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(54) **ANTENNA REFLECTING NET**

(57) An antenna reflector installed on an antenna support rod includes a main support rod, a left support rod, a right support rod and a plurality of connecting support members provided between the main support rod and the left support rod, the right support rod. Two ends of each connecting support member are fixed on the left

support rod and the right support rod with screws, respectively. A connecting pin which allows the connecting support members to be rotated relative to the main support rod is provided between at least one of the connecting support members and the main support rod. The antenna reflector is simple in design, and may be easily assembled, conveniently packaged and folded.

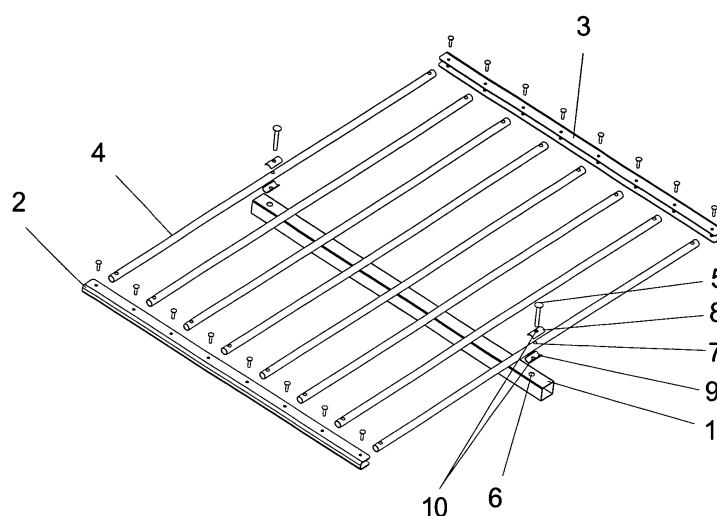


Fig.1

Description

[0001] The present application claims the benefit of priority to Chinese patent application No. 200920263457.6 titled "ANTENNA REFLECTOR", filed with the Chinese State Intellectual Property Office on November 19, 2009. The entire disclosures thereof are incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The invention relates to an antenna reflector.

BACKGROUND OF THE INVENTION

[0003] Most of conventional outdoor antennae include an antenna bracket and an antenna reflector. The antenna reflector includes a main support rod, a left support rod, a right support rod, and a plurality of branch support members. The plurality of branch support members are respectively fixed between the main support rod and the left support rod, the right support rod. Though the branch support members are strong enough, they cannot be folded. Thus, it is neither convenient to package, nor convenient to carry and transportation.

[0004] In view of the above disadvantages, some advantageous improvements are made in the present invention on the basis of the conventional antenna reflector.

SUMMARY OF THE INVENTION

[0005] The object of the present invention is to overcome the disadvantages of the prior art, and to provide an antenna reflector which is simple in design, and may be conveniently installed, packaged and may be folded.

[0006] The object of the present invention is achieved by the following technical solutions.

[0007] An antenna reflector installed on an antenna support rod includes a main support rod, a left support rod, a right support rod and a plurality of connecting support members provided between the main support rod and the left support rod, the right support rod. Two ends of each connecting support member are fixed on the left support rod and the right support rod with screws, respectively. At least one connecting pin which allows the connecting support members to be rotated relative to the main support rod is provided between at least one of the connecting support members and the main support rod.

[0008] For the above antenna reflector, axel holes are respectively provided at an upper end and a lower end of the main support rod. Through holes which correspond to the axel holes and receive the connecting pins are provided on at least one of the connecting support members. The connecting pin passes through the through hole and is received in the axel hole of the main support rod.

[0009] For the above antenna reflector, an upper arc

gasket and a lower arc gasket are respectively provided at a top side and a bottom side of the connecting support member. The upper arc gasket is disposed between the connecting support member and the connecting pin, and the lower arc gasket is disposed between the connecting support member and the main support rod. The upper arc gasket and the lower arc gasket are respectively provided with holes which correspond to the axel hole and the through hole and through which the connecting pin passes.

[0010] Compared with the prior art, the present invention has the following advantages. Since the connecting pin which allows the connecting support members to be rotated relative to the main support rod is provided between at least one of connecting support member and the main support rod, and the left support rod and the right support rod are respectively fixed at the left and right ends of the connecting support members, the connecting support members may drive the left support rod and the right support rod connected therewith to move upwardly or downwardly when the connecting support members are rotated relative to the main support rod, so that the left support rod and the right support rod move closer to the main support rod and are folded together. Therefore, the area of the reflector is reduced, which is easier for the operator to package the reflector.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Fig. 1 is an exploded view of the present invention;

[0012] Fig. 2 is a perspective view of the present invention; and

[0013] Fig. 3 is a schematic view illustrating the using state of the present invention.

DETAILED DESCRIPTION

[0014] Hereinafter, the present invention will be further described in detail with reference to drawings and a specific embodiment.

[0015] An antenna reflector installed on an antenna support rod includes a main support rod 1, a left support rod 2, a right support rod 3 and a plurality of connecting support members 4 provided between the main support rod 1 and the left support rod 2, the right support rod 3. Two ends of each connecting support members 4 are fixed on the left support rod 2 and the right support rod 3 with screws, respectively. A connecting pin 5 which allows the connecting support members 4 to be rotated relative to the main support rod 1 is provided between at least one of the connecting support members 4 and the main support rod 1.

[0016] Axel holes 6 are provided at the upper and lower ends of the main support rod 1, respectively. Through holes 7 which correspond to the axel holes 6 and may receive the connecting pins 5 are provided on the connecting support members 4, respectively. The connect-

ing pins 5 pass through the through holes 7 and are received in the axel holes 6 of the main support rod 1, respectively.

[0017] An upper arc gasket 8 and a lower arc gasket 9 are provided at the top and bottom sides of the connecting support member 4, respectively. The upper arc gasket 8 is provided between the connecting support member 4 and the connecting pin 5, and the lower arc gasket 9 is provided between the connecting support member 4 and the main support rod 1. The upper arc gasket 8 and the lower arc gasket 9 are respectively provided with holes 10 which correspond to the axel hole 6 and the through hole 7 and through which the connecting pin 5 passes.

[0018] When being assembled, the left and right ends of each connecting support member 4 are firstly fixed on the left support rod 2 and the right support rod 3 with screws, respectively, and then the upper arc gasket 8 and the lower arc gasket 9 are installed on the connecting support member 4, with the holes 10 of the upper arc gasket 8 and the lower arc gasket 9 corresponding to the through hole 7 of the connecting support member 4, and then the connecting support member 4 with the upper arc gasket 8 and the lower arc gasket 9 is placed on the main support rod 1, with the axel hole 6 of the main support rod 1 corresponding to the through hole 7, and finally, the connecting support member 4 and the main support rod 1 are movably connected together by the connecting pin 5, i.e., the connecting pin 5 passes through the through hole 7 and is received in the axel hole 6 of the main support rod 1. Since the connecting pin 5 which allows the connecting support members 4 to be rotated relative to the main support rod 1 is provided between at least one of connecting support members 4 and the main support rod 1, and the left support rod 2 and the right support rod 3 are respectively fixed at the left and right ends of the connecting support members 4, the connecting support members 4 may drive the left support rod 2 and the right support rod 3 connected therewith to move upwardly or downwardly when the connecting support members 4 are rotated relative to the main support rod 1, so that the left support rod 2 and the right support rod 3 move closer to the main support rod 1 and are folded together. Therefore, the area of the reflector is reduced, which is easier for the operator to package the reflector.

at least one connecting pin (5) which allows the connecting support members (4) to be rotated relative to the main support rod (1) is provided between at least one of the connecting support members (4) and the main support rod (1).

2. The antenna reflector according to claim 1, wherein axel holes (6) are respectively provided at an upper end and a lower end of the main support rod (1), through holes (7) which correspond to the axel holes (6) and receive the connecting pins (5) are provided on at least one of the connecting support members (4), the connecting pin (5) passes through the through hole (7) and is received in the axel hole (6) of the main support rod (1).
3. The antenna reflector according to claim 2, wherein an upper arc gasket (8) and a lower arc gasket (9) are respectively provided at a top side and a bottom side of the connecting support member (4), the upper arc gasket (8) is disposed between the connecting support member (4) and the connecting pin (5), the lower arc gasket (9) is disposed between the connecting support member (4) and the main support rod (1), the upper arc gasket (8) and the lower arc gasket (9) are respectively provided with holes (10) which correspond to the axel hole (6) and the through hole (7) and through which the connecting pin (5) passes.

Claims

1. An antenna reflector installed on an antenna support rod, comprising a main support rod (1), a left support rod (2), a right support rod (3), and a plurality of connecting support members (4) provided between the main support rod (1) and the left support rod (2), the right support rod (3), wherein two ends of each connecting support member (4) are respectively fixed on the left support rod (2) and the right support rod (3) with screws, **characterized in that**

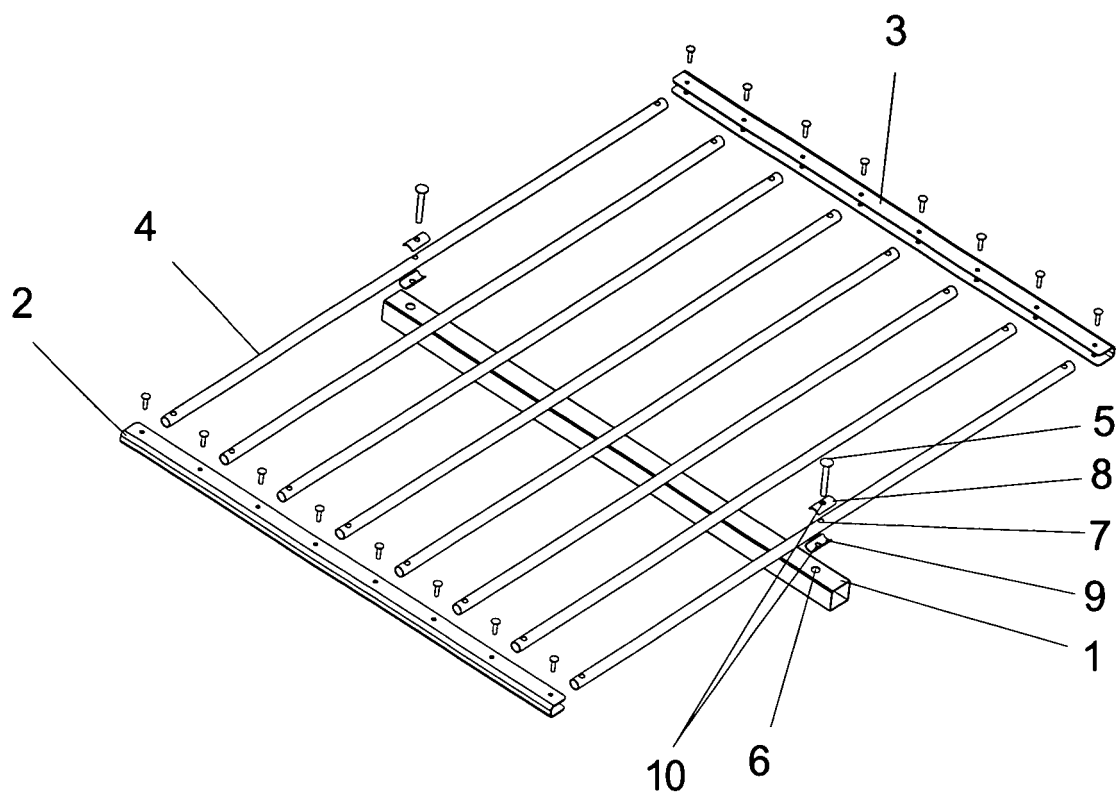


Fig.1

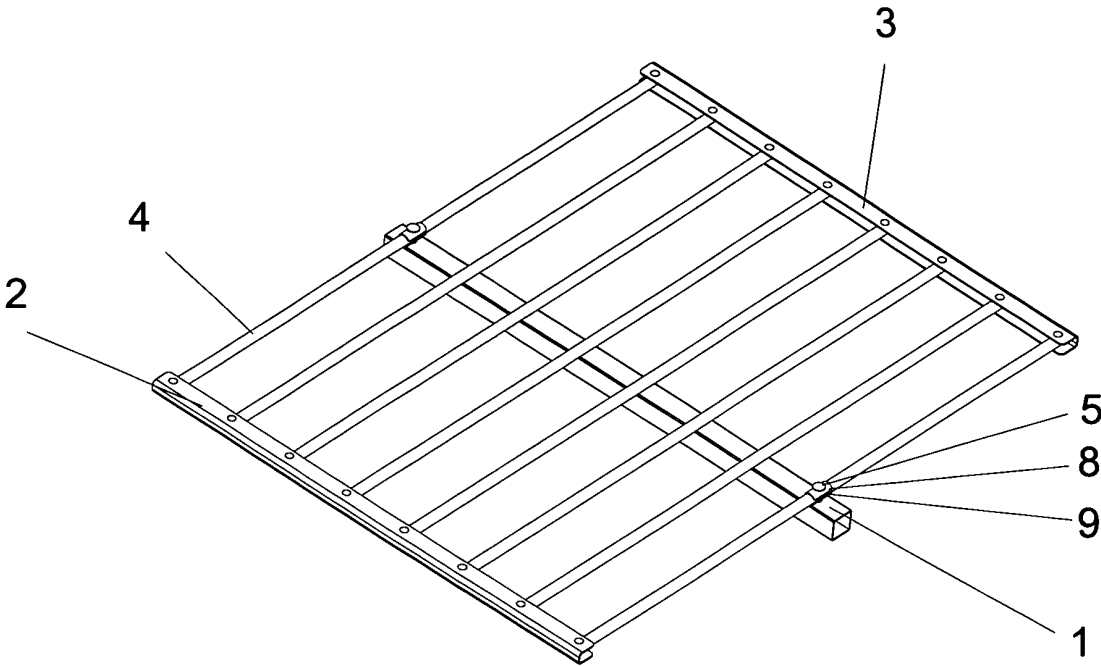


Fig. 2

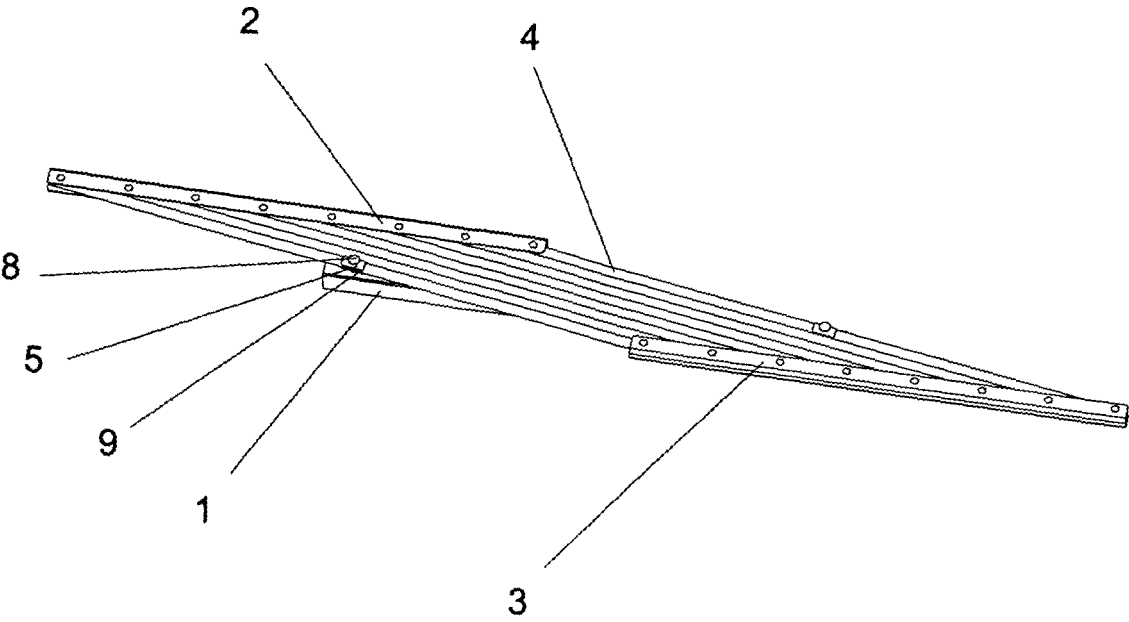


Fig. 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2010/076938

A. CLASSIFICATION OF SUBJECT MATTER

H01Q15/14(2006.01)i

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)

IPC: H01Q

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)

WPI, EPODOC, IEEE, CNPAT, CNKI: antenna, antennae, reflect, fold, rotate, portable, pack, package, area, proportion, space, shrink, contract**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN201576747U (HE Peikun) 08 Sep. 2010 (08.09.2010) description paragraphs 14-17	1-3
X	CN1471194A (NO 54 INST CHINA ELECTRONIC SCI & TECH G) 28 Jan. 2004 (28.01.2004) description page 3, line 17-page 4, line19, figures 1, 2	1-3
A	CN200997447Y (CHENGDU JIUHUA YUANTONG SCI & TECHNOLOGY DEV LTD CO) 26 Dec. 2007 (26.12.2007) the whole document	1-3
A	CN2604009Y (ZHAO Yucheng) 18 Feb. 2004 (18.02.2004) the whole document	1-3

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

* Special categories of cited documents:	“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
“A” document defining the general state of the art which is not considered to be of particular relevance	“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
“E” earlier application or patent but published on or after the international filing date	“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
“L” document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified)	“&”document member of the same patent family
“O” document referring to an oral disclosure, use, exhibition or other means	
“P” document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 23 Nov. 2010 (23.11.2010)	Date of mailing of the international search report 09 Dec. 2010 (09.12.2010)
Name and mailing address of the ISA/CN The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	Authorized officer TAN Wen Telephone No. (86-10)62411459

Form PCT/ISA /210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/CN2010/076938

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN201576747U	08.09.2010	None	
CN1471194A	28.01.2004	None	
CN200997447Y	26.12.2007	None	
CN2604009Y	18.02.2004	None	

Form PCT/ISA /210 (patent family annex) (July 2009)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- CN 200920263457 [0001]