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(54) SINGLE-COLUMN ADVERTISING STRUCTURE INCLUDING A MOBILE TELEPHONE STATION

(57) The invention relates to a single-column advertising structure including a mobile telephone station, of the type that is provided with a platform for advertising posters or a telecommunications antenna at a height. The single column is formed by: a series of tubular bodies with a constant diameter; a ladder providing access through the inside of the column; a first platform which is wider than the diameter of the column; a telecommunications antenna on the upper part of the column; a second platform disposed at a higher level than the first platform; microwave links; and connection cables inside the tubular bodies. Said structure allows easy installation and future dismantling of the column, as well as simple maintenance of the equipment installed thereon.

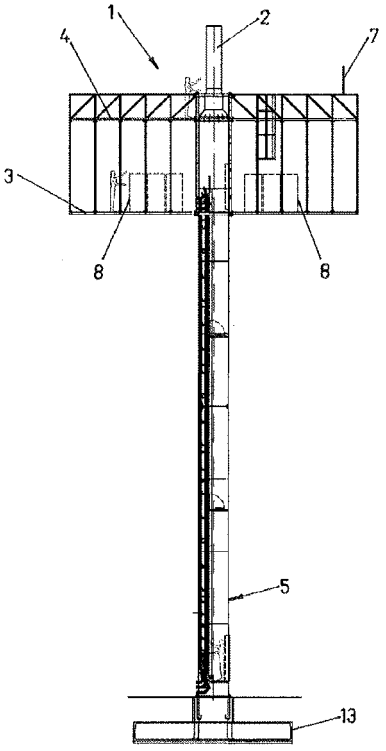


Fig. 2

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Description

OBJECT OF THE INVENTION.

[0001] The following invention, as expressed in the statement of the present specification, relates to a single-column advertising structure including a mobile telephone station, of the type that is provided with a platform for advertising posters or a telecommunications antenna at a height, being accessible via a ladder arranged by the external surface of the post, so that a first object of the invention is to combine in a single post an advertising service and a telecommunications base station for mono/multi-operator leaving the antenna integrated in the assembly.

[0002] A second object of the invention is that the single-column structure includes at a height, a first support platform of the advertising posters and a second platform for access to the communication antenna, and it may incorporate into the first platform, at least, one control cabinet.

[0003] Another object of the invention is to allow access to the platforms by a ladder through the inside of the column and that also through the inside of the column the connection cables access.

[0004] One last object of the invention is the possibility of supporting the entire structure on a floating base that facilitates the assembly and disassembly of the same if in the future you want to remove the column from the location.

FIELD OF APPLICATION.

[0005] The present specification describes a single-column advertising structure including a mobile telephone station, being applicable as advertising service since it has the corresponding advertising posters and as telecommunication service since it has an antenna for mono/multioperator.

BACKGROUND OF THE INVENTION.

[0006] As it is known the evolution of communication technologies offers users the possibility of having increasingly more services through mobile devices (mobile phones, PDA, laptops, etc.).

[0007] For this, a communications infrastructure is required by the mobile telephone operators that must increase in capacity and extent, as the demand for such services by society increases.

[0008] An essential requirement to enable this technology deployment is to increase the number of mobile communications base stations, that are associated with mobile phone antennas, but this fact is becoming more difficult to achieve, since it is necessary to find owners of locations (buildings, lands, etc.) willing to accommodate these equipment and antennas.

[0009] On the other hand, we can consider documents ES 1 058 218; ES 2 160 539 and ES 2 190 748, such that document ES 1 058 218 describes a *base station antenna for mobile telephony,* constituted by, at least, one first module carrier of the radiant element on a folding mast, attached by means of abatement to a second fixed base module, leaving the antenna in a vertical position for normal operation and it can be used in a horizontal position for maintenance operations.

[0010] Document ES 2 160 539 describes a *camouflage arrangement applicable on support towers of telecommunications antennas or similar,* consisting of truncated cone bodies fixed to the floor and fitted with an opening at the bottom, which bodies are covered with a plastic coating by way of tree bark and having protrusions wherein artificial branches fit.

[0011] Document ES 2 190 748 describes a *camouflaged tower for covers,* useful for the assembly of telecommunications facilities on buildings roofs comprising a structure that is mounted and fixed on terraces or building cover and that consists of an upper section, a lower section and a camouflaged external cover.

[0012] On the other hand, as it is known, the display of the advertising is carried out in very different ways, such that when being in urban areas it is common to have an advertising support on a post at an accessible height using a manual ladder.

[0013] Likewise, advertising supports are also known arranged at a height and provided with an access platform, such that the support post has an external access ladder. This platform has a width similar to the diameter of the post on the assembly part.

[0014] On the other hand, we can consider document ES 2 179 769 which describes a *single-column advertising board,* which consists of an structure of anchoring and fixation to the ground, a single column that links to a platform of placement of the advertising posters resting on structural turrets with access ladder and lighting structure.

DESCRIPTION OF THE INVENTION.

[0015] The present specification describes a single-column advertising structure including a mobile telephone station, being the type of columns which have at a height a platform with advertising posters or a telecommunications antenna, such that the single column is formed by:

- ♦ a series of tubular bodies with a constant union diameter, with each other, through the inside;
- ♦ a ladder providing access through the inside of the column formed by the tubular bodies;
- ♦ a first platform which is wider than the diameter of the column, for support of the advertising posters;
- ♦ a telecommunications antenna on the upper part of the column;
- ♦ a second platform disposed at a higher level than the first platform, for access to the antenna;

- ♦ microwave links, and;
- ♦ connection cables through the inside of the series of tubular bodies forming the column.

[0016] In a first practical implementation of the invention, on the first platform, off-centred with respect to the column, for support of the advertising posters it incorporates, at least, one control cabinet of the mono/multioperator telecommunications station.

[0017] Since the platform has a greater width than the diameter of the column and is off-centred, the circulation of operators is facilitated through the same.

[0018] In a second variant of practical implementation of the invention, the control cabinets are installed on the base of the column for which it has a location compartment of, at least, one control cabinet of the mono/multioperator telecommunications station.

[0019] In a third variant of practical implementation of the invention the location compartment of, at least, one control cabinet of the mono/multioperator telecommunications station is buried, not affecting the facility environment.

[0020] The assembly of the advertising posters, mounted on the lower platform, from the same, will be provided via the second platform, passable throughout its length, as well as having access to the antenna.

[0021] The microwave links for communication between columns may be placed where desired on the second platform being in the open air.

[0022] The column structure may incorporate communication electronics, such as radio links and/or communication equipment for base telephone stations (BTS).

[0023] The equipment mounted on the column may be energy-powered by the mains or by alternative energies such as wind power or solar energy.

[0024] The structure of the base of the column may be of the fixed type, single block of concrete, or modular, in the latter case constituted by the union of prestressed concrete blocks that allow easy assembly and disassembly on site under floating configuration directly on the compacted ground.

[0025] To complement the description that will be carried out next, and in order to help to a better understanding of the features of the invention, the present specification is accompanied by a set of plans, in the figures of which the most characteristic details of the invention are shown in an illustrative and not limitative form.

BRIEF DESCRIPTION OF THE DESIGNS.

[0026]

Figure 1. It shows an elevational side view of the previous figure, where the inner ladders of the post can be seen, as well as the upper platforms.

Figure 2. It shows an elevational front view of the single-column advertising structure including a mobile telephone station, being able to observe the upper platforms for access to the advertising posters and the antenna, as well as control cabinets.

Figure 3. It shows a detailed view of a practical implementation in which the control cabinet is installed at the base of the column, where the underground passage of the cables can be observed and having eliminated the floating anchor.

Figure 4. It shows a plant view of the association of the column with a compartment mounted on its base for the location of, at least, one control cabinet, as well as the management of the connection cables from the column to the aforementioned control cabinet.

DESCRIPTION OF A PREFERRED EMBODIMENT.

[0027] In view of the commented figures and in accordance with the adopted numbering we can observe how single-column 1 ends in an antenna 2 and incorporates a first platform 3 for the assembly of the advertising posters and a second platform 4 for access to the mobile phone mono/multioperator antenna 2.

[0028] Column 1 is conformed by a series of tubular bodies 5, by way of modules, with constant diameter and the union of which, with each other, is carried out along their inner part through screws and corresponding nuts and is materialized "in situ". These tubular bodies, in a practical implementation, are defined by modules of 10 m. although their length, as well as their diameter can be variable.

[0029] To access the first platform 3 and in order to obtain greater security, the column 1 incorporates a ladder 6 through its inside, with the added advantage of being perfectly camouflaged and not "visible".

[0030] The first platform 3 has a width greater than the diameter of the column 1, and serves as a support of the advertising posters, so that this first platform 3 is accessed by the ladder 6 through the inside of the column 1 and the operators will be able to move freely through it without the need for safety harnesses.

[0031] Column 1 has a second platform 4 at a level above the first platform 3 from which you can ascend to gain access to the antenna 2 wherein the column 1 is topped, which is perfectly integrated in the environment.

[0032] By having this second platform 4, passable in all its length, on the first platform 3, it is allowed to mount from it, in a simple and safe way, the advertising posters that are mounted on the sides of the first platform 3.

[0033] Likewise, in the profile structure defined by the first and second platform is facilitated the assembly of microwave links 7 at the desired place, outdoors, for communication between columns.

[0034] All the connection cables are protected since they are inside the column 1 and perfectly camouflaged.

[0035] The column structure may incorporate communication electronics, such as radio links and/or communication equipment for base telephone stations (BTS).

[0036] On the other hand, in a first practical implemen-

tation of the invention, on the first platform 3, off-centred with respect to the column 1, for support of the advertising posters it incorporates, at least, one control cabinet 8 of the mono/multioperator telecommunications station.

[0037] Thus, in Figure 1 of the designs it is shown how by having the first platform 3 a greater width than the diameter of the column and being off-centred with respect to the same, the operators are allowed to pass along the same.

[0038] In a second variant of practical implementation of the invention, on the base of the column 1 it has a location compartment 9 of, at least, one control cabinet 8 of the mono/multioperator telecommunications station. In this implementation, there is no control cabinet mounted on the first platform 3.

[0039] As shown in figures 3 and 4 of the designs, the operators will access the compartment 9 through a first access door 10, so that in order to gain access to the interior of the column 1 they will have to do it through a second door 11, i.e., the access to one place or another may be limited.

[0040] Likewise, we can see how the connection cables 12 are routed from column 1 to the control cabinet 8 of the lower compartment 9, being these cables 12 buried.

[0041] In a third practical implementation of the invention the location compartment 9 of, at least, one control cabinet 8 of the mono/multioperator telecommunications station is buried, not affecting the facility environment.

[0042] Obviously in said compartment 9 all those elements or components relative to the set may be installed.

[0043] The equipment mounted on the column may be energy-powered by the mains or by alternative energies such as wind power or solar energy.

[0044] The previous practical implementations may have as a base of support the traditional block of compact concrete or a floating base 13 positioned on the compacted ground and made with modular blocks that allow easy installation and future dismantling of the column.

Claims

1. Single-column advertising structure including a mobile telephone station, being the type of columns which have at a height a platform with advertising posters or a telecommunications antenna, **characterized in that** the single-column (1) is constituted by:

    - ♦ a series of tubular bodies (5) with a constant union diameter, with each other, through their inside;
    - ♦ a ladder (6) providing access through the inside of the single-column (1) formed by the tubular bodies (5);
    - ♦ a first platform (3) which is wider than the diameter of the single-column (1), for support of the advertising posters;
    - ♦ a telecommunications antenna (2) on the upper part of the column (1);
    - ♦ a second platform (4) disposed at a higher level than the first platform (3), for access to the antenna (2);
    - ♦ microwave links (7), and;
    - ♦ connection cables (12) through the inside of the series of tubular bodies forming the single-column (1).

2. Single-column advertising structure including a mobile telephone station, according to claim 1, **characterized in that** on the first platform (3), off-centred with respect to the single-column (1), for support of the advertising posters it incorporates, at least, one control cabinet (8) of the mono/multioperator telecommunications station of the antenna (2).

3. Single-column advertising structure including a mobile telephone station, according to claim 1, **characterized in that** the single-column (1) structure incorporates communication electronics, such as radio links and/or communication equipment for base telephone stations.

4. Single-column advertising structure including a mobile telephone station, according to claim 1, **characterized in that** on the base of the single-column (1) it has a location compartment (9) of, at least, one control cabinet (8) of the mono/multioperator telecommunications station of the antenna (2).

5. Single-column advertising structure including a mobile telephone station, according to claim 1, **characterized in that** the location compartment (9) of, at least, one control cabinet (8) of the mono/multioperator telecommunications station is buried.

6. Single-column advertising structure including a mobile telephone station, according to claim 1, **characterized in that** the equipment mounted on the column are energy-powered by the mains or by alternative energies such as wind power or solar energy.

7. Single-column advertising structure including a mobile telephone station, according to claim 1, **characterized in that** the structure can be supported by a modular floating base (13) facilitating the assembly and disassembly of the site.

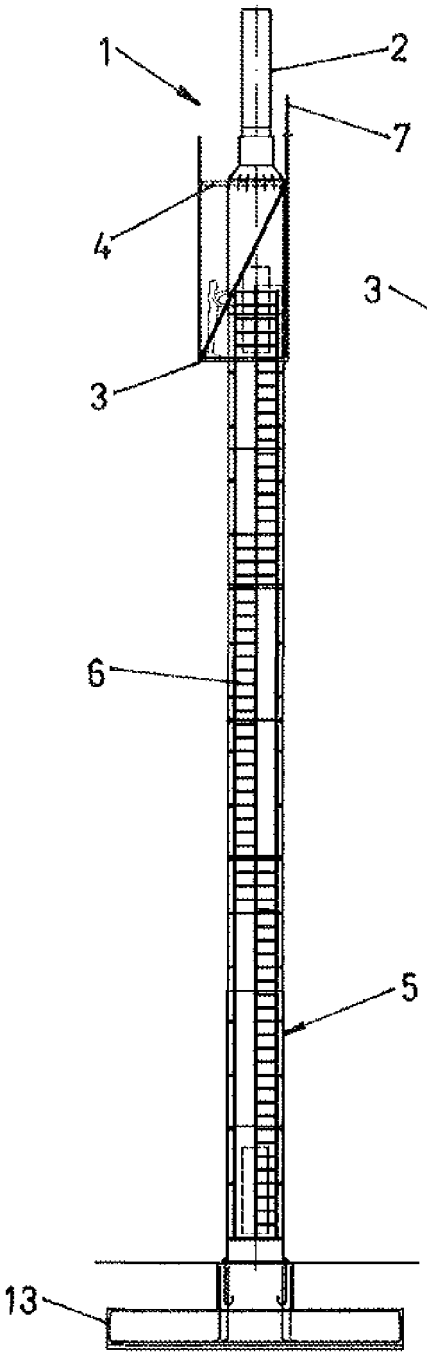


Fig. 1

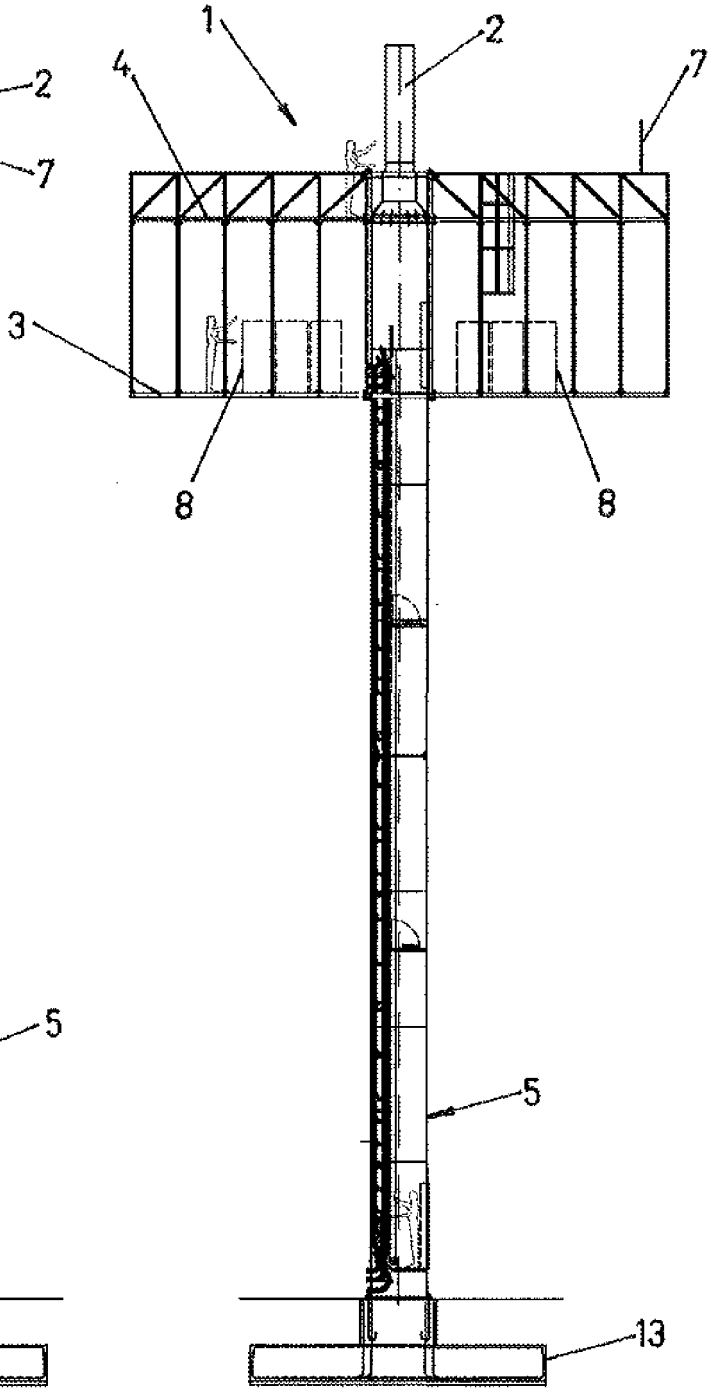


Fig. 2

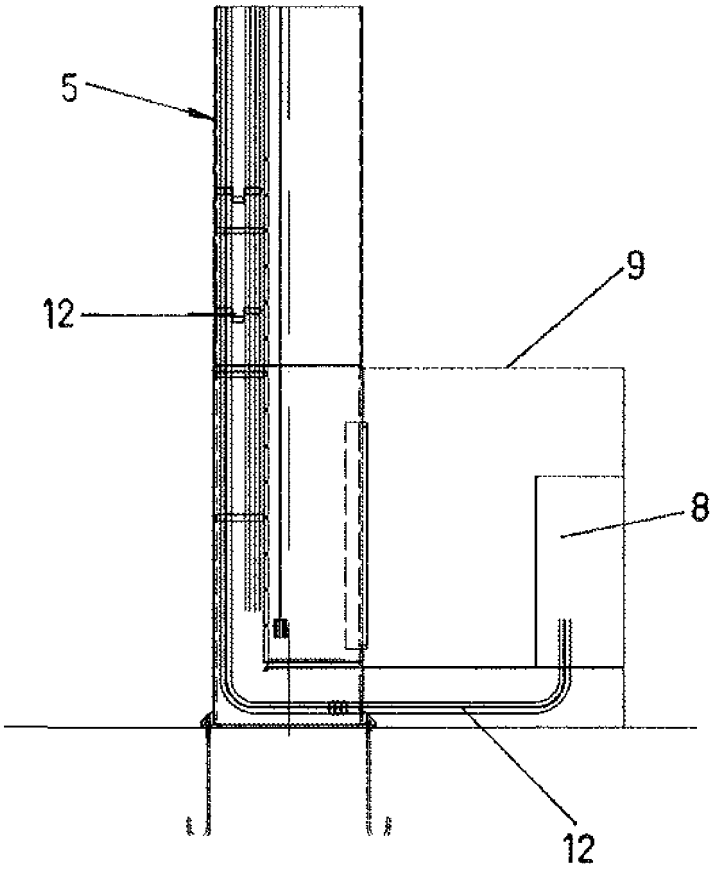


Fig. 3

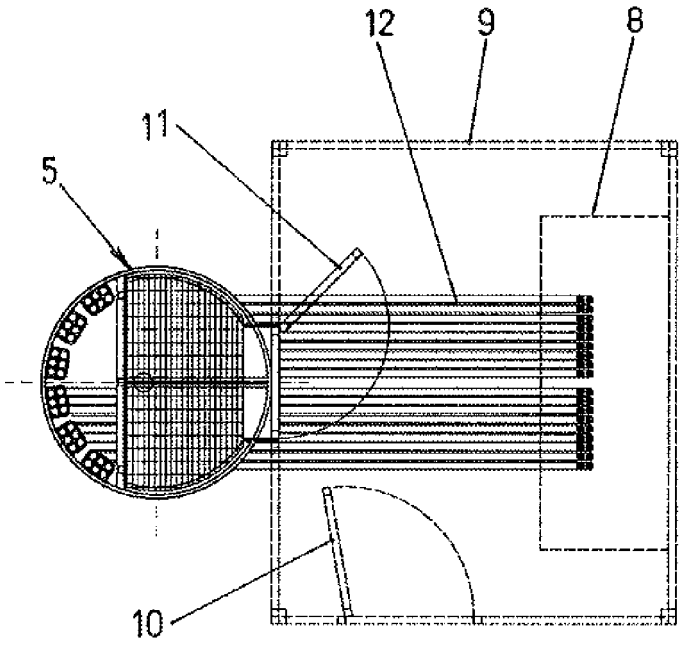


Fig. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2010/070804

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
H01Q, G09F, E04H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES, WIPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	DE 29622823 U1 (EISENMANN JOHANN) 12/06/1997, figure 2,	7
A	EP 1455414 A1 (ANDREW CORP) 08/09/2004, figure 5, paragraphs[0001 - 0009]; paragraph[0025];	1-7

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
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Date of the actual completion of the international search	Date of mailing of the international search report
26/04/2011	**(11/05/2011)**
Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04	Authorized officer M. Rivas Sáiz Telephone No. 91 3498595

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
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Form PCT/ISA/210 (patent family annex) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2010/070804

CLASSIFICATION OF SUBJECT MATTER

H01Q1/44 (2006.01)
G09F15/00 (2006.01)
E04H12/00 (2006.01)

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REFERENCES CITED IN THE DESCRIPTION

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- ES 2160539 **[0009] [0010]**
- ES 2190748 **[0009] [0011]**
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