

FORM 1

602728

Spruson & Ferguson

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

APPLICATION FOR A STANDARD PATENT

We, Siemens Aktiengesellschaft, incorporated in the Federal Republic Germany, of Wittelsbacherplatz 2, D-8000 Munich 2, Federal Republic of Germany, hereby apply for the grant of a standard patent for an invention entitled:

Isolating Plug for Testing Electrical Conductors in
Distribution Frames of Telecommunications Systems

which is described in the accompanying provisional specification.

Details of basic application:

Basic Applic. No:

Country

Application Date:

P 36 34 643.8

FEDERAL REPUBLIC OF GERMANY

10 October 1986

The address for service is:-

Spruson & Ferguson

Patent Attorneys

Level 33 St Martins Tower

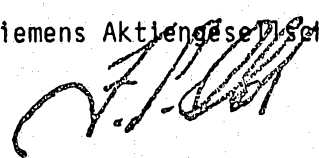
31 Market Street

Sydney New South Wales Australia

DATED this TWENTY-SEVENTH day of JULY 1990

Siemens Aktiengesellschaft

By:


Registered Patent Attorney

TO: THE COMMISSIONER OF PATENTS
AUSTRALIA

APPLICATION ACCEPTED AND AMENDMENTS

IAD/991F

ALLOWED 8 - 8 - 90



COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

DECLARATION IN SUPPORT OF AN APPLICATION FOR PATENT

In support of the application made for a patent for an invention entitled:

Isolating Plug for Testing Electrical Conductors in
Distribution Frames of Telecommunications Systems

I, Fraser Patison Old, C/- Spruson & Ferguson, St. Martins Tower, 31 Market Street, Sydney, New South Wales 2000, Australia, do solemnly and sincerely declare as follows:

1. I am authorised by Siemens Aktiengesellschaft, the applicant for the patent to make this declaration on its behalf.
2. The basic application as defined by Section 141 of the Act was made in Federal Republic of Germany on 10 October 1986 by Siemens Aktiengesellschaft.
3. Ewald Steiner and Ronald Richard Monk, of Fichtenweg 11, D-8137 Berg 3, Federal Republic of Germany and 10 Lorrimer Close, Mount Eliza, Victoria 3030, Australia, respectively are the actual inventors of the invention and the facts upon which the applicant is entitled to make the application are as follows:

The said Ronald Richard Monk is an employee of Telecom Australia, of 199 William Street, Melbourne, Victoria 3000, and the said Ewald Steiner is an employee of the applicant, the invention was jointly made by the inventors during the course of their respective employment and that as a result of an agreement between Telecom Australia and Siemens AG that portion of the invention attributable to the said Ronald Richard Monk is transferred to Siemens AG.

4. The basic application referred to in paragraph 2 of this Declaration was the first application made in a Convention country in respect of the invention(s) the subject of the application.

DECLARED at SYDNEY this 31ST day of JULY 19 90

.....
Signature of Declarant

TO: THE COMMISSIONER OF PATENTS
AUSTRALIA

IAD/991F

(12) PATENT ABRIDGMENT (11) Document No. AU-B-79518/87
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 602728

(54) Title
ISOLATING PLUG FOR TESTING TELECOMMUNICATIONS DISTRIBUTION FRAMES

International Patent Classification(s)
(51)⁴ H04Q 001/20 H01R 023/02 H04Q 001/14

(21) Application No. : 79518/87 (22) Application Date : 09.10.87

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(43) Publication Date : 14.04.88

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(71) Applicant(s)
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(56) Prior Art Documents
AU 570832 52867/86 H01H 50/02, 50/14, H01R 13/514
AU 545914 71029/81 H01R 31/08, 23/02, 13/648
DE 2629397

(57) Claim

1. An isolating plug for testing electrical conductors in a distribution frame of a telecommunications system, said distribution frame being provided with flat disc-like components which are stacked over each other and which are provided at a front side with rows of pairs of opposed connecting elements for electrical conductors, each pair of the connecting elements projecting substantially in straight lines into the interior of the disc-like component to form there opposed contact points between which, from the connection side, a plug-in tongue of the isolating plug can be inserted with the outer edge portion of the isolating plug projecting between and beyond the opposed connecting elements, the plug-in tongue having contact faces which can be contacted by the contact points and from which electrical conductors lead to an outer edge zone of the isolating plug which terminates in contact zones, located beyond and clear of the opposed connecting elements, for the better access and attachment of test leads.

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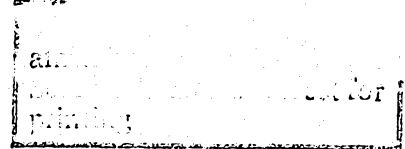
FORM 10

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

COMPLETE SPECIFICATION

(ORIGINAL)



FOR OFFICE USE:

Class Int Class

Complete Specification Lodged:

Accepted:

Published:

Priority:

Related Art:

Name and Address
of Applicant:

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Complete Specification for the invention entitled:

Apparatus for Testing Electrical Conductors in Distribution
Frames of Telecommunications Systems

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

5845/4

ISOLATING PLUG FOR TESTING ELECTRICAL CONDUCTORS IN
DISTRIBUTION FRAMES OF TELECOMMUNICATIONS SYSTEMS

5 The invention relates to a plug for testing electrical conductors in distribution frames of telecommunications systems, in particular telephone systems.

10 It is known from DE-PS 20 48 104 to make a distribution frame from flat disc-like laminar components which are provided with rows of pairs of opposed connecting elements for the electrical conductors. Each pair of the connecting elements extend virtually rectilinearly from the front of the distribution frame into the interior of the disc-like component where they form opposed contact points for connecting the external and internal conductors of the distribution frame. The contact points can be sectionally switched by means of simple isolating plug-in tongues which can be inserted from the front of the disc-like component through special plug-in channels between the opposed connecting elements of the pairs.

15 It is furthermore known in the case of newly opening, extending or exchanging modern for old, communications systems, for the distribution frames to be completely prewired and, until the installations are finally completed, for the conductors to be isolated by means of isolating plug-in devices which extend over the entire width of a disc-like component. Such a multiple plug is shown, for example, in the Siemens Catalogue "Schwachstromverteilereinrichtungen in lotfreier Anschlusstechnik"/"Weak current distributor equipment featuring solder-free connection technology", state of the art March 1981, page 50. Since the isolating plugs are inserted into all newly fitted disc-like components, they prevent free access to the outer zones of the connection elements for testing purposes. Such conductor tests must be carried out before the installation is switched on. Testing is performed by means of test leads which have tips shaped to correspond to the pairs of opposed connecting elements. Fitting of the test leads is particularly difficult when the disc-like components are in an elevated position.

The invention is concerned with the problems of facilitating the testing operations.

20 According to the invention there is provided an isolating plug for testing electrical conductors in a distribution frame of a

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telecommunications system, said distribution frame being provided with flat disc-like components which are stacked over each other and which are provided at a front side with rows of pairs of opposed connecting elements for electrical conductors, each pair of the connecting elements projecting substantially in straight lines into the interior of the disc-like component to form there opposed contact points between which, from the connection side, a plug-in tongue of the isolating plug can be inserted with the outer edge portion of the isolating plug projecting between and beyond the opposed connecting elements, the plug-in tongue having contact faces which can be contacted by the contact points and from which electrical conductors lead to an outer edge zone of the isolating plug which terminates in contact zones, located beyond and clear of the opposed connecting elements, for the better access and attachment of test leads.

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The connection points for the test leads are thus disposed clear of the connecting elements of the ^{disc-like} ~~laminar~~ component and are thus readily accessible. The isolating plug can have its outer edge portion so constructed that the connecting tips of the test leads can be fitted easily and securely. The test leads can, for example, be provided with plug-in contacts which are pushed on to the contact zones of the isolating plug.

In a possible further development, the isolating plug is constructed as a printed circuit board. This enables favourably-priced manufacture of the isolating plug. The contact surfaces and contact zones, like the conductor paths, can be produced in one operation.

In a yet further possible development, the isolating plug is constructed as a double-sided printed circuit board. Thus it is possible to test conductors leading from the distribution frame both outwardly and inwardly without the position of the isolating plug having to be changed.

Embodiments of this invention will now be described, by way of example, with reference to the accompanying drawing in which the sole figure is a perspective schematic view of a component of a distribution frame embodying this invention.

Referring to the drawing, there are shown two opposed rows of connecting elements 1 of a ^{disc-like} ~~laminar~~ component (not shown in greater detail) of a distribution frame in a telephone communications installation provided with an isolating plug 2. Also shown are clip-on contacts 3 of test leads which can be attached as required for testing to the plug 2.



One row of the connecting elements 1 serves for connection of internal conductors 4 and the other for connection of external conductors 4. The connecting elements 1 extend from the connection points for the conductors 4 in straight lines into the interior of the ^{disc-like} ~~laminar~~ component and form at their inner ends opposed contact points 5 which are separated by interposed plug-in tongues 6 of the isolating plug 2. The plug-in tongues 6 have in the region of the contact points 5 contact surfaces 7 which are contacted by the contact points 5. Extending from the contact surfaces 7 are printed conductor paths 8 which lead to an outer edge portion of the isolating plug 2, where they terminate in contact zones 9 for the clip-on contacts 3. The contact zones 9 lie beyond and clear of the free ends of the connecting elements 1 and are thus readily accessible for the fitting of the test leads. The isolating plug 2 is constructed as a printed circuit board printed on both sides (double-sided printed circuit board) so that both the inwardly and outwardly extending conductors 4 can be tested at the same time.

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The claims defining the invention are as follows:

1. An isolating plug for testing electrical conductors in a distribution frame of a telecommunications system, said distribution frame being provided with flat disc-like components which are stacked over each other and which are provided at a front side with rows of pairs of opposed connecting elements for electrical conductors, each pair of the connecting elements projecting substantially in straight lines into the interior of the disc-like component to form there opposed contact points between which, from the connection side, a plug-in tongue of the isolating plug can be inserted with the outer edge portion of the isolating plug projecting between and beyond the opposed connecting elements, the plug-in tongue having contact faces which can be contacted by the contact points and from which electrical conductors lead to an outer edge zone of the isolating plug which terminates in contact zones, located beyond and clear of the opposed connecting elements, for the better access and attachment of test leads.

2. An isolation plug according to claim 1, wherein the isolating plug is constructed as a printed circuit board.

3. An isolation plug according to claim 2, wherein the isolating plug is constructed as a double-sided printed circuit board.

4. An isolation plug for testing electrical conductors in distribution frames of telecommunications systems, said apparatus being substantially as described herein with reference to the accompanying drawing.

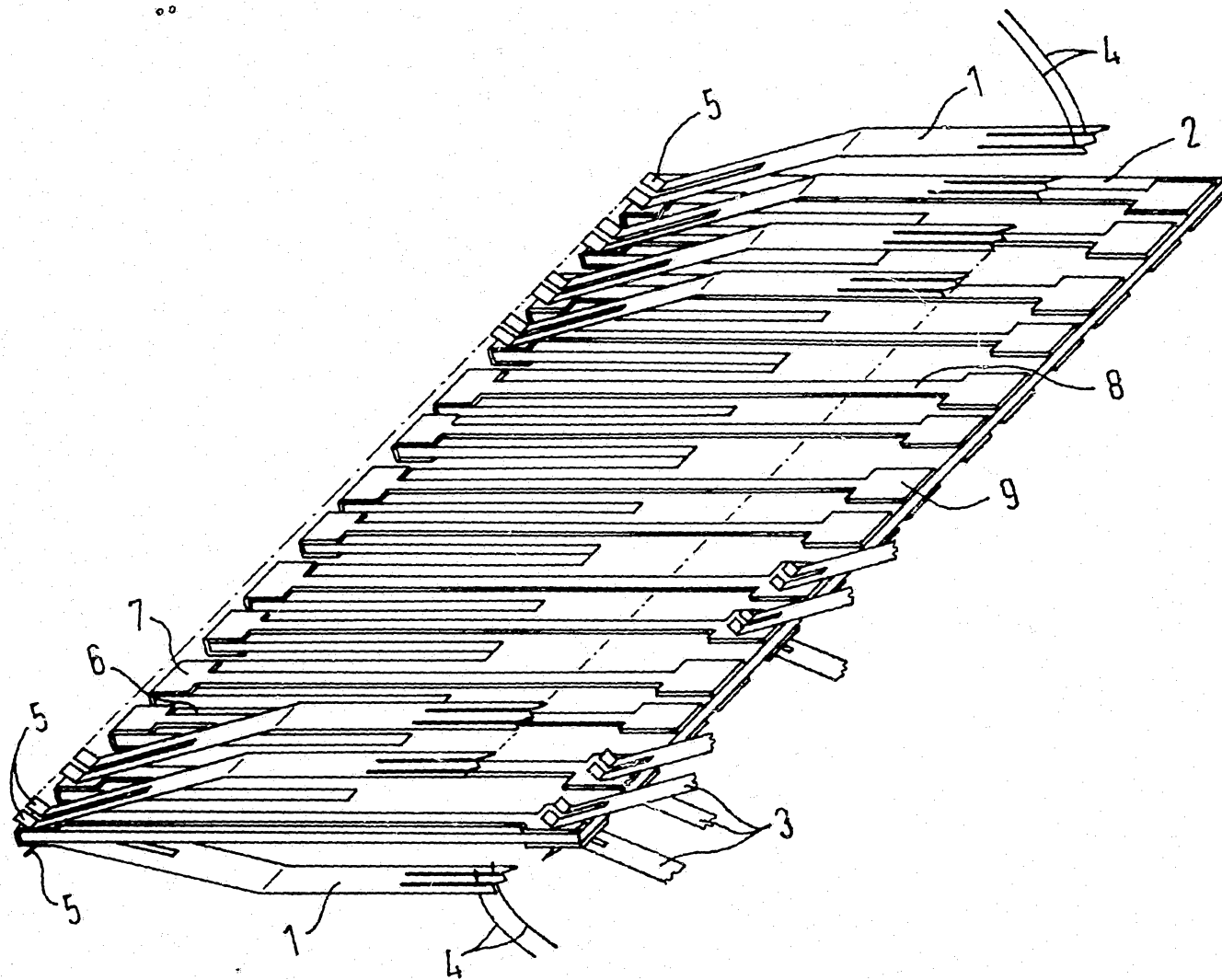
DATED this TWENTY-SEVENTH day of JULY 1990

Siemens Aktiengesellschaft

Patent Attorneys for the Applicant
SPRUSON & FERGUSON

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