642277

P/00/001
Section 29

AUSTRALIA
Patents Act 1990

PATENT REQUEST : STANDARD PATENT

We being the person identified below as the Applicant, request the grant of a patent to the person identified below as the Nominated Person, for an invention described in the accompanying standard complete specification.

Applicant:	GPT LIMITED
Address:	New Century Park, P.O. Box 53, COVENTRY CV3 1HJ, GREAT BRITAIN
Nominated Person:	GPT LIMITED
Address:	New Century Park, P.O. Box 53, COVENTRY CV3 1HJ, GREAT BRITAIN
Invention Title:	POWER SYSTEM FOR TELEPHONY SYSTEMS
Name(s) of Actual Inventor(s):	David Walker
Address for Service:	GRIFFITH HACK & CO 71 YORK STREET SYDNEY NSW 2000
Attorney Code:	GH

BASIC CONVENTION APPLICATION DETAILS

Application No	Country	Country Code	Date of Application
9016362.7	United Kingdom	GB	25 July 1990

DATED this 22nd day of July 1991

GPT LIMITED
By their Patent Attorney

GRIFFITH HACK & CO

S023232 25/07/91

9843A:rk

AUSTRALIA

GPT/4017 AU

B

PATENTS ACT 1952

APPLICATION BY ASSIGNEE OF INVENTOR

DECLARATION IN SUPPORT OF AN APPLICATION FOR A PATENT

NAME OF APPLICANT

In support of an application made by:
GPT LIMITED, a British Company of New Century Park, P.O.Box 53, Coventry CV3 1HJ, England

TITLE

for a patent for an invention entitled:
POWER SYSTEM FOR TELEPHONY SYSTEMS

FULL NAME AND ADDRESS OF SIGNATORY

I, COLIN FRANCIS HOSTE
of The General Electric Company, p.l.c., Patent Department (Wembley Office), Hirst Research Centre, East Lane, Wenmbley, Middlesex HA9 7PP.
do solemnly and sincerely declare as follows:

1. I am authorised by the above mentioned applicant for the patent to make this declaration on its behalf.

FULL NAME AND ADDRESS OF INVENTOR(S)

2. The name and address of each actual inventor of the invention is as follows:
DAVID WALKER, a British Subject of 277 Stone Road, Stafford, Staffordshire, ST16 1LA, England

SEE NOTES OVER

3. The facts upon which the applicant is entitled to make this application are as follows:
By virtue of an Assignment dated 25th July, 1990 From the Inventor to the above named applicant.

DELETE PARAGRAPHS 3 AND 4 FOR NON-CONVENTION APPLICATION

4. The basic application(s) as defined by Section 141 of the Act was (were) made as follows:
Country United Kingdom on 25th July 1990
in the name(s) GPT LIMITED
and in on
in the name(s)

PLACE AND DATE OF SIGNING

5. The basic application(s) referred to in the preceding paragraph was (were) the first application(s) made in a Convention country in respect of the invention the subject of this application.

For and on behalf of:
GPT LIMITED

Declared at Wembley, Middx. England
this 12th day of June 19 91
Signed C.F. Hoste COLIN FRANCIS HOSTE
Position THEIR ATTORNEY

GRIFFITH HACK & CO

PATENT AND TRADE MARK ATTORNEYS

MELBOURNE · SYDNEY · PERTH

AU9181365

(12) PATENT ABRIDGMENT (11) Document No. AU-B-81365/91
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 642277

(54) Title
POWER SYSTEM FOR TELEPHONY SYSTEMS

International Patent Classification(s)
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(21) Application No. : **81365/91** (22) Application Date : **25.07.91**

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9016362	**25.07.90**	**GB UNITED KINGDOM**

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(44) Publication Date of Accepted Application : **14.10.93**

(71) Applicant(s)
GPT LIMITED

(72) Inventor(s)
DAVID WALKER

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(56) Prior Art Documents
AU 568960 49918/85 H04M 19/2
AU 16639/83 H04M 19/2
EP 217369

(57) Claim

1. A telephony system in which a plurality of local network terminations are connected to a street cabinet in turn connected to an exchange via a speech signal link, and wherein the street cabinet has a power supply for supplying power and a master ringing signal to each of the local network terminations via a separate power conductor.

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Regulation 3.2

AUSTRALIA
Patents Act 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT
ORIGINAL

Name of Applicant: GPT LIMITED

Actual Inventor(s): David Walker

Address for Service: GRIFFITH HACK & CO
71 YORK STREET
SYDNEY NSW 2000

Invention Title: POWER SYSTEM FOR TELEPHONY SYSTEMS

The following statement is a full description of this invention, including the best method of performing it known to us:

GH&CO REF: 21787-D:COS:RK

POWER SYSTEM FOR TELEPHONY SYSTEMS

The present invention concerns power supplies for telephone systems in a telephony system. Where the customer's equipment is connected to the system by conducting cables it is normal practice for the power to be supplied to the customer's equipment along those cables. Modern telephony practice demands that power for telephones should be derived local to the customer rather than being supplied from a telephone exchange, particularly when the transmission medium from the exchange to the vicinity of the customer is either by radio or along optical fibres, or where the conducting cables are too long for the economic transmission of power.

The present invention is concerned with a simple solution to this problem.

Accordingly the present invention comprises a telephony system in which a plurality of local network terminations are connected to a street cabinet in turn connected to an exchange via a speech signal link, and wherein the street cabinet has a power supply for supplying power and a master ringing signal to each of the local network terminations via a separate power conductor.

Preferably the power supply comprises a rectifier for rectifying the A.C. mains. One output of the rectifier may be supplied to a battery to provide back up in the event of power

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failure. The master ringing signal is preferably generated by switches to which the D.C. output of the rectifier is connected, the switches being controlled by an oscillator. Power is thus distributed at ringing frequency.

In order that the invention may be more readily understood, an embodiment thereof will now be described by way of example and with reference to the accompanying drawings, in which:

Figure 1 is a block diagram of a telephony network according to the present invention, and

Figure 2 is a block diagram showing part of the network of Figure 1 in greater detail.

Referring now to Figure 1 of the drawings this shows a telephone exchange 1 having a number of optical output lines 2 leading to street cabinets. Only one street cabinet, given the reference 3, is shown. It will be appreciated that all the other street cabinets will be similar to cabinet 3 which contains an optical splitter indicated at 4 to split the incoming optical signal for transmission on to a plurality of footway boxes via fibre and power cables shown at 5 and 6 respectively. As will be apparent after the description of Figure 2 cabinet 3 also contains circuitry in the form of batteries, rectifiers and switches and is connected at 7 to a mains power supply (which is not shown). Two identical footway boxes 8 and 9 are shown each receiving an individual optical line 5 and a copper link 6 for providing power. Each footway box contains optical terminations generally indicated at 10 and power supplies generally indicated at 11. Each of the footway boxes has up to twenty fibre or copper outputs 12 leading to individual subscribers as shown at 13.

Referring now to Figure 2 of the drawings this shows a central power unit 20 located in the street cabinet 3 of Figure 1. This power unit comprises a rectifier 21 connected to the A.C. mains, which converts the incoming A.C. voltage into a stable D.C. voltage. This D.C. voltage is supplied to the terminals of a battery 22 allowing the system to continue operating during periods of mains supply interruption. The D.C. voltage is also applied to switches 23 controlled by a master oscillator 24 which converts the D.C. to A.C. at the required ringing frequency. This power is supplied along the power distribution cables 6 to the power

supplies 11 of the footway boxes. Each of these power supplies includes a rectifier 25 which converts the A.C. to D.C. to provide power supplies for the electronic line termination equipment and a filter 26 to separate out the A.C. to produce a ringer supply for the individual subscribers.

The benefits of the system just described are that there are a reduced number of connections to the main supply, a reduced number of rectifiers and batteries for the D.C. supply, and a reduced number of oscillators for ringing whilst only employing two conductors for distribution.

THE CLAIMS:

1. A telephony system in which a plurality of local network terminations are connected to a street cabinet in turn connected to an exchange via a speech signal link, and wherein the street cabinet has a power supply for supplying power and a master ringing signal to each of the local network terminations via a separate power conductor.

2. A system as claimed in claim 1 wherein the power supply comprises a rectifier for rectifying A.C. mains.

3. A system as claimed in claim 2 wherein one output terminal of the rectifier is connected to a battery to provide back up in the event of power failure.

4. A system as claimed in claim 3 and further comprising means in the street cabinet for generating a master ringing signal.

5. A system as claimed in claim 4 wherein the power from the street cabinet is distributed at ringing frequency.

6. A system as claimed in claim 5 wherein the D.C. output of the rectifier is connected to switches controlled by an oscillator in order to distribute the power at ringing frequency, and wherein each local network termination has a rectifier connected to the power output of the street cabinet to provide power supply for the electronic line termination equipment, and a filter for separating out the A.C. component to provide a ringer supply for individual subscribers connected to the local network termination.

7. A telephony system substantially as herein described with reference to the accompanying drawings.

DATED this 29th day of July 1993
GPT LIMITED

By their Patent Attorneys
GRIFFITH HACK & CO.

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ABSTRACT

POWER SYSTEM FOR TELEPHONY SYSTEMS

The invention concerns a telephony system in which a plurality of local network terminations (8) are connected to a street cabinet (3) in turn connected to an exchange (1), the street cabinet (2) having a power supply (21) for supplying power and a master ringing signal to each of the local network terminations. The power supply comprises a rectifier (21) for rectifying A.C. mains (7) and one output of the rectifier (21) is connected to a battery (22) to provide back up in the event of power failure.

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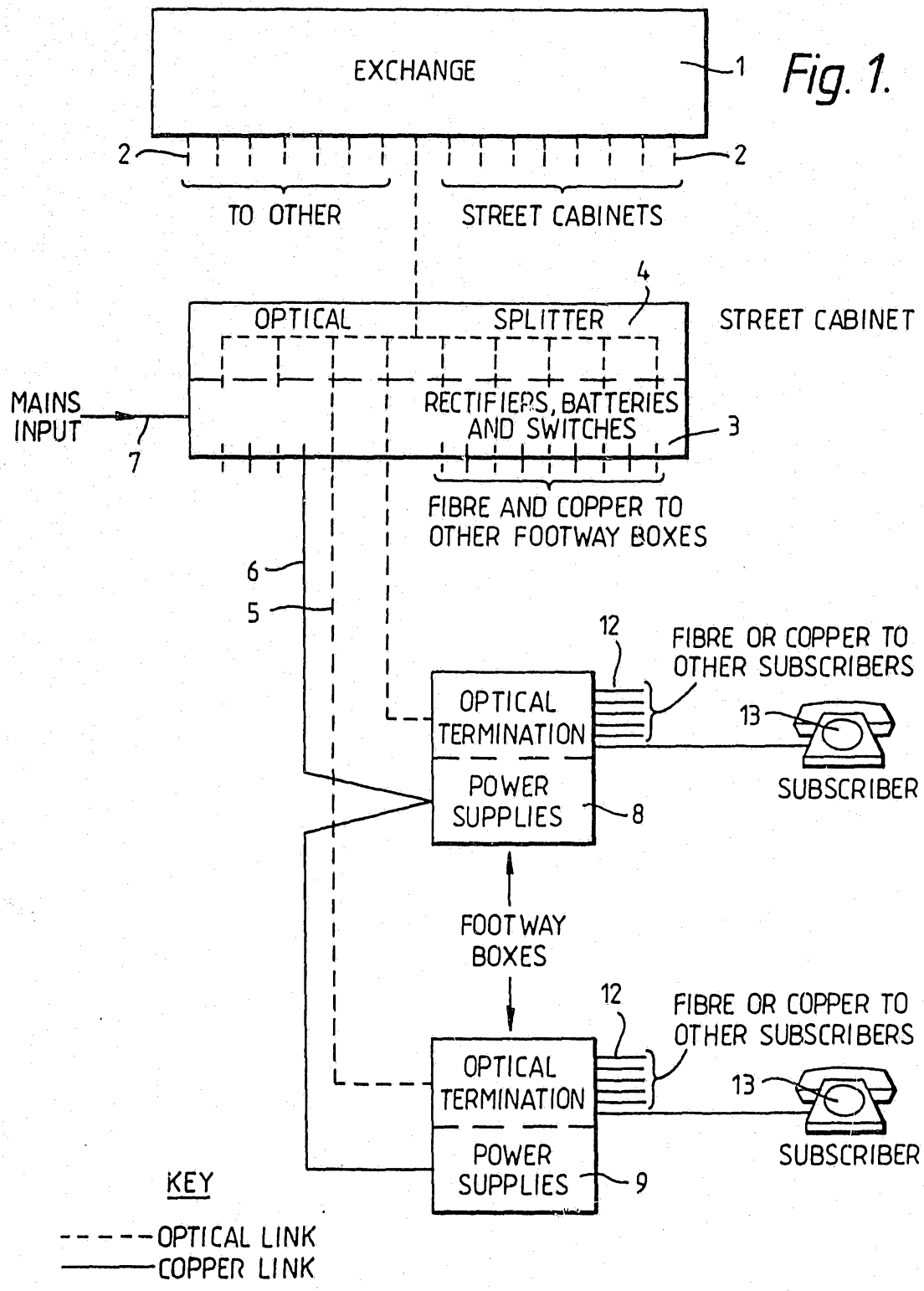
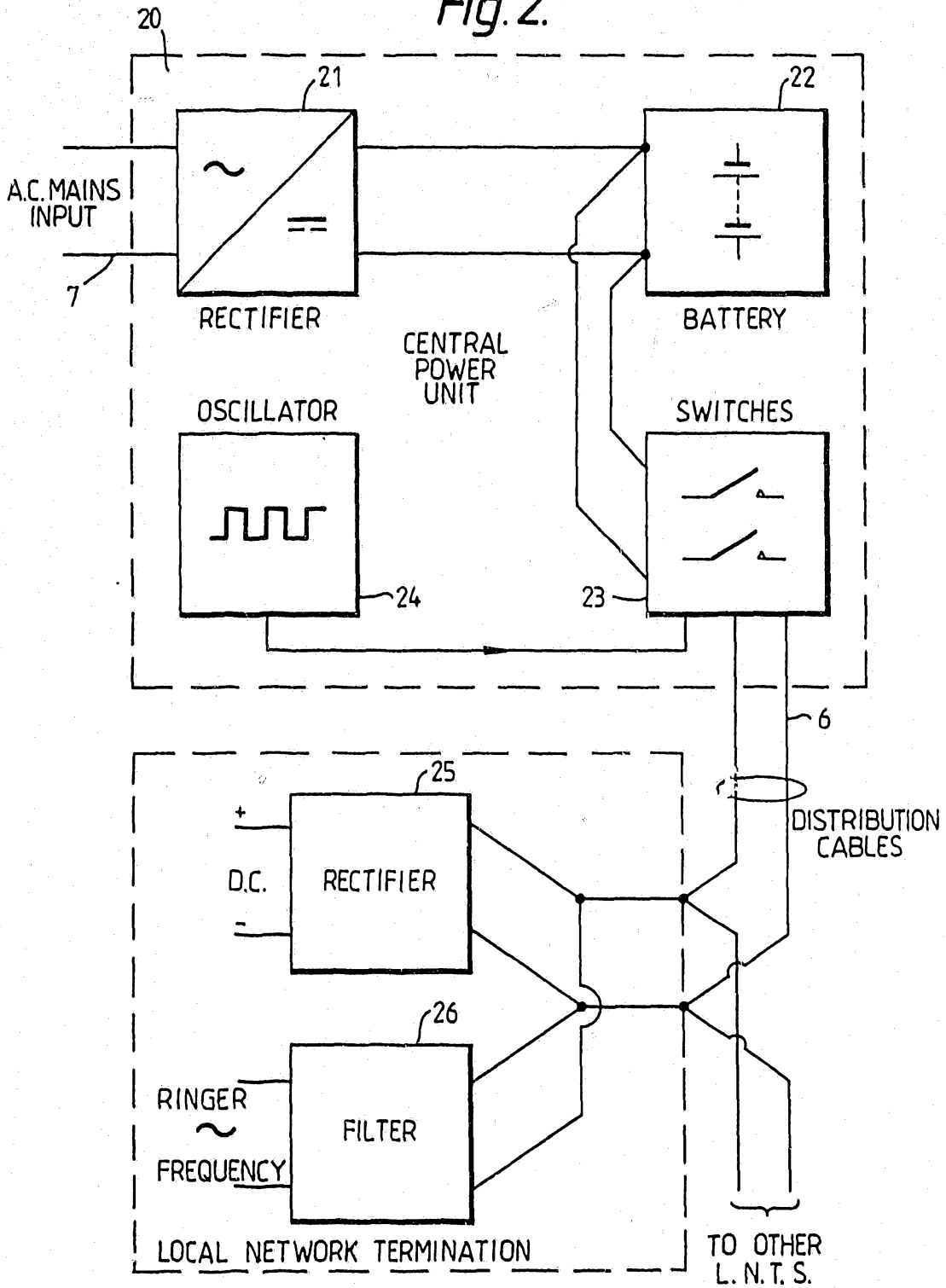


Fig. 1.

Fig. 2.


20
21
22
A.C. MAINS INPUT
7
RECTIFIER
BATTERY
CENTRAL POWER UNIT
OSCILLATOR
SWITCHES
24
23
6
25
+
D.C.
-
RECTIFIER
DISTRIBUTION CABLES
26
RINGER
FREQUENCY
FILTER
LOCAL NETWORK TERMINATION
TO OTHER L.N.T.S.