AUSTRALIA

PATENTS ACT 1990

NOTICE OF ENTITLEMENT

We, **Societe Civile Spironef,** the applicant/Nominated Person in respect of Application No. 32599/93 state the following:-

The Nominated Person is entitled to the grant of the patent because the Nominated Person derives title to the invention by assignment from Spironef Industries who would, on the grant of a patent for the invention to the inventor, be entitled to have the patent assigned to it.

The Nominated Person is entitled to claim priority from the application listed in the declaration under Article 8 of the PCT because the Nominated Person is the assignee of the applicant in respect of the application listed in the declaration under Article 8 of the PCT, and because that application was the first application made in a Convention country in respect of the invention.

DATED this ELEVENTH day of JULY 1994

.....

a member of the firm of
DAVIES COLLISON
CAVE for and on behalf
of the applicant(s)

(DCC ref: 1666862)

AU9332599

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(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 674505

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INFLATABLE CANOPY

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(71) Applicant(s)
SOCIETE CIVILE SPIRONEF

(72) Inventor(s)
GUY DELAMARE

(74) Attorney or Agent
DAVIES COLLISON CAVE , 1 Little Collins Street, MELBOURNE VIC 3000

(56) Prior Art Documents
EP 517559
US 4976074

(57) Claim

1. A multi-lobed, double wall inflatable vault, which can be deployed and retracted, confining, between its walls, a layer of air under pressure and composed of a plurality of distinct, inflatable hollow beams arranged side by side, each beam comprising four zones, two lateral zones of which form the webs and two zones, respectively the lower and upper zones, of which form the flanges of the said beam, and each beam being formed by a single continuous envelope ensuring the continuity of the leaktightness of the volume which it confines, equivalent webs of two contiguous beams being held opposite each other by means of continuous longitudinal flaps, each continuous flap being formed by a T-shaped profiled section, the two flanges of which being fastened on the envelope of each beam and the central tongue of which being intended to receive mechanical means for linking with the equivalent flap of the continuous beam.

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(71) ~~Déposant (pour tous les Etats désignés sauf US): SPIRONEF INDUSTRIES [FR/FR]; 212, avenue Paul-Doumer, F-92500 Rueil-Malmaison (FR).~~

(72) Inventeur; et
(75) Inventeur/Déposant (US seulement) : DELAMARE, Guy [FR/FR]; 37, avenue de la République, F-78230 Le Pecq (FR).

(74) Mandataire: LANCEPLAINE, Jean-Claude; Cabinet Lavoix, 2, place d'Estienne-d'Orves, F-75441 Paris Cédex 09 (FR).

(71) SOCIETE CIVILE SPIRONEF
21 rue Jean Giraudoux
F- 75116 Paris
France

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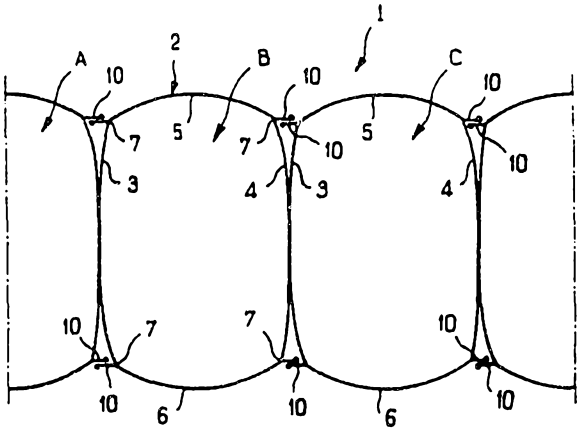
(54) Title: INFLATABLE CANOPY

(54) Titre: VOUTE GONFLABLE



(57) Abstract

An inflatable canopy (1) with a multilobed double wall, which can be extended and collapsed, enclosing a pressurized inter-wall air layer and consisting of a plurality of separate inflatable hollow beams (A, B, C...M, N) arranged side by side. Each beam comprises a continuous outer skin (2) including two webs (3, 4) and two flanges (5, 6). The corresponding webs (3, 4) of two adjacent beams are held opposite each other by continuous longitudinal lips (10) attached to the skin of each beam and comprising mechanical connecting elements for engaging the corresponding lip (10) of the adjacent beam.

(57) Abrégé

La présente invention a pour objet une voûte gonflable (1) à double paroi polylobée, déployable et escamotable confinant une couche d'air intérieure sous pression et composée d'une pluralité de poutres creuses (A, B, C,...M, N) gonflables, distinctes et disposées côte à côte. Chaque poutre est formée par une enveloppe continue (2) comprenant deux âmes (3, 4) et deux semelles (5, 6). Les âmes homologues (3, 4) de deux poutres contiguës sont maintenues en vis-à-vis par des bavettes (10) continues et longitudinales, fixées sur l'enveloppe de chaque poutre et comportant des moyens mécaniques de liaison avec la bavette homologue (10) de la poutre contiguë.

Inflatable vault

The subject of the present invention is a multi-lobed, double-wall inflatable vault, only the blade of air included between the two walls of which is pressurized, thus leaving the space which it covers at ambient pressure.

Generally, these inflatable vaults comprise a plurality of longitudinal beams arranged side by side, means of sliding of at least one longitudinal end of the beams along at least one deployment or folding path and means for supplying the said beams with inflation fluid.

This type of vault is designed in order, inter alia, to permit its deployment by means of simple inflation, as well as its retraction by deflation, which makes it possible, as desired, to cover a space for the purpose of protecting it from bad weather and for uncovering it in fine weather.

Such a vault may be used for temporarily covering large-size installations, such as stadia with stands for the spectators. In this case, it represents an enormous surface area of fabric, weighing from 50 to 100 tonnes, which is impossible to produce in the factory, to transport and to install as a single completely finished assembly. However, if the vault is produced as several elements, it is advisable, on the one hand, for these elements to be totally completed, tested in the factory, particularly to check their leaktightness, and, on the other hand, for the assembly of these elements together to be easy, rapid and to require no costly site equipment.

Vaults of this type are already known, in which the deployment and retraction can be produced by means of simple inflation and deflation, in which only the space between the two walls is pressurized and which are described, particularly, in patents FR-A-2,166,397 and FR-A-2,326,544.

Patent FR-A-2,166,397 relates to an inflatable structure including a succession of inflatable box structures which bear on one another when they are

inflated and which are placed between two sheets to which they are fastened, the said sheets being stretched by the box structures on inflation of the structure. Given the design of this structure, it cannot be applied to large-size constructions which is one of these objectives which the present invention proposes to achieve.

Patent FR-A-2,326,544 relates to an inflatable flexible structure consisting of a nave with at least two walls, which can be deployed and folded or retracted, composed of a series of contiguous chambers which can be flattened and pressurized, the dividing walls of which space apart the outer and inner and, optionally, median walls of the said nave. The multiple elements making up the vault are thus simple elementary panels of leaktight fabric which it is necessary to assemble on site in order to produce continuous links which are both strong and leaktight over great lengths, which requires very precise manufacturing tolerances and considerable tricky assembly work on site which does not guarantee the total reliability of the product obtained.

An inflatable vault is also known from patent FR-A-2,621,944, in which each beam includes two opposite panels forming flanges and each constituting one of the lobes of the inner or outer wall of the vault and two lateral panels forming the webs of the beam.

Equivalent panels of the adjacent beams are connected together with the aid of discontinuous mechanical linking means comprising, on the one hand, a series of flaps extending the panels of each beam along at least one of their longitudinal edges and, on the other hand, a plurality of profiled sections slipped one behind the other, simultaneously from one end to the other of each of the said flaps to be joined.

Such linking means pose problems owing to the fact that each beam is composed of at least two independent panels, the corresponding flaps of which must be inserted in the profiled sections at the same time as the flaps of the panels of the adjacent beam, and this has to be done over the entire length of the beams.

In order to remedy these drawbacks, the object of the present invention is to provide an inflatable vault in which the assembly of the inflatable hollow beams is facilitated.

To this end, the present invention provides a multi-lobed, double wall inflatable vault, which can be deployed and retracted, confining, between its walls, a layer of air under pressure and composed of a plurality of distinct, inflatable hollow beams arranged side by side, each beam comprising four zones, two lateral zones of which form the webs and two zones, respectively the lower and upper zones, of which form the flanges of the said beam, and each beam being formed by a single continuous envelope ensuring the continuity of the leaktightness of the volume which it confines, equivalent webs of two contiguous beams being held opposite each other by means of continuous longitudinal flaps, each continuous flap being formed by a T-shaped profiled section, the two flanges of which being fastened on the envelope of each beam and the central tongue of which being intended to receive mechanical means for linking with the equivalent flap of the continuous beam.

According to further preferred characteristics of the invention:

- the profiled section is formed by the folding of at least one strip of coated fabric,
- the mechanical linking means comprise:
- eyelet holes which are uniformly spaced and arranged opposite one another on the tongues of two equivalent flaps of two contiguous beams,
- continuous filler strips trapped along the free edge of the corresponding tongue,
- at least one continuous link slipped successively from top to bottom and from bottom to top in the pairs of eyelet holes arranged opposite one another

of the tongues of two equivalent flaps,

- the mechanical linking means are formed by slide closures each comprising two half-parts attaching to each other or detaching from each other on passage of a slider, each half-part being fastened on the tongue of one of the two equivalent flaps of two contiguous beams,

- each tongue of the flaps is formed from two parallel lips between which is fastened a band supporting one of the two half-parts of the corresponding slide closure,

- the webs and the flanges forming the continuous envelope of each beam are formed by intersecting surfaces, the said flaps being fastened along and on either side of the intersections of the said surfaces,

- the webs and the flanges forming the envelope of each beam are formed by mutually tangent surfaces, the said flaps being fastened along tangent lines of the said surfaces,

- the flaps located on one and the same side of each beam are continuous and form a loop at each end of the said beam.

According to further preferred characteristics of the invention:

- the inflatable vault comprises movable bearing fittings, arranged between the ends of two contiguous beams and connected to the flaps of the said contiguous beams, at the level of the end loops of the said flaps, by fastening means, the said bearing fittings interacting with a fixed base equipped with guide means, the profile of which determines a deployment and folding path of each of the said beams,

- the fastening means are formed by bolted small bars gripping the tongue of two contiguous flaps.

The present invention will be better understood with the aid of the detailed description which will follow, given by way of example with reference to the appended drawings, in which:

- Fig. 1 is a diagrammatic overall view of a vault according to the invention, in a section according.

to a plane parallel to the direction of its deployment,

- Fig. 2 is a diagrammatic view in section of a vault portion according to a first embodiment of the invention,

- Fig. 3 is a diagrammatic view in section of a vault portion according to a second embodiment of the invention,

- Fig. 4 is a view in section of a first embodiment of the mechanical means for linking two contiguous beams,

- Fig. 5 is a plan view of the mechanical linking means of Fig. 4,

- Fig. 6 is a view in section along the line 6-6 in Fig. 5,

- Fig. 7 is a view in section of a second embodiment of the mechanical means for linking two contiguous beams,

- Fig. 8 is a diagrammatic view of one end of a beam of the vault according to the invention,

- Fig. 9 is a view in section of the means for fastening bearing fittings on two contiguous beams.

In Fig. 1, a multi-lobed, double-wall inflatable vault, which can be deployed and retracted, has been shown diagrammatically, denoted overall by the reference 1.

This vault 1 confines, between its walls, a volume of air under pressure and is composed of a plurality of distinct and leaktight inflatable hollow beams, A, B, C ...M, N which are arranged side by side.

Each beam A, B, C, ... consists of a continuous envelope 2 ensuring the continuity of the leaktightness of the volume which it confines and composed of four zones, two lateral zones of which form the webs 3 and 4 and two zones, respectively the upper zone and the lower zone, of which form the flanges 5 and 6 of each beam.

According to a first embodiment shown in Fig. 2, the webs 3 and 4 and the flanges 5 and 6 forming the continuous envelope 2 of each beam A, B, C, ... are formed by surfaces which intersect at four

intersections 7.

According to a second embodiment shown in Fig. 3, the webs 3 and 4 and the flanges 5 and 6 forming the continuous envelope 2 of each beam A, B, C, ... are formed by mutually tangent surfaces.

The equivalent webs 3 and 4 of two contiguous beams A, B, C, ... are held opposite each other by continuous and longitudinal flaps 10 fastened on the envelope 2 of each beam and including mechanical means for linking with the equivalent flap 10 of the contiguous beam.

In the case in which the webs 3 and 4 and the flanges 5 and 6 of each beam A, B, C, ... are intersecting, a flap 10 is fastened along each intersection 7 (Fig. 2).

In the case in which the webs 3 and 4 and the flanges 5 and 6 of each beam A, B, C, ... are tangent, a flap 10 is fastened along the tangent lines of the said webs 3 and 4 and of the said flanges 5 and 6 (Fig. 3).

As shown in Figs. 4 to 7, each flap 10 which are continuous is formed by a T-shaped profiled section, the two flanges 11 and 12 of which are fastened on the envelope 2 of each beam A, B, C, ... and the central tongue 13 of which is intended to receive the mechanical linking means.

The profiled section is formed, for example, by the folding of at least one strip of coated fabric.

By referring, now, to Figs. 4 to 6, a description will be given of a first embodiment of the mechanical means for linking two contiguous beams.

These mechanical linking means comprise, on the one hand, crimped, metallic eyelet holes 15 which are uniformly spaced and arranged opposite one another on the tongues 13 of the equivalent flaps 10 of the contiguous beams A, B, C, ..., and, on the other hand, continuous filler strips 16 trapped in a hem formed by the free edge of each tongue 13.

The link of two contiguous flaps 10 and, consequently, of the beams together is produced by a

continuous link 17 such as, for example, a cable or a lace slipped successively from top to bottom and from bottom to top in the pairs of eyelet holes 15 arranged opposite one another of the tongues 13 of two equivalent flaps 10.

By referring, now, to Fig. 7, a description will be given of a second embodiment of the mechanical means for linking two contiguous beams.

In this case, the mechanical means for linking two contiguous flaps 10 are formed by a slide closure 20.

Each slide closure 20 is composed of two half-parts 21 and 22 attaching to each other or detaching from each other on passage of a slider which is not shown.

Each half-part 21 and 22 of the slide closure 20 is fastened on the tongue 13 of a flap 10 by means of a continuous band, respectively 23 and 24, supporting the corresponding half-parts 21 or 22.

In order to improve the leaktightness and to protect the slide closure 20, each tongue 13 of the flaps 10 is formed from two parallel lips 13a and 13b between which is fastened the band 23 or 24 supporting one of the two half-part 21 or 22 of the corresponding slide closure 20, the lip 13a of one of the tongues 13 straddling the lip 13a of the other tongue 13.

The flaps 10 located on one and the same side of each beam A, B, C, ... are continuous and form a loop 30 at each end of the said beam, as shown in Fig. 8.

As shown in Figs. 8 and 9, the vault 1 according to the present invention comprises movable bearing fittings 31, arranged between the ends of two contiguous beams, for example A and B, and connected by fastening means 32 to the flaps 10 of the said contiguous beams at the level of the end loops 30 of the said flaps 10.

The fittings 31 interact with a fixed base 33 equipped with guide means 34, the profile of which determines a deployment and folding path of each of the beams A, B, C, ... The fastening means 32 of the fittings 31 with the contiguous tongues 13 of two flaps 10 are formed by two longitudinal small bars 35 each

gripping, by means of bolts 36, a tongue 13 against the corresponding fitting 31. Each small bar 35 bears on the filler strip 16 of the tongue 13.

The advantages of the present invention result essentially from the possibility which it offers of producing vaults of very large dimensions, composed of a plurality of component elements which are easy to manufacture, easy to transport and to assemble with no special tooling, directly on site, and which may be erected or retracted very rapidly.

The inflatable vault according to the present invention applies to the production of a roof for stadia, swimming pools, tennis courts, sports halls, restaurants, theatres, exhibition halls or shops, diverse installations, leisure parks, conference halls or large-size storage sheds.

It is particularly adapted to the protection against bad weather of places frequented by the public and which it is desired, nevertheless, to uncover in fine weather, but it may also apply to permanently roofed installations.

CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A multi-lobed, double wall inflatable vault, which can be deployed and retracted, confining, between its walls, a layer of air under pressure and composed of a plurality of distinct, inflatable hollow beams arranged side by side, each beam comprising four zones, two lateral zones of which form the webs and two zones, respectively the lower and upper zones, of which form the flanges of the said beam, and each beam being formed by a single continuous envelope ensuring the continuity of the leaktightness of the volume which it confines, equivalent webs of two contiguous beams being held opposite each other by means of continuous longitudinal flaps, each continuous flap being formed by a T-shaped profiled section, the two flanges of which being fastened on the envelope of each beam and the central tongue of which being intended to receive mechanical means for linking with the equivalent flap of the continuous beam.

2. An inflatable vault according to claim 1, characterized in that the profiled section is formed by the folding of at least one strip of coated fabric.

3. An inflatable vault according to claim 1, characterized in that the mechanical linking means comprise eyelet holes which are uniformly spaced and arranged opposite one another on the tongues of two equivalent flaps of two contiguous beams, continuous filler strips trapped along the free edge of the corresponding tongue, at least one continuous link slipped successively from top to bottom and from bottom to top in the pairs of eyelet holes arranged opposite one another of the tongues of two equivalent flaps.

4. An inflatable vault according to claim 1, characterized in that the mechanical linking means are formed by slide closures each comprising two half-parts attaching to each other or detaching from each other on passage of a slider, each half-part being fastened on the

tongue of one of the two equivalent flaps of two contiguous beams.

5. An inflatable vault according to claim 4, characterized in that each tongue of the flaps is formed from two parallel lips between which is fastened a band supporting one of the two half-parts of the corresponding slide closure.

6. An inflatable vault according to any one of the preceding claims, characterized in that the webs and the flanges forming the continuous envelope of each beam are formed by intersecting surfaces, the said flaps being fastened along and on either side of the intersections of the said surfaces.

7. An inflatable vault according to any one of claims 1 to 5, characterized in that the webs and the flanges forming the envelope of each beam are formed by mutually tangent surfaces, the said flaps being fastened along tangent lines of the said surfaces.

8. An inflatable vault according to any one of the preceding claims, characterized in that the flaps located on one and the same side of each beam are continuous and form a loop at each end of the said beam.

9. An inflatable vault according to any one of the preceding claims, characterized in that it comprises movable bearing fittings, arranged between the ends of two contiguous beams and connected to the flaps of the said contiguous beams, at the level of the end loops of the said flaps, by fastening means, the said fittings interacting with a fixed base equipped with guide means, the profile of which determines a deployment and folding path of each of the said beams.

10. An inflatable vault according to claim 9, characterized in that the fastening means are formed by

bolted small bars gripping the tongue of two contiguous flaps.

11. A multi-lobed double wall inflatable vault substantially as herein described with reference to Figures 1, 2, 4, 5, 8 and 9 or Figures 1, 3, 4, 5, 8 and 9 or Figures 1, 2, 7, 8 and 9 or Figures 1, 3, 7, 8 and 9 of the accompanying drawings.

FIG_1

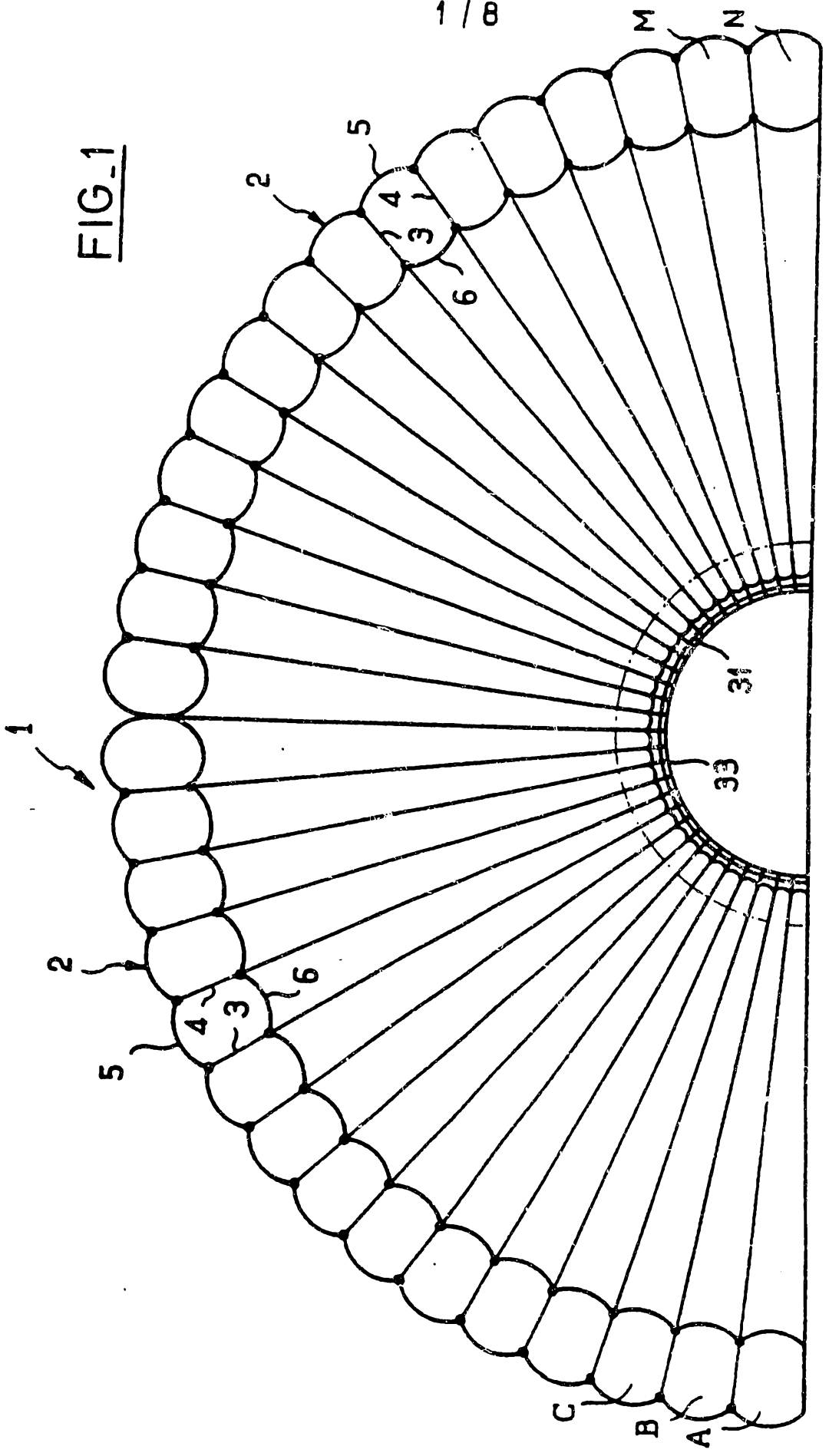


FIG.2

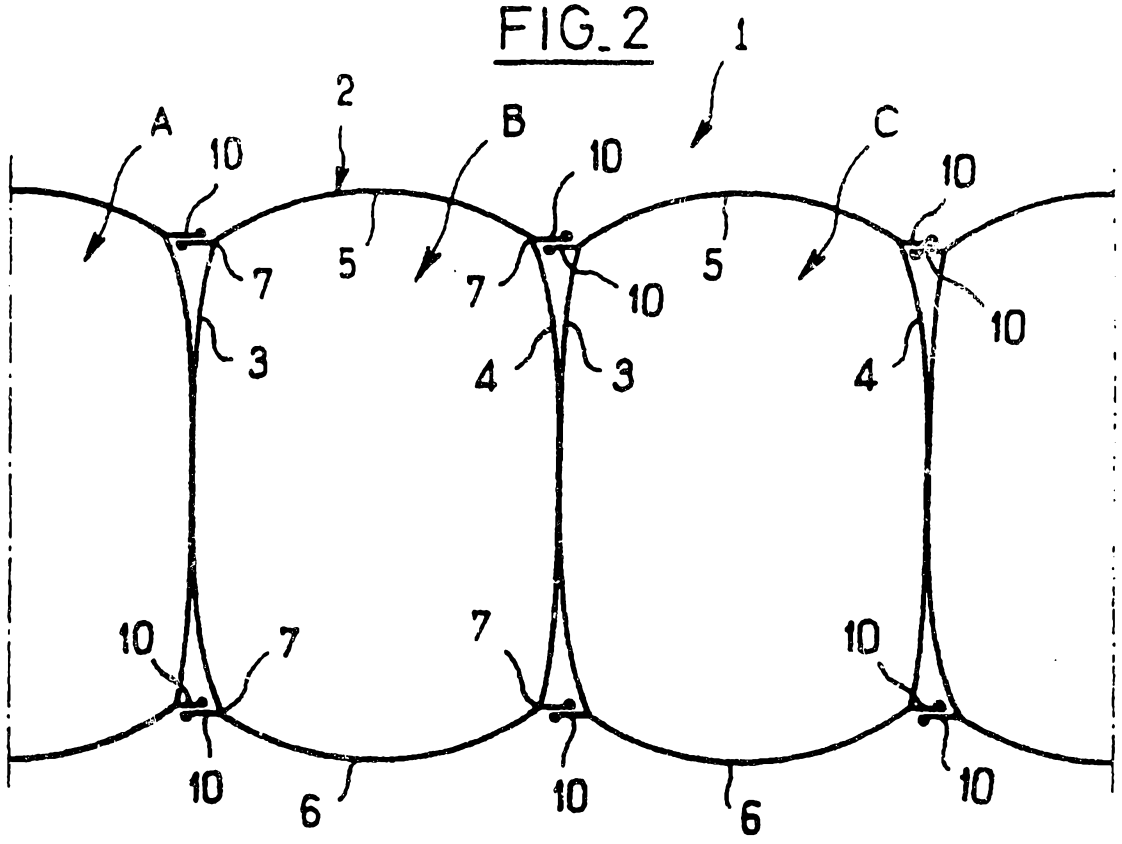
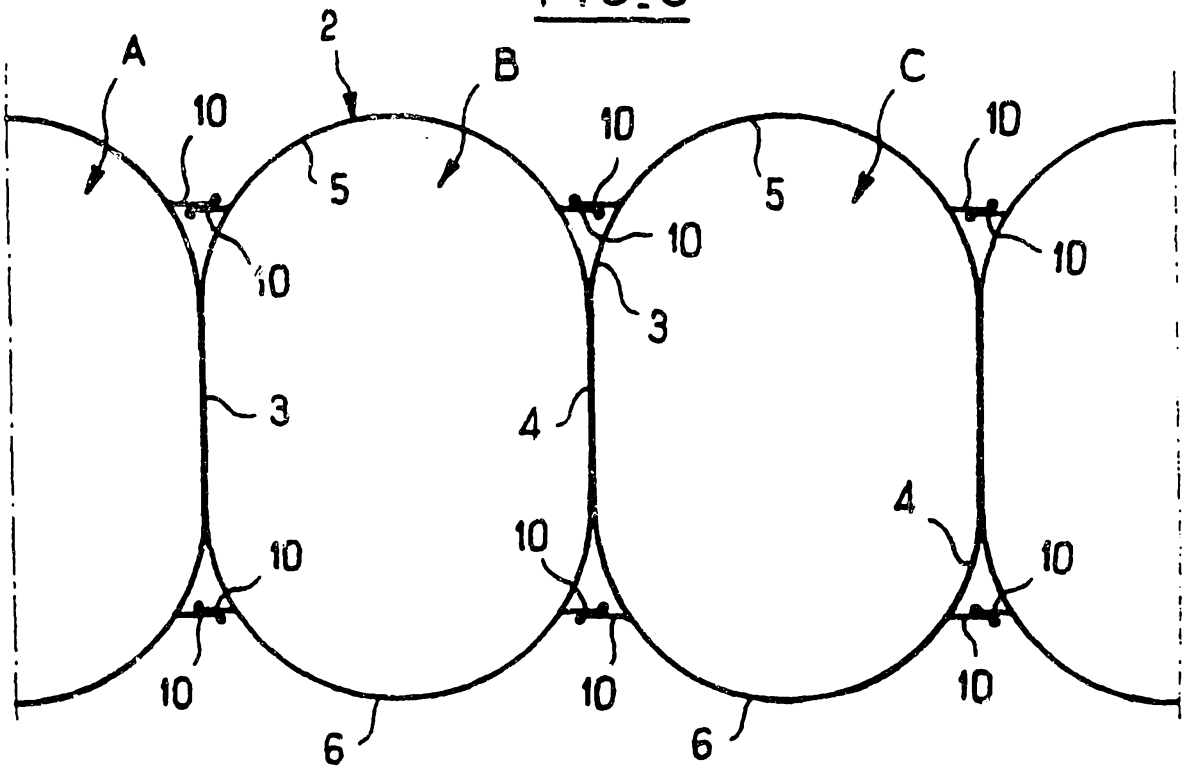


FIG.3



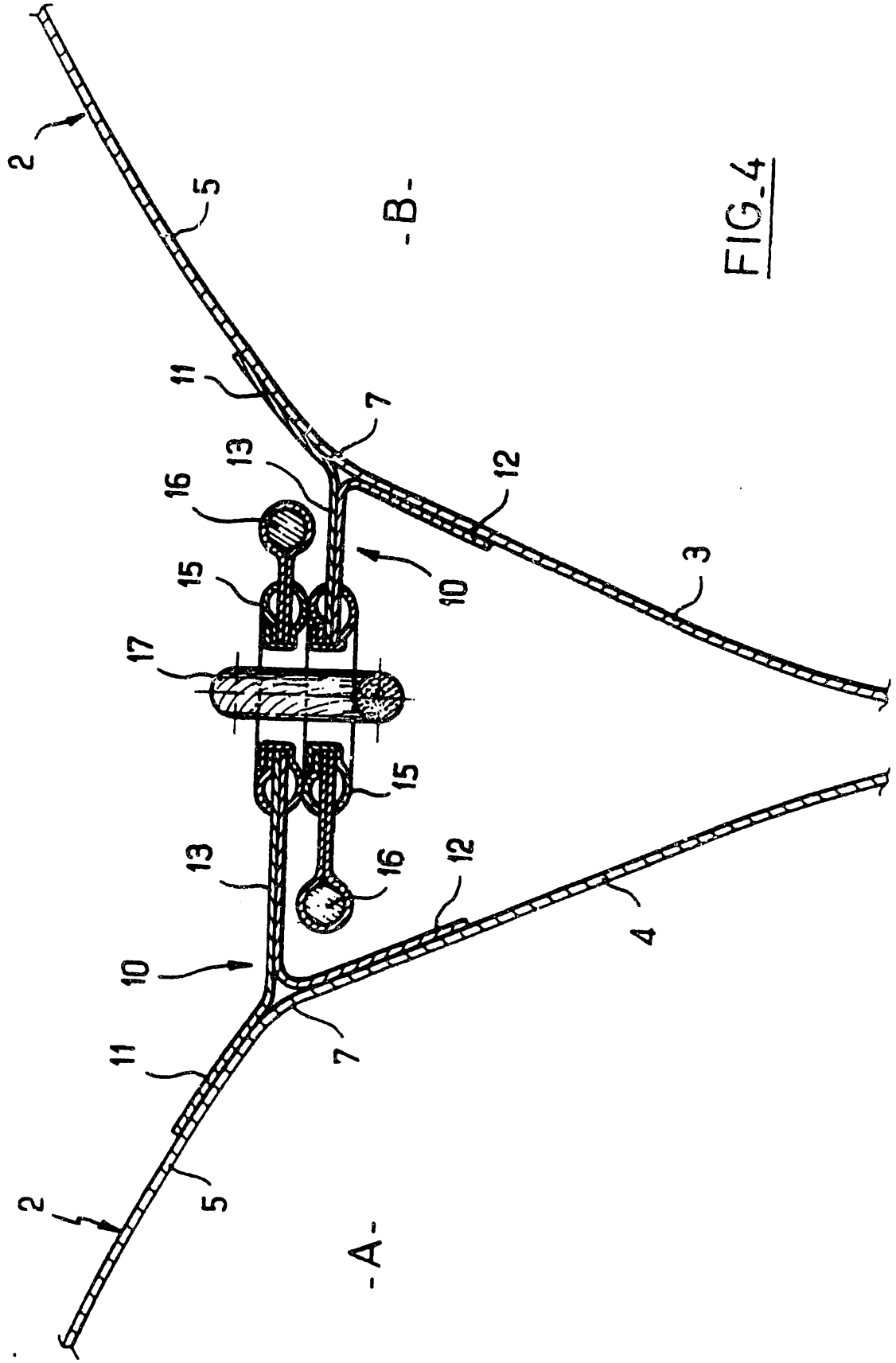
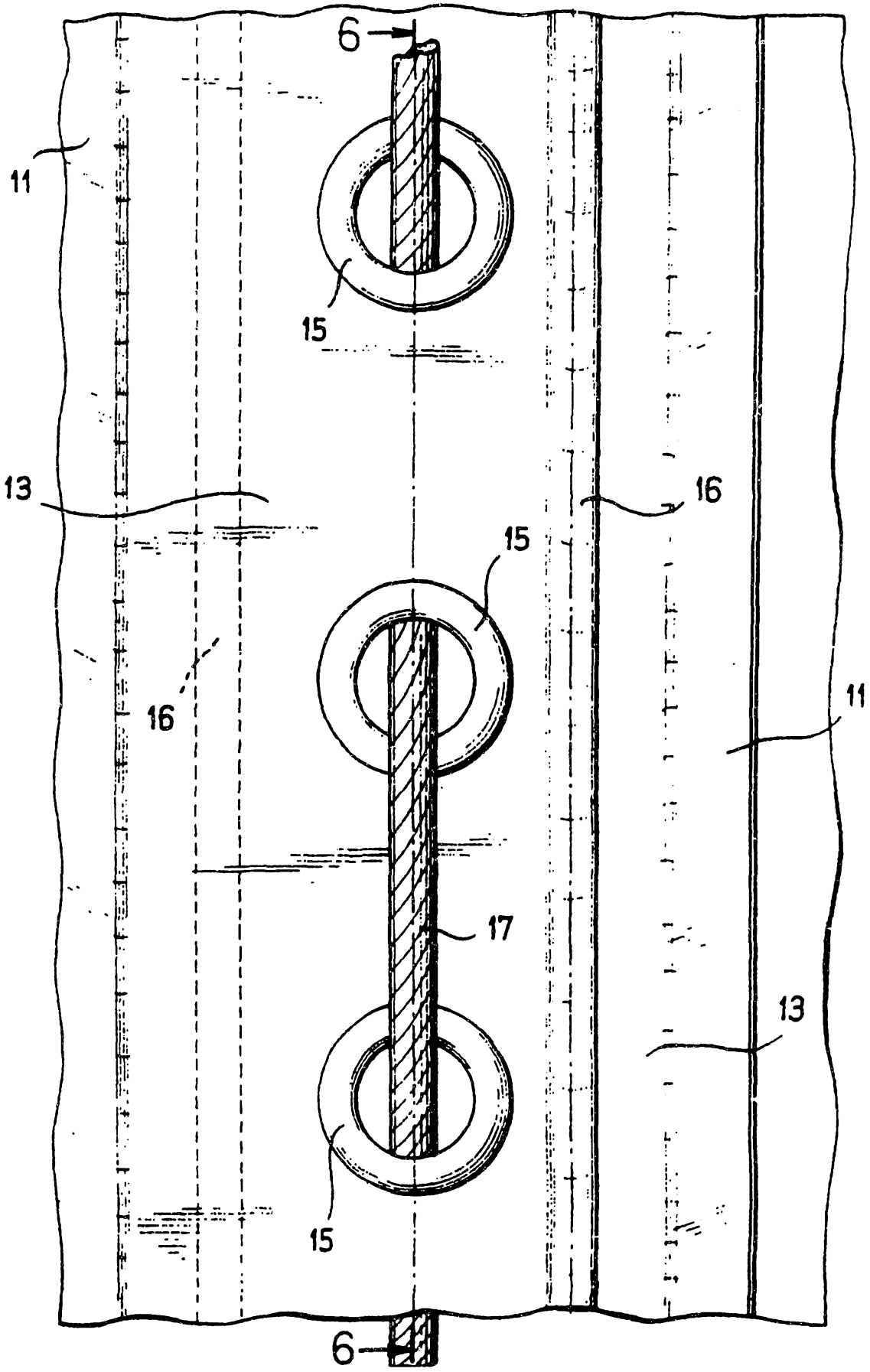


FIG_4

FIG.5



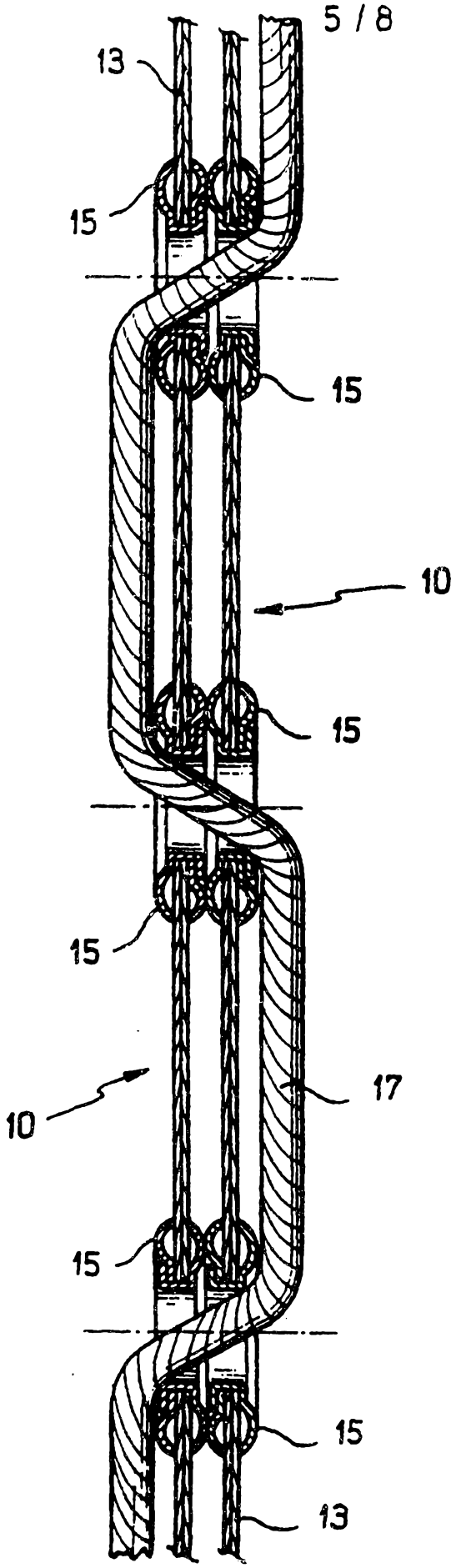


FIG_6

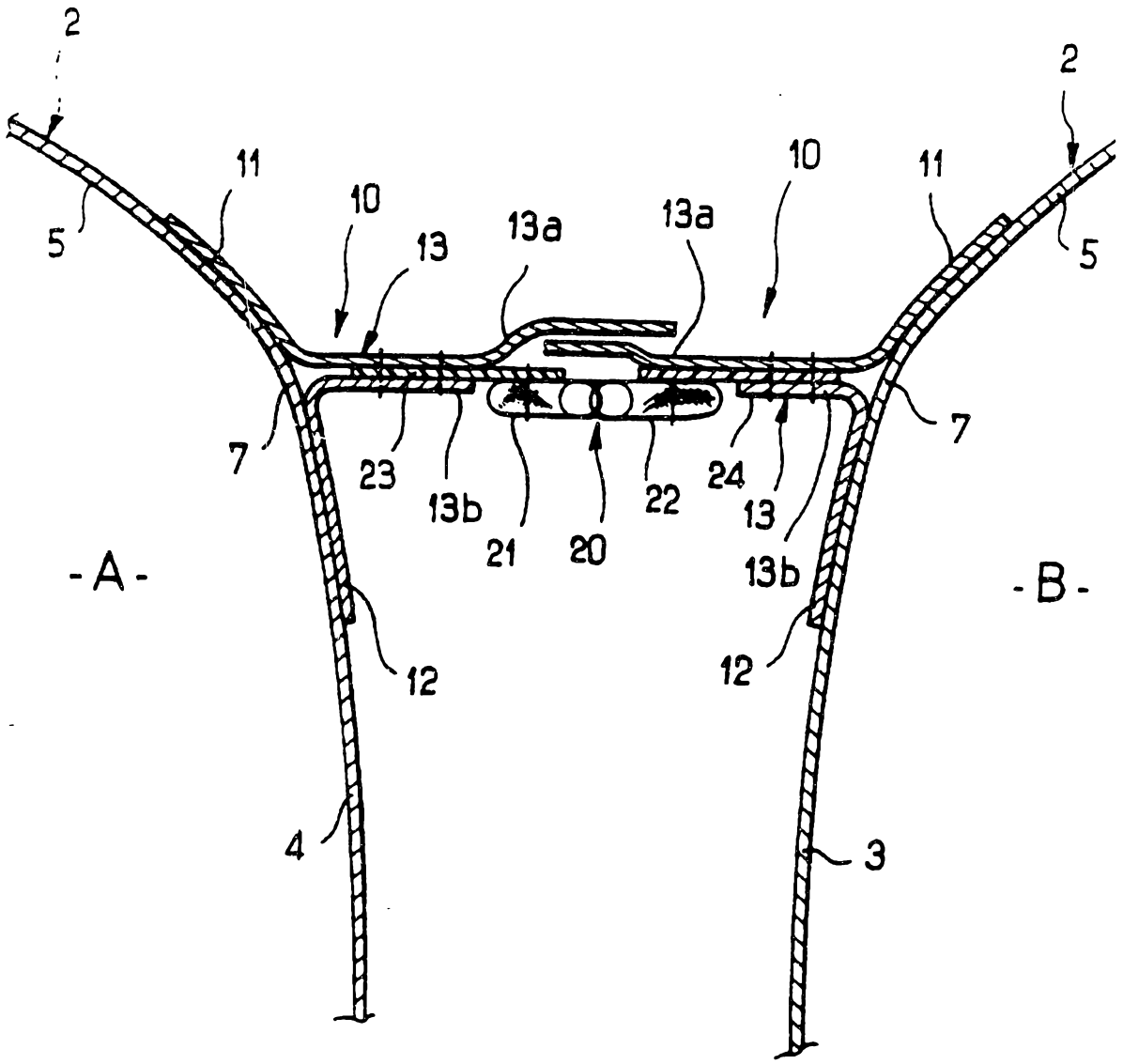


FIG_7

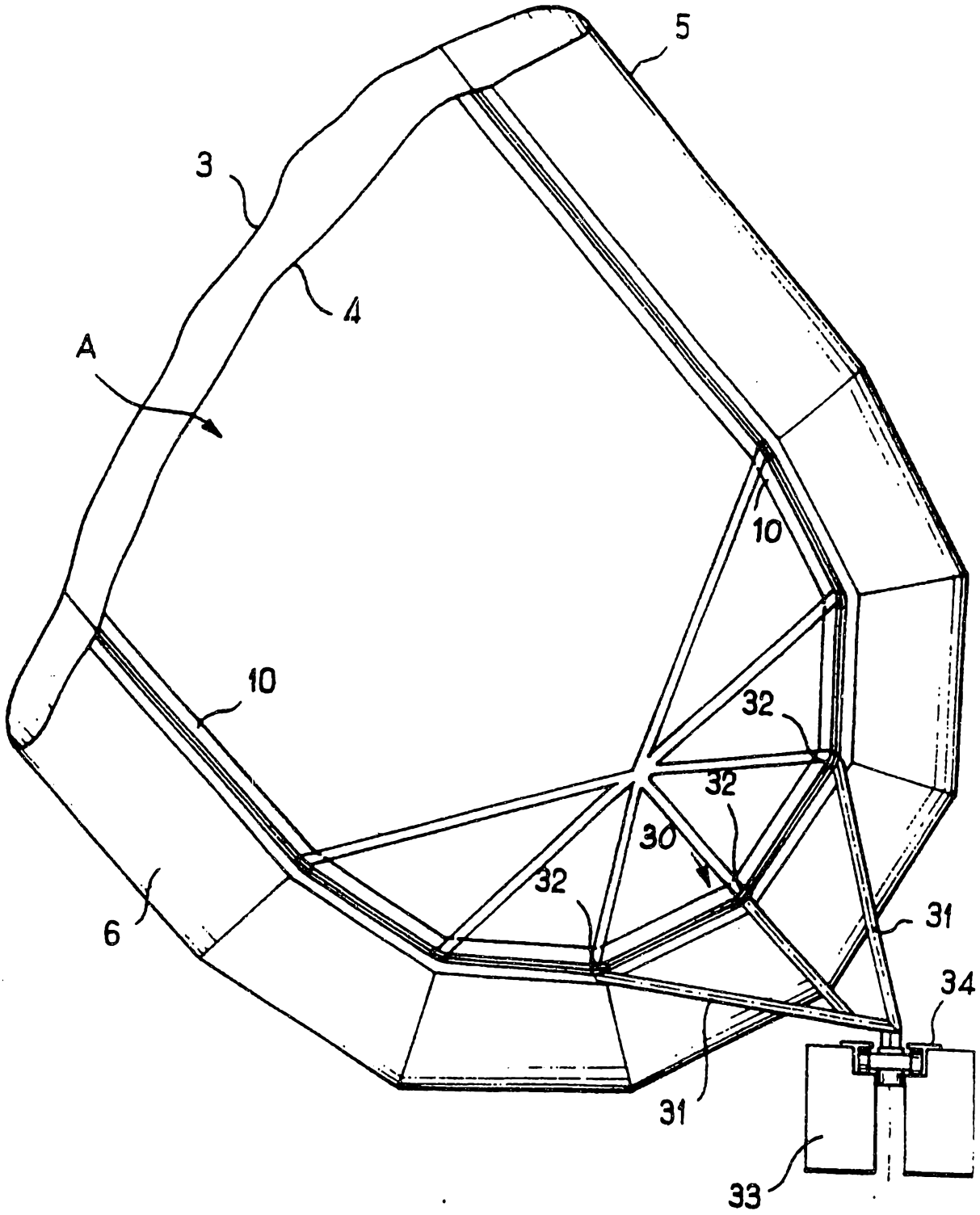


FIG_8

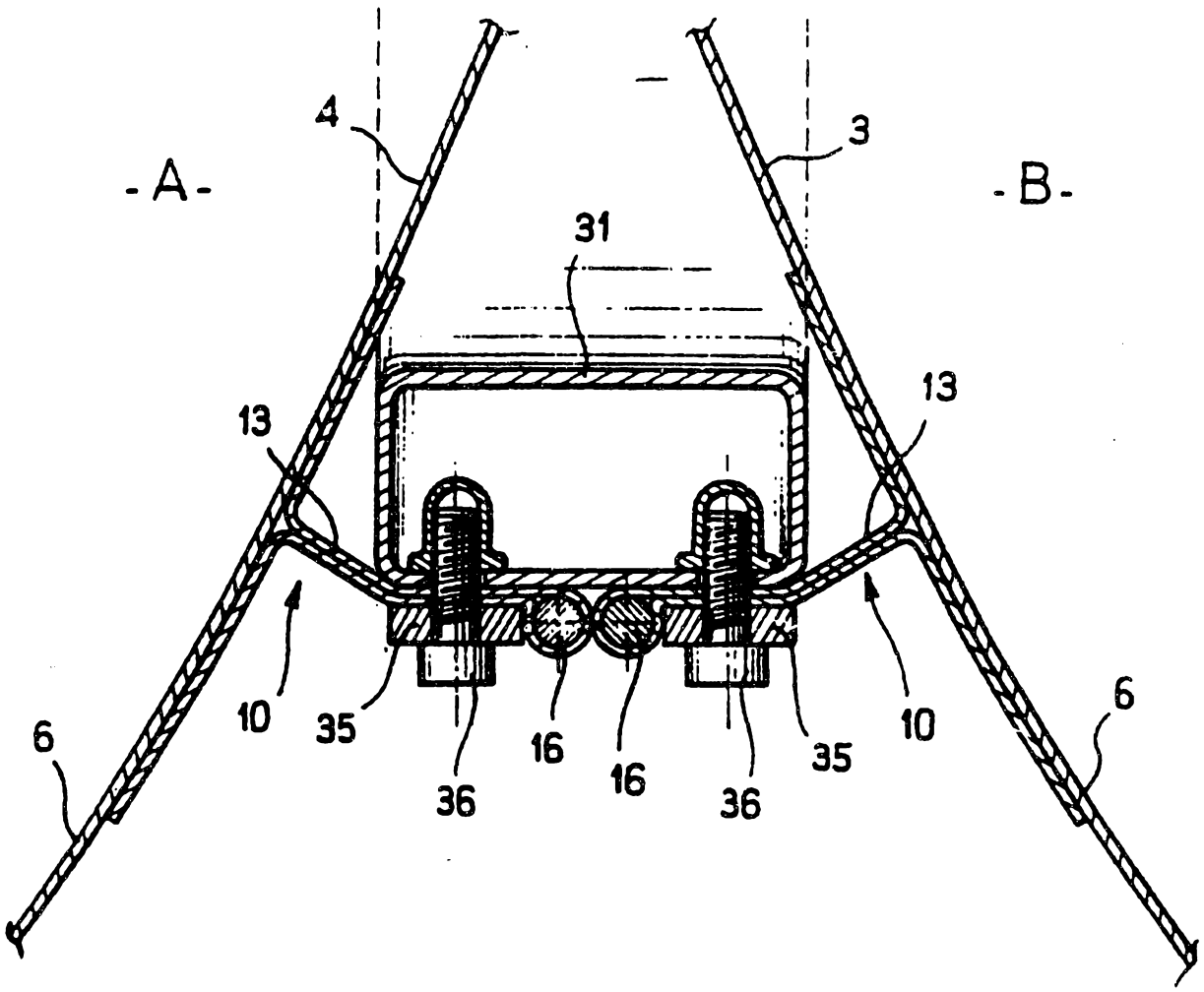


FIG_9

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FR 92/01113

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.5 E04H15/20

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)

Int.Cl.5 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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	FR,A,2 621 944 (DELAMARE) 21 April 1989 cited in the application see page 12, line 11 - line 23; figures 6,7	1
A	---	7
Y	FR,A,2 062 116 (BACHMANN & CIE S.A.) 25 June 1971 see page 3, line 28 - page 4, line 8; figure 6	1
A	---	
	EP,A,0 065 240 (MINIGRIP EUROPE GMBH) 24 November 1982 see page 9, paragraph 2 - page 11, paragraph 1; figures 1-4	1,2,8
A	---	
	DE,A,2 903 169 (LANG) 31 July 1980 see page 17, line 1 - line 32; figures 2,3	3,4

	-/--	

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"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

"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

"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

"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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
05 April 1993 (05.04.93)	21 April 1993 (21.04.93)
Name and mailing address of the ISA/ EUROPEAN PATENT OFFICE Facsimile No.	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FR 92/01113

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE,A,2 223 158 (BETEILIGUNGS-AG FUER HAUSTECHNIK) 30 November 1972 see page 4, last paragraph; figure 3 ----	5

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON INTERNATIONAL PATENT APPLICATION NO.

FR 9201113
SA 68513

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on
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FR-A-2621944	21-04-89	AU-A-	2365588	20-04-89
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		JP-A-	1230874	14-09-89
		US-A-	4976074	11-12-90
FR-A-2062116	25-06-71	None		
EP-A-0065240	24-11-82	FR-A-	2505903	19-11-82
		FR-A-	2520403	29-07-83
DE-A-2903169	31-07-80	None		
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		AU-B-	469104	05-02-76
		AU-A-	4218272	15-11-73
		GB-A-	1385261	26-02-75

RAPPORT DE RECHERCHE INTERNATIONALE

Demande Internationale No PCT/FR 92/01113

I. CLASSEMENT DE L'INVENTION (si plusieurs symboles de classification sont applicables, les indiquer tous) [7]

Selon la classification internationale des brevets (CIB) ou à la fois selon la classification nationale et la CIB

CIB 5 E04H15/20

II. DOMAINES SUR LESQUELS LA RECHERCHE A PORTE

Documentation minimale consultée[8]

Système de classification	Symboles de classification
CIB 5	E04H

Documentation consultée autre que la documentation minimale dans la mesure où de tels documents font partie des domaines sur lesquels la recherche a porté[9]

III. DOCUMENTS CONSIDERES COMME PERTINENTS[10]

Catégorie °	Identification des documents cités, avec indication, si nécessaire,[12] des passages pertinents [13]	No. des revendications visées [14]
Y	FR,A,2 621 944 (DELAMARE) 21 Avril 1989 cité dans la demande voir page 12, ligne 11 - ligne 23; figures 6,7	1
A		7

Y	FR,A,2 062 116 (BACHMANN & CIE S.A.) 25 Juin 1971 voir page 3, ligne 28 - page 4, ligne 8; figure 6	1

A	EP,A,0 065 240 (MINIGRIP EUROPE GMBH) 24 Novembre 1982 voir page 9, alinéa 2 - page 11, alinéa 1; figures 1-4	1,2,8

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° Catégories spéciales de documents cités:[11]

"A" document définissant l'état général de la technique, non considéré comme particulièrement pertinent

"E" document antérieur, mais publié à la date de dépôt international ou après cette date

"L" document pouvant jeter un doute sur une revendication de priorité ou cité pour déterminer la date de publication d'une autre citation ou pour une raison spéciale (telle qu'indiquée)

"O" document se référant à une divulgation orale, à un usage, à une exposition ou tous autres moyens

"P" document publié avant la date de dépôt international, mais postérieurement à la date de priorité revendiquée

"T" document ultérieur publié postérieurement à la date de dépôt international ou à la date de priorité et n'appartenenant pas à l'état de la technique pertinent, mais cité pour comprendre le principe ou la théorie constituant la base de l'invention

"X" document particulièrement pertinent; l'invention revendiquée ne peut être considérée comme nouvelle ou comme impliquant une activité inventive

"Y" document particulièrement pertinent; l'invention revendiquée ne peut être considérée comme impliquant une activité inventive lorsque le document est associé à un ou plusieurs autres documents de même nature, cette combinaison étant évidente pour une personne du métier.

"&" document qui fait partie de la même famille de brevets

IV. CERTIFICATION

Date à laquelle la recherche internationale a été effectivement achevée	Date d'expédition du présent rapport de recherche internationale
05 AVRIL 1993	21. 04. 93
Administration chargée de la recherche internationale	**Signature du fonctionnaire autorisé**
OFFICE EUROPEEN DES BREVETS	CLASING M.F.

III. DOCUMENTS CONSIDERES COMME PERTINENTS [14] (SUITE DES RENSEIGNEMENTS INDIQUES SUR LA DEUXIEME FEUILLE)

Catégorie °	Identification des documents cités, [16] avec indication, si nécessaire des passages pertinents [17]	No. des revendications visées [18]
A	DE,A,2 903 169 (LANG) 31 Juillet 1980 voir page 17, ligne 1 - ligne 32; figures 2,3	3,4
A	DE,A,2 223 158 (BETEILIGUNGS-AG FUER HAUSTECHNIK) 30 Novembre 1972 voir page 4, dernier alinéa ; figure 3	5

ANNEXE AU RAPPORT DE RECHERCHE INTERNATIONALE RELATIF A LA DEMANDE INTERNATIONALE NO.

FR 9201113
SA 68513

La présente annexe indique les membres de la famille de brevets relatifs aux documents brevets cités dans le rapport de recherche internationale visé ci-dessus.
Lesdits membres sont contenus au fichier informatique de l'Office européen des brevets à la date du
Les renseignements fournis sont donnés à titre indicatif et n'engagent pas la responsabilité de l'Office européen des brevets. 05/04/93

Document brevet cité au rapport de recherche	Date de publication	Membre(s) de la famille de brevet(s)		Date de publication
FR-A-2621944	21-04-89	AU-A-	2365588	20-04-89
		EP-A-	0312429	19-04-89
		JP-A-	1230874	14-09-89
		US-A-	4976074	11-12-90
FR-A-2062116	25-06-71	Aucun		
EP-A-0065240	24-11-82	FR-A-	2505903	19-11-82
		FR-A-	2520403	29-07-83
DE-A-2903169	31-07-80	Aucun		
DE-A-2223158	30-11-72	AT-A-	339007	26-09-77
		AU-B-	469104	05-02-76
		AU-A-	4218272	15-11-73
		GB-A-	1385261	26-02-75

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