensions, 5-in. x  $3\frac{1}{2}$ -in. x  $1\frac{1}{4}$ -in.

PRICE, each	..	20 -	(E)
Code word	..	zidyg	

Available also—as illustrated above—for sunk fixing in cast-metal conduit box, with overlapping bronzed brass front plate.

Approx dimensions of Front Plate—4½-in. x 4½-in.

PRICE	...	20 -	(E)
Add sunk to Code word			

### **FIG. 4790 CONTACT BOX.** CIRCULAR DOOR PATTERN.

On solid hardwood circular base, with wrought brass cover and cast brass escutcheon. All machined finished and lacquered. Internal mechanism substantially made with heavy gold-silver contacts and entirely insulated from cover and key.

Approx. diameter,  $3\frac{3}{4}$ -in.

PRICE, each	..	14/-	(E)
Code word	..	zidza	

Available also—as illustration on page 13—for sunk fixing in circular cast-metal terminal conduit box, with overlapping bronzed brass front plate,  $3\frac{3}{4}$ -in. in diameter.

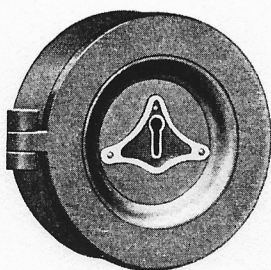
PRICE	...	14/-	(E)
Add sunk to Code word			

*Any of the foregoing Contact Boxes can be made to fit Attendant's Ward Key or any existing keys of convenient size at extra cost, according to quantity—For standard keys see page 11.*

# TANGENT WATCHMAN'S ELECTRIC TELL-TALE CLOCKS DRY-INK MARKING

## CONTACT BOXES—*continued.*

**FIG. 4791** is in every way the same as Fig. 4790, but is fitted in a heavy cast-metal case for outdoor use, while **FIG. 4785** consists of a push contained in hardwood case with hinged door fitted with Lock and Key.



**FIG. 4791.**

### **FIG. 4791 CONTACT BOX.**

CAST-METAL OUTDOOR PATTERN.

On high-insulation ebonite base in cast-metal case strongly hinged with cast brass escutcheon. Internal mechanism substantially made with heavy gold-silver contacts, entirely insulated from key and case, and suitable for fixing in the open.

Approx. diameter,  $5\frac{1}{2}$ -in.

PRICE, each : 25/- Code word : zieby (E)

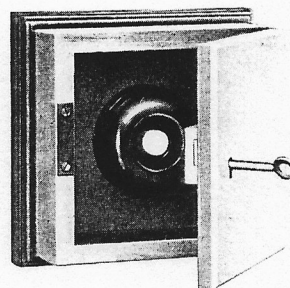
Any of the foregoing Contact Boxes can be made to fit Attendant's Ward Key or any existing keys of convenient size at slight extra cost according to quantity.



**FIG. 4792.**

Keys to suit either of these boxes 2/- each ; 18/- per doz.

Code word : yeycf



**FIG. 4785.**

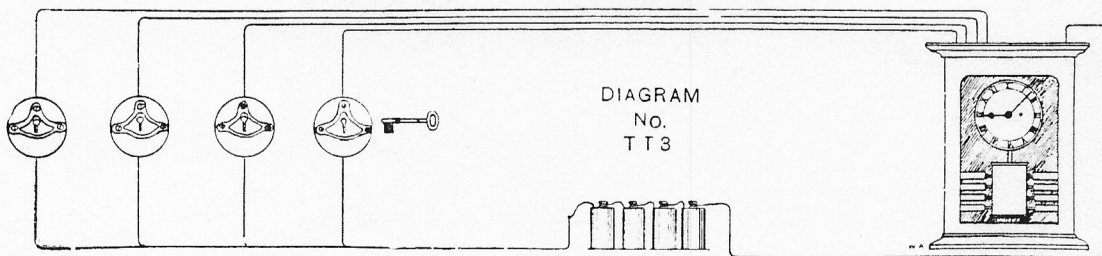
### **FIG. 4785 LOCK-UP CONTACT BOX.**

Consisting of an push-button mechanism, with gold-silver contacts, ebonised front and ivory centre. All contained in a solid hardwood case with lock and key, of the design shown.

Approx dimensions,  $5\frac{1}{2}$ -in. x  $5\frac{1}{2}$ -in. x  $2\frac{1}{2}$ -in.

PRICE, each : 17/- Code word : ziegd (E)

## DIAGRAM OF CONNECTIONS



The extreme simplicity of the connections will be at once apparent from a glance at the above diagram. The wiring is the same as that used for a system of electric bells with an indicator, namely, one wire from each contact box to the clock, and one common return wire. The battery shown may be replaced by a transformer where A.C. Supply is available, or by twin accumulators and a trickle charger in the case of a D.C. Supply—see also page 9.

# TANGENT

## WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

### DRY-INK MARKING

#### GROUP SYSTEM

Considerable economy may be effected in the initial cost of an installation covering large or small areas by the use of the Group System of Contact Boxes, whereby the time of operating each group is recorded instead of the time of operating each Contact Box on the system. By this means, the size of the Tell-Tale Clock, Fig. 4770 or Fig. 4771, is considerably modified.

With the Group System of Contact Boxes, the installation is divided into sections or groups (as for instance, floors in a building) thereby effecting economy in the wiring, which may account to a considerable item in a system covering a large area, and also in the number of stations on the Tell-Tale Clock, and thus reducing the cost of the clock.

The Contact Boxes in each group are arranged in series with a line wire connecting to the movement on the Tell-Tale Clock, and a return wire joining on at some suitable point to the common return of all other groups, see diagram No. TT5 below.

In each group two different types of Contact Box are required, (Fig. 4800 and Fig. 4790) as illustrated on next page. By reference to the diagram No. TT5 below, it will be seen that the Fig. 4790 Contact Box must be situated so as to be the last contact to be visited in the group; all others being Fig. 4800.

In the Fig. 4800 Contact Box, as illustrated on next page, a flag normally shows at the aperture behind a glass screen. When the watchman or attendant operates the contact with his key, this flag is replaced and remains out of sight. At the last station of the group, where the Fig. 4790 box is fixed, the action of recording with the key completes the circuit of the section, operates the marker on the clock, and at the same time causes the flags on the Fig. 4800 boxes of that group to drop ready for the next visit.

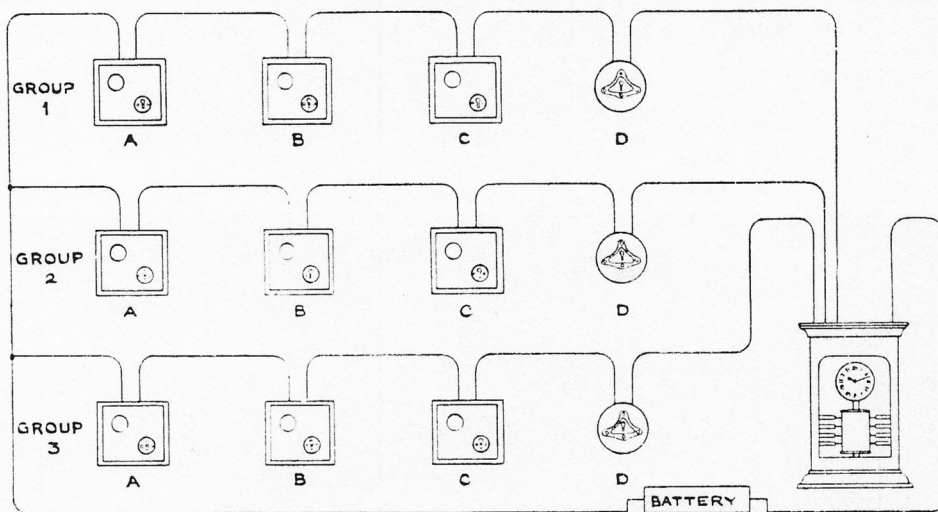


Diagram No. TT5. GROUP SYSTEM.

Stations A, B and C may be visited in any sequence, but station D must always be the last one to be operated, the contact springs in this box alone being arranged to close the circuit of that group after the other boxes have been visited and operated.

*The Battery illustrated may be replaced by either and Transformer or Trickle Charged Accumulators—please see bottom page 9.*

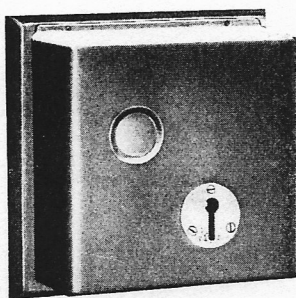
# TANGENT

## WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

### DRY-INK MARKING

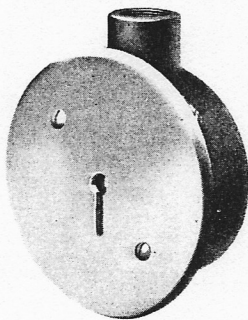
#### CONTACT BOXES FOR GROUP SYSTEM

(See previous page).

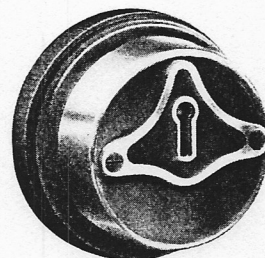


**FIG. 4800 SURFACE FIXING**

(For all but the last).



**FIG. 4790 SUNK FIXING**



**FIG. 4790 SURFACE FIXING**

(For last station on each section).

#### FIG. 4800 CONTACT BOX.

On polished hardwood base with teak finished metal cover, glazed aperture for flag signal, and bronzed brass escutcheon. Internal mechanism consisting of key contacts, together with substantial drop relay, arranged to be automatically re-set when key is turned and provided with heavy gold-silver contacts.

Approx. dimensions  $5\frac{3}{4}$ -in. x  $5\frac{3}{4}$ -in. x  $2\frac{3}{4}$ -in.

PRICE, each	..	<b>32/6</b>	(E)
Code word	..	zielj	

Available also for sunk fixing, in cast metal conduit box, with overlapping bronzed brass front plate, approx. 5-in. x 5-in.

PRICE	...	<b>42/-</b>
Add sunk to Code word		

#### FIG. 4790 CONTACT BOX.

On solid hardwood circular base, with wrought brass cover and cast brass escutcheon. All machined finished and lacquered. Internal mechanism substantially made with heavy gold-silver contacts, and entirely insulated from cover and key.

Approx. diameter  $3\frac{3}{4}$ -in.

PRICE, each	..	<b>14/-</b>	(E)
Code word	..	zidza	

Available also—as illustrated above—for sunk fixing, in circular cast-metal terminal conduit box, with overlapping bronzed brass front plate.  $3\frac{3}{4}$ -in. diameter.

PRICE	...	<b>14/-</b>
Add sunk to Code word		

**Fig. 4792 KEYS**, illustrated on page 11, to suit the above Boxes, Price **2/-** each **18/-** per dozen.

Code word: yeycf

The above Contact Boxes can be made to fit Attendant's Ward Key or any existing keys of convenient size at extra cost according to quantity.

# TANGENT

## WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

### DRY-INK MARKING

### WATCHMAN'S RELIEF ALARM

An Alarm attachment may be added to the Tell-Tale Clock by means of which a loud-ringing Bell or other Alarm device, is sounded at some suitable place, if an interval of more than, say, 15 or 30 minutes—or any pre-arranged length of time—passes without a record being made on the Clock. By this means, if an accident occurs to the Watchman, if he be taken ill, or any trouble arises, warning is given by the alarm bell ringing. The Alarm is automatically switched off during the hours the Watchman is off duty.

### ALARM ATTACHMENT.

Fitted to any Tell-Tale Clock, to sound an Alarm Device if Watchman allows a long or pre-determined interval to elapse without pegging. Up to, say, 30 minutes' interval, with automatic arrangement on Clock to switch out the alarm during the day.

PRICE, each .. £8 - 10 - 0 (E) Code word .. ziemk

### ALARM DEVICES.

We illustrate below two alternative Alarm Devices.

Firstly, loud sounding Bells operated either by Batteries or by direct connection to the A.C. or D.C. Service Mains. Such Bells are suitable for fixing either in protected or exposed positions, and are manufactured in sizes of Gong ranging from 4 inch up to 12 inch diameter.

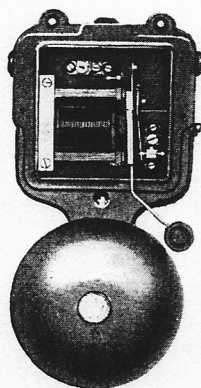


FIG. 145.

As an alternative a "TANGENT" ELECTRO-MOTOR SYREN may be installed. Such Syrens are to be particularly recommended in situations calling for an Alarm immediately distinguishable from, and very much more powerful than, a Bell.

Dependent upon the size of the Syren installed, an extensive outdoor sound radius may be obtained with particular application to buildings remotely situated. They are operated from either the A.C. or D.C. Service Mains.

For Prices and other details of Tangent Sound Signals, please see Book 1.

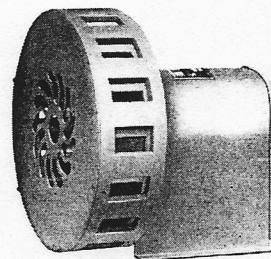


FIG. 1459.

### TRANSFORMER

As described on page 9, where A.C. is available, a Transformer may be employed to operate the markers, thus dispensing with Batteries.

**FIG. 1132** Single phase Transformer in all-metal case, totally enclosed terminals. Grip socket for a  $\frac{3}{8}$ " conduit for supply wires and bush for low voltage wires. Primary 200/250 50 cycles. Secondary 20 watts.

PRICE, each .. .. 33/9 (E)  
Code word .. .. yejoj  
Fused Output .. .. 3/- extra.  
Add yejoj to Code word.

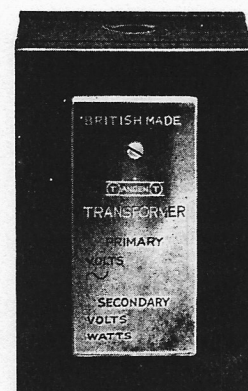
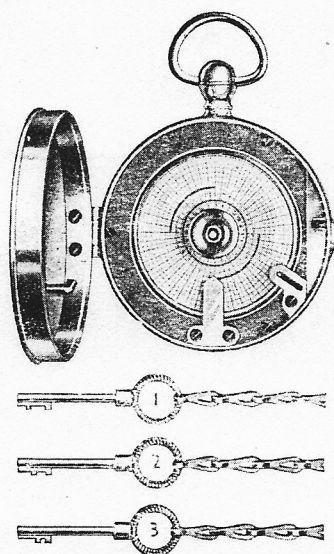
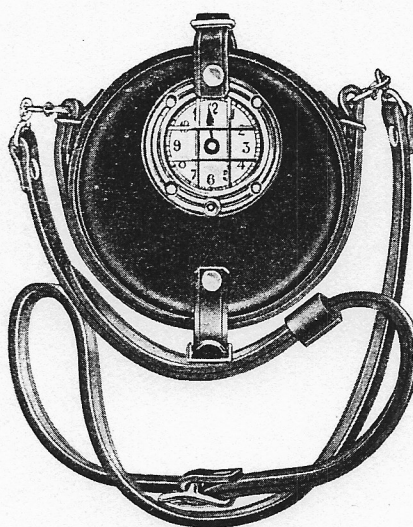


FIG. 1132.

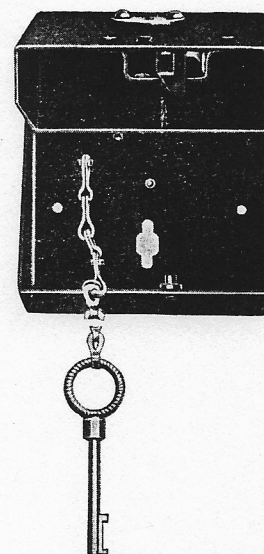
# TANGENT PORTABLE TELL-TALE CLOCKS



6 & 12 STATION.



UNIVERSAL.  
FIG. 4780.



KEY STATION BOX FOR  
UNIVERSAL MODEL

## FIG. 4780.

The Tell-Tale is enclosed in a brass box, nickel-plated, approximately 4½-in. diameter, fitted with lock and key. It consists of a 48-hour lever clock of superior finish to take a moving paper dial, on which are radial lines corresponding with the time. The dial is divided into 12 hours by dark lines, and sub-divided into intervals of 15 minutes by lighter lines and short strokes respectively. Each key operates its appropriate punch, perforating the paper chart in its own particular section. The keys are disposed at suitable positions throughout the building to be covered, which places the watchman or attendant must visit in order to obtain the impression on the dial of the different stations. The impressions on the dial show at a glance both the time and the order in which the different stations have been visited.

## PRICES, each :—

**6 STATION CLOCK (48 hour)** Complete with leather Pouch and shoulder strap, six keys and chains, one year's supply of charts

£10 - 0 - 0 (E)

Code word : zierp

**12 STATION CLOCK.** As above but with 12 keys and chains

£12 - 0 - 0

Code word : ziefs

**UNIVERSAL MODEL.** For use with an unlimited number of stations. Prints on a paper tape by means of an inked ribbon, the number of the station and the time in hours and minutes (a.m. and p.m. as the case may be) ... ..

£16 - 15 - 0

Code word : zifce

**Special Keys for Universal Model** ... ..

9 - 8

Code word : zifec

**STATION BOXES FOR UNIVERSAL MODEL** with key chain welded in ... ..

6 - 8

Code word : zifug

*As a British Company we must point out that these Portable Clocks are not made in this country. They are of French manufacture, and are the only equipments dealt with which are not ALL BRITISH.*

# TANGENT WATCHMAN'S ELECTRIC TELL-TALE CLOCKS

SOME PROMINENT USERS — SOME NAMES YOU KNOW.

## HOSPITALS, MENTAL HOSPITALS, PRISONS, &c.

Argyle & Bute, Lochgilphead.  
Aycliffe Mental Colony, Darlington.  
Banstead Mental—London County Council.  
Barnsley Hall, Bromsgrove.  
Bath Union Hospital.  
Bethel Hospital, Norwich.  
Berkhamstead Foundling Hospital.  
Berkshire County, Wallingford.  
Bexley Hospital, (L.C.C.) (2 clocks).  
Birmingham Union Institute.  
Botley's Park Mental Colony.  
Bracebridge Mental Hospital.  
Brandesburton Hall, Yorkshire.  
Brookhall Institution, Nr. Blackburn.  
Bromham Mental Colony, Bedford.  
Bucks. County, Aylesbury.  
Burntwood Mental Hospital, Staffs.  
Calderstones Certified Institution.  
Cane Hill Mental Hospital, Coulsdon (2 clocks).  
Canterbury City.  
Cheadle Royal, Cheshire (2 clocks).  
Chester-le-Street Isolation Hospital.  
Cheshire County, Macclesfield (3 clocks).  
Colney Hatch, London County Council.  
Cornwall County, Bodmin.  
Counties, Arlesley.  
Crane Hall Colony.  
Croydon Mental Hospital, Upper Warlingham.  
Cumberland & Westmorland, Garlands, Carlisle.  
Darenth (and Schools) L.C.C.  
Devonshire County, Plymouth.  
District, Kilkenny.  
Donegal District, Letterkenny.  
Down Mental Hospital, N. Ireland.  
Dundrum Central, Dublin.  
Durham C.C. Poor Law Institution, Durham.  
Durham C.C. Poor Law Institution, Lanchester.  
East Sussex, Hellingly.  
Exeter City.  
Fisherton House, Salisbury.  
Friern Hospital, Southgate, London C.C.  
Fulbourn Mental Hospital.  
Gateshead Mental Hospital (2 clocks).  
Glamorgan County Mental Hospital, Bridgend

Glamorgan Cty., Parcgywylt & Angleton (2 clocks).  
Grangeorgan Mental Hospital, Dublin.  
Hallam House, West Bromwich.  
Hants. County, Fareham.  
Hanwell Mental—London County Council.  
Haywards Heath Hospital, Sussex.  
Hereford County, Burghill.  
Hill End, St. Albans.  
Horton Hospital, Epsom, London C.C.  
Hull Borough.  
H.M. Prison, Bristol.  
H.M. Prison, Brixton.  
H.M. Prison, Cardiff.  
H.M. Prison, Chelmsford.  
H.M. Prison, Durham.  
H.M. Prison, Holloway.  
H.M. Prison, Leeds.  
H.M. Prison, Lewes.  
H.M. Prison, Norwich.  
H.M. Prison, Pentonville.  
H.M. Prison, Portland.  
H.M. Prison, Wandsworth.  
H.M. Prison, Wormwood Scrubbs.  
Ipswich Borough.  
Isle of Wight County.  
Joint Counties, Abergavenny.  
Kent County, Chatham Down.  
Kent County, Barming Heath.  
Kesteven, Lincolnshire.  
Laverstock House, Salisbury.  
Leicester Borough.  
Leicester & Rutland, Narborough.  
Mapperley Hospital, Notts.  
Melton, Nr. Portsmouth.  
Middlesex County, Wandsworth.  
Mickleover, Derby.  
Monaghan Mental Hospital.  
Montrose.  
Newcastle City.  
Newport Borough, Caerleon, Mon.  
Norfolk County, Thorpe, Norfolk.  
Northampton County Mental Hospital,  
Berrywood, Northants.  
Northumberland County, Morpeth.  
Nottingham Cty., Radcliffe-on-Trent (2 clocks)

Omagh Mental Hospital.  
Park Prewett Mental Hospital, Basingstoke.  
Portrane, Donabate, County Dublin.  
Portsmouth City.  
Powick Mental Hospital, Worcester.  
Rainhill, Lancashire.  
Ratcliffe Mental Hospital, Notts.  
Richmond District, Dublin.  
Royal Albert, Lancaster.  
Royal Eastern Counties Inst., Colchester (2).  
Rubery Hill, Birmingham.  
Ryhope Mental Hospital, Sunderland.  
Scalbor Park, Yorkshire.  
Shrewsbury Mental Hospital.  
Somerset & Bath, Wells.  
St. Andrew's Colony, Northumberland.  
St. Catherine's, Doncaster.  
St. George's Hospital, Hyde Park, London.  
Stafford.  
Staffordshire County, Chedleton.  
Stallington Hall Mental Colony, Staffs.  
Stanley Hall, Wakefield.  
Starcross, Nr. Exeter (2 clocks).  
Stoke Union Institution.  
Storthes Hall, Kirk Burton, Huddersfield.  
Suffolk County, Melton.  
Sunderland Union Institution.  
The Lawn, Lincoln.  
Tue Brook House, Liverpool.  
Uffculme, Birmingham.  
Wansford House, Exeter.  
Western Joint, Cotford, Somerset.  
West Ham Mental Hos., Goodmayes (2 clocks).  
West Riding, Wakefield.  
West Sussex, Chichester.  
West Yorkshire Joint, Doncaster.  
Whitchurch, Cardiff.  
Whittingham, Lancashire.  
Wilts. County, Devizes.  
Winwick Mental Hospital, Lancashire.  
Winwick Reception Hospital, Lancashire.  
Winson Green, Birmingham.  
Wolverhampton Union Institution.  
Worcester County.  
Wyke House, Isleworth. And many others.

## FACTORIES, WAREHOUSES PUBLIC BUILDINGS, &c.

Accles & Pollock, Ltd., Birmingham.  
Acton Town Hall.  
Adelphi Buildings, London.  
Antwerp Floorcloth & Linoleum Co.  
Artillery Mansions, Westminster, London.  
Banca Commerciale Italiano, London.  
Barclay's Bank, London.  
Baring's Bank, London.  
Best & Lloyd's Metal Works, Birmingham.  
Bird's Custard Powder Works, (5 clocks).  
Birmingham Civic Centre.  
Birmingham Municipal Bank.  
Blakeborough, J. & Sons, Brighouse.  
Boote Town Hall.  
Brigg's Bodies, Ltd., Dagenham.  
British Thomson-Houston Co Ltd., Rugby.  
Cheverley Park, Newmarket.  
Cooper, McDougal & Robertson, Ltd.,  
Coote's Brewery, Brighton. (Berkhamstead).  
Corah, N. & Sons, Ltd., Leicester.  
Crown Agents for the Colonies, London.  
C.W.S. Flour Mills, Dunston-on-Tyne.  
C.W.S. Boot Factory, Leicester.  
C.W.S., Newcastle-on-Tyne.  
"Daily Mirror," London (2 clocks).  
Dawain Post Office, Cairo, Egypt.  
Debenham & Freebody, London.  
De Beers' Consolidated Mines, South Africa.  
Dickins & Jones, Ltd., London.  
Dunedin Post Office, New Zealand.  
Durban Corporation, South Africa.

Ewart & Sons, Belfast.  
Ericsson Telephones Ltd., Beeston, Notts.  
Freeman, Hardy & Willis, Shoe Merchants, Leic.  
Gas, Light & Coke Co., London (10 clocks).  
General Electric Co., Coventry.  
Goodlys Furnishing Ltd., Leicester.  
Govt. Life Insurance Building, Wellington, N.Z.  
Government Offices, Wellington, New Zealand.  
G.P.O., London (7 clocks).  
Guest, Keen & Nettlefolds, Cwbran Works,  
Newport.  
Hambros Bank, London.  
Harmsworth, Ltd., Publishers, London.  
Henley's Telegraph Works, Co., London.  
Hudson's Dry Soap Works, Bankhall.  
Imperial Paper Mills, London.  
Innistrinch, Dalmally, N.B.  
Innis & Riddle (China) Ltd., Shanghai.  
Iron Trades House, London.  
Kynoch's Works, Birmingham.  
L.C.C. Furnishing & Stationery Depts.,  
Leeds Forge Co., Leeds. (Clerkenwell).  
"Leicester Mercury," Leicester.  
Lewis's, Ltd., Urmston.  
Lichfield Brewery Co., Lichfield.  
Liverpool Gas Company.  
London Film Productions Ltd., Denham.  
London University.  
Luton Hoo Mansion, Beds.  
McCrum, Watson & Mercer, Armagh.  
Matunga Shops of G.I.P. Railway, India.

Merryweather & Sons, London.  
Mersey Docks & Harbour Board, Liverpool.  
Ministry of Public Works.  
National Bank, Edinburgh.  
North British Rubber Co., Edinburgh.  
Parliament Buildings, Wellington, N.Z.  
Patent Borax Co., Ltd., Birmingham.  
Perfecta Tube Co., Aston, Birmingham.  
Peter Robinson, Ltd., London.  
Prices (Tailors) Ltd., Leeds.  
Prudential Assurance Co. Ltd., London (2 clocks).  
Rabone & Co., Rule Manufacturers, Birmingham.  
Royal Liver Building, Liverpool.  
Rudge-Whitworth Cycle Co., Coventry & Birm.  
Rufford Estate Offices, Ollerton.  
Rylands, Ltd., Manchester.  
Salisbury, Rhodesia, Govt. Administration.  
Selfridge & Co., Ltd., London.  
Slaithwaite Spinning Co.  
Social Security Building, Wellington, N.Z.  
St. Vincent, British West Indies, Government  
Administration.  
Standard Bank Ltd., Johannesburg.  
Sumries, C. & M., Leeds.  
Thos. Cook & Sons, Ltd., London.  
Trinidad, British West Indies, Govt. Admin.  
Tubes, Ltd., Aston, Birmingham.  
Union Cold Storage Co., Ltd., Buenos Aires.  
Vernons, Liverpool.  
Williams, Deacon's Bank, London (2).  
Wolsey Ltd., Leicester.