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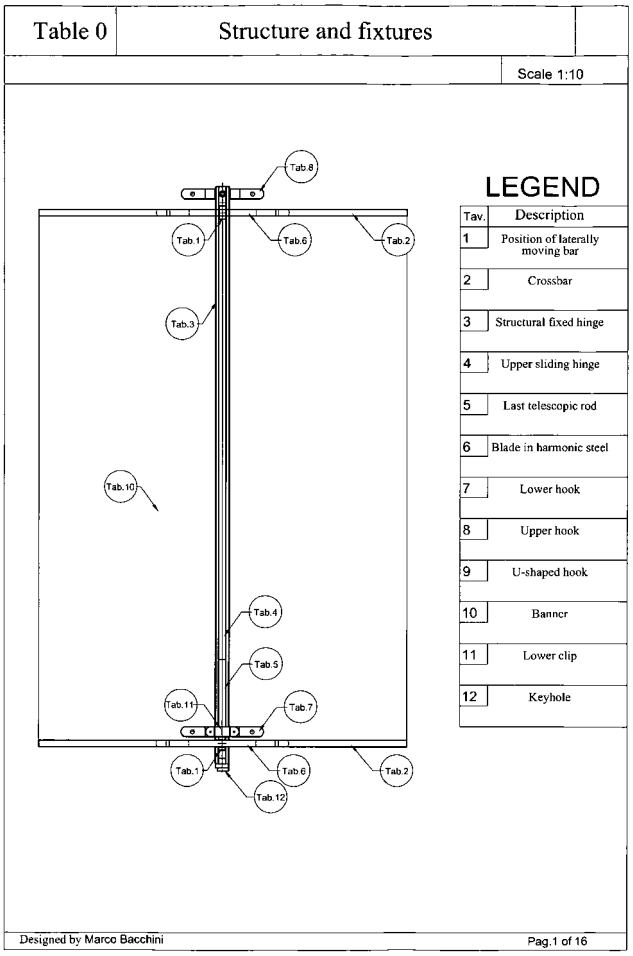
(71) Applicant: **Bacchini, Marco**
47833 Morciano di Romagna (IT)

(72) Inventor: **Bacchini, Marco**
47833 Morciano di Romagna (IT)

(54) **Advertising structure**

(57) A system designed using banners which are able to shift and reposition themselves in the presence of wind and telescopic rods affixed to poles. The structure may be single or double sided to hold advertisement banners. It is easily dismantled, and almost fully made in aluminium. The first semi-fixed structure to be positioned onto a pre-existing pole base.



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Description

[0001] The structure may be single or double sided used to support standard sized advertisement banners. The materials used are: anodized aluminium to protect against the elements and salt, stainless steel, harmonic steel, and PVC (polyvinyl chloride). Conceived of as a semi-fixed telescopic structure, at the time of initial instalment takes up to the same amount of time or similar in comparison to the standard banner, will later save a great deal of time in banner substitution and standard maintenance. Thanks to the stability rendered by the harmonic steel blades , the paper made advertisement can be affixed directly to the banner. The height at which the banner is replaced once the telescopic rod is extracted is half that of structures commonly used today.

Materials, structure specifics and necessary operations:

The materials used are as follows:

[0002]

1. Solid shell made of anodized aluminium AxBxC **Table 1 Position of lateral moving bar.** Variable in size, length and width (depending on the banner needed to hold). Available in 5 variations **A, B, C, D and E.** This is an essential component of the internal structure held by an extractable pin from the crossbar and set in place by the harmonic steel blades. In this structure there are 2 shells which are fixed to the upper sliding hinges (Table 4) and last telescopic rod (Table 5) respectively.

2. Inner tube is FxFxSp aluminum and tube in GxGxSp1iron. **Table 2 Crossba**r. Variable in size, length, and width (depending on the banner needed to hold). Available in 5 variations F, G, Sp, **Sp1 and X1.** An essential component to the structure necessary in attaching the banner, keeping it taut and forcing it to stretch. In the structure there are 2 inner tubes which are set in place using pins. Banners printed on PVC will be removed and then reinserted on the inside of the new banner simply and quickly.

3. Tube in rounded aluminium HxHxSp **Table 3 Fixed Hinge**. Variable in size, length, and width (depending on the banner needed to hold). Available in 3 variations **H, Sp e X2**. The sliding hinges will be on the inside of this tube which will be fixed to the pole. A notch is present in the lower edge of the banner in order to block the aforementioned hinge at viewing height (**HE**).

4. Tube in aluminium MxMxSp **Table 4 Upper Sliding Hinge**. (In this summary, upper indicates located on the upper half of the structure, and lower located on the lower half of the structure). Variable in size, length, and width (depending on the banner needed to hold). Available in 3 variations **M, Sp e X3**. On the inside of the tube a recess is present for the positioning of the crossbars will be fixed on the upper half. In addition, a pin is present on the upper half of the structure in order to hold the last telescopic rod in place to allow for the correct functioning of the vertical tightening system and tension annulment. This pin will slide inside the fixed hinge until the lower part of the crossbar is no longer touching the upper part of the lower clip (**Table 11**) so as to block maintenance height (**HM**). That is the height at which banners will be substituted as well as the height for adhering paper advertisements.

5. Tube in aluminium NxNxSp **Table 5 Last Telescopic Rod**. Variable in size, length, and width (depending on the banner needed to hold) in 3 variations **N, Sp and X4**. A recess for lateral shafts is located on the inside of the lower part of the tube. In addition, a pin on the lower half of the structure is present in order to sustain the pressure from the spring on the inside of the same tube to allow for the correct functioning of the vertical tightening system and tension annulment. This pin is located on the inside of the upper sliding hinge.

6. Base in aluminium PxSp **Table 6 Blade in Harmonic Steel**. Variable in size, length, and width (depending on the banner needed to hold) in 3 variations **P, Sp and X5.** This component will be fastened to the recess for the crossbar and will be placed behind the lateral moving bar. The mechanical characteristics of the material allow for movement of the bars in case of high winds, which will then be repositioned with a reduction in wind intensity.

7. Base in varnished steel for outdoors QxSp **Table 7 Lower Hook**. Variable in size, length, and width (which depends on the size of the pole used to support the structure) in 6 variations **Q, R, S, T, Sp and X6**. This will be fastened to the pole and will support the lower part of the fixed hinge using the lower clip (**Table 11**) which, depending on use, may require 1 or 2 per structure. One (no.1) used for single-sided viewing, and two (no.2) used for double-sided viewing, which in both cases will require bolts or screw threads for a secure hold to the support pole.

8. Base in varnished steel for outdoors QxSp, U. **Table 8 Upper Hook**. Variable in size, length, and width (which depends on the size of the pole used to support the structure) in 6 variations **Q, U, V, Sp, X6 and X7**. This will be fastened to the rod and sustain the upper part of the structural fixed hinge by a U-shaped bump and a steel R-shaped spine. 1 or 2 may be required depending on use. The first (no.1)

used for single-sided viewing, and two (no.2) used for double-sided viewing, which in both cases will require bolts or screw threads for a secure hold to the support pole to hold the anti-condensation sheet.

9. Base in varnished steel for outdoors QxSp **Table 9 U-shaped Hook**. Variable in size, length, and width (which depends on the size of the pole used to support the structure) in 4 variations **Q, V, Sp, and X6.** Used only for single-sided viewing which will be joined using a screw thread or screws on both the upper and lower hooks.

10. Printed Sheet in PVC or laminated cotton. **Table 10 Sheet for fastening or for exhibiting.** In 2 variables **X and Y**. All structural variations depend on these, or more precisely, the size of sheet used will require modifications to the size of the structure. The sheet /banner used allows for the binding of a paper poster onto our support structures, while the banner used in exhibiting is printed on PVC with a bottom notch cut out, which will be replaced entirely at the following viewing.

11. Base in varnished steel for outdoors QxSp **Table 11 Lower Clip**. Variable in size, length, and width (which depends on the size of the lower clip and the fixed hinge) built to maintain the structure; in 3 variations Q, S and Sp. This component will be fixed to the lower hook and replace the crossbar. 1 or 2 may be required per structure depending on use; one (no. 1) for single-sided viewing and two (no.2) for double-sided viewing.

12. Nylon prints designed by us will change depending on the variations of the last telescopic rod and the fixed hinge. **Table 12 Lock and Key**. Inside a lock and key will permit to tighten or unhook the banner.

13. **Table 13, 14 and 15.** This concept design outline contains the innovations, concepts and ideas which represent the whole project require safeguarding from all forms of duplication or plagiarism.

CHARACTERISTICS

(concept design sheet)

[0003] Special spring feature: A spring is located inside the last telescopic rod which ensures vertical tensioning of the banner. This allows the banner increased wind resistance leading to less sagging, thereby considerably reducing the risk of tear.

[0004] Tension Annulment: A spring inside the last telescopic rod allows for vertical tension annulment during the replacement of a banner. This feature allows for simple and quick banner substitution.

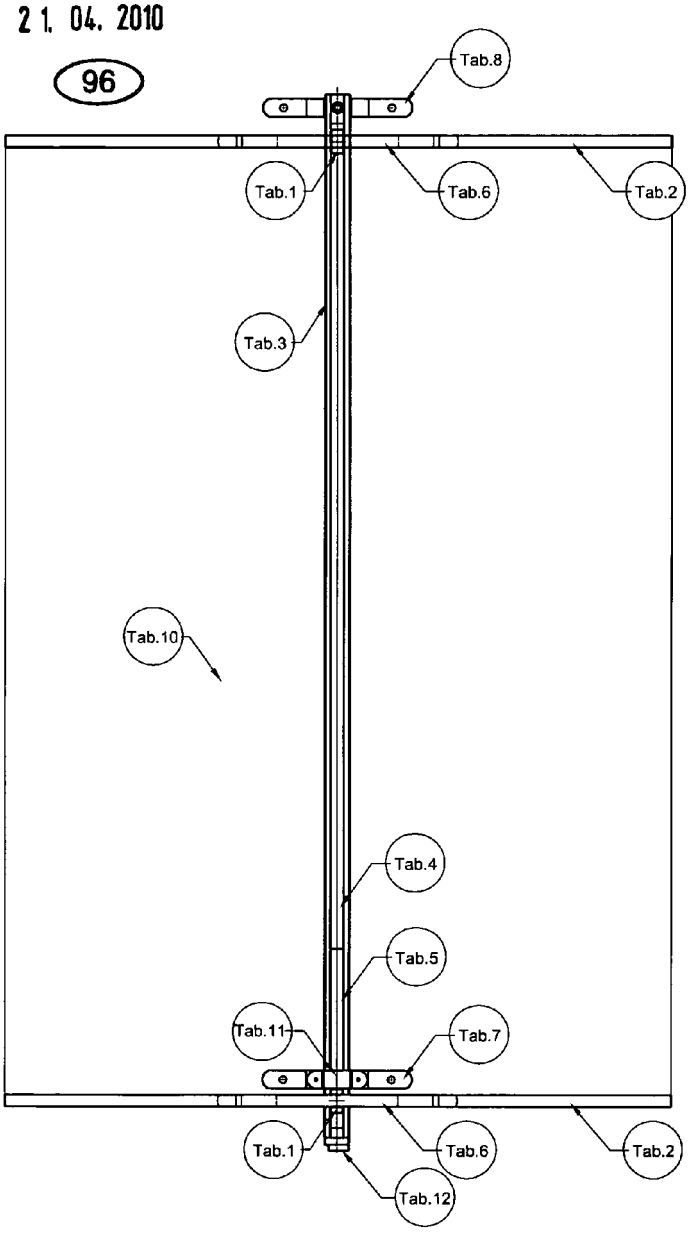
[0005] Lowering system: the two crossbars are connected to the structure by a pin which allows the banner to remain intact and unstressed in case of high winds. In addition, 2 blades in harmonic steel are placed on the back of the hinge so as to result in minimal stress to the support pole in the presence of high or medium high winds in order to perfectly reposition the banner after winds have subsided.

[0006] The entire project is aimed at the finalization of a practical product; one made using excellent materials; whose priority is structural safety (using light, resistant, and fireproof materials). Assembled so as not to damage the structural stability of the poles using blades in harmonic steel which results in lowered working heights by 50% thanks to the telescopic system.

Claims

1. features a spring system to hold the banner
2. lowering system using harmonic steel blades in order to reposition banner with a reduction in wind speed
3. telescopic assembly in order to aid maintenance and banner substitution
4. mechanism for tension annulment
5. adherence of paper advertisements onto taut banner also possible
6. lock and key system in place to secure structure

Table 0	Structure and fixtures	
		Scale 1:10



LEGEND

Tav.	Description
1	Position of laterally moving bar
2	Crossbar
3	Structural fixed hinge
4	Upper sliding hinge
5	Last telescopic rod
6	Blade in harmonic steel
7	Lower hook
8	Upper hook
9	U-shaped hook
10	Banner
11	Lower clip
12	Keyhole

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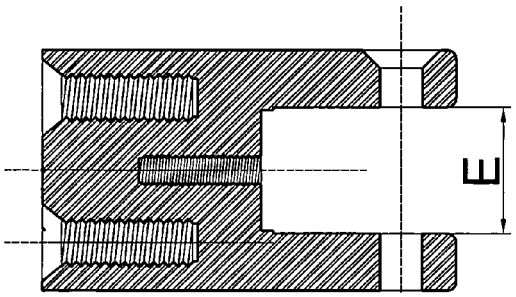
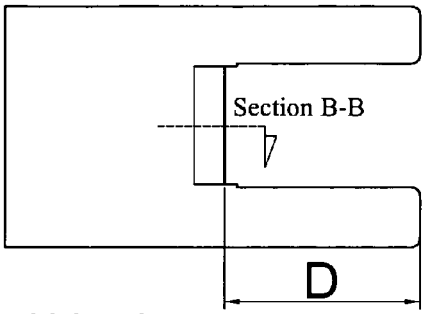
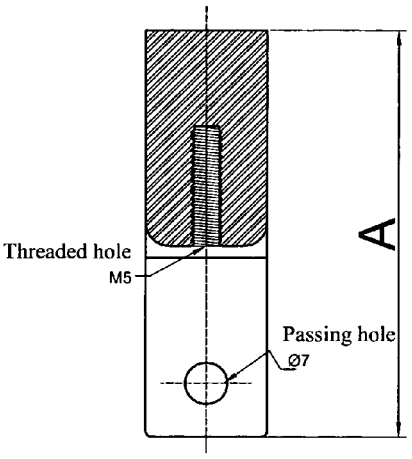
Table 1	Position of lateral moving bar	
		Scale 1:1



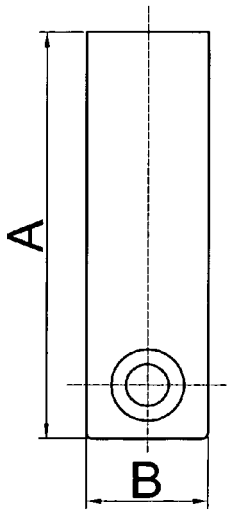
Section A-A



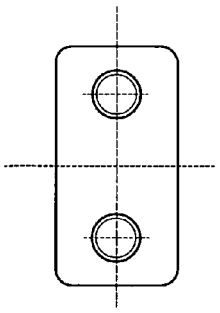
Side view



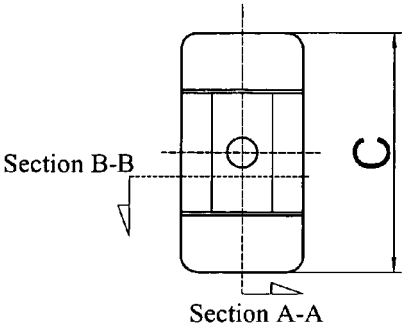
Section B-B



View from above



Rear view



View from below

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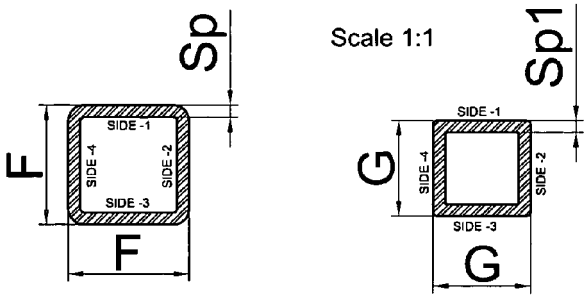
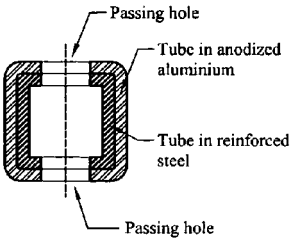
Table 2	Crossbar	
	Scala 1:10	

composed from:

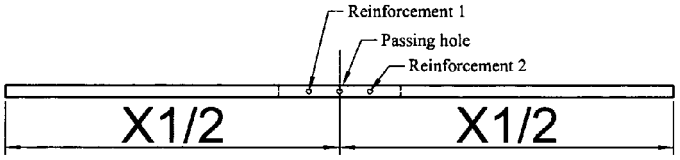
Tube in anodized aluminium **FxFxSp**

Tube in armoured steel **GxGxSp L=X1**



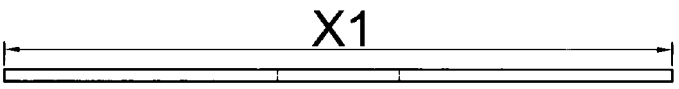


Section

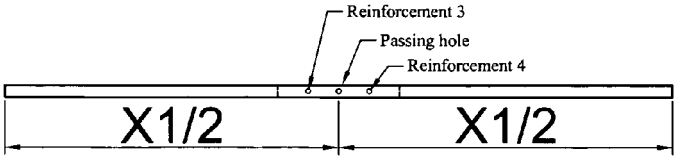


Detail side 1 Detail of section 1

Side -1



Side -2

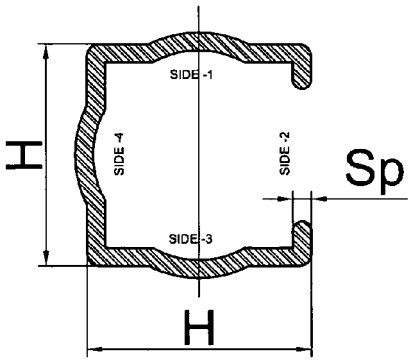


Side -3

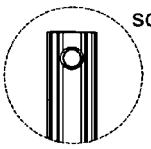
Side -4

Table 3	Fixed Hinge	

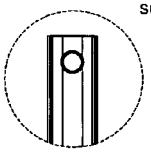
Scale 1:1



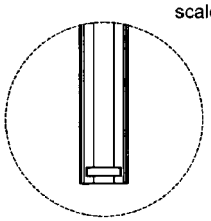
Detail
scale 1:5 Fig.1



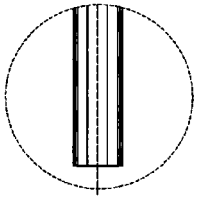
Detail
scale 1:5 Fig.2



Detail
scale 1:5 Fig.3



Detail
scale 1:5 Fig.4



rounded and notched border **HxHxSp**
L=X2

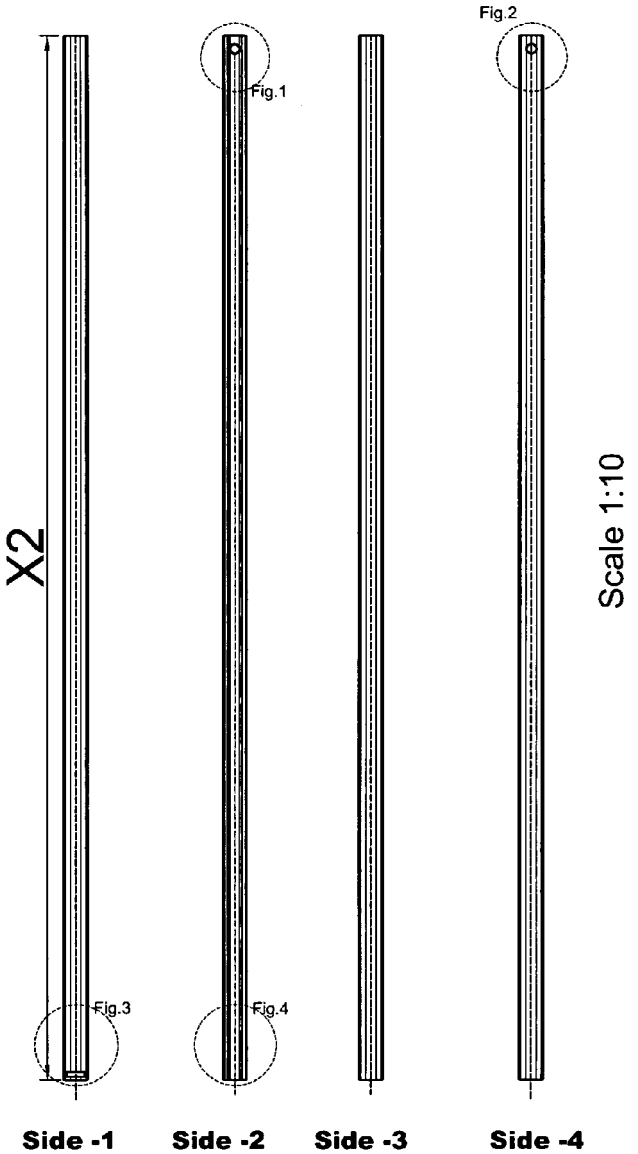


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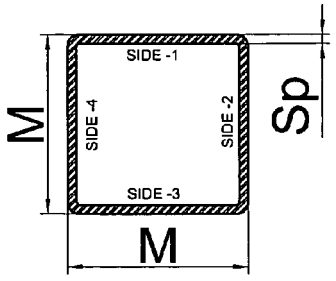
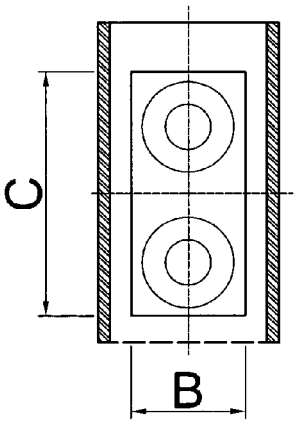
Table 4	Upper sliding hinge	

Raw material: Tube in aluminium **MxMxSp L=X3**



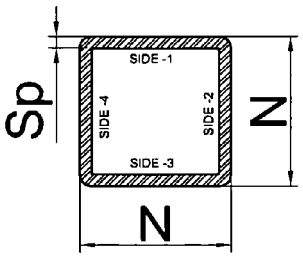
Scale 1:1



Cross-section side 1/3
Scale 1:1

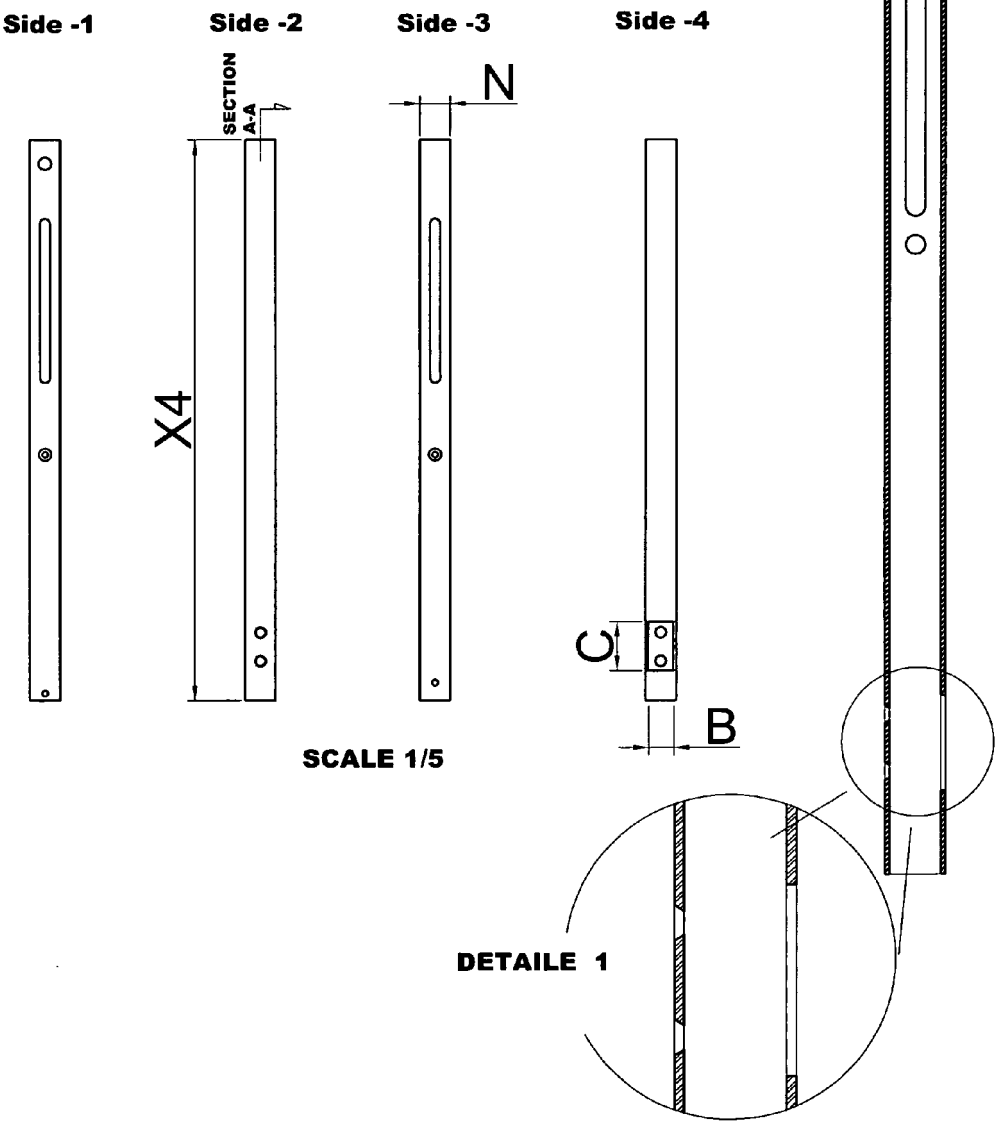
Scale 1:10

Table 5	Last telescopic rod	



SCALE 1/1

Raw material:
Square tube in
aluminium **NxNxSp L=X4**

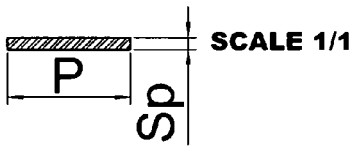


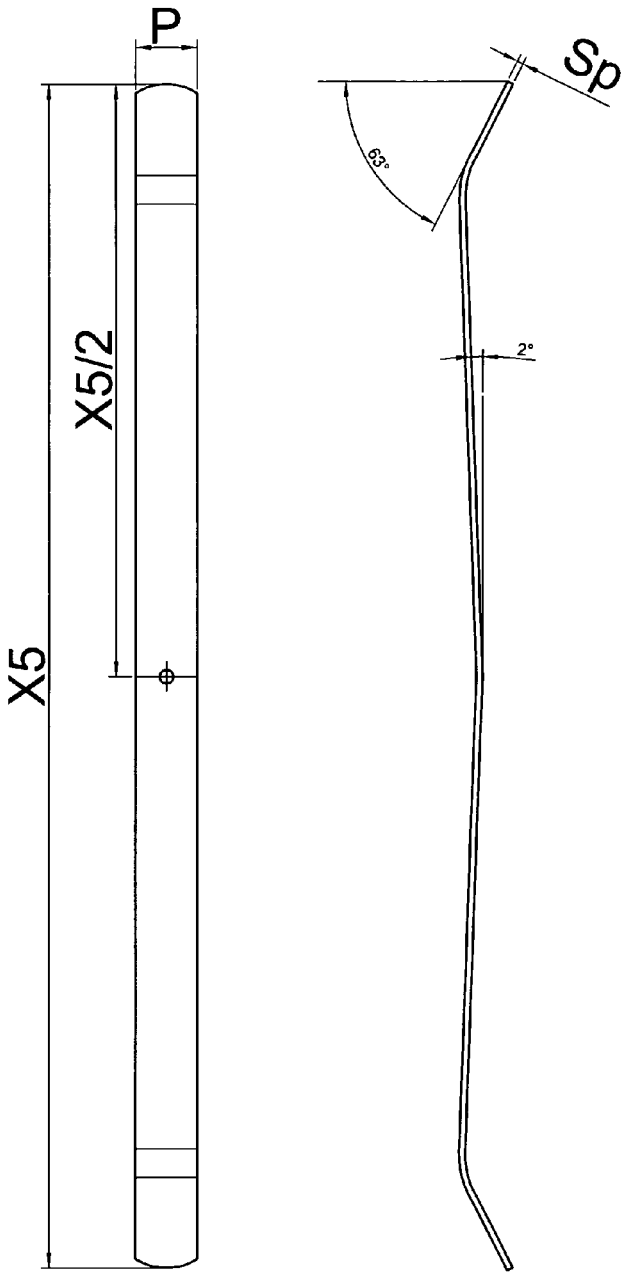
SCALE 1/5

Table 6	Blade in harmonic steel	

Raw material:

Base in harmonic steel **PxSp L=X5**





SCALE 1:5

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Table 7	Lower Hook	

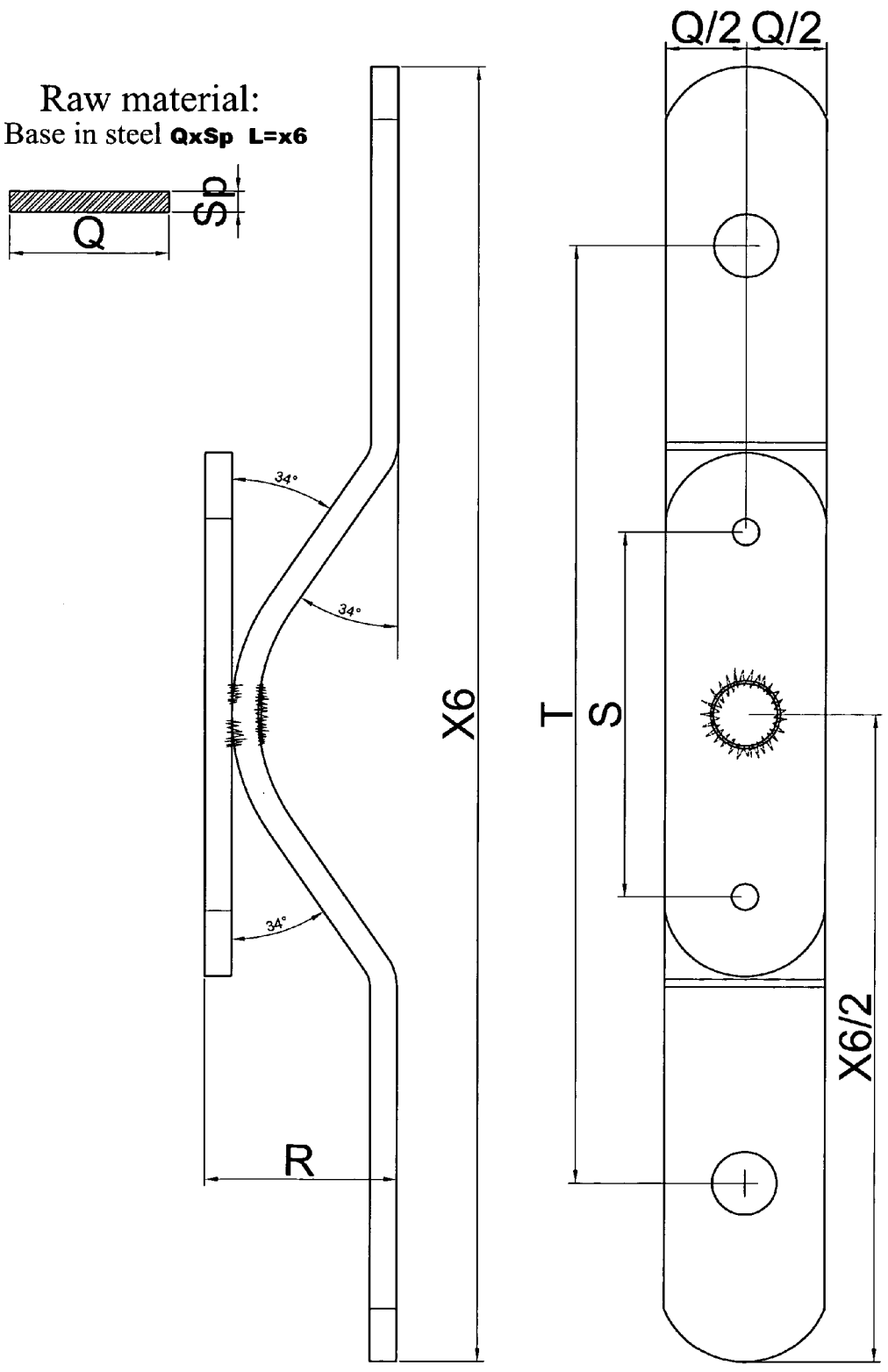

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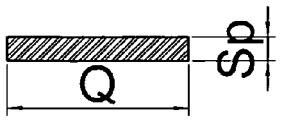
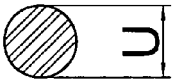
Table 8	Upper Hook	



Raw material:
Base in steel **QxSp L=x6**



Raw material:
Solid rounded top in steel
ØU L=X7

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Table 9	U-shaped Hook	

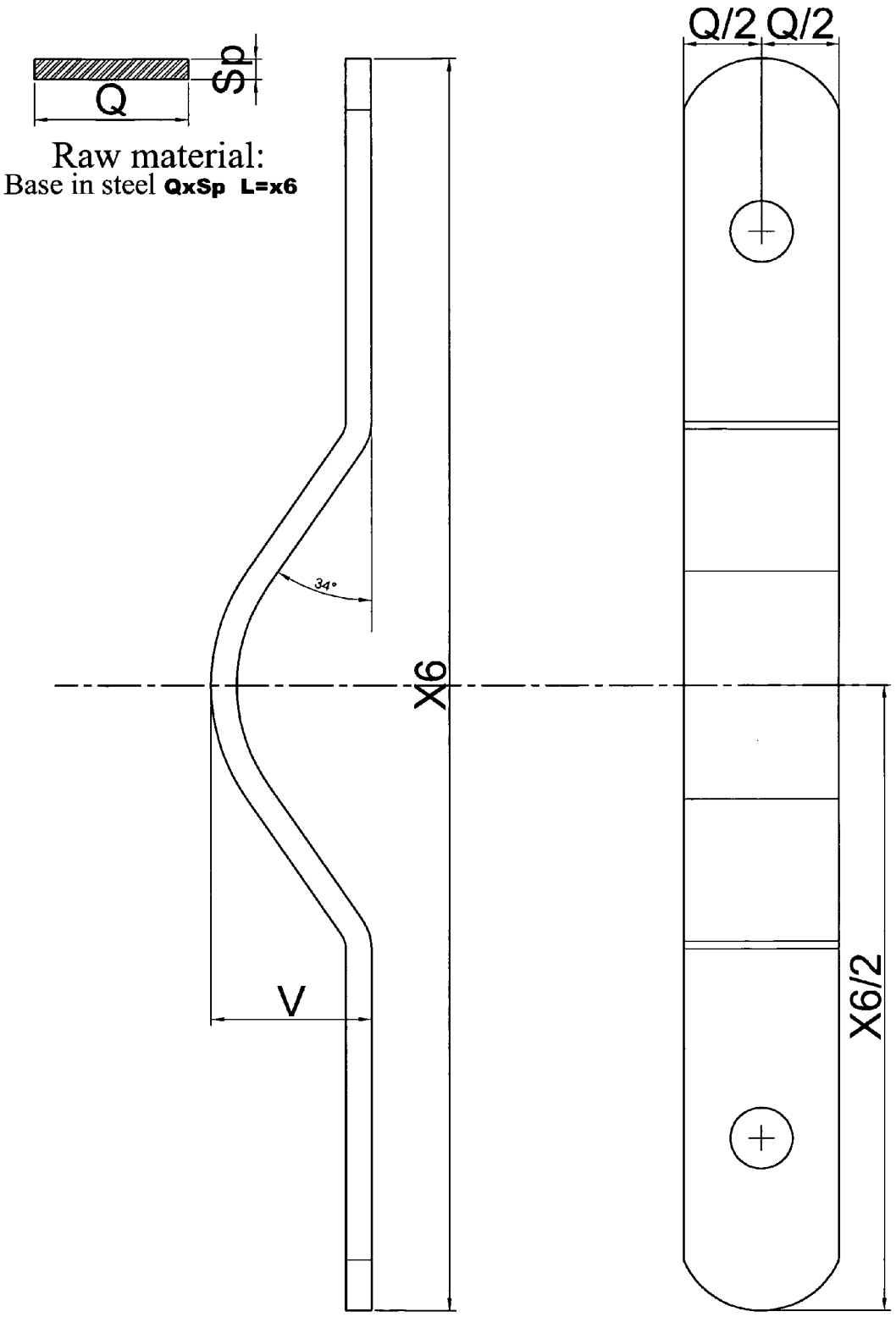

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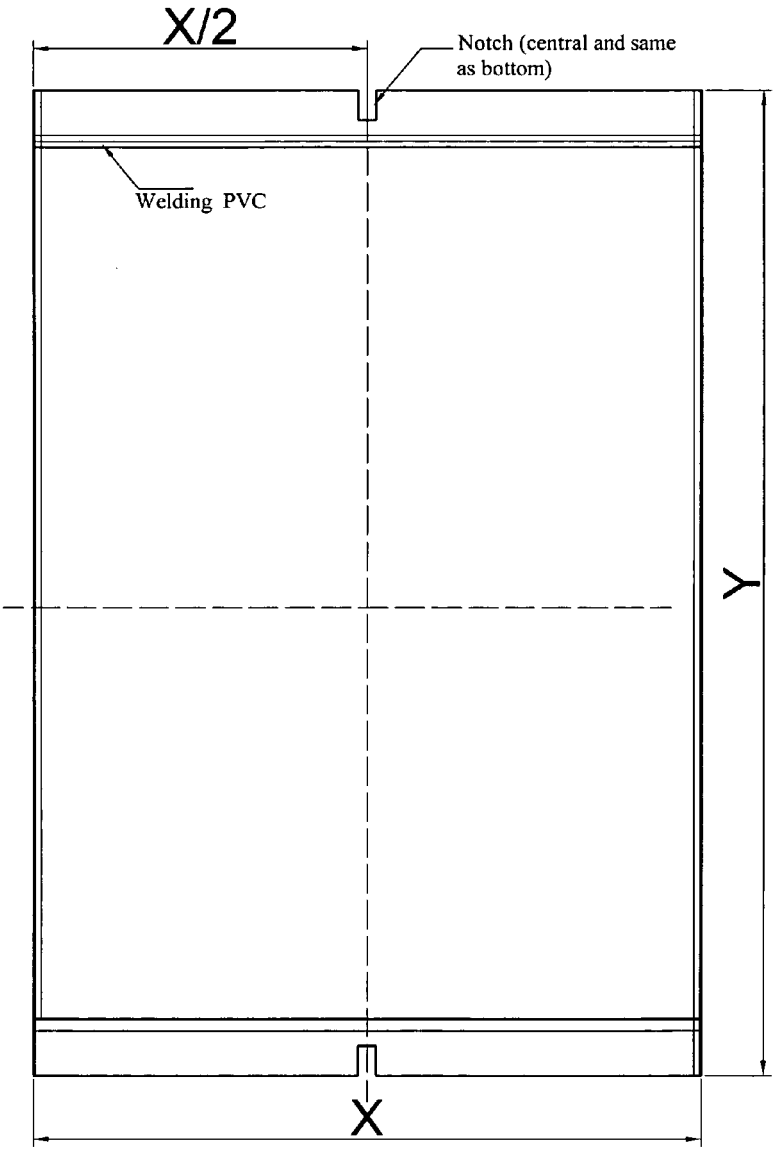
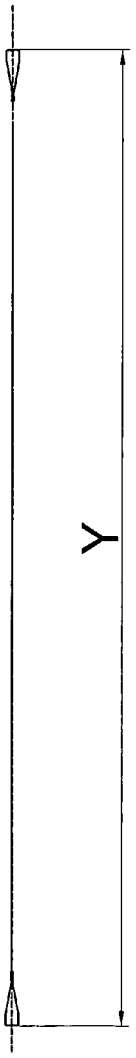
Table 10	Sheet devised for structure	
Printed PVC or white banner for attaching paper advertisements		



Front view

Scale 1:10



Side view

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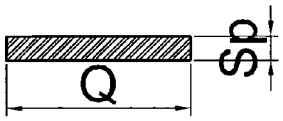
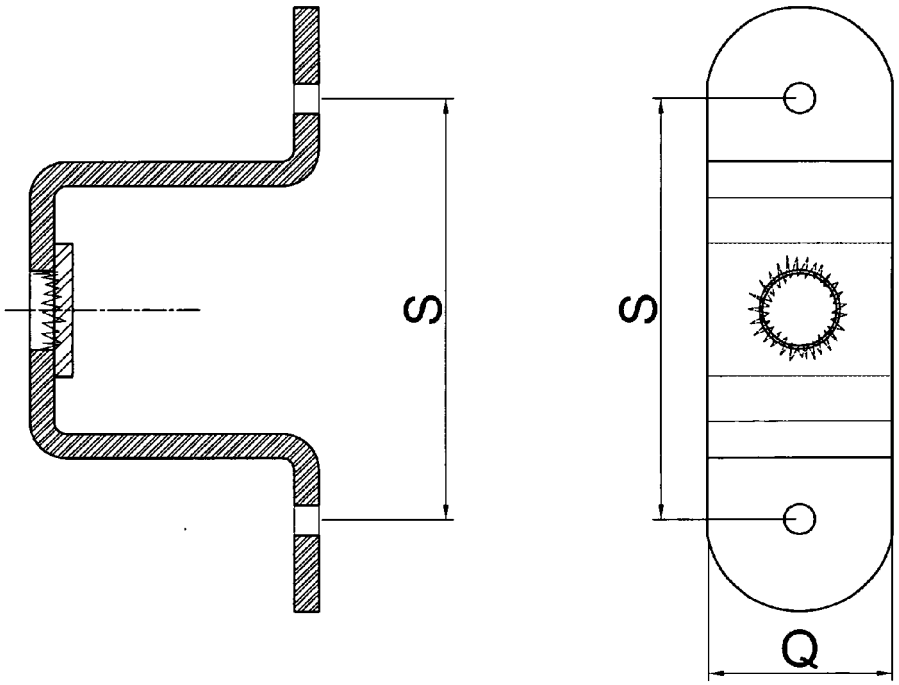
Table 11	Lower Clip	

Raw material:

Base in steel QxSp





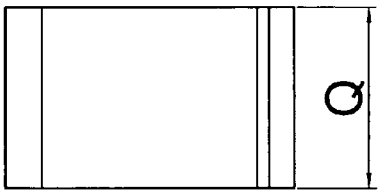


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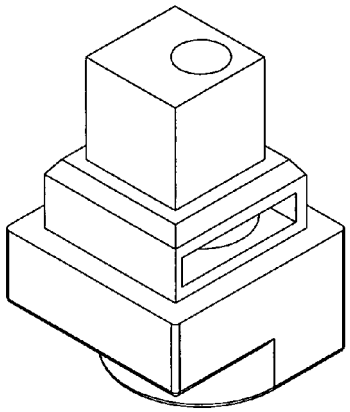
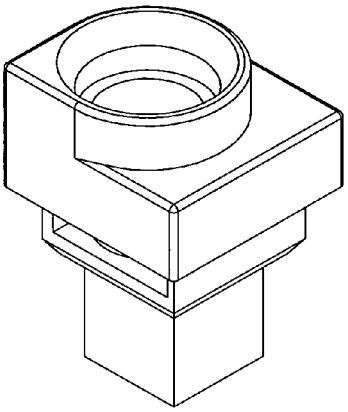
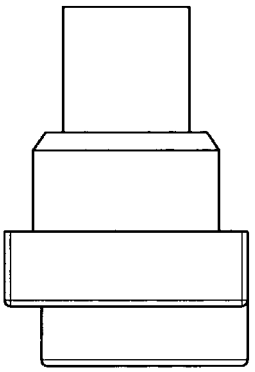
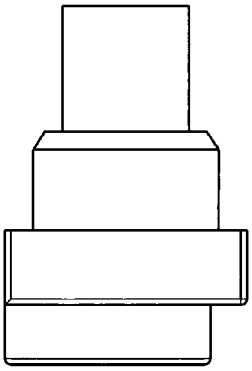
Table 12	Lock and Key	



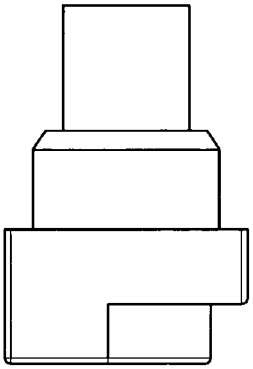




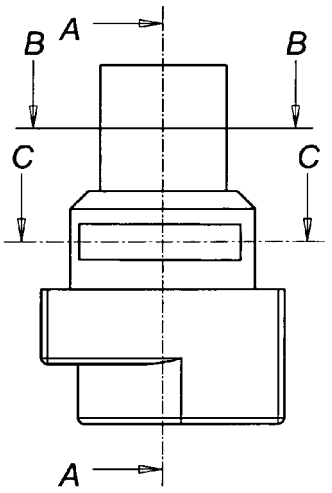
Side A

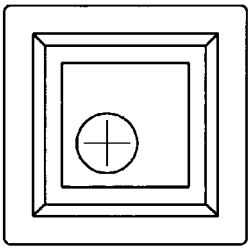


Side B

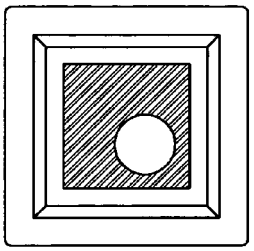


Side C

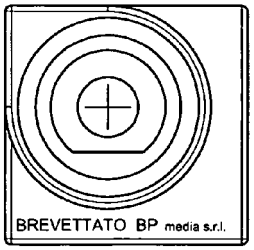




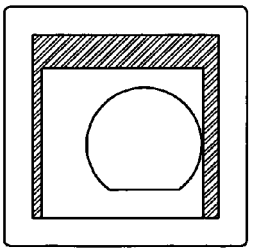
Top view



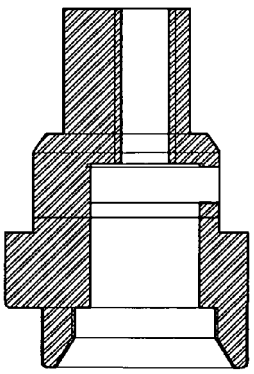
Section B-B



View from below view



Section C-C



Section A-A

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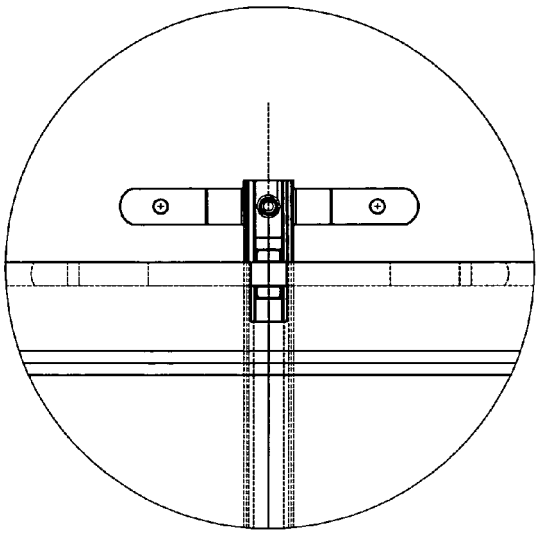
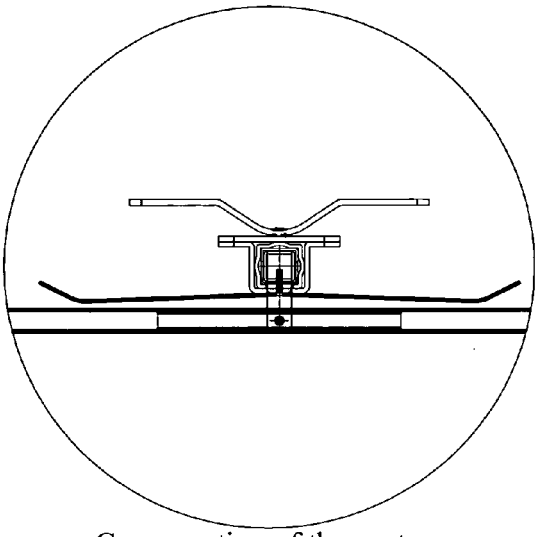
Table 13	Banner Shifting and Blades in harmonic steel	
Concept sheet 1		Scale 1:5



Front view of structure (detail of upper crossbar) as in Part 1 Table A



Cross-section of the centre of upper crossbar (detail of upper crossbar) as in Part 2 Table A

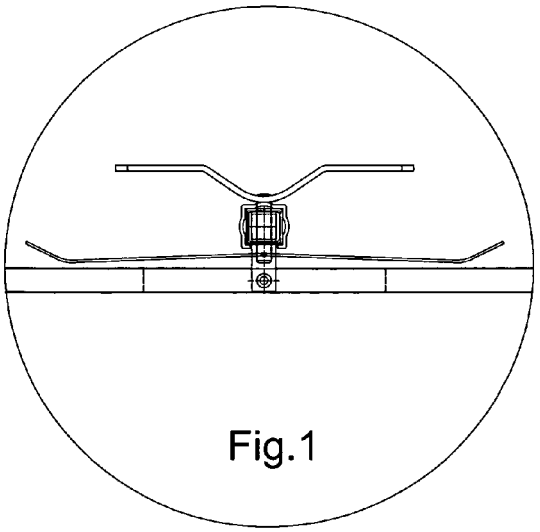


Fig.1

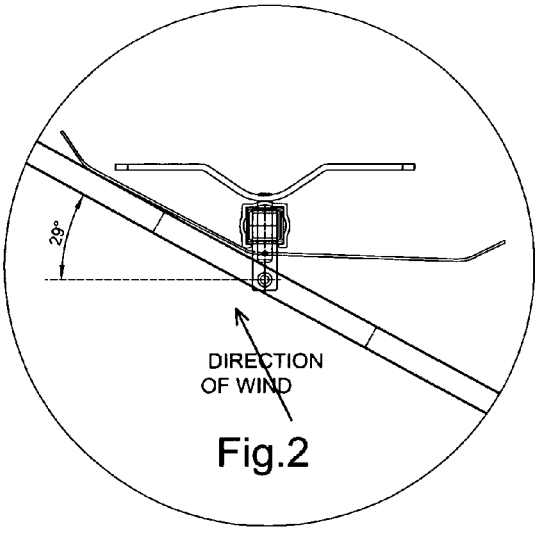


Fig.2

View from above which highlights the position of the crossbars
Fig 1- in absence of wind
Fig 2- in presence of high winds

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Table 14	Vertical tightening and tension annulment	
Concept sheet 2		Scale 1:5

Fig.3

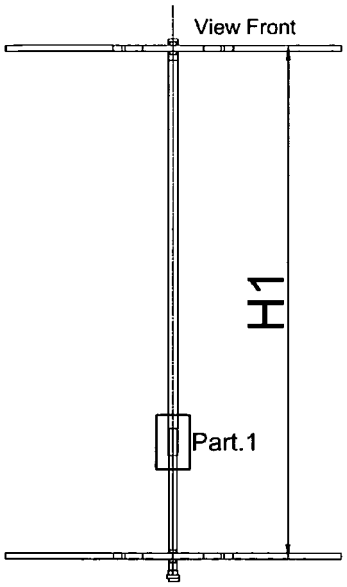


Fig.5

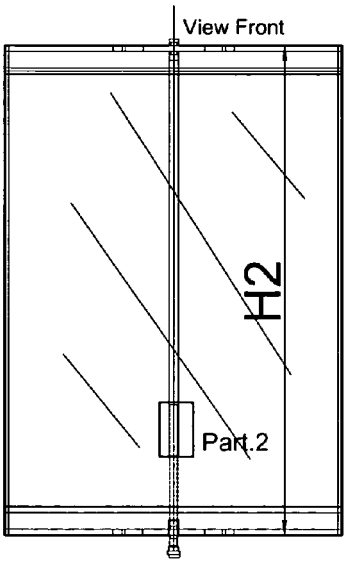


Fig.7

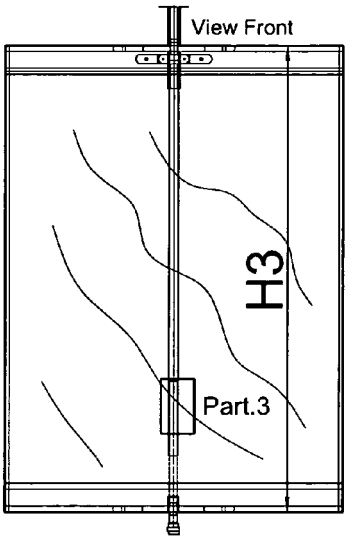


Fig.4 Scale 1:3

Side Section Front Section

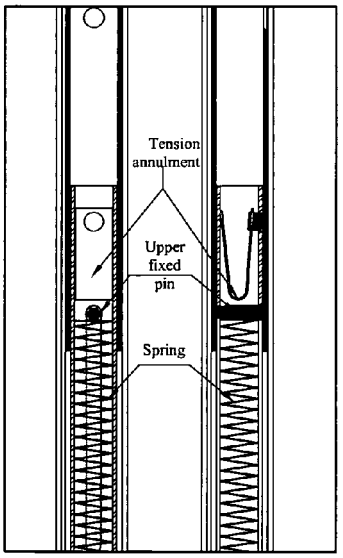


Fig.6 Scale 1:3

Side Section Front Section

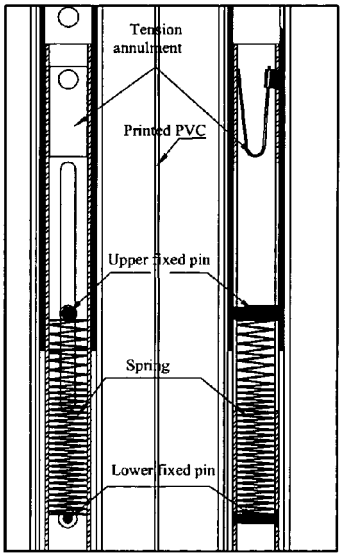
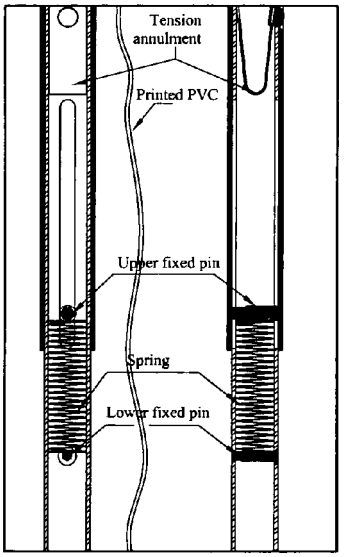


Fig.8 Scale 1:3

Side Section Front Section



SIDE AND FRONT SECTION

Cross section of the centre of lower part of telescopic rod (detail of vertical tensioning system without banner and at the limit of its vertical extension) Seen in detail 1 fig 1

SIDE AND FRONT SECTION

Cross section of the centre of lower part of telescopic rod (detail of vertical tensioning system with banner and at the limit of its vertical extension) Seen in detail 2 fig 6

SIDE AND FRONT SECTION

Cross section of the centre of lower part of telescopic rod (detail of vertical tensioning system with banner at time of substitution and with tension annulment in effect) Seen in detail 3 fig 7

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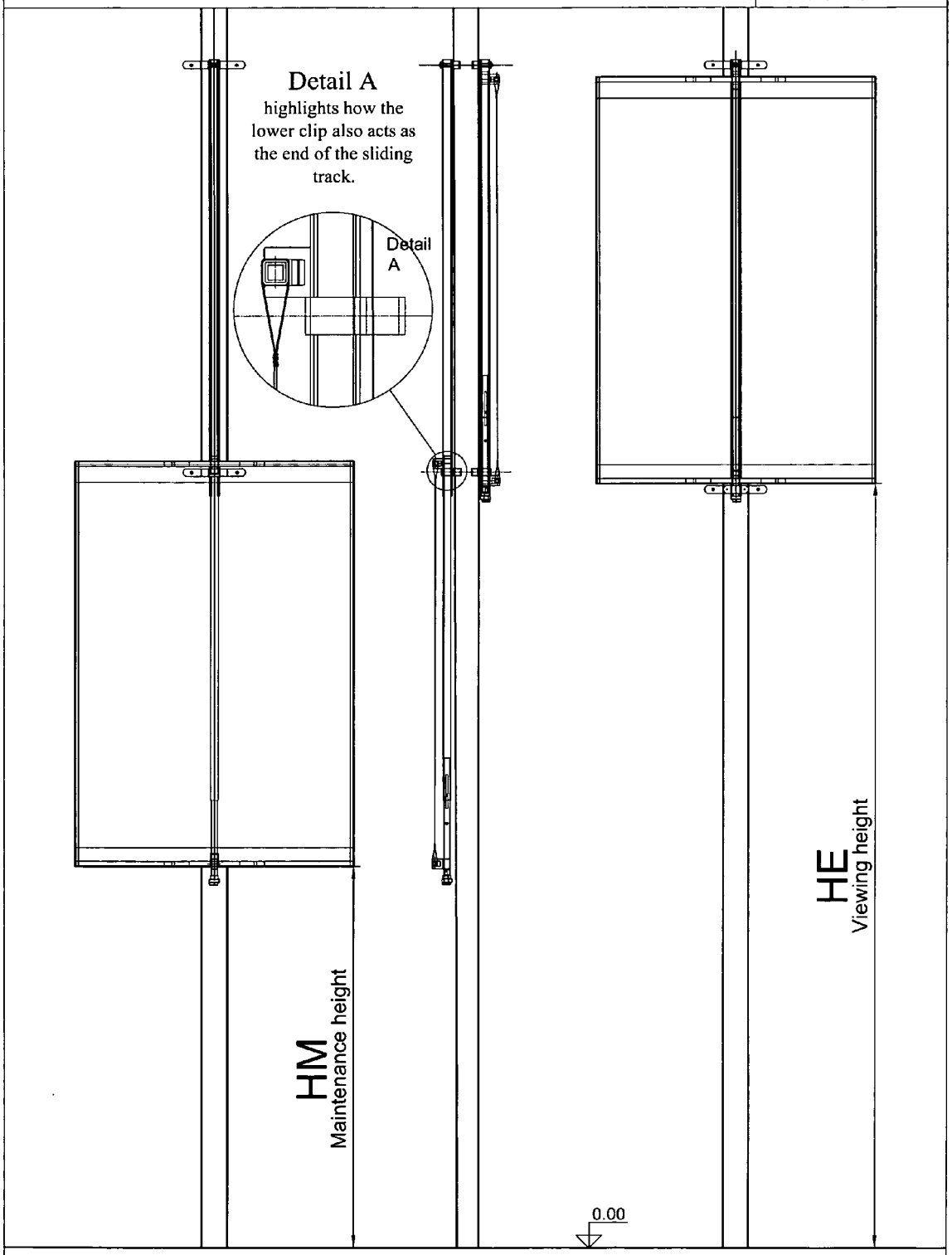
Table 15	Detail of telescopic rod	
Concept sheet 3		Scale 1:5



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EUROPEAN SEARCH REPORT

Application Number
EP 09 42 5288

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2007/126387 A1 (EXPAND INTERNAT AB [SE]; VALEIJ THOMAS [SE]; KEKKONEN JARI [SE]; SAO B) 8 November 2007 (2007-11-08) * page 7, line 15 - page 10, line 13; claims 1-13; figures 2,6,8 *	1-6	INV. G09F15/00 G09F17/00
X	US 6 334 596 B1 (TEMPLE BOYD K [US]) 1 January 2002 (2002-01-01) * column 4, line 53 - column 12, paragraph 54; figures 1-9 *	1-6	
X	GB 2 381 366 A (ENGLISH STUART GERALD [GB]; FARRAR PETER [GB]; HEIN JOHN [GB]) 30 April 2003 (2003-04-30)	1,2,4-6	
Y	* page 2, paragraph 1 - paragraph 2; claims 1-7; figures I-V *	3	
Y	DE 93 17 394 U1 (MUEHL PAUL [DE]) 13 January 1994 (1994-01-13) * page 4, paragraph 3 - page 6, paragraph 1; figure 2 *	3	

TECHNICAL FIELDS SEARCHED (IPC)

G09F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	15 July 2010	Pavlov, Valeri

CATEGORY OF CITED DOCUMENTS

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