FORM 1

642719

SPRUSON & FERGUSON

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

APPLICATION FOR A STANDARD PATENT

Siemens Aktiengesellschaft, incorporated in the Federal Republic of 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:

Protective Assembly for a Distributor in a Telecommunications Network

which is described in the accompanying complete specification.

Details of basic application(s):-

Basic Applic. No:	Country:	Application Date:
P4008543.0	DE	16 March 1990

The address for service is:-

Spruson & Ferguson
Patent Attorneys
Level 33 St Martins Tower
31 Market Street
Sydney New South Wales Australia

DATED this THIRTEENTH day of MARCH 1991

Siemens Aktiengesellschaft

By: J. Gutmann

Registered Patent Attorney

TO: THE COMMISSIONER OF PATENTS
OUR REF: 150842
S&F CODE: 61890

5020573 15/03/91

5845/3

SPRUSON & FERGUSON

AUSTRALIA
CONVENTION
STANDARD
& PETTY PATENT
DECLARATION

COMMONWEALTH OF AUSTRALIA
THE PATENTS ACT 1952

DECLARATION IN SUPPORT OF A CONVENTION APPLICATION FOR A PATENT

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

Title of Invention: Protective Assembly for a Distributor in a Telecommunications Network

I/~~We~~ John Gordon Hinde

Full name(s) and address(es) of Declarant(s): Care of Spruson & Ferguson
31 Market Street
Sydney, New South Wales, 2000
Australia

do solemnly and sincerely declare as follows:-

Full name(s) of Applicant(s)

~~1. I am/We are the applicant(s) for the patent~~

(or, in the case of an application by a body corporate)

1. I am/~~We are~~ authorised by

Siemens Aktiengesellschaft

the applicant(~~s~~) for the patent to make this declaration on its/~~their~~ behalf.

2. The basic application(~~s~~) as defined by Section 141 of the Act was/~~were~~ made

Basic Country(ies): in Federal Republic of Germany

Priority Date(s): on 16 March 1990

Basic Applicant(s): by Siemens Aktiengesellschaft

~~3. I am/We are the actual inventor(s) of the invention referred to in the basic application(s)~~

Full name(s) and address(es) of Inventor(s)

(or where a person other than the inventor is the applicant)

3. Lothar Rapp and Ewald Steiner

of Gabriele Muenter Str 7, 8000 Muenchen 71 and Fichtenweg 11, 8137 Berg 3 both in Federal Republic of Germany

(respectively)

~~is~~/are the actual inventor(s) of the invention and the facts upon which the applicant(~~s~~) is/~~are~~ entitled to make the application are as follows:

Set out how Applicant(s) derive title from actual inventor(s) e.g. The Applicant(s) is/are the assignee(s) of the invention from the inventor(s)

The said applicant is the assignee of the actual inventors.

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

Declared at Sydney this 12th day of March 1991

J. Main

Signature of Declarant(s)

SFP4 To: The Commissioner of Patents

1/81

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(12) PATENT ABRIDGMENT (11) Document No. AU-B-73523/91
(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 642719

(54) Title
PROTECTIVE ASSEMBLY FOR A DISTRIBUTOR IN A TELECOMMUNICATIONS NETWORK

International Patent Classification(s)
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(71) Applicant(s)
SIEMENS AKTIENGESELLSCHAFT

(72) Inventor(s)
LOTHAR RAPP; EWALD STEINER

(74) Attorney or Agent
SPRUSON & FERGUSON , GPO Box 3898, SYDNEY NSW 2001

(56) Prior Art Documents
AU 52351/90 H04Q 1/14
GB 2060267

(57) Claim

1. A protective assembly for a distributor in a telecommunications network, said assembly comprising a housing having a plurality of receiving chambers each adapted to receive an overvoltage arrester which includes transversely protruding wire-like connecting legs, said assembly being substantially planar and having first and second contact parts, said first contact parts being arranged as plug-in contacts along a longitudinal edge of a front side of said housing for mating with complementary contacts of said distributor and extending towards the rear of said assembly, said second contact parts being strip-shaped contacts connected to an earth plate at the rear of said assembly, wherein an inner end of each said first and second contact parts is constructed as an insulation piercing connecting terminal that is bent upwards vertically with respect to a bottom of said assembly and into a clamping slot of same, one of said connecting legs can be pressed.

S & F Ref: 150842

FORM 10

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952

COMPLETE SPECIFICATION

(ORIGINAL) 642719

FOR OFFICE USE:

Class Int Class

Complete Specification Lodged:
Accepted:
Published:

Priority:

Related Art:

Name and Address of Applicant: Siemens Aktiengesellschaft
Wittelsbacherplatz 2
D-8000 Munich 2
FEDERAL REPUBLIC OF GERMANY

Address for Service: Spruson & Ferguson, Patent Attorneys
Level 33 St Martins Tower, 31 Market Street
Sydney, New South Wales, 2000, Australia

Complete Specification for the invention entitled:

Protective Assembly for a Distributor in a Telecommunications Network

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

5845/4

Abstract

Protective assembly for a distributor in a telecommunications network.

The flat plug-in-type protective assembly can be equipped with overvoltage arresters (3) which exhibit wire-shaped transversely protruding connecting legs (4). The protective assembly is provided with contact parts (7) which extend from the overvoltage arresters (3) towards the front-end plug-in contacts (6).

The contact parts (7) are bent up vertically with respect to a bottom (8) of the protective assembly in the area of the connecting legs (4) and constructed as contact terminals (9), into the clamping slot (12) of which the connecting legs (4) can be pressed.

Overvoltage arresters (3) contacted in this manner can be easily inserted and exchanged.

Fig. 3

PROTECTIVE ASSEMBLY FOR A DISTRIBUTOR IN A TELECOMMUNICATIONS NETWORK

The invention relates to a protective assembly for a distributor in a telecommunications network, particularly in a telephone exchange, in which the protective assembly can be equipped with overvoltage arresters which exhibit transversely protruding wire-like connecting legs.

Such a protective assembly has become known, for example through German Offenlegungsschrift 35 25 233. According to this, the cylindrical overvoltage arresters are inserted horizontally in the receiving chambers of the plug-in type flat protective assembly. The latter is provided with contact parts which are formed along a front-side longitudinal edge as plug-in contacts for corresponding counter contacts of the distributor. The contact parts are constructed in the interior of the protective assembly as soldering connections for the connecting legs of the overvoltage arresters. Contact parts leading to the rear are connected in one piece to a common earthing plate of the protective assembly.

The invention is based on the object of simplifying the production and maintenance of the protective assembly,

In accordance with the present invention there is disclosed a protective assembly for a distributor in a telecommunications network, said assembly comprising a housing having a plurality of receiving chambers each adapted to receive an overvoltage arrester which includes three transversely protruding wire-like connecting legs, said assembly being substantially planar and having first and second contact parts, said first contact parts being arranged as plug-in contacts along a longitudinal edge of a front side of said housing for mating with complementary contacts of said distributor and extending towards the rear of said assembly, said second contact parts being strip-shaped contacts connected to an earth plate at the rear of said assembly, wherein an inner end of each said first and second contact parts is constructed as an insulation piercing connecting terminal that is bent upwards vertically with respect to a bottom of said assembly and into a clamping slot of same, one of said connecting legs can be pressed.

Such contact means, which have been successful as insulation piercing connecting devices for insulated switching wires provide the possibility of solderless connection of the connecting legs by a simple pressing-in. This is much simpler and less expensive than soldering. The contact terminals encircle the connecting legs of the overvoltage arresters with their stamped-free clamping legs with such tightness that the said legs are reliably contacted and held. Defective overvoltage arresters can be exchanged several times and without effort. The pressing of the connecting legs into the clamping slots of the contact terminals can be done with the aid of a simple tool which jointly hooks around the connecting legs of an overvoltage arrester. In the case of re-equipment, it is possible to press in all connecting legs of all overvoltage arresters of a protective assembly at the same time.

The overvoltage arresters are safely fixed in the housing of the protective assembly after the connecting legs have been pressed into the insulation piercing connecting devices. In this arrangement, it is advantageous that a position displacement of the connecting legs is limited by an adjoining wall part of the protective assembly.

The pressing-in depth of the connecting legs is limited so that a uniform angular position of the connecting legs is achieved.

The play between the front ends of the connecting legs and the partition is reduced to a minimum so that the overvoltage arresters are held with little play in the housing of the protective assembly. In addition, the connecting legs are so easily accessible in this position that they can be pulled out of the contact terminals without difficulties. Due to the connecting legs protruding towards the rear, the contact terminals are arranged at the rear of the overvoltage arresters so that the contact parts are fixed to an adequate length in the bottom of the protective assembly.

A further development provides the possibility of a space-saving arrangement of the voltage arresters and contact parts.

The preferred contact parts make it possible to contact both the underside and the top of the plug-in zone.

At the same time, this is mechanically reinforced.

In the text that follows, the invention will be explained in greater detail with reference to an exemplary embodiment shown in the drawing, in which:

Fig. 1 shows a partially broken top view of a protective assembly with overvoltage arresters,

Fig. 2 shows a side view of the protective assembly according to Figure 1 with a part section along line II-II in Figure 1,

Fig. 3 shows a section through the protective assembly according to Figure 1 along line III-III, and

Fig. 4 shows a section along line IV-IV through the protective assembly according to173Xalong.

According to Figures 1 to 4, a housing 1 of a protective assembly for a distributor in a telecommunications network exhibits receiving chambers 2 for three-pin overvoltage arresters 3 having wire-like transversely protruding connecting legs 4. The elongated flat protective assembly is provided along its front side 5 with plug-in contacts 6 which can be contacted with corresponding counter contacts of the distributor.

The plug-in contacts 6 are component of contact parts 7 which extend in the direction of the rear of the protective assembly in a bottom 8 of the housing 1. The inner ends of the contact parts 7 are bent up vertically from the bottom 8. In this section, they form contact terminals 9 in a manner of insulation piercing connecting devices for insulated wires.

On the rear of the protective assembly, an earth plate 10 is mounted from which strip-shaped contact parts 7 connected in one piece extend to the associated connecting legs 4. The earth plate 10 is freely accessible at the rear of the protective assembly and can be easily contacted by means of ~~half~~ contact springs of the distributor. The contact parts 7 of the earth plate 10 also end in contact terminals 9 which are flush with the remaining contact terminals 9.

The receiving chambers 2 are arranged offset with respect to one another in two rows. Into the receiving chambers, projections 11 protrude in the longitudinal direction of the protective assembly, which partially overlap the overvoltage arresters 3 and rest tangentially against their circumference. The projections 11 are

arranged in such a manner that the overvoltage arresters 3 can be pushed underneath with the connecting legs 4 standing up. After that, the connecting legs 4 are rotated in the direction of the bottom 8 into a position parallel to the latter. During this operation, the connecting legs 4 are pressed into clamping slots 12 of the contact terminals 9 up to a step-like constriction. In this arrangement, wall parts 13 of the housing 1 limit the displaceability of the overvoltage arresters 3 so that these are held with little play underneath the oblique projections 11. The step-like constriction is arranged in such a manner that the connecting legs 4 extend approximately parallel to the bottom 8 of the housing 1 in the pressed-in position.

The contact parts 7 are bent in a U-shape around the front longitudinal edge of the housing 1 in the area of the plug-in contacts 6 and thus form a contact zone which allows the possibility of contacting on both sides.

The claims defining the invention are as follows:

1. A protective assembly for a distributor in a telecommunications network, said assembly comprising a housing having a plurality of receiving chambers each adapted to receive an overvoltage arrester which includes three transversely protruding wire-like connecting legs, said assembly being substantially planar and having first and second contact parts, said first contact parts being arranged as plug-in contacts along a longitudinal edge of a front side of said housing for mating with complementary contacts of said distributor and extending towards the rear of said assembly, said second contact parts being strip-shaped contacts connected to an earth plate at the rear of said assembly, wherein an inner end of each said first and second contact parts is constructed as an insulation piercing connecting terminal that is bent upwards vertically with respect to a bottom of said assembly and into a clamping slot of same, one of said connecting legs can be pressed.

2. A protective assembly according to claim 1, wherein each overvoltage arrester can be partially inserted under tangentially obliquely support projections of the housing.

3. A protective assembly according to claim 1 or 2, wherein each clamping slot exhibits in its middle region a step-like constriction.

4. A protective assembly according to claim 3, wherein the connecting legs point in the direction of the rear of the protective assembly approximately parallel to the bottom of the protective assembly ~~approximately parallel to the bottom of the protective assembly~~ and that the connecting terminals are arranged in one plane for all connecting legs of the each overvoltage arrester.

5. A protective assembly according to any one of claims 1 to 4, wherein the receiving chambers are arranged offset with respect to one another in two rows.

6. A protective assembly according to any one of the preceding claims, wherein the plug-in contacts of the contact parts are bent in a U-shape around the longitudinal edge of the housing formed at the front side.

7. A protective assembly as claimed in any one of the preceding claims wherein said distributor is a telephone exchange.

8. A protective assembly as claimed in any one of the preceding claims, wherein said overvoltage arrester has three connecting legs.

9. A protective assembly for a distributor in a telecommunications network substantially as described herein with reference to the drawings.

DATED this TWENTY-SEVENTH day of JANUARY 1993

Siemens Aktiengesellschaft

Patent Attorneys for the Applicant
SPRUSON & FERGUSON

FIG2

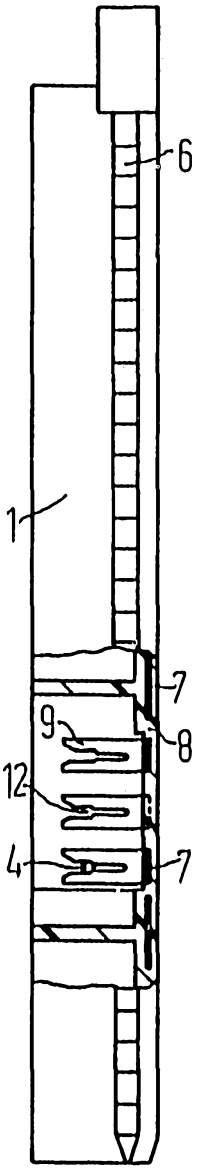

FIG1

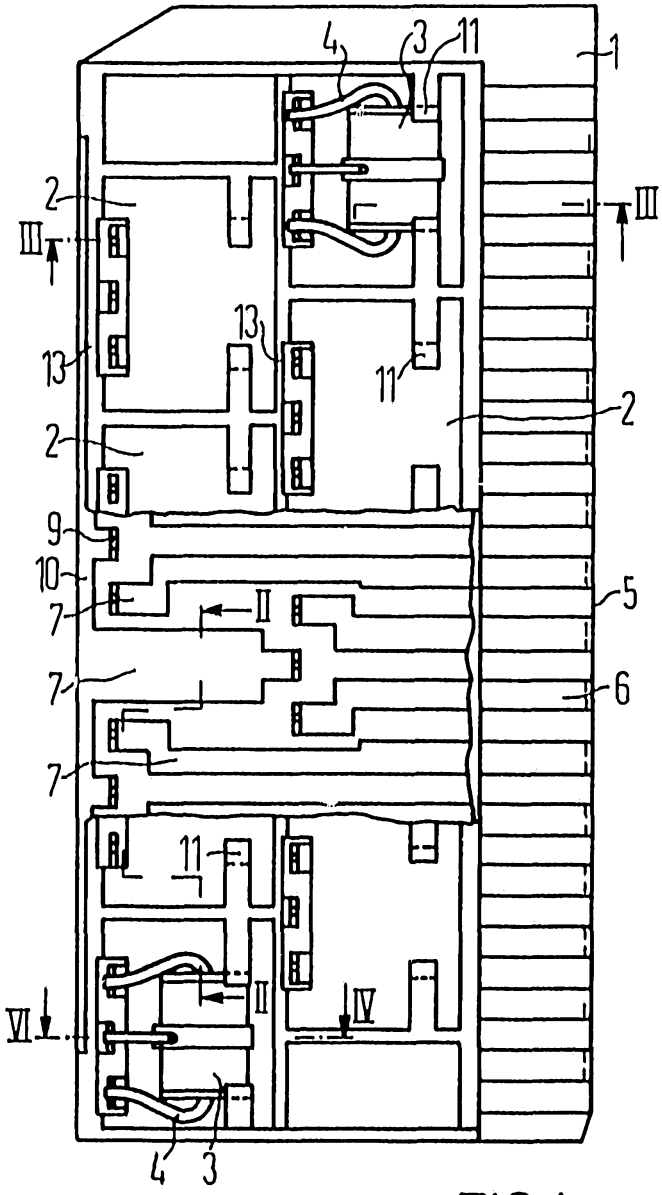

FIG3

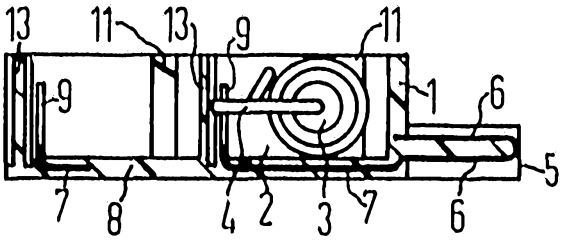

FIG4