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(71) Applicant(s)
Multi Media Investments Limited

(Incorporated in the Channel Islands)

**P O Box 641, Wellington House, Union Street,
St Helier, Channel Islands**

(72) Inventor(s)
Jonathan Nicolas Ogden

(74) Agent and/or Address for Service
Graham Jones & Company
**77 Beaconsfield Road, Blackheath, LONDON,
SE3 7LG, United Kingdom**

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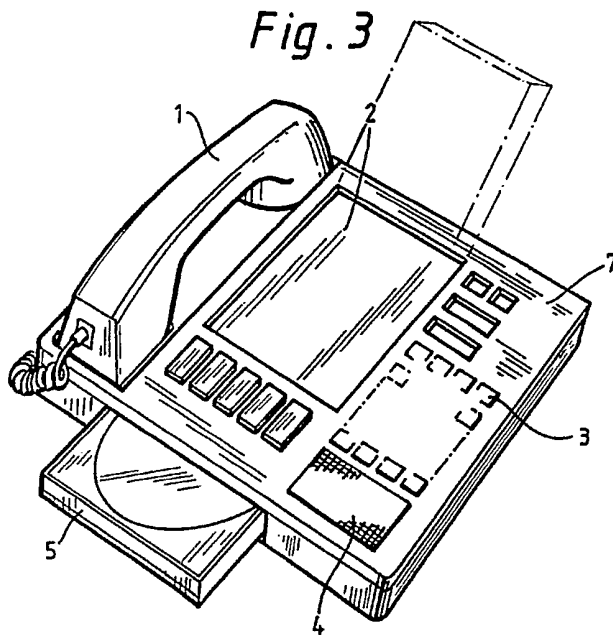
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H4K KBNJ
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GB 2267414 A EP 0457077 A2 EP 0437199 A2
EP 0378775 A2 WO 93/16550 A1 US 5146493 A

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UK CL (Edition N) **H4K KBNJ KBNX KFH , H4L LDSX**
LECC LECX
INT CL⁶ **H04M 1/274 1/276 , H04Q 7/32**

(54) **Telecommunications apparatus having removeable memory device**

(57) Telecommunications apparatus comprising a telephone 1, receiver means for receiving a memory device 5 containing a database, and control means 3 for accessing the memory device and identifying required data in the database. The memory device may be a CD-ROM, a floppy disc or a personal computer memory compressed information applications card. The memory device 5 may be inserted into a slot forming part of the receiver means. The telephone set may also include a penpad system (see Fig. 5) for transmitting handwritten messages. The telephone may be a desktop, or a cellular telephone (see Fig. 9).



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1990.

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Fig. 1

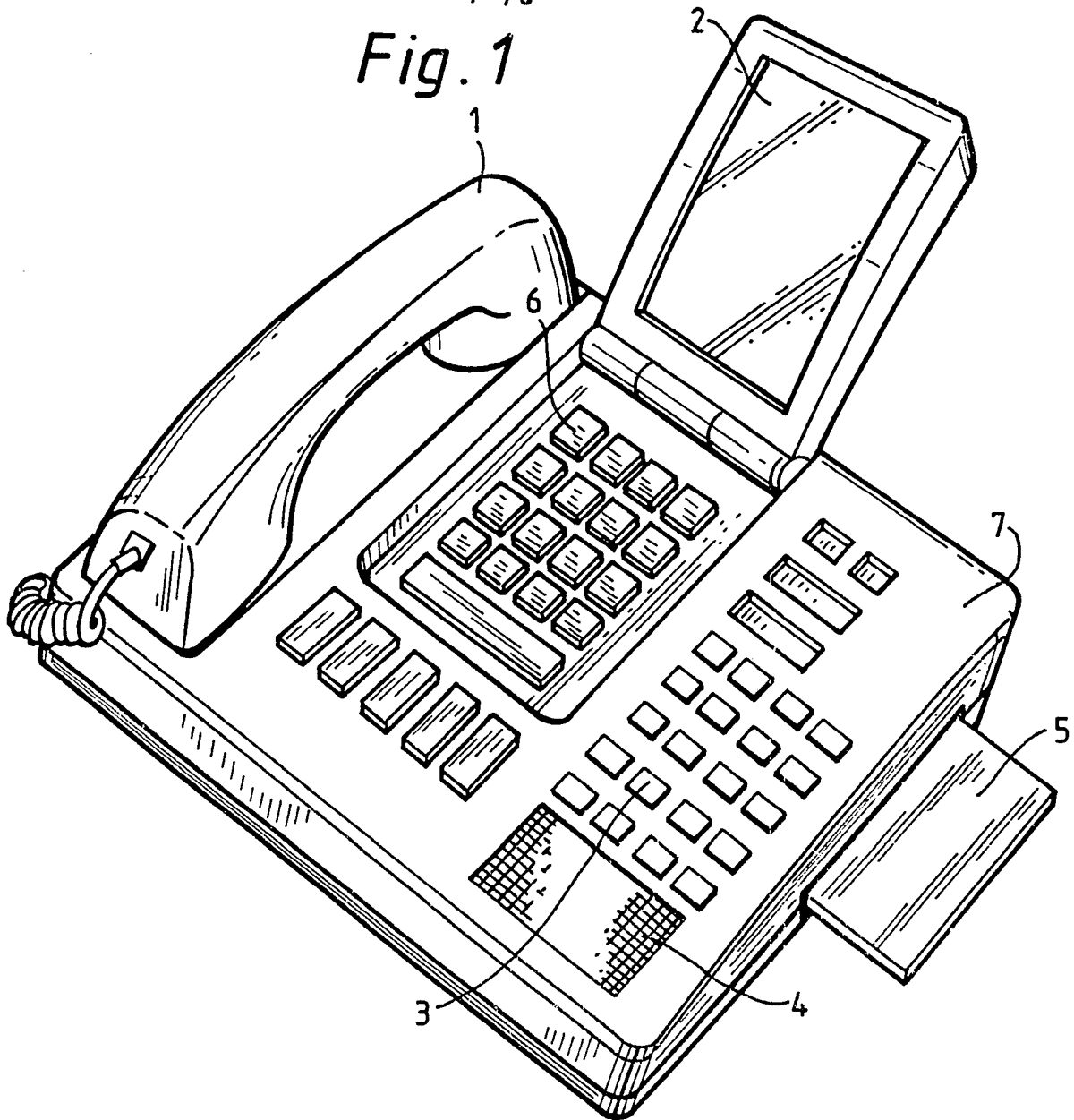


Fig. 2

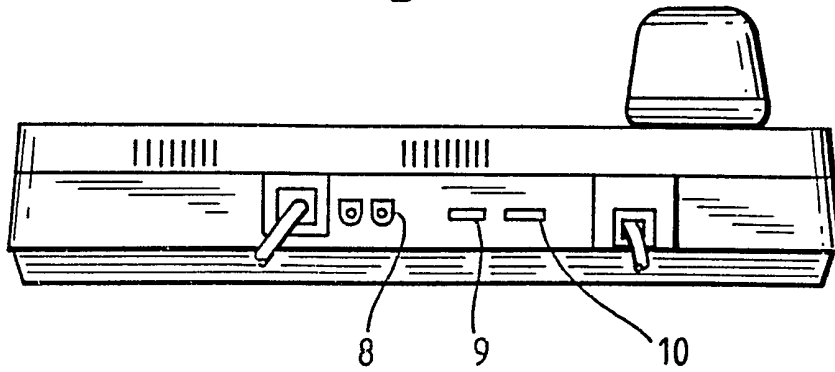


Fig. 3

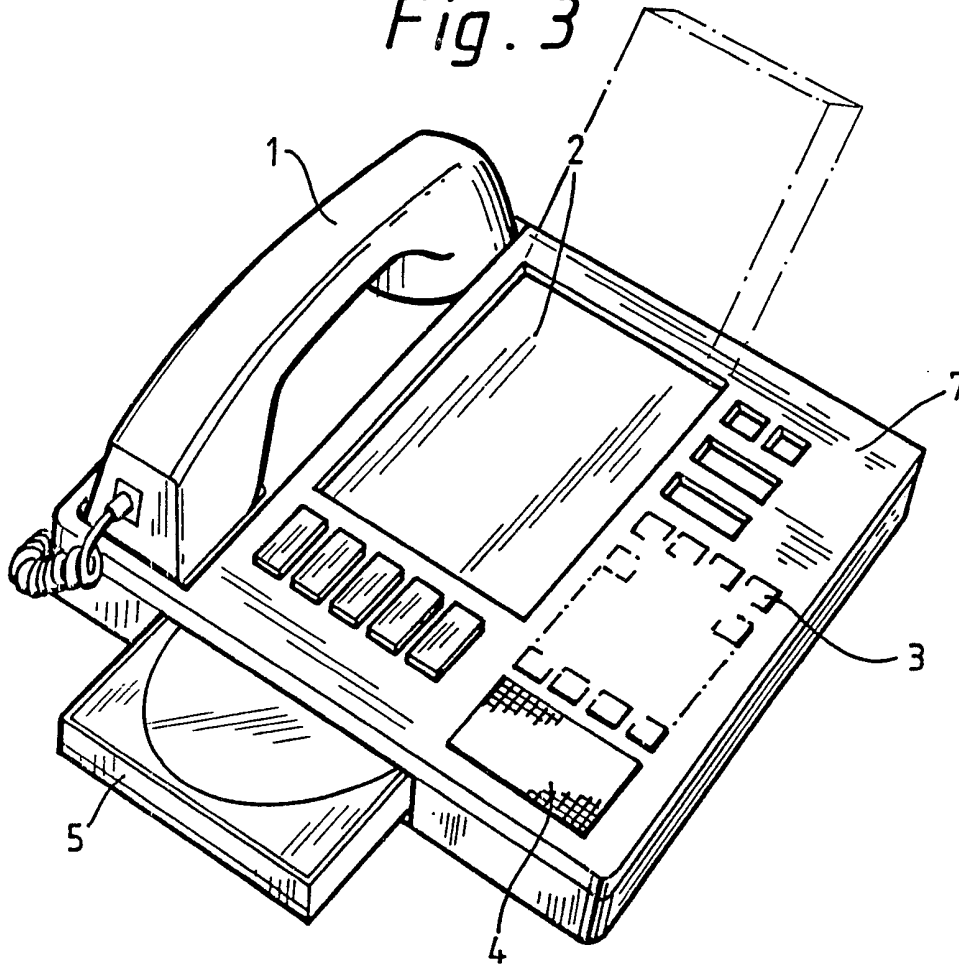


Fig. 4

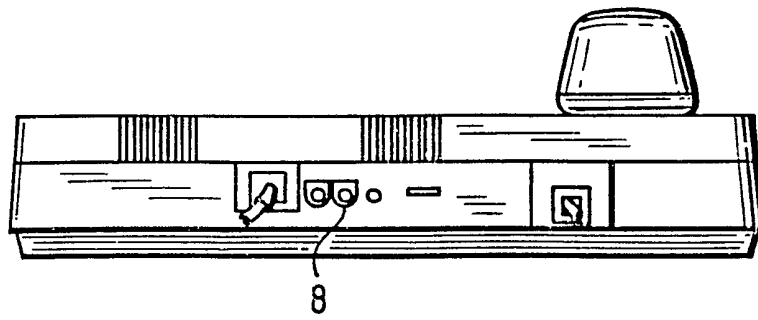


Fig. 5

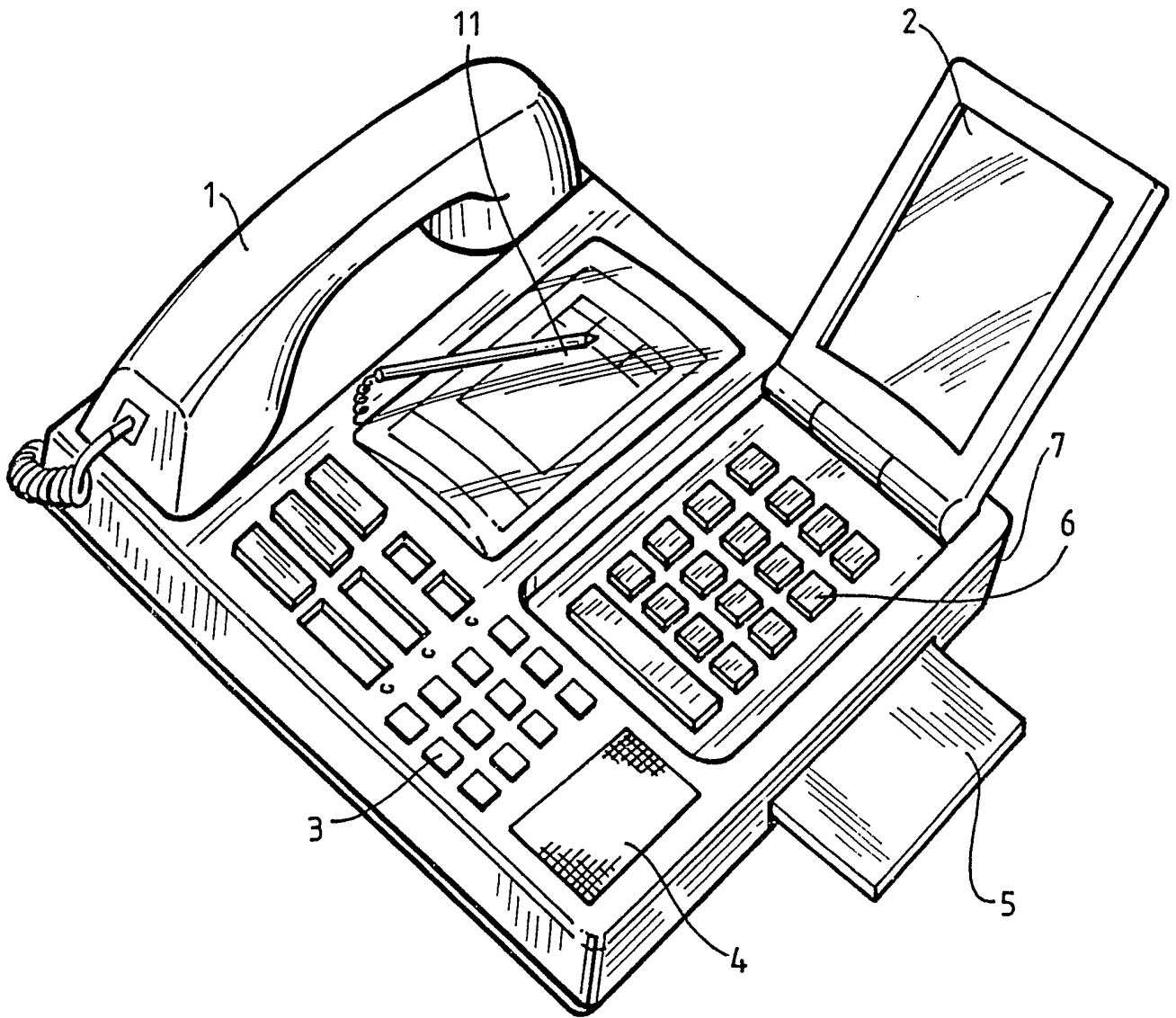
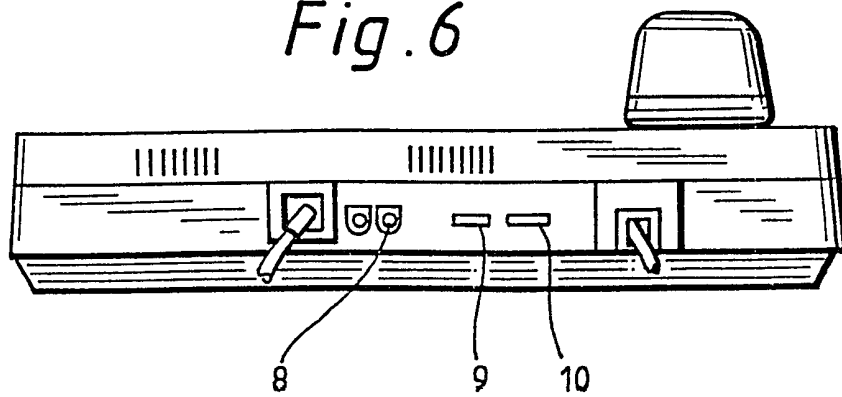


Fig. 6



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Fig. 7

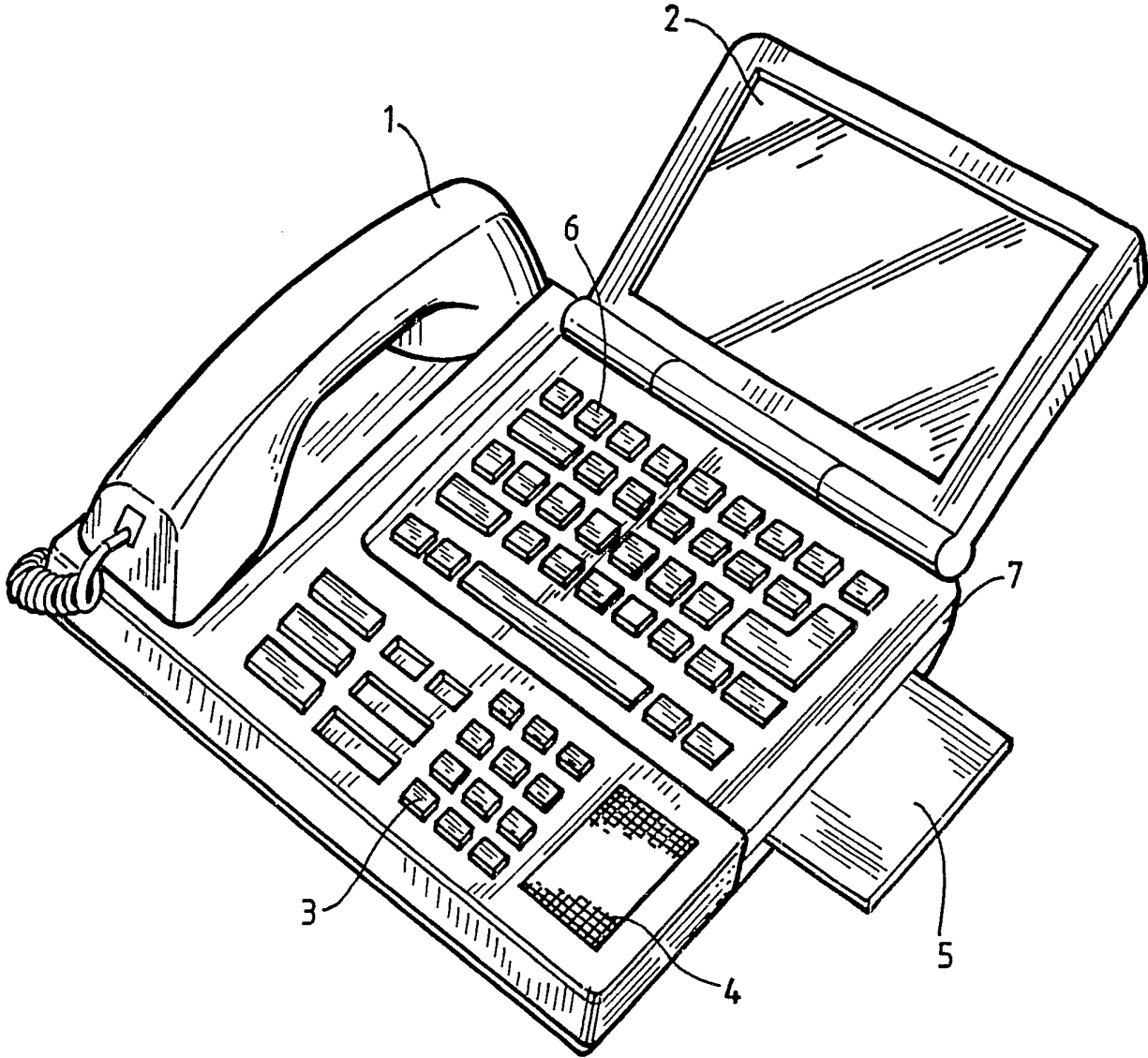
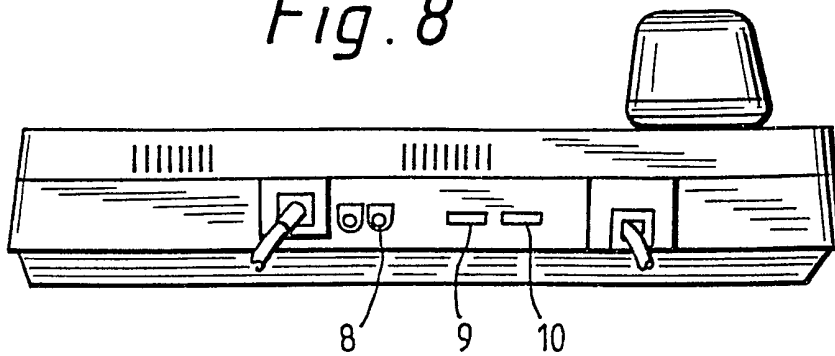


Fig. 8



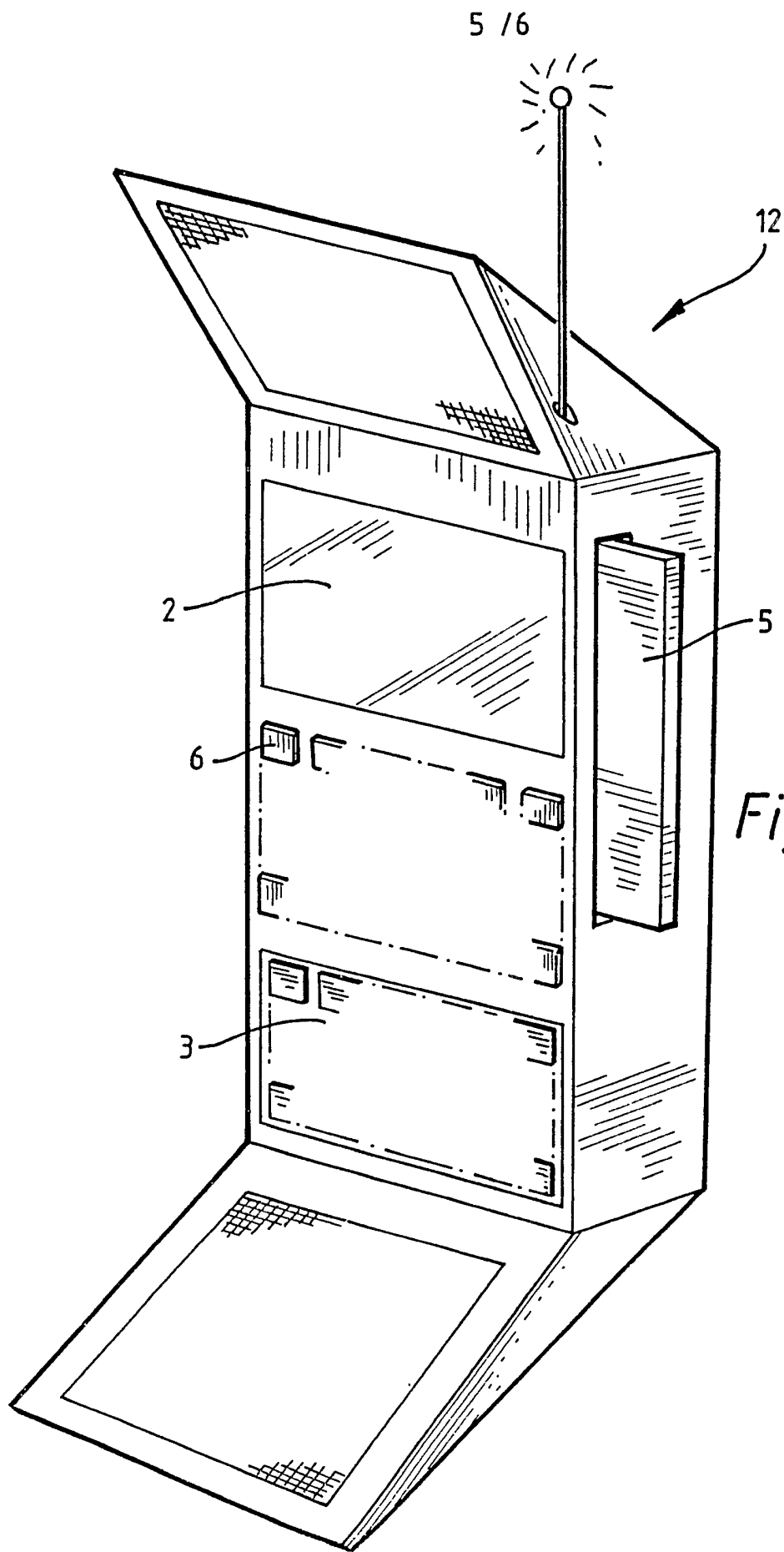


Fig. 9

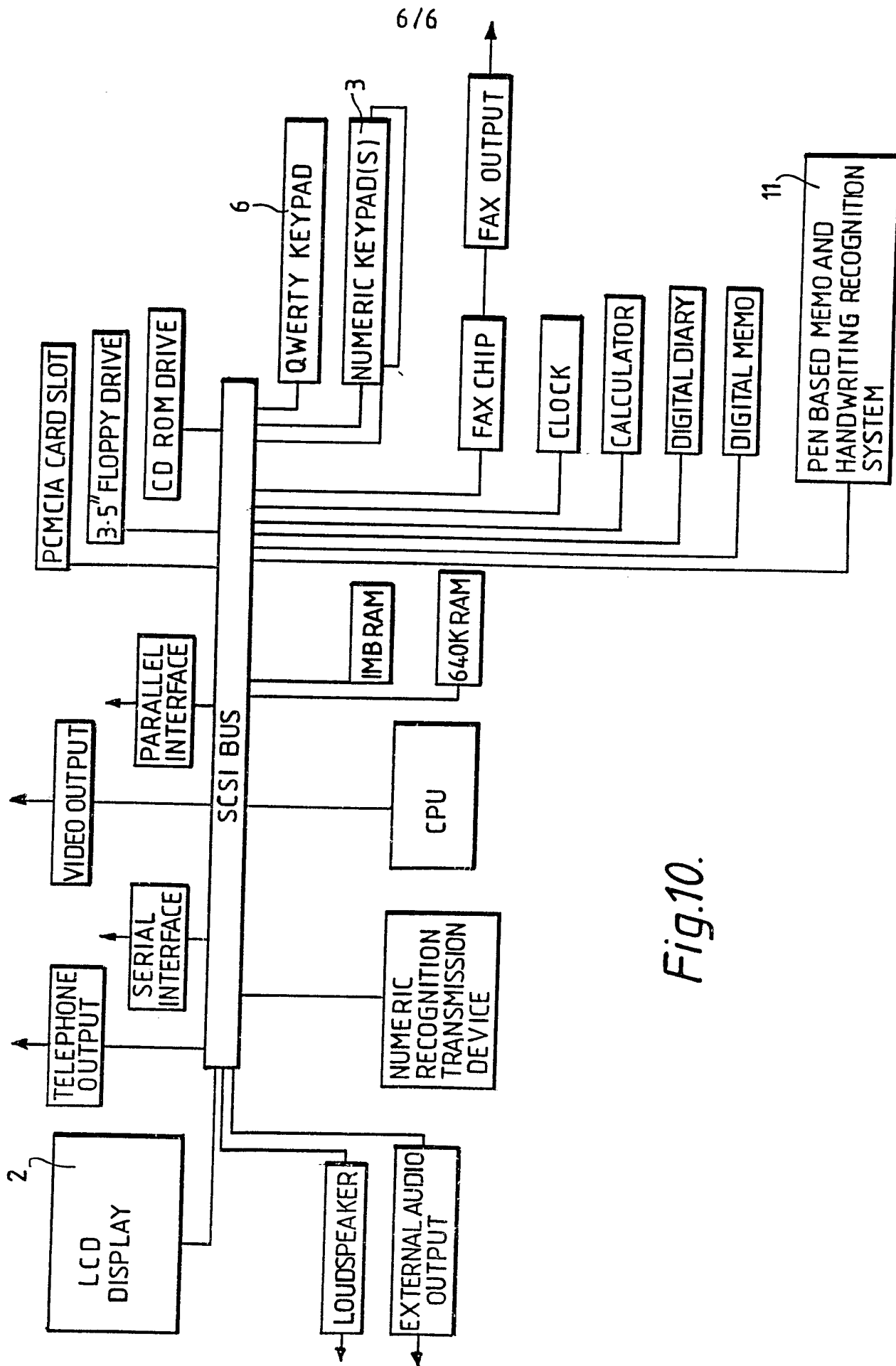


Fig.10.

TELECOMMUNICATIONS APPARATUS

This invention relates to telecommunications apparatus and, more especially, this invention relates to telecommunications apparatus comprising a telephone.

In accordance with one non-limiting embodiment of the present invention there is provided telecommunications apparatus comprising a telephone, receiver means for receiving a memory device containing a database, and control means for accessing the memory device and identifying required data in the database.

The telephone may be an analogue, digital or cellular voice telephone.

The telephone may be a desk bound telephone or a portable telephone.

Preferably, the receiver means is a slot in a base of the telephone. Other types of receiver means may be employed.

The memory device may be a CD-ROM (compact disc read only memory), a 3.5 inch floppy disc or a PCMCIA (personal computer memory compressed information applications) card. Other types of memory devices may be employed. Generally, the memory devices are interchangeable and they may be inserted one at a time in the receiver means for being accessed by the control means.

The database is preferably a telephone directory database. The database may additionally or alternatively be a fax database. Generally, any suitable and appropriate database or databases containing information of a type used by a telephone may be employed.

The control means may comprise a "Qwerty" keypad for use in searching the database.

The telecommunications apparatus may include display means for displaying the identified required data. The display means may be a LCD (liquid crystal device) screen.

The display means may be a hinged display means which is pivotable between open and closed positions. The display means can alternatively be a fixed position display means.

The telecommunications apparatus may include automatic telephone number dialing means for automatically dialing identified required telephone numbers.

The telecommunications apparatus may include fax interface means, for example a socket.

The telecommunications apparatus may include automatic fax number dialing means for automatically dialing identified required fax numbers.

The telecommunications apparatus may be such that it is also able automatically to transmit faxes once the required fax number has been identified.

The telecommunications apparatus may include a penpad handwritten recognition system for enabling fax messages to be written and sent.

The telecommunications apparatus may include computer interface means. The computer interface means may be a socket and the computer may be a personal computer or any other suitable and appropriate type of computer.

The telecommunications apparatus may include video interface means, for example a socket.

The present invention extends to the telecommunications apparatus when provided with the memory device. The memory device will usually be separately formed from the telephone apparatus and will be connected to the telephone apparatus via the receiver means on a temporary basis, for example for the time required for the control means to access the memory device in order to identify the required data. After the memory device has been accessed and the required data used, for example the required telephone number telephoned or the required fax number faxed, then the memory device will usually be removed from the telecommunications apparatus so that the

telecommunications apparatus is then ready for receiving another memory device containing a different database and different data, for example a different telephone number or fax number listing. Generally, only one memory device at a time will be connected to the telecommunications apparatus via the receiver means. If desired however two or more of the memory devices may be connected to the telecommunications apparatus simultaneously via the receiver means.

Embodiments of the invention will now be described solely by way of example and with reference to the accompanying drawings in which:

Figure 1 is a perspective view showing first telecommunications apparatus;

Figure 2 is a rear view of the telecommunications apparatus shown in Figure 1;

Figure 3 is a perspective view showing second telephone communications apparatus;

Figure 4 is a rear view of the telecommunications apparatus shown in Figure 3;

Figure 5 is a perspective view of third telecommunications apparatus;

Figure 6 is a rear view of the telecommunications apparatus shown in Figure 5;

Figure 7 is a perspective view of fourth telecommunications apparatus;

Figure 8 is a rear view of the telecommunications apparatus shown in Figure 7;

Figure 9 is a perspective view of fifth telecommunications apparatus; and

Figure 10 is a block diagram showing an electric circuit construction for the telecommunications apparatus.

Referring to Figures 1 and 2, there is shown telecommunications apparatus comprising a handset 1 and a LCD screen 2, which may be a black and white screen 2 or a coloured screen 2. The telecommunications apparatus also comprises a telephone keypad 3, a loudspeaker and microphone 4, and receiver means in the form of a slot shown as receiving a memory device in the form of a CD-ROM, a floppy disc or a PCMCIA card.

The telecommunications apparatus also has a "Qwerty" keyboard 6 with function keys as shown. The telecommunications apparatus still further comprises a CD-ROM player 7, a fax interface 8, a personal computer interface 9, and a video interface 10.

The telecommunications apparatus shown in Figures 1 and 2 is a desk bound unit, and when it is not in use, the LCD screen 2 can be pivoted about the illustrated hinge to a closed position over the keyboard 6.

The telecommunications apparatus shown in Figures 1 and 2 operates such that a memory device 5 in the form of a CD-ROM, a floppy disc or a PCMCIA card is inserted into a slot as illustrated in the base of the telecommunications apparatus. The contents of the memory device are displayed on the screen 2. The memory device is searched using the keypad 6. The response is highlighted on the screen 2. The entry is selected using the function keys forming part of the keyboard 6.

The telecommunications apparatus automatically dials the required number. When the call is connected, the caller is connected to the speaker and microphone 4, or to the handset 1.

The telecommunications apparatus can be used for conventional telephone calls simply by dialing in a usual manner using the telephone keypads 3.

The fax interface 8 allows connection to an external fax machine. The personal computer interface 9 allows connections to a remote computer, in which case the telecommunications apparatus acts as a remote memory device drive, for example a remote CD-ROM drive.

The contents of the memory device can be output into a video system via the video interface 10.

The function keys in the keyboard 6 may be used to operate a variety of available functions such for example as a clock, a calculator and a games

function. Required information will be displayed on the screen 2.

The telecommunications apparatus shown in Figures 3 and 4 is constructed and operates similarly to that shown in Figures 1 and 2. It will be noticed that in Figures 3 and 4, the memory device 5 is inserted into a slot in a front part of the base, rather than in a side part of the base as shown in Figures 1 and 2. In Figures 3 and 4, the screen 2 is shown in its closed position.

Referring now to Figures 5 and 6, similar parts as in Figures 1 and 2 have been given the same reference numerals for ease of comparison and understanding. The telecommunications apparatus shown in Figures 5 and 6 is additionally provided with a pen based handwriting recognition system 11. The recognition system 11 includes a pen and a penpad as shown. The recognition system 11 allows a note or other document to be produced on the penpad. The memory device, for example the CD-ROM, is then accessed to identify an appropriate fax number, the identification being effected via the keyboard 6, and the required fax number being displayed on the screen 2. When the appropriate entry is displayed, the note or document from the penpad of the recognition system 11 is

automatically faxed using a system internal fax card and the function keys 6.

Referring now to Figures 7 and 8, there is shown fourth telecommunications apparatus and similar parts as in previous Figures have been given the same reference numerals for ease of comparison and understanding. The telecommunications apparatus of Figures 7 and 8 operates similarly to that shown in Figures 1 and 2. The telecommunications apparatus of Figures 7 and 8 has a larger LCD screen 2 which covers a larger "Qwerty" keyboard 6 with function keys.

Referring now to Figure 9, there is shown telecommunications apparatus 12 which is portable and which includes a cellular telephone. The telecommunications apparatus 12 shown in Figure 9 operates similarly to the telecommunications apparatus shown in previous Figures and similar parts have been given the same reference numerals for ease of comparison and understanding.

The telecommunications apparatus 12 of Figure 9 operates on the insertion of the memory device such for example as the CD-ROM, the floppy disc or the PCMCIA card. The contents of the memory device are displayed on the screen 2. The memory device is searched using the "Qwerty" keypad 6. The response is highlighted on

the screen 2. The entry is selected using the function keys 6.

The telecommunications apparatus 12 automatically dials the number and when the call is answered, the caller is automatically connected to the cellular telephone. For conventional telephone calls, the required telephone number can be dialed using the keypad 3.

Referring now to Figure 10, there is shown a self-explanatory circuit diagram illustrating the electrical circuitry and operation of the telecommunications apparatus of the invention. Generally, the telecommunications apparatus of the present invention may be produced as a single unit comprising a number of pre-moulded components. Within the unit, a motherboard supports a central processing unit (CPU) and memory chips together with providing hard wire interlinks to a numeric recognition transmission device via a small computer systems interface backplane (SCSI bus). The SCSI provides a docking interface and both serial and parallel interfaces are supported directly from the motherboard. The screen output is into the LCD display screen 2. This display screen 2 is preferably a flat display screen 2 and it may give a black and white display or a colour display.

As shown in Figure 10, the CD-ROM interface is via the SCSI backplane and can support all existing CD-ROM disc sizes, for example 12cm, 8cm and 6.5cm. A 3.5 inch floppy disc drive option is available as shown, with interconnection via the SCSI bus. Also as shown, a PCMCIA option is available.

As shown in Figure 10 ancillary feature chips such as clock and calculator functions are mounted directly on to the motherboard. The pen based memo, handwriting recognition, ink capture systems, Qwerty keyboard 6 and the numeric keypads 3 reside on the upper surface of a moulding for the telecommunications apparatus and they are linked by multi channel flexible cabling. The microphones and loudspeakers are mounted on the upper surface together with the removable telephone handset 1.

The telecommunications apparatus of the present invention allows rapid searching of large databases on memory devices such as CD-ROM databases containing telephone directories. The databases are stored using interchangeable memory devices and they can be searched via a number of routines. When the appropriate information is identified, the user selects the entry, which is highlighted, and an auto dial facility causes the telephone to dial the identified entry. The telecommunications apparatus can also link

to an internal fax card pen based or keyboard based memo system to allow fax numbers to be identified and hard copy messages to be despatched automatically. A serial interface allows a computer with conventional word processing or database functions to be attached to the telecommunications apparatus. Multiple fax numbers may be selected and stored within the memory of the telecommunications apparatus for multiple automatic electronic mailings.

The telecommunications apparatus of the present invention provides the ability to access and manipulate vast databases coupled with autodial and communications via fax from the integration of pen based technology. The telecommunications apparatus of the present invention combines telephone technology with powerful computing, giving multiple application opportunities to end users.

It is to be appreciated that the embodiments of the invention described above with reference to the accompanying drawings have been given by way of example only and that modifications may be effected. Thus, for example, the telecommunications apparatus may be provided with a printer interface which allows connection of a printer in case information stored within the memory device, for example the CD-ROM, should

require downloading in hard copy format. The display on the screen 2 may be a display other than an LCD display.

CLAIMS

1. Telecommunications apparatus comprising a telephone, receiver means for receiving a memory device containing a database, and control means for accessing the memory device and identifying required data in the database.

2. Telecommunications apparatus according to claim 1 in which the telephone is an analogue, digital or cellular voice telephone.

3. Telecommunications apparatus according to claim 1 or claim 2 in which the telephone is a desk bound telephone or a portable telephone.

4. Telecommunications apparatus according to any one of the preceding claims in which the receiver means comprises a slot in a base of the telephone.

5. Telecommunications apparatus according to any one of the preceding claims in which the receiver means contains a memory device containing a database.

6. Telecommunications apparatus according to claim 5 in which the database is a telephone directory database and/or a fax database.

7. Telecommunications apparatus according to any one of the preceding claims in which the control means comprises a "Qwerty" keypad for use in searching the database.

8. Telecommunications apparatus according to any one of the preceding claims and including display means for displaying the identified required data.

9. Telecommunications apparatus according to claim 8 in which the display means is a liquid crystal device display means.

10. Telecommunications apparatus according to claim 8 or claim 9 in which the display means is a hinged display means which is pivotable between open and closed positions.

11. Telecommunications apparatus according to claim 8 or claim 9 in which the display means is a fixed position display means.

12. Telecommunications apparatus according to any one of the preceding claims and including automatic telephone number dialing means for automatically dialing identified required telephone numbers.

13. Telecommunications apparatus according to any one of the preceding claims and including fax interface means.

14. Telecommunications apparatus according to any one of the preceding claims and including automatic fax number dialing means for automatically dialing identified required fax numbers.

15. Telecommunications apparatus according to claim 14 and which is such that it is also able automatically to transmit faxes once the required fax number has been identified.

16. Telecommunications apparatus according to any one of the preceding claims and including a penpad handwritten recognition system for enabling fax messages to be written and sent.

17. Telecommunications apparatus according to any one of the preceding claims and including computer interface means.

18. Telecommunications apparatus according to any one of the preceding claims and including video interface means.

19. Telecommunications apparatus substantially as herein described with reference to the accompanying drawings.

Relevant Technical Fields

Search Examiner
 MR S J L REES

(i) UK Cl (Ed.N) H4K (KBNJ, KBNX, KFH) H4L (LECX, LECC, LDSX)

Date of completion of Search
 12 JANUARY 1995

(ii) Int Cl (Ed.6) H04M (1/274, 1/276) H04Q (7/32)

Documents considered relevant following a search in respect of Claims :-
 1 TO 19

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Categories of documents

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|---|---|
| X: Document indicating lack of novelty or of inventive step. | P: Document published on or after the declared priority date but before the filing date of the present application. |
| Y: Document indicating lack of inventive step if combined with one or more other documents of the same category. | E: Patent document published on or after, but with priority date earlier than, the filing date of the present application. |
| A: Document indicating technological background and/or state of the art. | &: Member of the same patent family; corresponding document. |

Category	Identity of document and relevant passages	Relevant to claim(s)
X, P	GB 2267414 A (HODKINSON) whole document	1 to 8, 12
X	EP 0457077 A2 (ROLM) whole document	1 to 3, 5 to 8
X	EP 0437199 A2 (HITACHI) whole document	1 to 19
X	EP 0378775 A2 (STORNO) whole document especially lines 21 to 36 of column 3 ≡ WO 90/66648	1 to 9, 11, 12
X	WO 93/16550 A1 (BELL) whole document especially page 10 line 6 to page 11 line 15	1 to 10, 12, 17, 18
X	US 5146493 A (CANON) whole document especially lines 20 to 38 of column 7	1 to 3, 5 to 9, 11 to 15

Databases:The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).