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Remarks:
Amended claims in accordance with Rule 137(2) EPC.

(54) **Bower**

(57) Bower, **characterized in that** the truss is provided with a roof frame (6) over part of its width, under which are provided two rollers (10A and 10B) extending in the longitudinal direction of the bower, and on which

is wound a cloth which can be laterally unwound over the remaining part of the truss and which can be further guided downward over a return pulley (14A, 14B) at the top far end of the posts (3A-3B) up to the foot of the posts (3A-3B).

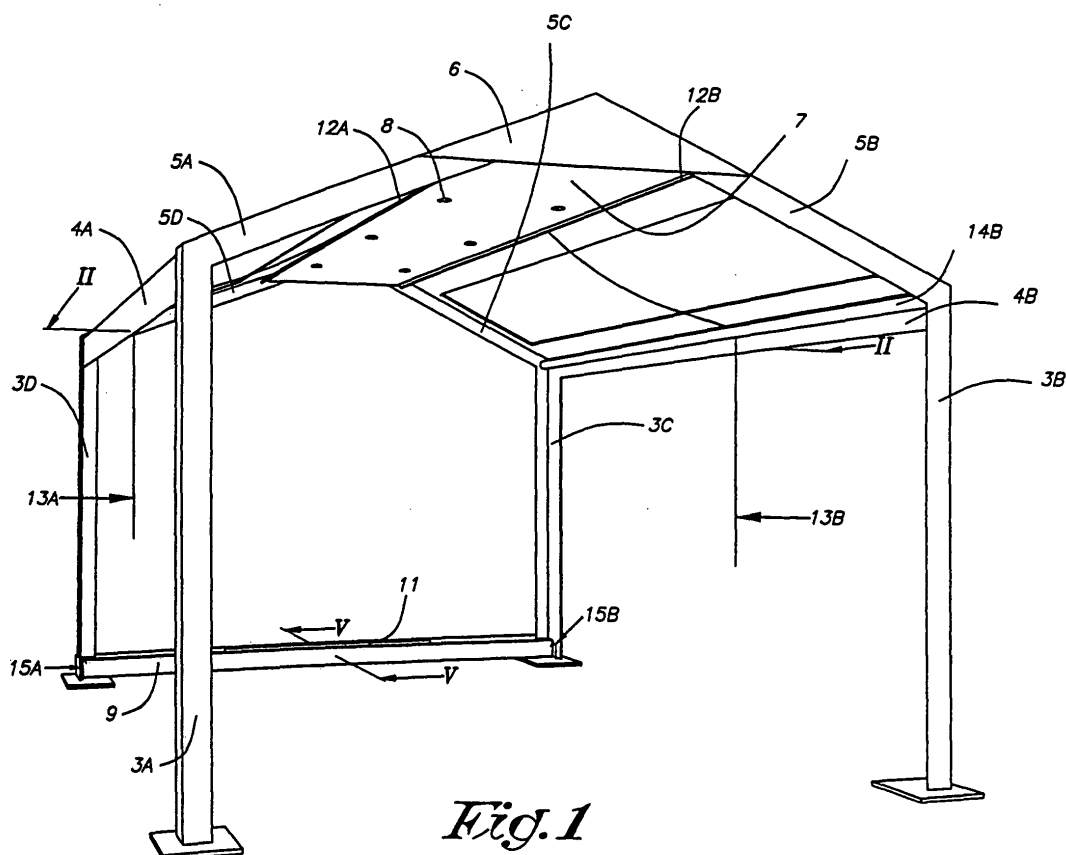


Fig. 1

Description

[0001] The present invention concerns a bower.

[0002] In particular, the invention is meant for a bower which can be erected in a detached manner as a garden or swimming pool bower.

[0003] Traditionally, such a bower offers many application possibilities. It may be used for example as an awning, a marquee, as a protection from the rain, a changing cubicle, a summer house, a flower shop, a smoking space, a showroom, a reception room, a workshop, a dinette, a storage room, an emergency accommodation and the like. It may also be used to cover a Jacuzzi, swimming pool or plunge pool arranged in a garden or on an outdoor terrace.

[0004] Traditionally, little garden and swimming pool bowers are made of a wooden or metal frame with standing posts, cross connections and a roof structure, onto which can be fixed one or several fixed or removable side walls and a covering roof, which are either or not erected permanently.

[0005] Said side walls and the roof can seal the frame entirely or partly from the outside, such that a space in the shape of a tent or a chapel is formed on the inside which may offer protection from sunlight, rain and other unfavorable weather conditions, and such that some privacy can also be guaranteed.

[0006] A known disadvantage of these conventional systems is that they are usually heavy and complex.

[0007] As a result, they are rather expensive as far as construction, storage, transport, purchase and maintenance are concerned, and they are moreover difficult to install for do-it-yourselfers.

[0008] An additional disadvantage is that, when the bower has to be pulled down again, this requires a lot of effort, and it moreover needs a lot of storage space.

[0009] A disadvantage related thereto is that people usually refrain from pulling the bower down, such that it remains erected in the garden all summer long, as a result of which it is exposed to wind and rain during this whole period, such that the bower will rather quickly look weather-beaten.

[0010] Another disadvantage of a permanent erection of the bower is that it may be seriously damaged in case of windy weather, as well as its environment.

[0011] A further known disadvantage is that bowers often obstruct the view as they are usually erected more or less permanently, and their side walls or roofs cannot be easily moved or taken away after use.

[0012] The latter, when they are made of canvass, are moreover difficult to tighten smoothly, leading to pouches or fluttering, especially in case of windy or rainy weather, which may be annoying and may lead to further damage.

[0013] Also, the present invention aims to remedy the above-mentioned and other disadvantages by providing a bower which is mainly formed of a frame of at least four posts, connected in pairs by means of joists extending in the longitudinal direction, and which are moreover con-

nected in pairs by means of two trusses which are each formed of slanting joists which are connected at their far ends so as to form an angle, whereby the truss is provided over a part of the width of a roof frame under which are provided two rollers extending in the longitudinal direction of the bower and on which is wound a cloth which can be laterally unwound over the remaining width of the truss and which can be further guided down over a return pulley at the top end of the posts up to the foot of the posts.

[0014] A major advantage thereof is that the construction can be kept very simple and that, consequently, a bower according to the invention can be manufactured, stored, offered, transported and installed at a favorable price. The installation does not necessarily require any action of a craftsman.

[0015] Another advantage of this simple construction is that the bower occupies very little space and can be manually operated. As a result, one does not depend on power supply among others, resulting in less breakdowns and at the same time saving energy, which is environment-friendly.

[0016] Another advantage is that the cloth can be unrolled whenever one wishes to use the bower, and that it can be rolled up again after use, such that it is protected from dirt and damage and as a result will last longer.

[0017] A further additional advantage is that, by rolling up the cloths when the bower is not in use, also the visible hinder which it might cause is restricted to a minimum, since only the thin and simple supporting structure, which is an essential characteristic thereof, can stay more or less permanently erected.

[0018] Yet another advantage consists in that, thanks to the light and self-supporting structure of a bower according to the invention, it no longer needs to be fixed to an outer wall or any other type of fixed support, or at least to a lesser extent.

[0019] In a preferred embodiment is provided at least one cabinet connecting two opposite posts on the cross-cut end of the bower, and which is provided with a longitudinal slot. In this cabinet, i.e. in the longitudinal direction of the cabinet, is provided a roller on which is wound a cloth which can be drawn up along the posts via the aforesaid slot, up against the bottom side of the roof frame.

[0020] An advantage thereof is that not only the side walls can be easily rolled up and unrolled, but that also the front side and/or rear side of the bower can be easily unrolled and rolled up again in this way.

[0021] Said roller or rollers are further provided with a spring which is clamped while the cloth concerned is being unrolled so as to wind up said cloth again when the latter is released under the influence of the built-up spring tension.

[0022] Thanks to said spring tension, and partly as the cloth being rolled up on rollers and being guided over a return pulley makes it possible to keep said cloth well taut over its entire width, pouches or fluttering can be prevented, especially in case of windy or rainy weather,

which may not only be annoying but which may also lead to damage or a shorter life.

[0023] Storage is done automatically when the side walls and/or the roof are/is rolled up since, when the cloths are rolled up, well protected against dirt and damage, and not obstructing the view in any way whatsoever, they are stored in the cabinets provided to that end.

[0024] In order to keep the cloths open when unwound, a lock is further provided.

[0025] This may be formed of simple hooks behind which the unwound cloth can be hooked, or it may be based on a reel system.

[0026] In another preferred embodiment, the roof frame is provided with a bottom extending in the longitudinal direction up to a distance from the roof frame and thus forming a gap through which the cloth can be unwound.

[0027] The cloth is then provided with a lath on its free end whose cross section is larger than the opening formed by the gap.

[0028] In order to be able to easily unwind the cloth, a rope or ribbon is provided on the above-mentioned lath which is externally guided over a return pulley and is pulled through up to a comfortable upward reach.

[0029] In another preferred embodiment, the posts and joists are formed of L-shaped struts whose legs are directed outward so as to cover the side edges of the unrolled cloth.

[0030] The advantages thereof are that, between cloth and frame, in an unrolled condition, there are no more air gaps which might lead to draughts or pouches being formed in the cloth, and which might thus be annoying or could lead to damage, especially in case of bad weather conditions.

[0031] In yet another preferred embodiment, the free end of the cloth which is being pulled up has the shape of the lower side of the truss as a whole and the roof frame, and it is in particular made trapezoidal.

An advantage thereof is that the pulled-up cloth can be tightly fit to the shape of the roof, of the roof frame respectively, which has the same positive effect as obtained with the L-shaped struts as mentioned above.

[0032] In another preferred embodiment, elements are provided in the roof frame which make it possible to apply lamps, decoration, acoustic installation components, cooling or heating elements, insect traps, alarm systems or the like.

[0033] An advantage thereof is that the bower can be adapted in a simple and easy way to different conditions of use requiring or needing a strongly varying, adapted or atmospheric setting.

[0034] In order to better explain the characteristics of the invention, the following preferred embodiment of a bower according to the invention is described by way of example only, without being limitative in any way, with reference to the accompanying drawings, in which:

figure 1 schematically represents a bower according

to the invention, seen in perspective;

figure 2 represents a cross section according to line II-II in figure 1;

figure 3 is a magnification of the part of the roof indicated with F3 in figure 2;

figure 4 is an exploded view of a torsion shaft with which the cloths can be rolled up;

figure 5 is a section of a cabinet in which a rolled-up cloth is stored according to arrow V-V in figure 1;

figure 6 schematically represents the bower with a half drawn-up back wall, seen in perspective;

figure 7 shows a detail of an angle of the bower indicated by F7 in figure 6.

[0035] Figures 1 to 5 schematically represent a bower 1 that is not in use, i.e. with the cloths forming the side walls and/or the roof being rolled up and safely stored away.

[0036] The bower is hereby built of a metal frame, formed of four vertical posts 3A-3D, connected in pairs by the joists 4A and 4B, and of a roof formed of two trusses built of the slanting joists 5A-5D respectively, and of a roof frame 6.

[0037] The roof frame 6 is provided with a bottom 7 in which has been provided atmospheric lighting in the form of lamps 8.

[0038] The posts 3A-3D and the joists 5A-5D are formed of L-shaped struts whose legs are directed outward.

[0039] Between the two rear posts 3D and 3C, a cabinet 9 is provided at ground level in which the cloth is put which is to form the rear wall, and which is represented in figure 5 as being rolled-up and stored away.

[0040] Above the bottom 7 of the roof frame 6 are situated two parallel rollers 10A and 10B on which the cloths are wound which are to form the roof and the side walls.

[0041] These cloths are provided with a lath on their free ends. In the case of the cloth which is to form the rear wall, said lath 11 has a width corresponding to that of the bottom 7 of the roof frame 6.

[0042] In the case of the cloths which are to form the roof, the respective laths 12A and 12B essentially have the same widths as those of the roof and the side wall.

[0043] In the middle of the laths 12A and 12B is provided a rope or a ribbon 13A, 13B respectively which is guided down externally over a return pulley 14A, 14B respectively, up to a comfortable upward reach.

[0044] At the foot of the posts 3A-3D are provided hooks 15A-15D on the inside which can co-operate in pairs and behind which the laths 12A and 12B can be hooked at ground level.

[0045] Figure 4 shows an example of a traditional roller as is applied in the roof frame or in the cabinet 9 and whose construction and finish is well known to the craftsman. This figure shows how the roller 7 or 10 is provided with a shaft 16, around which is provided a torsion spring and which is fixed to the shaft 16 with one far end and to the roller 10 with the other far end.

[0046] The shaft 16 is fixed with both far ends to the roof frame 6, the cabinet 9 respectively.

[0047] On each roller is wound a cloth which is fixed on the roller 10A-10C with one edge.

[0048] It should be noted that the cross section of the lath 11 is considerably larger than the slot 17 formed by the walls of the cabinet 9 over its entire length and through which the cloth in the cabinet 9 is guided to the roller 10C.

[0049] Figure 6 schematically represents the bower when it is ready for use, seen in perspective, i.e. with the cloths forming the roof and the side walls unrolled and hooked, and with the cloth forming the rear wall only partly drawn up for clarity's sake.

[0050] Figure 7 shows a detail of the part indicated by F7 in figure 6.

[0051] The use of the bower 1 and the operation of the cloths is very simple and as follows.

[0052] Starting from the situation as shown in figures 1 to 5, which represent a situation which is not ready for use, the cloth which is to form the rear wall and which is stored in the cabinet 9 is drawn up against the bottom 7 of the roof frame 6 by means of the lath 11. Thanks to its trapezoidal shape, it fits up tightly and without any gaps being formed on the frame forming the rear wall.

[0053] As a result of the cloth being unrolled, the torsion spring 16 situated in the cabinet 9 is clamped. The cloth being hooked with the lath 11 on hooks which are provided to that end on the bottom side of the bottom 7 of the roof frame 6, together with the downward directed tensile force of the clamped spring 16 make sure that the cloth is stretched between the frame without any pouches being formed or without any fluttering.

[0054] In a similar way, by pulling the rope or the ribbon 13A or 13B, the cloth which is wound around a longitudinally directed roller 10A or 10B on the bottom 7 of the roof frame 6 will be unrolled and guided externally along with said rope or ribbon over the return pulleys 14A, 14B respectively, up to the bottom level, where it is hooked around the hooks 15A, 15B provided to that end with the laths 12A and 12B respectively.

[0055] During the unrolling, the spring 16 situated in the rollers 10A and 10B will be clamped on the bottom 7 of the roof frame 6, so that, analogously to what happened in the rear wall, the tensile force of the spring 16, which is directed upward this time, will make sure that the cloth remains evenly stretched between the frame without any pouches being formed.

[0056] In this way is obtained a bower which is ready for use, as represented in figure 6, but in which, for clarity's sake, the cloth of the rear wall is only partly drawn up.

[0057] If the bower is no longer of use, one only has to unhook the cloths which are hooked behind their respective hooks 15A and 15B by means of the laths 11, 12A and 12B, after which, as a result of the tensile force of the springs which had been built up due to the unrolling, said cloths will be rolled up again in their respective cabinet 9 or storage room above the bottom 7 of the roof frame 6.

[0058] The present invention is by no means restricted to the embodiments described by way of example and represented in the accompanying drawings; on the contrary, such a bower according to the invention can be made in all sorts of shapes and dimensions while still remaining within the scope of the invention.

Claims

1. Bower which is mainly formed of a frame of at least four posts (3A-3D), connected in pairs by means of joists (4A and 4B) extending in the longitudinal direction, and which are moreover connected in pairs by means of two trusses which are each formed of slanting joists (5A-5D) which are connected at their far ends so as to form an angle, **characterized in that** the truss is provided over a part of the width of a roof frame (6) under which are provided two rollers (10A and 10B) extending in the longitudinal direction of the bower and on which is wound a cloth which can be laterally unwound over the remaining width of the truss and which can be further guided down over a return pulley (14A, 14B) at the top end of the posts (3A-3B) up to the foot of the posts (3A-3B).
2. Bower according to claim 1, **characterized in that** it is provided with a cabinet (9) with a longitudinal slot (17) on at least one crosscut far end, connecting the posts at the crosscut far end of the bower and in which is provided a roller (10C), in the longitudinal direction of the cabinet (9), on which is wound a cloth which can be drawn up via the aforesaid slot (17) along the posts (3A-3B) up against the bottom side of the roof frame (6).
3. Bower according to any one of the preceding claims, **characterized in that** the rollers (10A, 10B, 10C) are provided with a spring (16) which is clamped while the cloth concerned is being unwound so as to wind said cloth up again under the influence of the built-up spring tension as soon as it is released.
4. Bower according to any one of the preceding claims, **characterized in that** a lock is provided for the cloths in their unwound condition.
5. Bower according to any one of the preceding claims, **characterized in that** the lock is formed of hooks (15A, 15B) around which the unwound cloth can be hooked, or of a reel system.
6. Bower according to any one of the preceding claims, **characterized in that** the roof frame (6) is provided with a bottom (7) extending up to a distance from the roof frame so as to form a slot through which the cloth can be unwound.

7. Bower according to any one of the preceding claims, **characterized in that** the cloth is provided with a lath (11, 12A, 12B) on its free end whose cross section is larger than the opening formed by the slot. 5
8. Bower according to any one of the preceding claims, **characterized in that** the posts (3A-3D) and the joists (4A, 4B) are formed of L-shaped struts whose legs are directed outward so as to cover the side edges of the unrolled cloth. 10
9. Bower according to any one of the preceding claims, **characterized in that** the free end of the cloth which is pulled up has the shape of the lower side of the truss as a whole, and **in that** the roof frame in particular is trapezoidal. 15
10. Bower according to any one of the preceding claims, **characterized in that** elements are provided in the roof frame (6) to apply lamps, decoration, acoustic installations or the like. 20

Amended claims in accordance with Rule 137(2) EPC. 25

1. Bower which is mainly formed of a frame of at least four posts (3A-3D), connected in pairs by means of joists (4A and 4B) extending in the longitudinal direction, and which are moreover connected in pairs by means of two trusses which are each formed of slanting joists (5A-5D) which are connected at their far ends so as to form an angle, whereby the truss is provided over a part of the width of a roof frame (6) under which are provided two rollers (10A and 10B) extending in the longitudinal direction of the bower and on which is wound a cloth which can be laterally unwound over the remaining width of the truss and which can be further guided down to the feet of the posts **characterized** that said cloth can be guided over a return pulley (14A, 14B) at the top end of the posts (3A-3B) and that the roof frame (6) is provided with a bottom (7) extending up to a distance from the roof frame (6) so as to form a slot through which the cloth can be unwound. 30 35 40 45
2. Bower according to claim 1, **characterized in that** it is provided with a cabinet (9) with a longitudinal slot (17) on at least one crosscut far end, connecting the posts at the crosscut far end of the bower and in which is provided a roller (10C), in the longitudinal direction of the cabinet (9), on which is wound a cloth which can be drawn up via the aforesaid slot (17) along the posts (3A-3B) up against the bottom side of the roof frame (6). 50 55
3. Bower according to any one of the preceding claims, **characterized in that** the rollers (10A, 10B,

10C) are provided with a spring (16) which is clamped while the cloth concerned is being unwound so as to wind said cloth the roof frame (6) is provided with a bottom (7) extending up to a distance from the roof frame (6) so as to form a slot through which the cloth can be unwound. up again under the influence of the built-up spring tension as soon as it is released.

4. Bower according to any one of the preceding claims, **characterized in that** a lock is provided for the cloths in their unwound condition.

5. Bower according to any one of the preceding claims, **characterized in that** the lock is formed of hooks (15A, 15B) around which the unwound cloth can be hooked, or of a reel system.

6. Bower according to any one of the preceding claims, **characterized in that** the cloth is provided with a lath (11, 12A, 12B) on its free end whose cross section is larger than the opening formed by the slot.

7. Bower according to any one of the preceding claims, **characterized in that** the posts (3A-3D) and the joists (4A, 4B) are formed of L-shaped struts whose legs are directed outward so as to cover the side edges of the unrolled cloth.

8. Bower according to any one of the preceding claims, **characterized in that** the free end of the cloth which is pulled up has the shape of the lower side of the truss as a whole, and **in that** the roof frame in particular is trapezoidal.

9. Bower according to any one of the preceding claims, **characterized in that** elements are provided in the roof frame (6) to apply lamps, decoration, acoustic installations or the like.

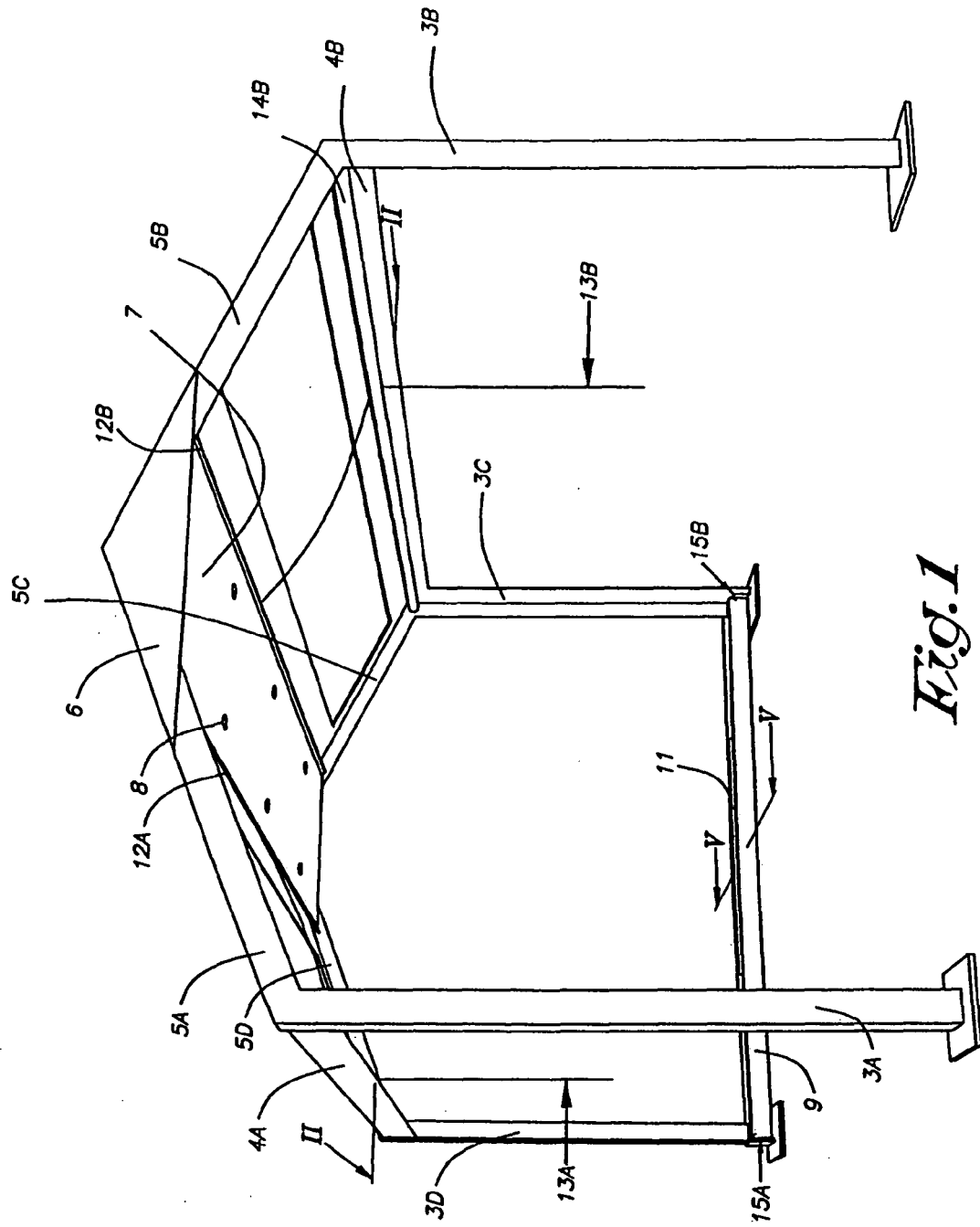


Fig. 1

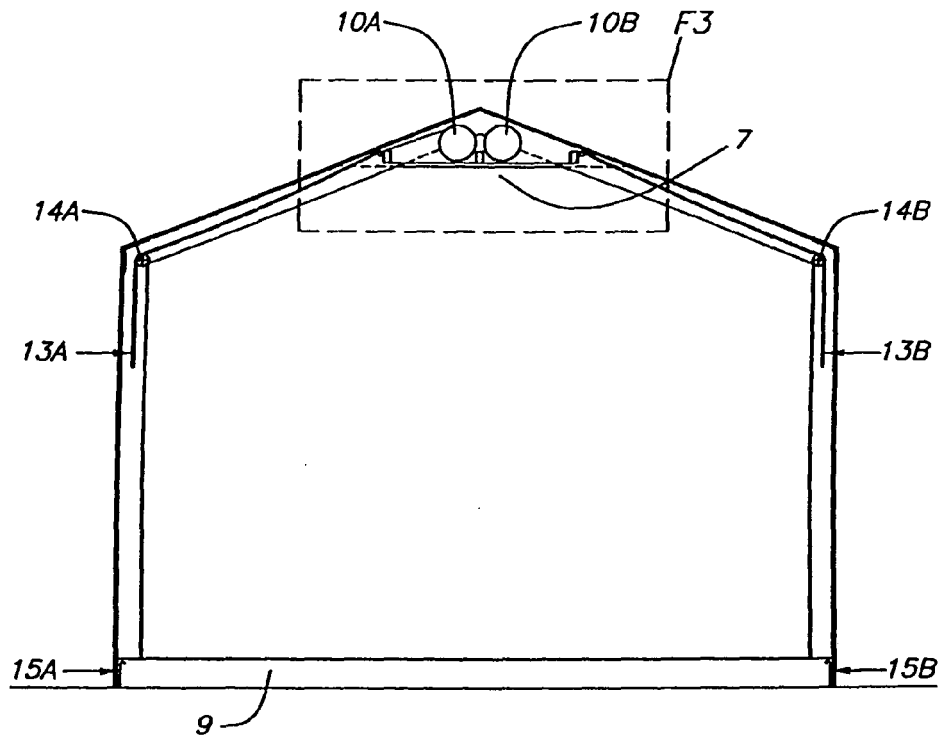


Fig. 2

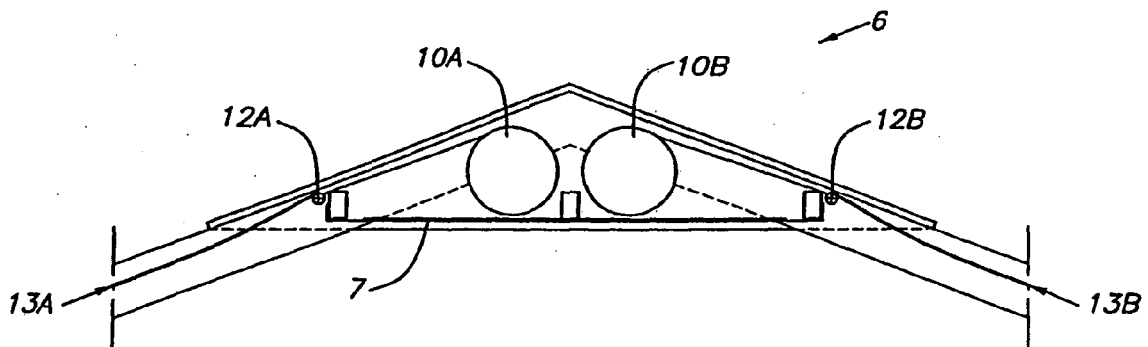


Fig. 3

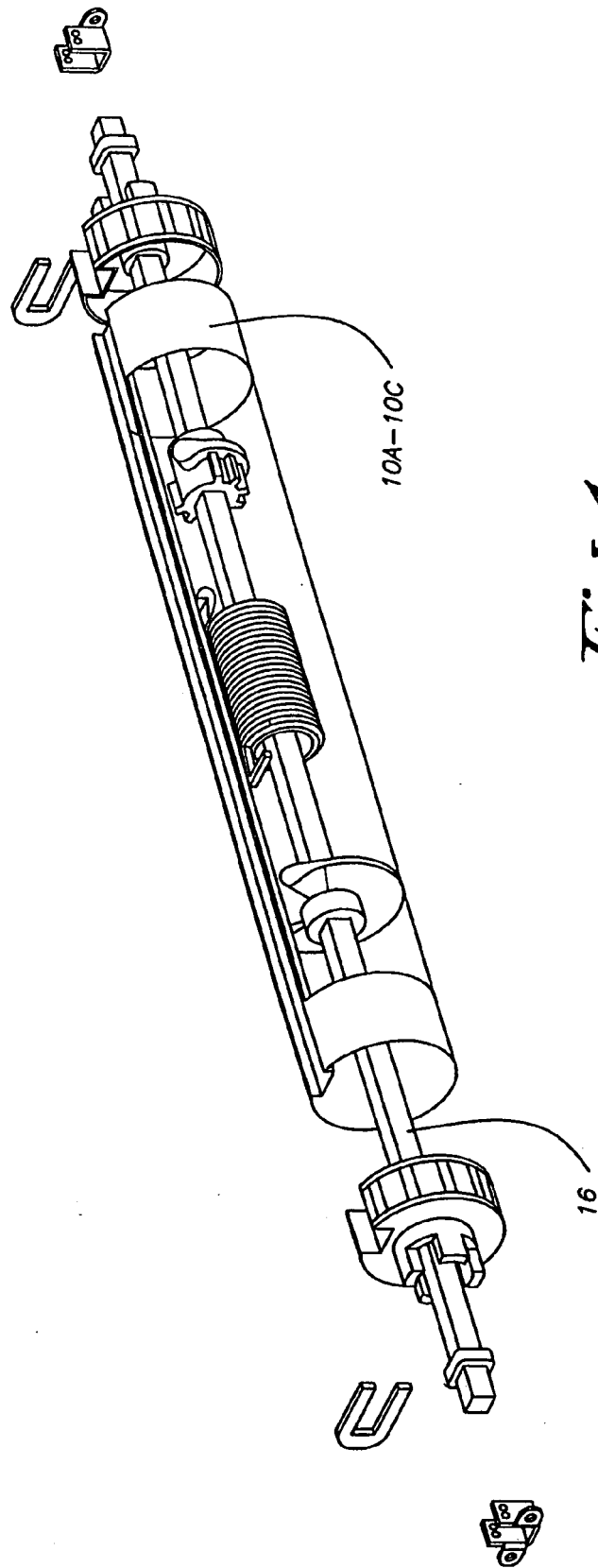


Fig. 4

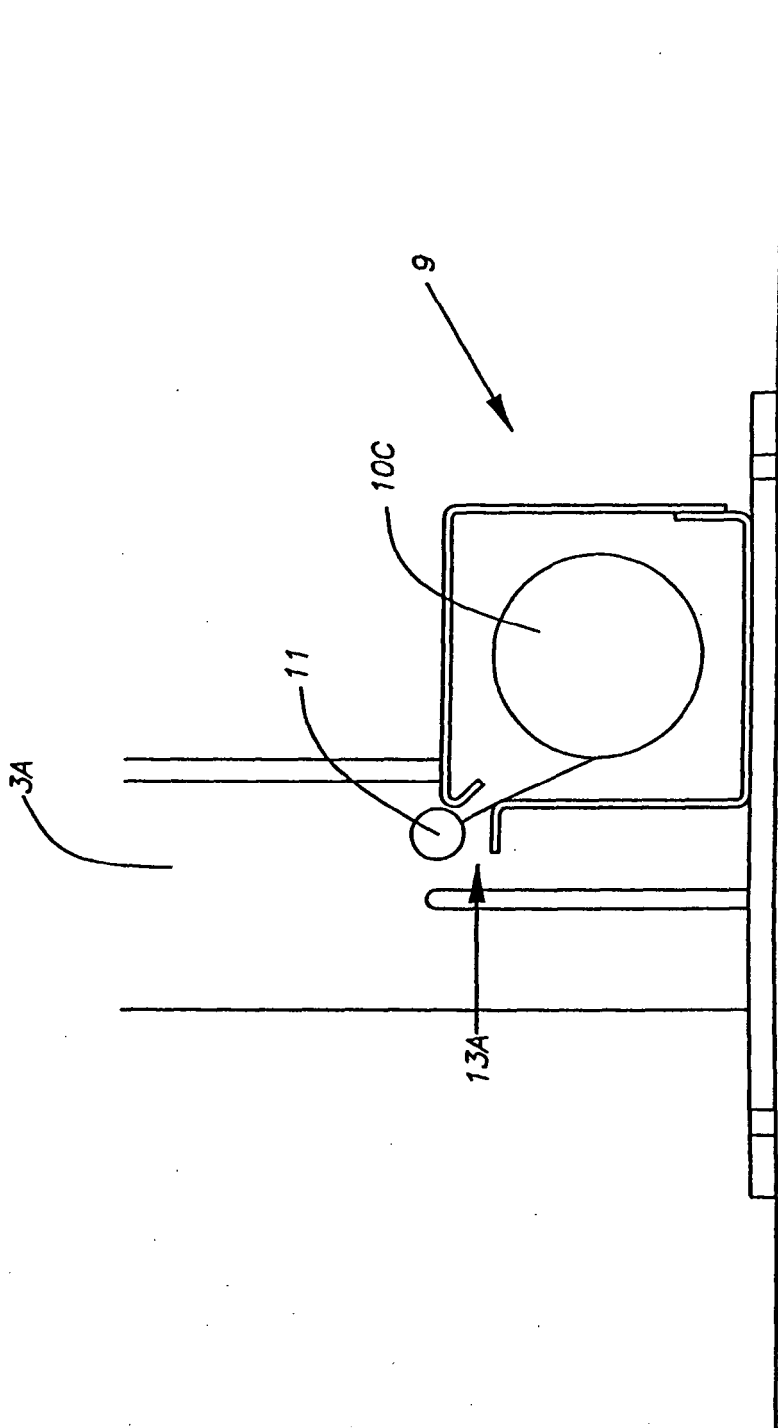
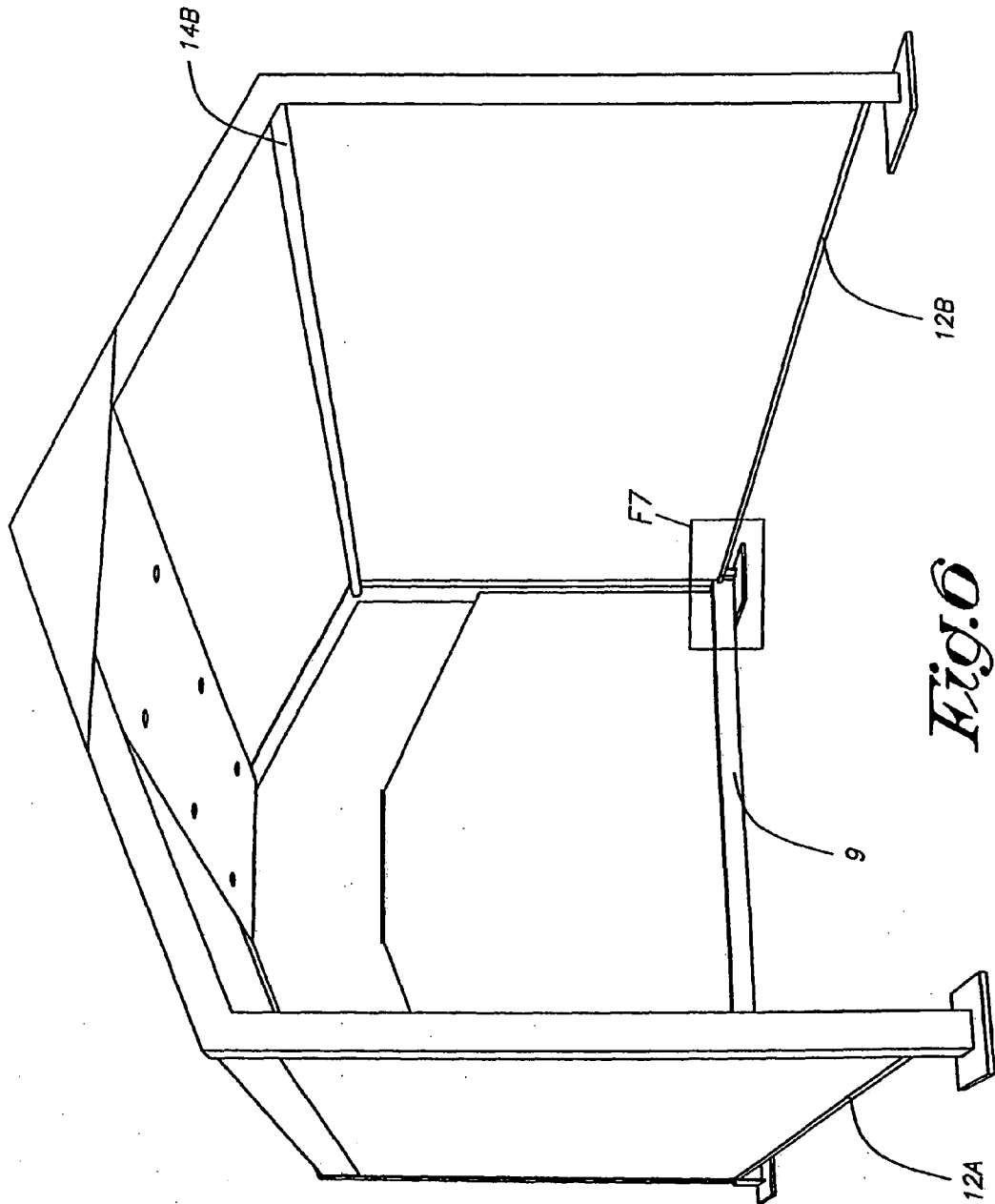


Fig. 5



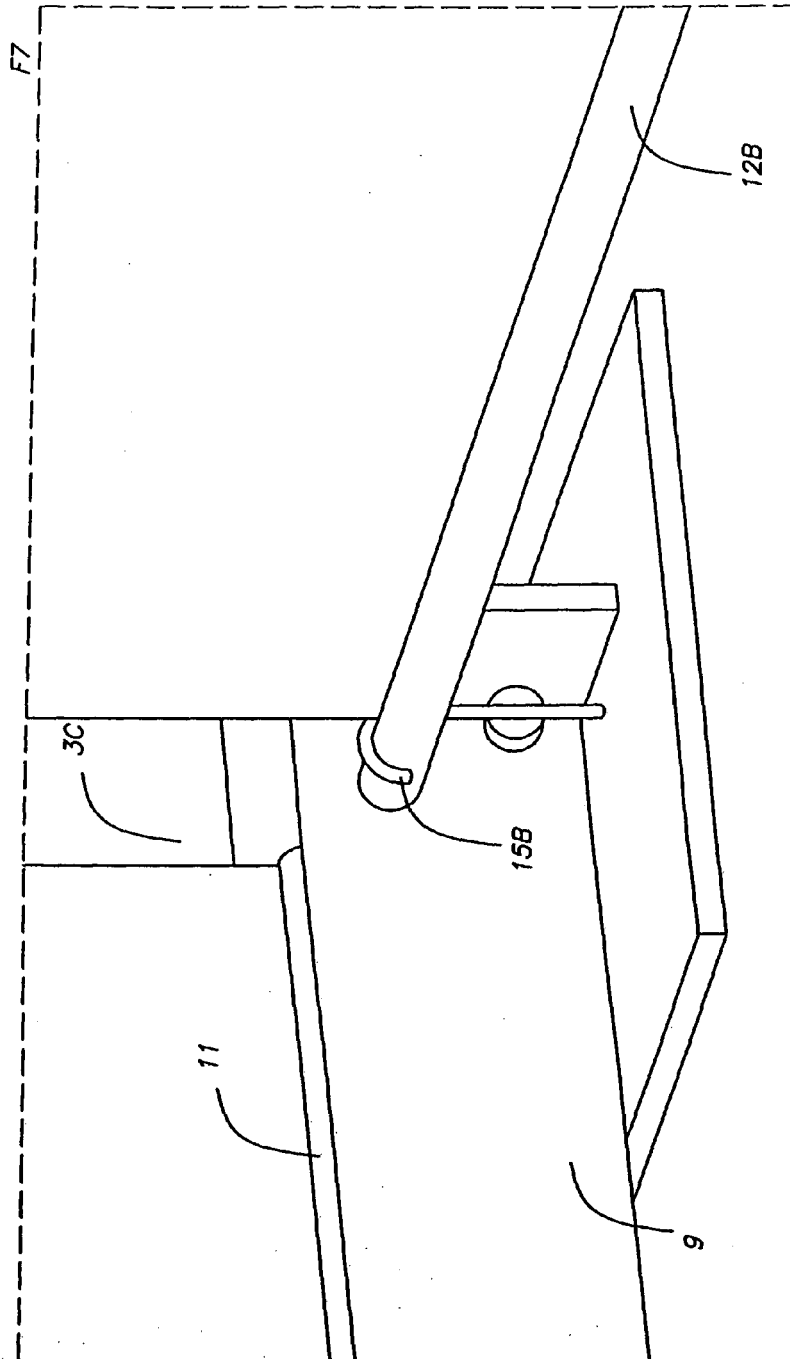


Fig. 7



EUROPEAN SEARCH REPORT

 Application Number
 EP 09 44 7022

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	DE 295 20 626 U1 (MOCH MICHAEL [DE]) 30 April 1997 (1997-04-30)	1,4,5,8,10	INV. E04H1/12
Y	* the whole document *	2-5,7,9	E04H15/58
Y	----- US 2 104 648 A (LAWRENCE HICKEY) 4 January 1938 (1938-01-04)	2,7	
A	* the whole document *	1,3-5	
Y	----- US 5 555 681 A (CAWTHON MARK A [US]) 17 September 1996 (1996-09-17)	3-5,9	
A	* column 5, line 15 - column 11, line 4; figures *	1,2	
A	----- US 4 387 533 A (GREEN GEORGE H [CA] ET AL) 14 June 1983 (1983-06-14)	1,6	
	* column 9, line 35 - column 10, line 20; figure 4 *		
A	----- US 5 216 834 A (CROWLEY LAWRENCE J [AU]) 8 June 1993 (1993-06-08)	1,4,5	
	* the whole document *		

The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC) E04H A01G E04F
Place of search		Date of completion of the search	Examiner
The Hague		4 September 2009	Fordham, Alan
CATEGORY OF CITED DOCUMENTS		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	
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 EPO FORM 1503 03/82 (P04C01)

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

EP 09 44 7022

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04-09-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 29520626 U1	30-04-1997	NONE	
US 2104648 A	04-01-1938	NONE	
US 5555681 A	17-09-1996	NONE	
US 4387533 A	14-06-1983	NONE	
US 5216834 A	08-06-1993	CA 2062791 A1	23-12-1990
		DE 4090873 T	14-05-1992
		GB 2253232 A	02-09-1992

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82