



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
18.01.2012 Bulletin 2012/03

(51) Int Cl.:
H01Q 1/12 (2006.01) H01Q 1/44 (2006.01)

(21) Application number: **11380057.7**

(22) Date of filing: **04.07.2011**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(71) Applicant: **Telnet Redes Inteligentes S.A.**
50196 La Muela Zaragoza (ES)

(72) Inventor: **The designation of the inventor has not yet been filed**

(74) Representative: **Ungria Lopez, Javier et al**
Avda. Ramón y Cajal, 78
28043 Madrid (ES)

(30) Priority: **13.07.2010 ES 201030738 U**

(54) **Mimicked and retractable telecommunications antenna**

(57) Mimicked and retractable telecommunications antenna, being of the type that constitutes a base station for mobile telephony and that is installed on the top of different buildings, leaving the telecommunications antenna (1) itself, fixed to a supporting base consisting of, at least, one self-supporting telescopic modular body (2), fitted with an internal motor (3) connected to an electronic

control unit (4) for its operation, in such a way that the telecommunications antenna (1) itself, can shift through a tubular part (5), permeable to radiation and joined to the roof structure (6) of the enclosure (7) and which, in the working position, is flush with the ridge piece (8) of the roof structure (6), achieving concealment of the antenna in the building and at floor level to facilitate inspection and maintenance tasks.

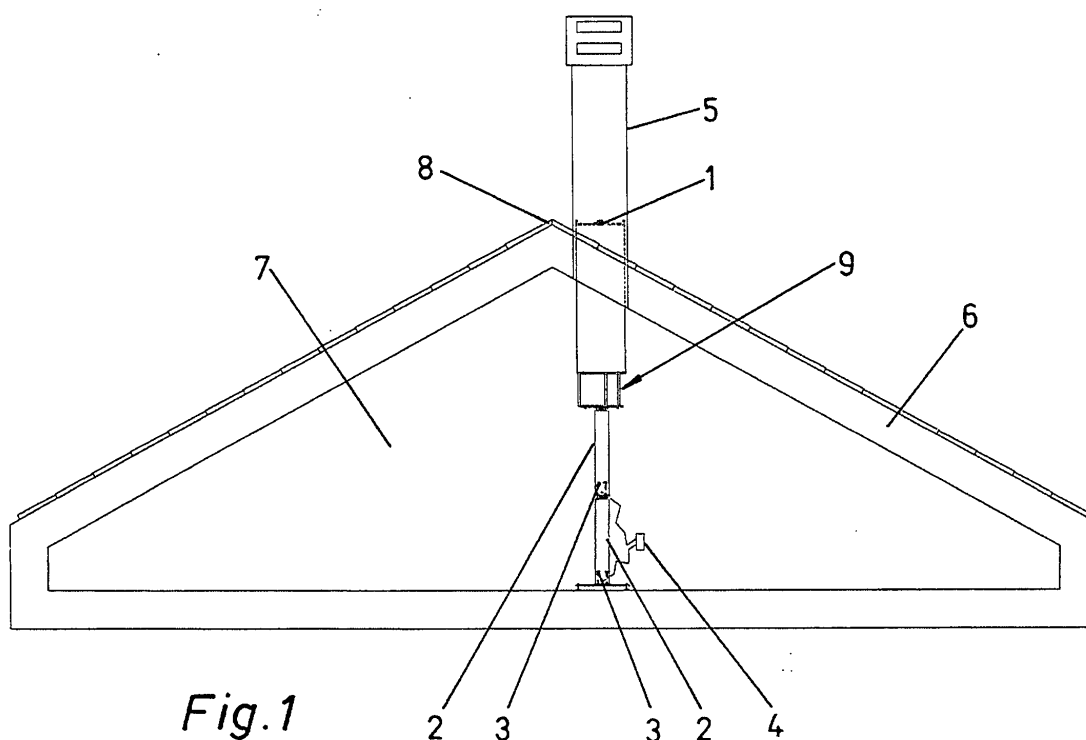


Fig. 1

Description

OBJECT OF THE INVENTION.

[0001] The following invention, as stated in the heading of this specification, relates to a mimicked and retractable telecommunications antenna, being of the type of telecommunication antennas that constitutes a base station for mobile telephony and that are mounted on the top part of different buildings, having as a first objective to be mounted in a mimicked manner without affecting the aesthetic of the surroundings.

[0002] A second objective of the invention is to present a mobile telecommunications antenna that is retractable from its working position becoming mimicked in the building on which it is mounted.

[0003] A third objective of the invention is for the telecommunications antenna, in its retracted position, to be mimicked in the building and at floor level in order to facilitate inspection and maintenance tasks.

FIELD OF APPLICATION.

[0004] The present specification discloses a telecommunications antenna for mobile telephony, applicable for installation in an enclosure on the top part of different buildings.

BACKGROUND OF THE INVENTION.

[0005] As is known, the evolution of communication technologies offers users the possibility of having increasing services provided over mobile devices (mobile phones, PDAs, laptops, etc..)

[0006] This requires a communications infrastructure on the part of mobile telephone operators, which must increase in capacity and scope, as demand from society for this type of services increases.

[0007] An essential requirement to enable this technological deployment is to increase the number of mobile communication base stations, which are associated to mobile telephony antennas, but this fact is increasingly difficult to achieve given that site owners (of buildings, plots of land, etc.) have to be found who are prepared to accommodate these antennas and equipment.

[0008] Therefore, with a view to solving these inconveniences it is a question of the antennas having the least possible visual impact on the surroundings in which they are mounted and of facilitating maintenance tasks, and, thus, on the one hand the aim has been to adapt them to the surroundings with a view to avoiding a visual impact and on the other hand the aim has been to facilitate maintenance operations.

[0009] Thus, in respect of reducing the visual impact of the telecommunications antennas which have been installed on flat terraces and which consist of a fixed mast, they have been finished off at their top part in a body having a generally cylindrical shape simulating a chim-

ney.

[0010] At the same time, for this same purpose of camouflage the telecommunications antenna one may consider patents ES 2 160 539; ES 2 190 748 and EP 1 089 376 which present camouflaged towers for telecommunication antennas.

[0011] Hence, patent ES 2 160 539 describes an *arrangement of camouflage applicable over support towers of telecommunication antennas or similar*, consisting of truncated bodies fixed to the floor and provided with an aperture at the bottom part, the body being coated in a plastic coating simulating tree bark and presenting protuberances on which artificial branches can be slotted.

[0012] On a separate note, patent ES 2 190 748, describes a *mimicked tower for rooftops*, useful for mounting telecommunications installations on the rooftops of buildings and which comprises a structure that is mounted and fixed on building terraces or rooftops and consisting of a top section, a bottom section and a camouflaged outer cover.

[0013] Likewise, patent EP 1 089 376 describes an artificial tree for camouflaging antennas.

[0014] At the same time, in respect of means employed to facilitate the positioning of a telecommunications antenna for maintenance operations, one can consider patent ES 1 058 218 which describes a *mobile phone base station antenna*, consisting of, at least, one first module that carries the radiating element on a folding mast, joined by folding means to a second fixed base module, leaving the antenna in vertical position for normal functioning and capable of folding to the horizontal position for maintenance operations.

DESCRIPTION OF THE INVENTION.

[0015] This specification discloses a mimicked and retractable telecommunications antenna, being of the type of antennas for telecommunications which consist of a base station for mobile telephony and which are installed on the top part of different buildings, in such a way that the telecommunications antenna itself, remains fixed to a supporting base consisting of, at least, a self-supporting telescopic modular body, each self-supporting telescopic modular body being fitted with an internal motor connected to an electronic control unit for operation thereof, in such a way that, the telecommunications antenna itself, shifts through a tubular piece, in the form of a chimney, permeable to radiation and joined to the roof structure of the enclosure and which, in the working position, is flush with the ridge piece of the roof structure.

[0016] This facilitates mounting of the installation of the self-supporting telescopic modular bodies on which the telecommunications antenna itself is supported, as it has a light weight and does not require any civil works.

[0017] On a separate note, the bottom zone of the telecommunications antenna itself, in the retracted position, remains at an accessible height for maintenance operations, avoiding having to install any platform from which

to operate and therefore avoiding falls by workmen.

[0018] Also, the operation of the electronic control unit simultaneously activates the internal motors of each one of the self-supporting telescopic modular bodies forming the supporting base for the antenna, allowing fast retraction/unfolding of the telescopic modular bodies.

[0019] Certainly, it is a question of being able to install the mimicked telecommunications antenna without affecting the aesthetic of the surroundings and which, through being retractable facilitates maintenance operations.

[0020] To complement the description made below, and with a view to contributing to a better understanding of the characteristics of the invention, the present specification is accompanied by a set of plans, whose figures by way of illustration but not limitation, represent the most characteristic details of the invention.

BRIEF DESCRIPTION OF THE DESIGNS.

[0021]

Figure 1. Shows an elevated view of an enclosure on which a telecommunications antenna has been mounted, noting how a tubular piece in the form of a chimney stands out over the roof structure, the antenna being in the retracted position.

Figure 2. Shows an elevated view of the enclosure of the preceding figure on which a telecommunications antenna has been mounted, noting how a tubular piece in the form of a chimney stands out over the roof structure, the antenna being in the working position mimicked by the piece in the form of a chimney.

DESCRIPTION OF A PREFERRED EMBODIMENT.

[0022] In the light of the aforementioned figures and according to the adopted numbering one may note how the telecommunications antenna 1 itself is fixed to a supporting base consisting of two self-supporting telescopic modular bodies 2, which are fitted, inside, with a motor 3 connected to an electronic control unit 4 for operation thereof.

[0023] At the same time, the telecommunications antenna 1 itself, shifts through a tubular piece 5, in the form of a chimney, permeable to radiation and joined to the roof structure 6 of the enclosure 7 where it is installed, remaining perfectly mimicked within the surroundings without interfering with the aesthetic.

[0024] Also, when the telecommunications antenna 1 is in the working position, it is flush with the ridge piece 8 of the roof structure 6, in such a way that the entire radiating zone thereof is above it, optimising functioning.

[0025] With this structuring, when the telecommunications antenna 1 itself is retracted the bottom zone 9, in which the elements to be manipulated are found, are left at an accessible height from the floor for maintenance

operations.

[0026] In this way, operation of the electronic control unit 4, simultaneously activates the internal motors 3 of each one of the self-supporting telescopic modular bodies 2, causing them to unfold/fold at the same time thereby reducing the time for the manoeuvre.

[0027] Thus, when the telecommunications antenna 1 itself is in the working position, figure 2, the radiating zone thereof is with its bottom part flush with the ridge piece 8 of the roof structure 6 thereby optimising its functioning, whereas when it is retracted, figure 1, to carry out any maintenance operation zone 9 of the elements to be manipulated is accessible from the floor of the enclosure without requiring any platform.

[0028] For certain, through the object of the invention a very simple installation of the telecommunications antenna is provided without the need for special tools and without the need for devices or machines for lifting components to their point of installation, since they can be transported, given their light weight and volume, in a lift or up the stairs.

[0029] On a separate note, to maintain a totally and absolutely static position the supporting base may be anchored to a point, for example the roof structure, possibly by means of a mounting plate 10 for joining to the top self-supporting telescopic modular body 2.

[0030] Similarly, although, by way of an example, self-supporting telescopic modular bodies have been represented the installation may have one or more and the bottom body may be anchored to a lower platform at a variable height from the floor.

Claims

1. MIMICKED AND RETRACTABLE TELECOMMUNICATIONS ANTENNA, being of the type consisting of a base station for mobile telephony and that is installed on the top part of different buildings, **characterised in that** the telecommunications antenna (1) itself, is fixed to a supporting base consisting of, at least, one self-supporting telescopic modular body (2), each self-supporting telescopic modular body (2) being fitted with an internal motor (3) connected to an electronic control unit (4) for operation thereof, in such a way that, the telecommunications antenna (1) itself, can shift through a tubular piece (5), permeable to radiation and joined to the roof structure (6) of the enclosure (7) and that, in the working position, is flush with the ridge piece (8) of the roof structure (6).
2. MIMICKED AND RETRACTABLE TELECOMMUNICATIONS ANTENNA, according to claim 1, **characterised in that** the bottom part (9) of the telecommunications antenna (1) itself, in the retracted position, remains at an accessible height for maintenance operations.

3. MIMICKED AND RETRACTABLE TELECOMMUNICATIONS ANTENNA, according to claim 1, **characterised in that** operation of the electronic control unit (4) simultaneously activates the internal motors (3) of each one of the self-supporting telescopic modular bodies (2).

10

15

20

25

30

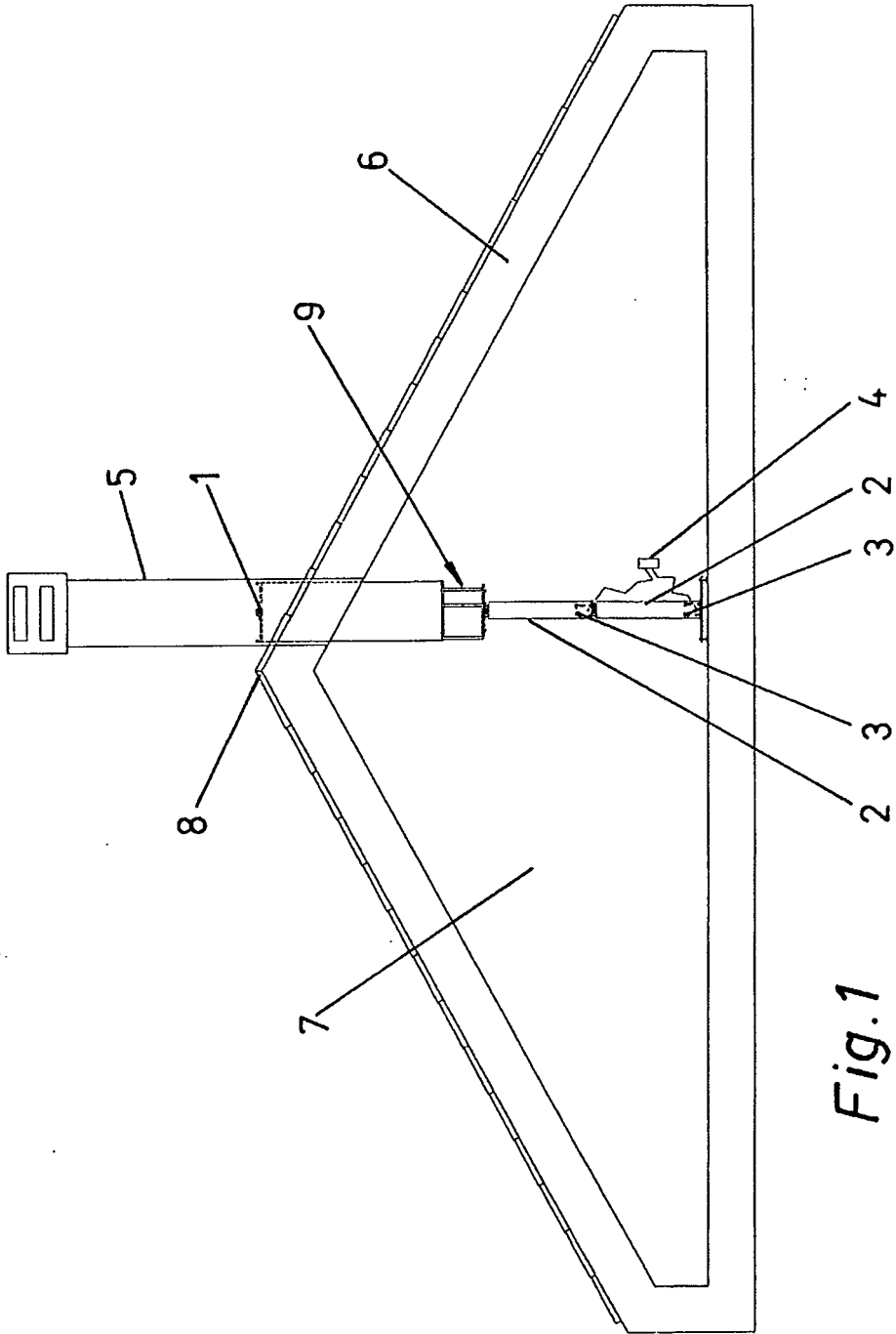
35

40

45

50

55



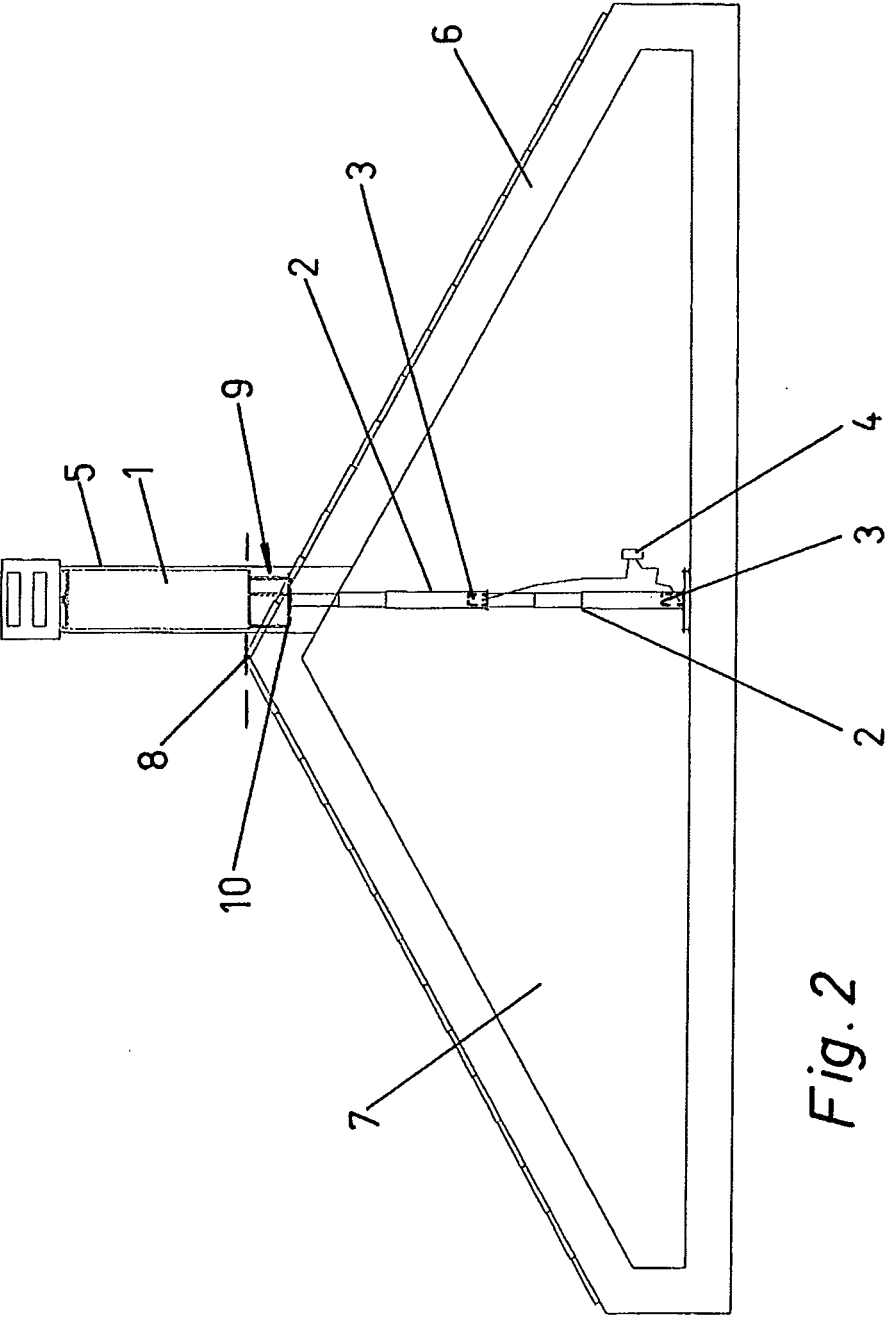


Fig. 2



EUROPEAN SEARCH REPORT

Application Number
EP 11 38 0057

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	DE 28 29 116 A1 (KROES WILHELM) 17 January 1980 (1980-01-17)	1,2	INV. H01Q1/12 H01Q1/44
A	* figure 1 * * pages 5-9 *	3	
Y	----- US 2002/005815 A1 (SPAULDING HERMAN [US]) 17 January 2002 (2002-01-17) * abstract; figure 8 * * paragraph [0097] *	1,2	
Y	----- GB 2 417 833 A (EUROP SATELLITES LTD [GB]) 8 March 2006 (2006-03-08) * abstract; figures 4-6 *	1,2	
Y	----- ES 2 190 748 A1 (ATT CONSULTORIA DE PROYECTOS S [ES]) 1 August 2003 (2003-08-01) * abstract; figures 1,2 * -----	1,2	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			H01Q
Place of search		Date of completion of the search	Examiner
Munich		7 November 2011	Unterberger, Michael
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

1
EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 11 38 0057

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

07-11-2011

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 2829116	A1	17-01-1980	NONE	
US 2002005815	A1	17-01-2002	NONE	
GB 2417833	A	08-03-2006	NONE	
ES 2190748	A1	01-08-2003	NONE	

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- ES 2160539 [0010] [0011]
- ES 2190748 [0010] [0012]
- EP 1089376 A [0010] [0013]
- ES 1058218 [0014]