

The subject of the present invention is an inflatable roof, which can be unfolded and folded away by respectively inflating and deflating it.

5 In general, these inflatable roofs include a plurality of longitudinal beams arranged side by side, means for sliding at least one end of the beams along at least one unfolding or folding-up track and means for supplying the said beams with pressurized fluid.

10 This type of roof is known, among others, to allow it to be unfolded simply by inflating and folded away by deflating. This makes it possible, as required, to cover over a space for the purpose of protecting it from the elements and to uncover it in fine weather.

15 FR-A-2 621 944 more particularly discloses an inflatable roof in which each beam comprises two opposed panels forming a flange and each constituting one of the lobes of the interior and exterior wall of the roof and two side panels forming the web of the beam.

20 The means for supplying the beam with inflating fluid are formed by at least one conduit which passes through the said beams and can be extended along its length, its extension and its retraction being respectively controlled by the unfolding and folding-away of the roof.

25 In this roof, the supply conduit is common to all beams and communicates with each of the said beams via a blockable orifice controlled by blocking-off means and the supply conduit sealingly passes through an opening made in each of the side panels.

30 The unfolding track is located outside the beams, which leads to stresses distributed over a small area of the wall.

35 FR-A-2,677,394 also discloses an inflatable roof comprising a plurality of longitudinal beams arranged side by side, means for sliding at least one end of the beams along at least one unfolding or folding-up track and means for supplying the beams with inflating fluid.

In this case, the unfolding or folding-up track passes sealingly through the said beams.

This unfolding or folding-up track extends longitudinally inside a pressurized-fluid supply conduit and the sliding means are located between the said track and the wall of the said conduit.

5 However, such a structure poses sealing problems and is complex because of the arrangement of the folding or folding-up track inside the pressurized-fluid supply conduit.

10 The object of the invention is to propose an inflatable roof, which can be unfolded and folded away, enabling the previously mentioned drawbacks to be avoided.

15 The subject of the invention is therefore an inflatable roof, which can be unfolded and folded away by respectively inflating and deflating it, comprising:

- a plurality of longitudinal inflatable beams arranged side by side,
 - means for supplying the inflatable beams with pressurized fluid,
 - 20 - means for sliding the beams along at least one unfolding or folding-up track formed by a rigid beam sealingly passing through these beams,
- characterized in that the rigid beam is formed by a pipe for conveying the pressurized fluid for inflating or
- 25 deflating the beams communicating, on the one hand, at least at one of its ends, with the pressurized-fluid supply means and, on the other hand, with the interior of at least one inflatable beam via at least one orifice made in the wall of the pipe and equipped with means for
- 30 blocking it off.

According to other characteristics of the invention:

- the pipe is formed by a tube having a circular cross-section or a rectangular cross-section,
- 35 - the means for supplying the inflatable beams are formed by at least one pressurized-fluid generator,
- the pressurized-fluid generator is a centrifugal blower comprising, on the one hand, a suction port equipped with a first flexible duct whose free end comprises

means for connection to a second flexible duct which is joined to the pipe and, on the other hand, a delivery port comprising means for connection to the second flexible duct which is intended to be joined alternately by the said means for connection to the delivery port in order to inflate the beams, or to the free end of the first flexible duct in order to deflate the said beams,

- the blocking-off means are formed by sealed doors associated with means for opening them or for closing them,
- each door comprises at least one leaf pivoting in the pipe between a closed position providing continuity of the external wall of the said pipe and an inclined open position directing, through the orifices, the pressurized fluid from this pipe towards the said at least one inflatable beam or from the said at least one inflatable beam towards the said pipe,
- the contiguous walls of the adjacent inflatable beams are joined together around the corresponding pipe by a support plate carrying the sliding means and, together with the said pipe, leaving a free space which can be blocked off momentarily by a seal,
- the adjacent support plates are held away from each other by at least one spacer, by a distance such that the length of the pipe between the said adjacent support plates comprises at least one part of the surface of at least one of the said blockable orifices.

The invention will be more clearly understood on reading the description which follows, given solely by way of example and with reference to the appended drawings in which:

- Fig. 1 is a diagrammatic perspective view of an inflatable roof according to the invention,
- Fig. 2 is a partial diagrammatic sectional view of one of the ends of the inflatable beams in the folded-away position,
- Fig. 3 is a diagrammatic view of the means for supplying the inflatable beams with pressurized fluid,

- Fig. 4 is a cross-sectional view of a first embodiment of the means for sliding the inflatable beams,
- Fig. 5 is a cross-sectional view of a second embodiment of the means for sliding the inflatable beams,
- 5 - Fig. 6 is a diagrammatic cross-sectional view, in the closed position, of a first embodiment of the means for blocking off the orifices in the pipe,
- Fig. 7 is a diagrammatic cross-sectional view, in the open position, of the first embodiment of the means for
- 10 blocking off the orifices in the pipe,
- Fig. 8 is a diagrammatic cross-sectional view of a first embodiment of the means for sliding the inflatable beams along the unfolding or folding-up track,
- Fig. 9 is a diagrammatic cross-sectional view of a
- 15 second embodiment of the means for sliding the inflatable beams along the unfolding or folding-up track,
- Fig. 10 is a diagrammatic cross-sectional view of two contiguous inflatable beams,
- Fig. 11 is a diagrammatic partial sectional view of one
- 20 end of the inflatable beams in the unfolded position,
- Fig. 12 is a diagrammatic cross-sectional view of a second embodiment of the means for blocking off the orifices in the pipe,
- Fig. 13 is a diagrammatic cross-sectional view of an
- 25 alternative form of the seal between two inflatable beams, in the deflated position,
- Fig. 14 is a diagrammatic cross-sectional view of the seal of Fig. 13, in the inflated position and
- Fig. 15 is a diagrammatic cross-sectional view of
- 30 another alternative form of the seal between two inflatable beams, in the inflated position.

Fig. 1 diagrammatically depicts an inflatable roof 1 constituted by a plurality of longitudinal inflatable beams A, B, C ... M, N which are sealed and

35 arranged side by side in order to form the roof 1.

At each end of the beams A, B, C ..., the said beams are mounted so as to slide along an unfolding or folding-up track 2 and 2a which passes through the flexible walls of the beams, as will be described later.

Each unfolding or folding-up track 2 and 2a is formed by a rigid beam.

One of the rigid beams, such as the rigid beam 2 for example, is formed by a pipe 3 for conveying a pressurized fluid for inflating or deflating the beams A, B, C ...

According to an alternative form, each rigid beam may be formed by a pipe for conveying the pressurized fluid.

The pipe 3 for conveying the pressurized fluid for inflating or deflating the beams A, B, C ... communicates, on the one hand, at least at one of its ends, with pressurized-fluid supply means 4 (Fig. 1) and, on the other hand, with the interior of at least one inflatable beam A, B, C ... via at least one orifice 5, 5a, 5b, 5c ... made in the wall of the pipe 3 and each equipped with means for blocking it off.

The pipe 3 is formed, for example, by a straight or curved tube having a circular cross-section (Fig. 4) or by a curved tube having a rectangular cross-section (Fig. 5).

This tube may be made from wood, from a composite or alternatively from metal.

According to an illustrative embodiment depicted in Figs. 4 and 5, the pipe 3 is composed of two side walls 10a and 10b, the two edges 11 and 12 of which are straight or curved and which are made by a stack of wooden strips 13a, 13b, 13c ... 13n and, on the other hand, of at least two wooden planks 14, 15, 16 and 17 which are straight or curved and are adhesively bonded to the end face of the edges 11 and 12 of the said side walls 10a and 10b.

The means 4 for supplying the inflatable beams A, B, C ... with pressurized fluid are formed by at least one pressurized-fluid generator.

According to an illustrative embodiment depicted in Fig. 3, the pressurized-fluid generator is a centrifugal blower 4 which includes a suction port 21 and a delivery port 22.

The suction port 21 or the delivery port 22 are respectively joined to the pipe 3 by means of two flexible ducts 23 and 24.

5 The first flexible duct 23 has its two ends joined to stationary fixtures 25 and 26, one 25 of which is fixed on the suction port 21 and the other 26 is carried by a support plate 27 mounted on the delivery port 22 by means of a fixture 28.

10 The second flexible duct 24 has one of its ends joined to a stationary fixture 29 fastened to the pipe 3 and the other of its ends joined to a movable fixture 30 associated with operating means 31 allowing sealed connection of the second flexible duct 24 either to the fixture 28 for the delivery port 22, in order to inflate
15 the beams A, B, C ... and to unfold the beam, or to the fixture 26 for the free end of the first flexible duct 23, in order to deflate the beams A, B, C ... and to fold up the roof 1.

Referring now to Figures 6 and 7, the means for
20 blocking off an orifice 5 will be described, the means for blocking off the other orifices being identical.

The blocking-off means are formed by sealed doors
40 associated with means 41 for opening them or for closing them.

25 Each sealed door 40 comprises at least one leaf 42 pivoting in the pipe 3 about a point of articulation 43 between a closed position (Fig. 6) providing continuity of the external wall of the said pipe 3 and an inclined open position (Fig. 7) directing, through the
30 corresponding orifice 5, the pressurized fluid from this pipe 3 towards the corresponding inflatable beam A, B, C ... or from the said corresponding inflatable beam A, B, C ... towards the said pipe 3.

According to the illustrative embodiment depicted
35 in Figs. 6 and 7, the pipe 3 includes two opposed orifices 5 equipped with leaves 42 opening towards each other and comprising a mechanism for clamping these leaves 42 in the closed position.

This mechanism for clamping the leaves 42 in the

closed position is composed of two connecting rods 44 and 45 which are articulated together at one of their end at a common point of articulation 46 and are each articulated at their other end to each of the leaves 42 at a point of articulation 47.

The means 41 for opening or for closing the leaves 42 and formed, for example, by a cylinder actuator, the free end of the cylinder actuator rod 41a of which is joined to the connecting rods 44 and 45 at their common point of articulation 46.

Each leaf 42 is formed by two elements 50 and 51 which can be disconnected from each other, and fastened together, by means of a plurality of screws 52 accessible from outside the pipe 3.

The first element 50 is open at its central part and carries, on the one hand, the articulations 43 and 47 and, on the other hand, a seal 53 for sealing to the internal wall of the pipe 3 over the perimeter of the orifice 5 in the said pipe 3.

The separation of the second element 51 from the first element 50 makes it possible to obtain access to the interior of the pipe 3 in order to carry out maintenance on the means 41 for opening or for closing the leaves 42.

The second element 51 blocks off the central part of the first element 50 and provides continuity of the external wall of the pipe 3 in the closed position of the leaf 42, as depicted in Fig. 6.

As depicted in Figs. 8 and 9, the contiguous walls 60 and 61 of the adjacent inflatable beams, for example A and B, are sealingly joined together around the corresponding pipe 3 by using a support plate 62 carrying the sliding means constituted, for example, by a roller 63 or by a runner.

Each roller 63 is intended to roll along the external wall of the pipe 3 while the roof 1 is being unfolded or folded up.

Each support plate 62, together with the corresponding pipe 3, leaves a free space 64 allowing inter-

communication between the pressurized compartments of the adjacent inflatable beams, for example A and B.

5 The free space 64 is completely free or permanently blocked off or momentarily blocked off, for example after the roof has been unfolded.

10 As depicted in Fig. 8, the free space 64 is permanently blocked off by a seal 65 fixed on the support plate 62 and rubbing against the external wall of the pipe 3 while the roof 1 is being unfolded or folded away so as to isolate the pressurized compartments of the adjacent inflatable beams, for example A and B.

As depicted in Fig. 9, the free space 64 is momentarily blocked off by a seal 66 which can be inflated and folded up.

15 This seal 66 is fixed on the support plate 62 inside which it is folded up in the absence of pressurization and it unfolds under the effect of its internal pressurization in order to be sealingly applied against the external wall of the pipe 3.

20 As depicted in Fig. 9, each wall of the adjacent inflatable beams, for example A and B, is sealingly secured to the support plates 62 by means of a fixture 67a and 67b held captive in an annular hem 68a and 68b formed by turning over the corresponding wall 60 and 61.

25 The fixtures 67a and 67b are fixed to the support plate 62 by means of a plurality of bolts 69.

30 When the beams are deflated and folded away, the adjacent support plates 62 are, as may be seen in Figures 2 and 8, held apart by spacers 70 by a distance such that the length of the corresponding pipe 3 lying between these adjacent support plates 62 comprises at least one part of the surface of at least one blockable orifice 5d, 5c ...

35 According to an alternative form, the spacer 70 may carry a roller, not depicted, for guiding on the corresponding pipe 3.

According to another alternative form, the spacer 70 may be fixed both to the adjacent support plates 62 of the first beam A, the length of this spacer corresponding

to the separation of these support plates 62 when the first beam A is inflated.

As depicted in Fig. 10, the contiguous walls 60 and 61 of the adjacent inflatable beams, for example A and B, are joined together along the space which extends between the support plates 62 and along the space between a support plate 62 and the end or ends of the inflatable beams by at least one self-grabbing tape 71.

This self-grabbing tape 71 is composed of two parts 72 and 73 which may catch on each other or be detached from each other.

Each of these parts 72 and 73 is fixed, for example, by welding at least along its longitudinal edges to each of the walls 60 and 61 of the adjacent beams, for example A and B.

In another embodiment, the contiguous walls 60 and 61 of the adjacent inflatable beams, for example A and B, are joined together by a continuous support plate, not depicted, which extends between the unfolding tracks 2 and 2a. In this case, each support plate comprises at each of its ends an orifice for passage of the corresponding unfolding track.

Referring now to the figures, and especially to Figures 2 and 11, the operation of the inflatable roof 1 according to the invention will be described.

In order to unfold this inflatable roof 1, the orifices 5, 5a, 5c and 5d are closed, by the corresponding leaves 42, and the orifice 5b is open.

The blower 3 operates in inflating mode and the beam A, which lies facing the open orifice 5b, is inflated and then the beam B is inflated since it is firstly in communication with the beam A and secondly, after starting the inflation, lies facing the open orifice 5b.

Next, the orifice 5b is closed and the orifice 5c is opened so as to inflate the beams C and D, and so on.

In the event of a drop in pressure, because of various leaks, or in order to pressurize the beams further after they have been unfolded, the orifice 5 is

opened in order to pressurize the beams A and B or the orifice 5a in order to pressurize the beams C and D or the other orifices in order to pressurize the corresponding beams.

5 When folding away the roof 1, all the orifices 5, 5a, 5b, 5c ... are closed and the blower 4 operates in suction mode.

 The orifice 5d is firstly opened in order to deflate the beam N, and then the beam M which communi-
10 cates with the beam N.

 The orifice 5d is closed and the orifice 5c is opened in order to deflate the beam D, and then the beam C.

 Next, the orifice 5c is closed and the orifice 5b
15 is opened in order to deflate the beams A and B so as to fold up the entire roof.

 Referring now to Fig. 12, a second embodiment of the means for blocking off an orifice 5 will be described.

 These blocking-off means are only used for
20 inflating the beams A, B, C ... M, N, these beams being deflated by another orifice 5 provided with a sealed door 40 according to the first embodiment described previously.

 In this case, the blocking-off means are formed
25 by non-return valves 74 actuated by the difference in the fluid pressures existing, on the one hand, in the pipe 3 and, on the other hand, in the said at least inflatable beam A, B, C ... M, N.

 Each non-return valve 74 comprises two associated
30 membranes 75 and 76 made of flexible material.

 The first membrane 75 blocks off the orifice 5 between the inside of the pipe 3 and the inflatable beam, for example A, and the second membrane 76 surrounds the said orifice 5.

35 These two membranes 75 and 76 are joined together over a portion of their periphery.

 For example, they are joined together in the portions 77a and 77b and are not joined together in the portion 78.

Advantageously, these two membranes 75 and 76 are arranged in a cavity 80 made in the wall of the pipe 3 and are protected by inspection doors 81 equipped with orifices 82a and 82b which bring this cavity 80 into
5 communication with the interior of the corresponding inflatable beam, for example A.

Fig. 12 depicts, on the same pipe 3, two valves 74, one of which is in a blocking-off position F and the other one of which is in an open position G.

10 When the inflatable beam A is pressurized by the pressurized-fluid generator 4 operating in inflation mode, the pressure increases in the pipe 3 to a level greater than the pressure existing in this beam A and consequently in the cavity 80.

15 Due to the effect of this pressure difference, the membranes 75 and 76 move apart in the open position G, exposing the orifice 5 and revealing one or more openings 79 in that or those portions of the periphery of the membranes 75 and 76 where they are not joined to-
20 gether.

This flow of pressurized fluid then passes from the pipe 3 via the orifice 5, and then between the membranes 75 and 76 via the opening 79 and via the orifices 82a and 82b to the inflatable beam A.

25 When the pressurized-fluid generator 4 is stopped, the pressure drops in the pipe 3 and the pressure then existing in the inflatable beam A becomes greater than that existing in the said pipe 3.

30 In this case, the two membranes 75 and 76 are sealingly applied against each other in the closed position F, pressing the opening or openings 79 flat and blocking off the orifice 5.

According to an alternative form depicted in Figs. 13 to 15, the free space 64 can be blocked off
35 momentarily by a seal 90 formed by three concentric parts.

These three concentric parts consist of an annular double membrane 91, an elastic lip 92 made on one of the edges of the double membrane 91, and at least one

heel 93 for fixing on the support plate 62 and made on the other edge of the said double membrane 91.

5 This annular double membrane 91, on the inside, leaves a space 94 joined to inflating means, not depicted.

The elastic lip 92 is formed by a toroidal ring.

10 Moreover, the seal 90 is made from elastic gum of an elastomer or plastomer, the gum being reinforced by a web of cables 95 which are arranged radially and extend continuously into the said heel 93 and the annular double membrane 91.

The cables 95 are made of metal, of textile or of glass fibres.

15 The annular double membrane 91 of the seal 90 can deform between a non-inflated first state (Fig. 13) providing the sealing between two adjacent beams A, B, C ... M, N by elastic clamping of the lip 92 against the pipe 3 and an inflated second state (Fig. 14) leaving a passage between the two adjacent beams A, B, C ... M, N.

20 According to a first embodiment depicted in Figs. 13 and 14, the internal space 94 of the double membrane 91 is joined to the inflating means by a hose 96, and the pressure exerted by the elastic lip 92 on the pipe 3, when the seal 90 is in the inflated position, is adjusted by a ring 97 fastened to the support plate 62 and on which ring the said seal bears in the deflated position. The position of the ring 97 with respect to the support plate 62 can be adjusted. This adjustment may possibly be achieved by means of shims 98.

30 According to a second embodiment, depicted in Fig. 15, one of the membranes of the double membrane 91 is arranged between two stiffening cheeks, 99a and 99b respectively, and the seal 90 is fixed on the support plate 62, at the heels 93, by a fixing member 100.

35 The cheek 99a arranged between the two membranes of the double membrane 91 comprises a conduit 101 emerging into the internal space 94 and joined to the inflating means, not depicted.

The configuration of the seal 90, inflated and

folded away or deflated and applied against the pipe 3
between each beam A, B, C ... M, N, controls the succes-
sive inflation or deflation of these beams by closing or
opening the intercommunication passage 64. For the
5 successive inflation of the said beams A, B, C ... M, N,
the corresponding seal 90 is successively folded away, by
inflating, and then deflated when the corresponding beam
has been inflated to the desired pressure.

The sealing of the beams A, B, C ... M, N is
10 provided by the seals 90 which, in the deflated state,
are applied, owing to their shape and their structure,
against the pipe 3.



CLAIMS

1. Inflatable roof, which can be unfolded and folded away by respectively inflating and deflating it, comprising:
 - 5 - a plurality of longitudinal inflatable beams A, B, C ... M, N arranged side by side,
 - means (4) for supplying the inflatable beams A, B, C ... M, N with pressurized fluid,
 - means for sliding the beams A, B, C ... M, N along at least one unfolding or folding-up track (2, 2a) formed by a rigid beam sealingly passing through these beams, characterized in that the rigid beam is formed by a pipe (3) for conveying the pressurized fluid for inflating or deflating the beams A, B, C ... M, N communicating, on the one hand, at least at one of its ends, with the pressurized-fluid supply means (4) and, on the other hand, with the interior of at least one inflatable beam A, B, C ... M, N via at least one orifice (5, 5a, 5b, 5c, 5d) made in the wall of the pipe (3) and equipped with means (40) for blocking it off.
2. Inflatable roof according to Claim 1, characterized in that the pipe (3) is formed by a tube having a circular cross-section.
3. Inflatable roof according to Claim 1, characterized in that the pipe (3) is formed by a tube having a rectangular cross-section.
4. Inflatable roof according to Claim 1, characterized in that the means for supplying the inflatable beams A, B, C ... M, N are formed by at least one pressurized-fluid generator (4).
5. Inflatable roof according to one of Claims 1 to 4, characterized in that the pressurized-fluid generator (4) is a centrifugal blower comprising, on the one hand, a suction port (21) equipped with a first flexible duct (23) whose free end comprises means (26) for connection to a second flexible duct (24) which is joined to the pipe (3) and, on the other hand, a delivery port (22) comprising means (28) for connection to the second flexible duct (24) which is intended to be joined alter-



nately by means for connection to the delivery port (22) in order to inflate the beams A, B, C ... M, N , or to the free end of the first flexible duct (23) in order to deflate the said beams.

5 6. Inflatable roof according to Claim 1, characterized in that the blocking-off means are formed by sealed doors (40) associated with means (41, 41a) for opening them or for closing them.

10 7. Inflatable roof according to Claim 6, characterized in that each door (40) comprises at least one leaf (42) pivoting in the pipe (3) between a closed position providing continuity of the internal wall of the said pipe (3) and an inclined open position directing, through the orifices (5, 5a, 5b, 5c, 5d), the pressurized fluid
15 from this pipe (3) towards the said at least inflatable beam A, B, C ... M, N or from the said at least one inflatable beam A, B, C ... M, N towards the said pipe (3).

20 8. Inflatable roof according to Claims 1, 6 and 7, characterized in that the pipe (3) includes at least two opposed orifices (5, 5a, 5b, 5c, 5d) equipped with leaves (42) opening towards one another and comprising a mechanism for clamping them in the closed position which is composed of two connecting rods (44, 45) which are
25 articulated together at one of their ends and are each articulated at their other end to each of the said leaves (42), the said means for opening or for closing the leaves (42) being joined to the connecting rods (44, 45) at their common point of articulation (46).

30 9. Inflatable roof according to Claim 1, characterized in that the blocking-off means are formed by non-return valves (74) actuated by the difference in the fluid pressures existing, on the one hand, in the said pipe (3) and, on the other hand, in the said at least
35 inflatable beam A, B, C ... M, N.

10. Inflatable roof according to Claim 9, characterized in that each non-return valve (74) comprises at least one first membrane (75) blocking off the corresponding orifice (5) co-operating with a second



membrane (76) surrounding the said orifice (5) and joined over a portion of its periphery to the first membrane (75), it being possible for the said first and second membranes (75, 76) to move, owing to the difference in the fluid pressures, between a position in which the corresponding orifice (5) is blocked off and in which the membranes (75, 76) are sealingly applied against each other and a position in which the said orifice (5) is open and in which the membranes (75, 76) are separated from each other and leave between them at least one opening (79) for passage of the fluid.

11. Inflatable roof according to one of Claims 1 to 5, characterized in that the contiguous walls (60, 61) of the adjacent inflatable beams A, B, C ... M, N are sealingly joined together around at least one corresponding pipe (3) by a support plate (62) carrying the sliding means (63) and, together with the said at least pipe (3), leaving a free space (64) which can be blocked off by a seal (65, 66, 90).

12. Inflatable roof according to Claim 11, characterized in that the seal (65) is carried by the corresponding support plate (62) and rubs against the external wall of the pipe (3) while the roof (1) is being unfolded or folded away.

13. Inflatable roof according to Claim 11 or 12, characterized in that the seal (66) is constituted by an inflatable seal.

14. Inflatable roof according to Claim 11, characterized in that the seal (90) is formed by an annular double membrane (91) comprising, on one of its edges, an elastic lip (92) and on the other of its edges at least one heel (93) for fixing on the support plate (62), the said annular double membrane (91) which, on the inside, leaves a space (94) joined to inflating means and which can deform between a non-inflated first state providing the sealing between two adjacent beams A, B, C ... M, N by elastic clamping of the lip (92) against the pipe (3) and an inflated second state leaving a passage between the two adjacent beams A, B, C ... M, N.



15. Inflatable roof according to Claim 14, characterized in that the elastic lip (92) is formed by a toroidal ring.

5 16. Inflatable roof according to Claims 14 and 15, characterized in that the seal (90) is made from elastic gum of an elastomer or plastomer, the gum being reinforced by a web of cables (95) which are arranged radially and extend continuously into the said heel (93) and the annular double membrane (91).

10 17. Inflatable roof according to Claim 11 or 14, characterized in that the adjacent support plates (62) are held away from each other by at least one spacer (70), by a distance such that the length of the pipe (3) between the said adjacent support plates (62) comprises
15 at least one part of the surface of at least one of the said blockable orifices (5, 5a, 5b, 5c, 5d).

18. Inflatable roof according to Claim 17, characterized in that the spacer (70) is fixed both to the adjacent support plates (62) of the first beam A, the length
20 of this spacer (70) corresponding to the separation of these support plates (62) when the first beam A is inflated.

19. Inflatable roof according to one of the preceding claims, characterized in that the contiguous walls (60,
25 61) of the adjacent inflatable beams A, B, C ... M, N are joined together by at least one self-grabbing tape (71).

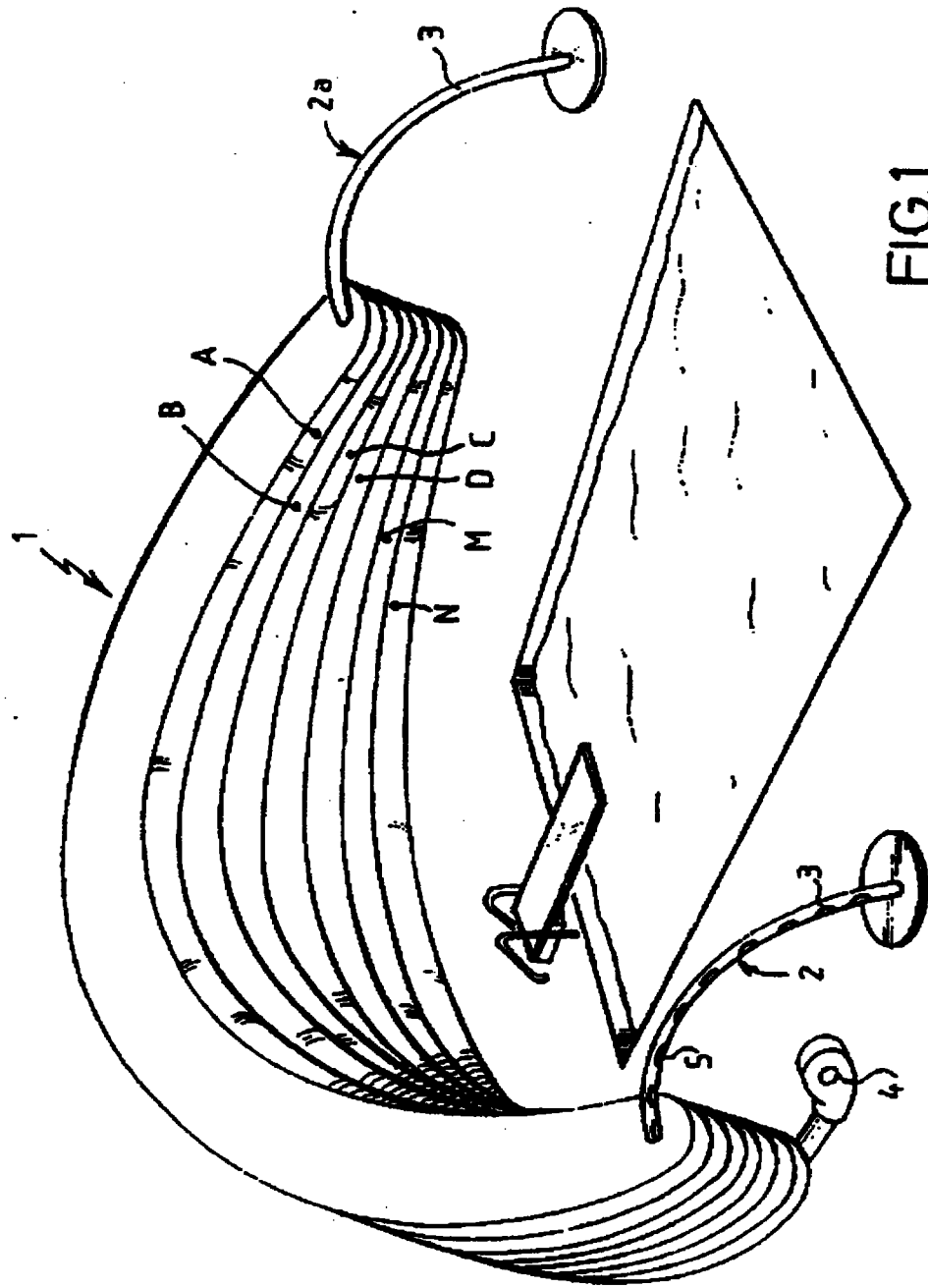
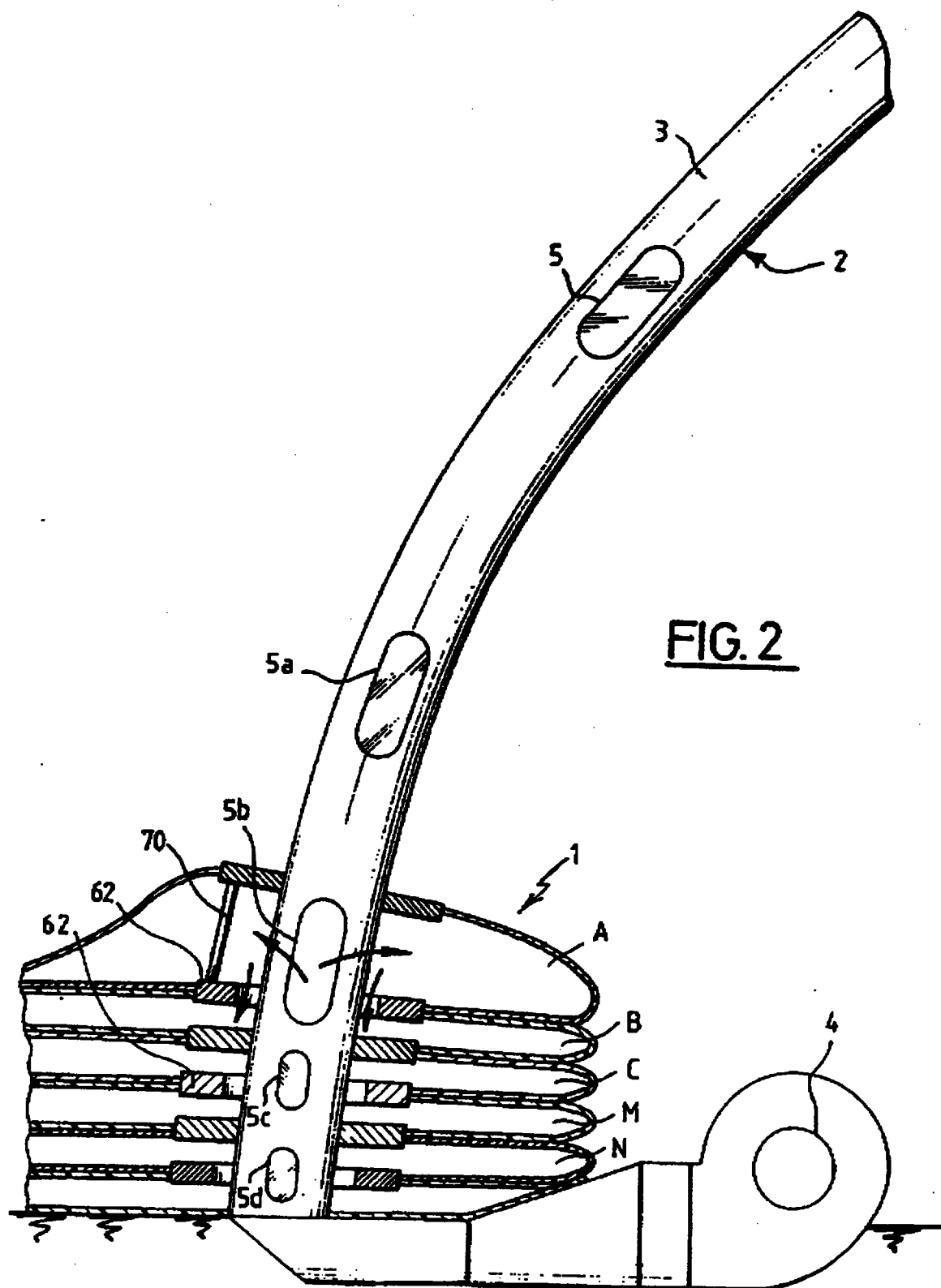
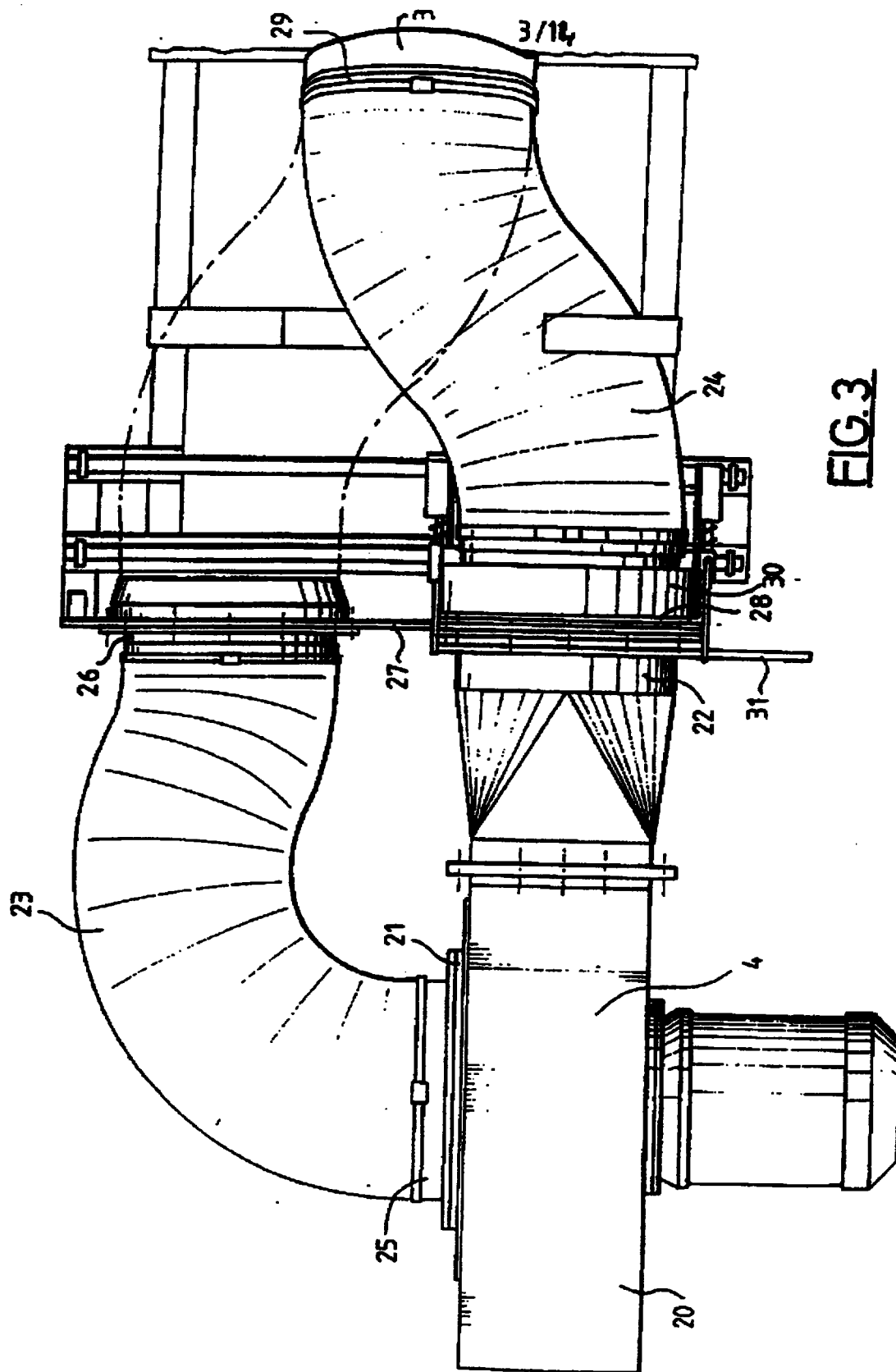


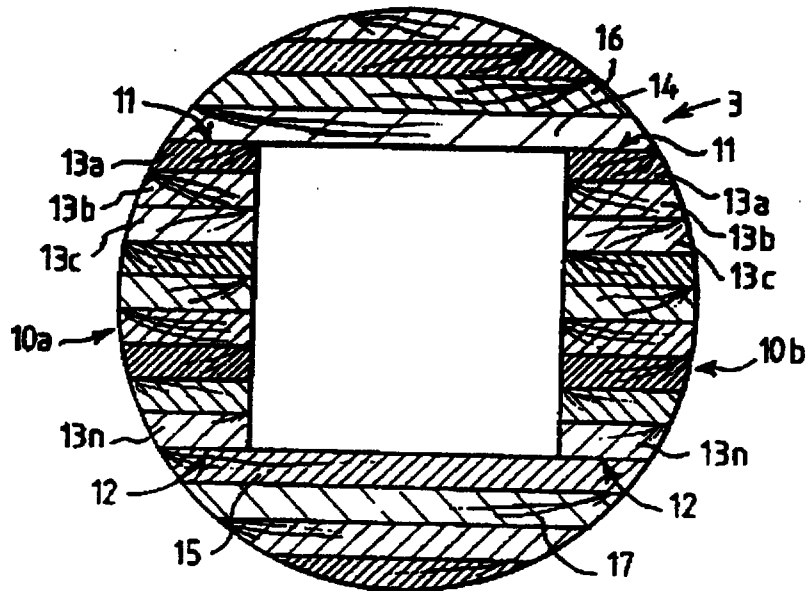
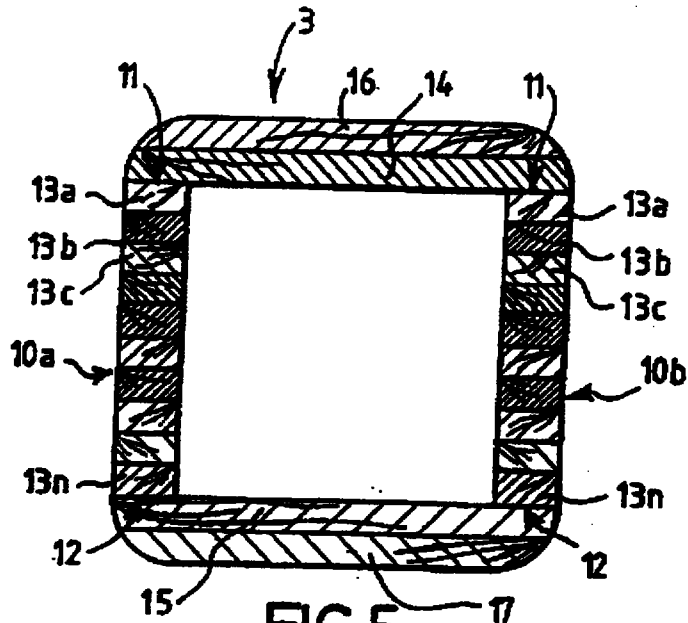
FIG. 1

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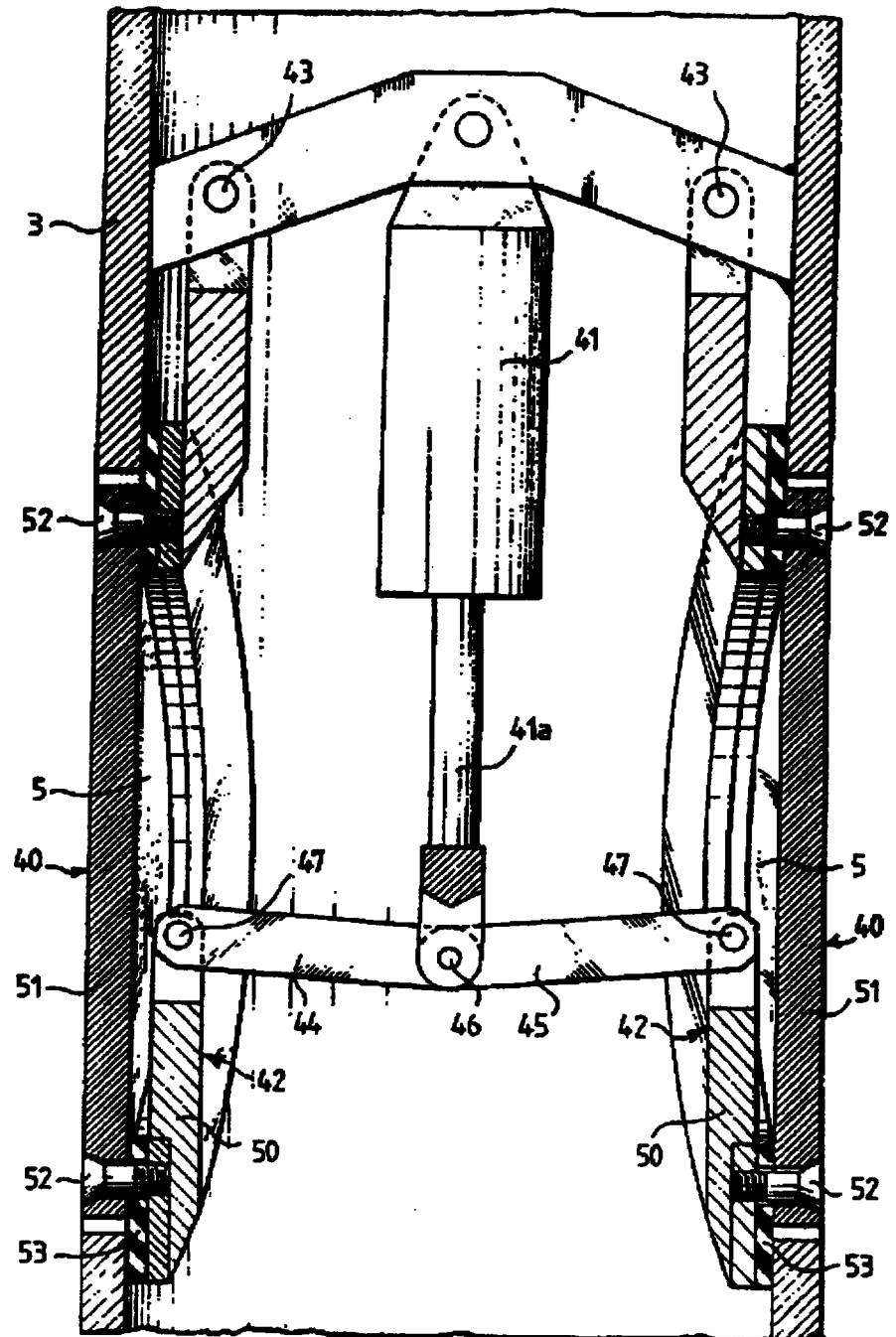




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FIG. 6

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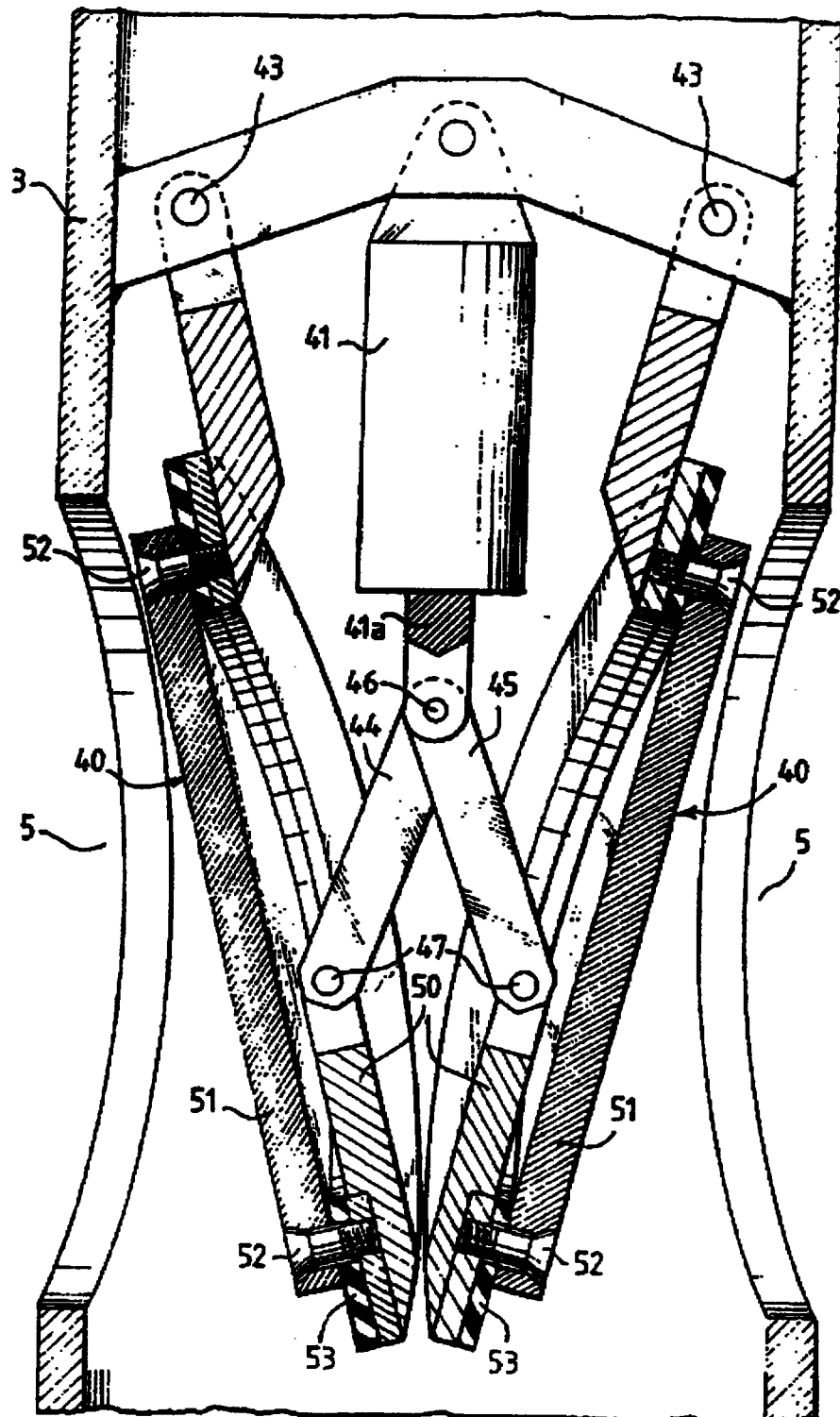
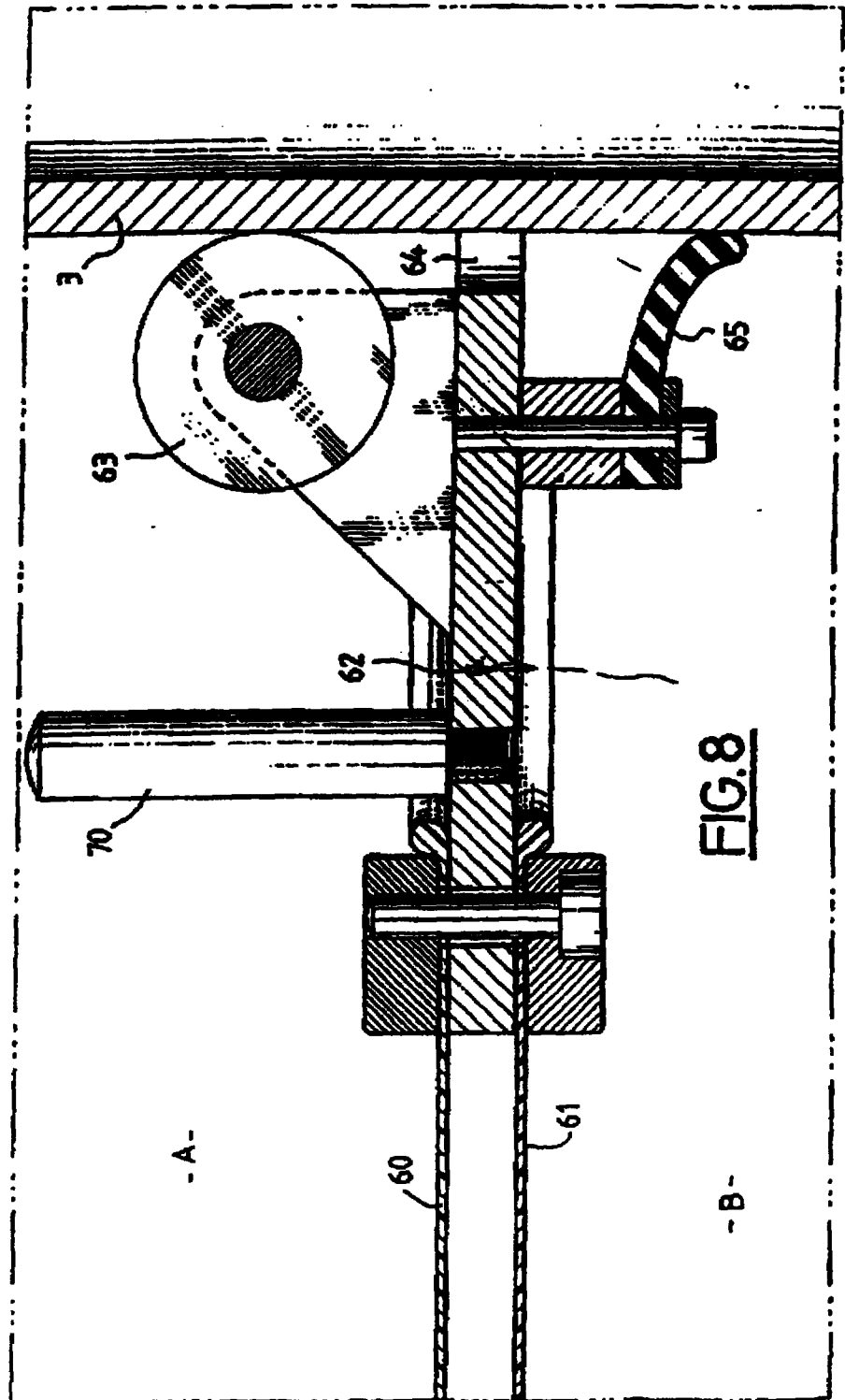


FIG. 7

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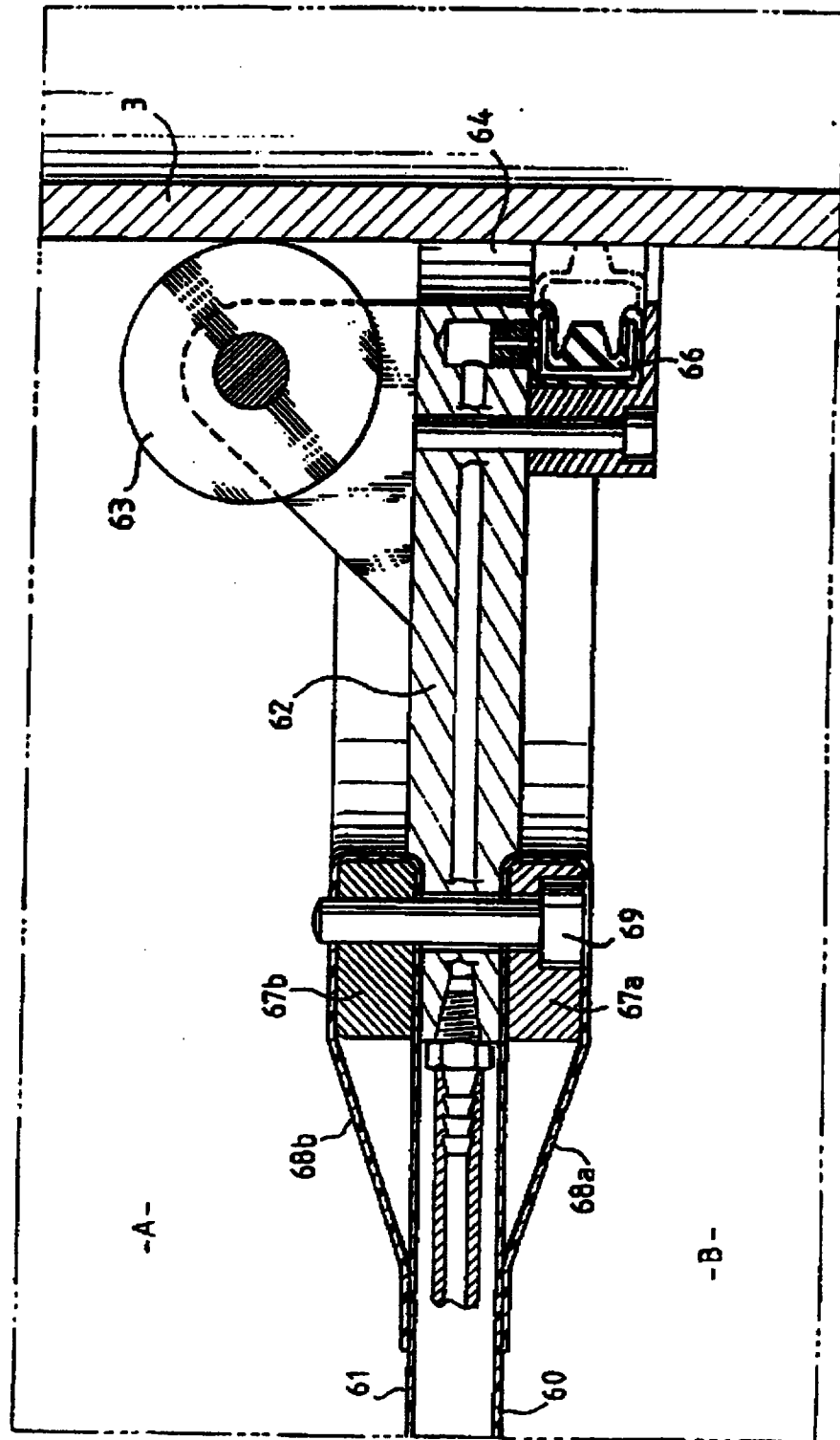
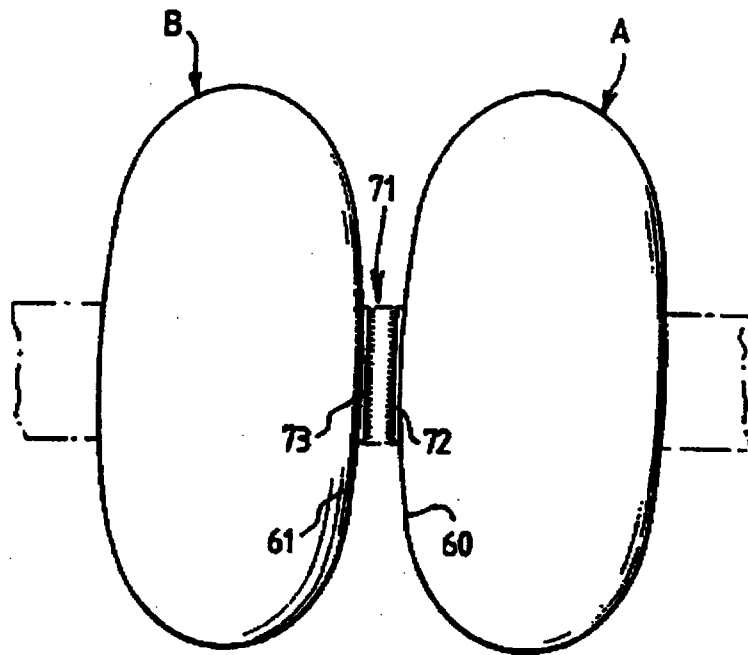
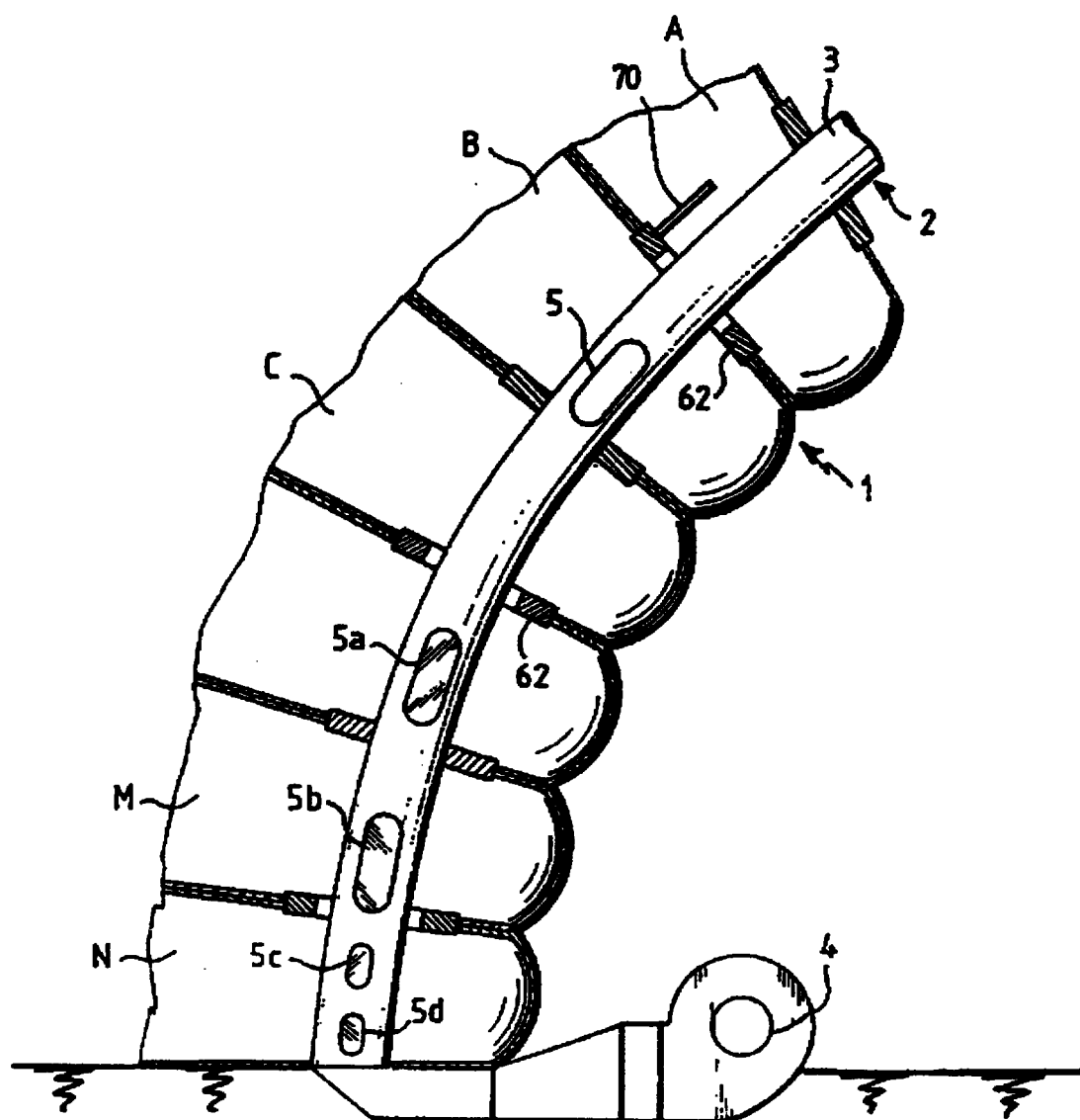
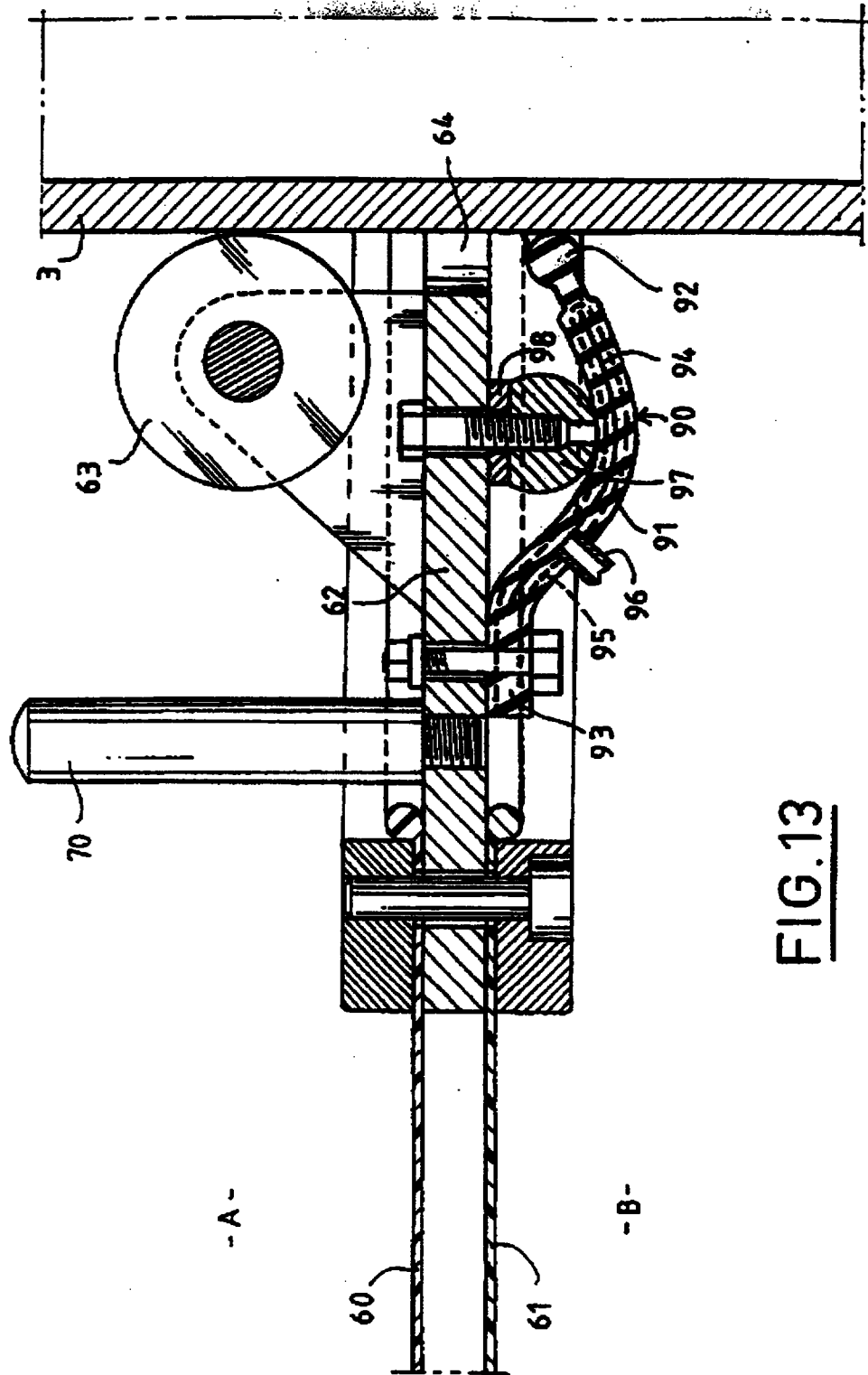


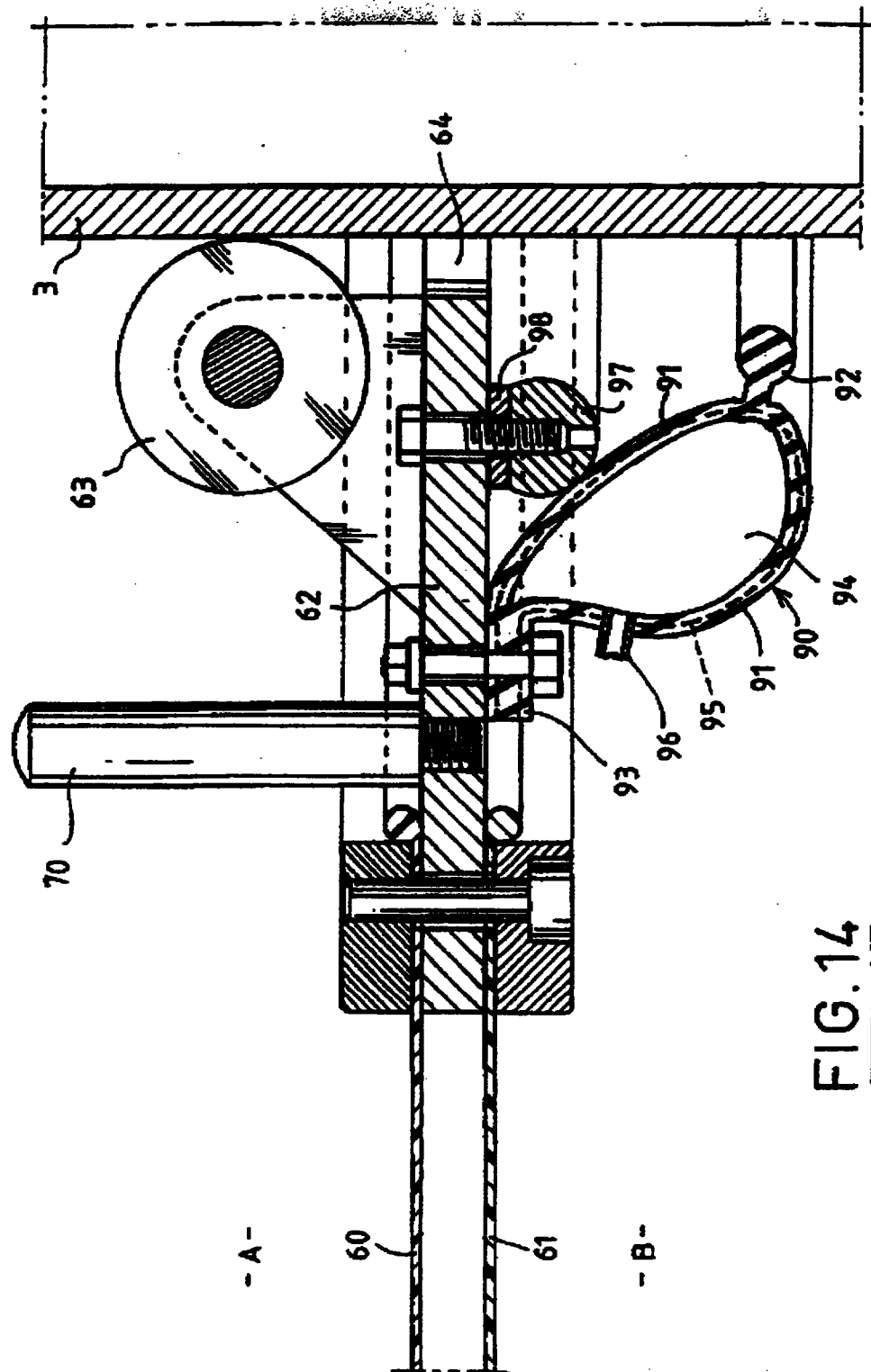
FIG. 9

9/11₄FIG. 10

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FIG. 11





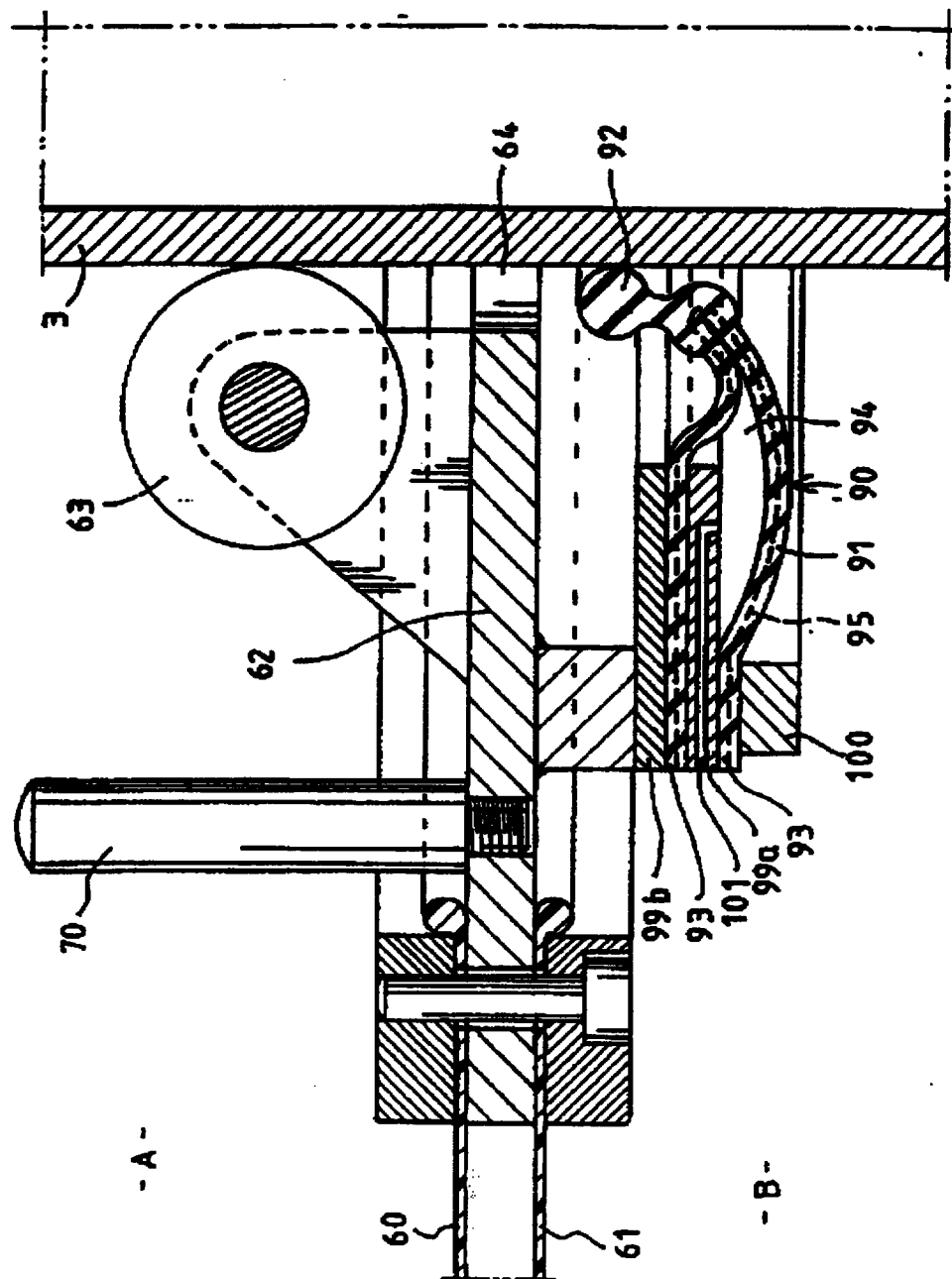
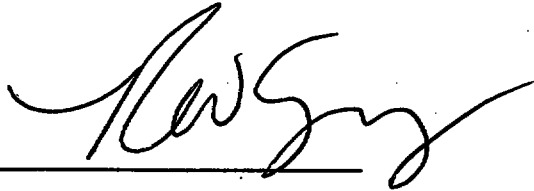


FIG. 15

Re: International Patent Application No. PCT/FR96/00765

I, Roger Walter GRAY MA DPhil CPhys, translator to RWS Translations Ltd., of Europa House, Marsham Way, Gerrards Cross, Buckinghamshire, England, hereby declare that I am conversant with the French and English languages and that I am the translator of the document attached and certify that to the best of my knowledge and belief the following is a true and correct translation of International Patent Application No. PCT/FR96/00765.

A handwritten signature in black ink, appearing to read 'R. W. Gray', written over a horizontal line.

R. W. GRAY

Signature of translator

Date : 7th January 1998

COMPANY NAMED: SPIRONEF SOCIETE CIVILE

5 Inflatable roof which can be unfolded and folded away

ABSTRACT

10 The subject of the invention is an inflatable roof (1),
which can be unfolded and folded away by respectively
inflating and deflating it, comprising a plurality of
longitudinal inflatable beams A, B, C ... arranged side
by side, means (4) for supplying the inflatable beams
with pressurized fluid and means for sliding the beams
15 along at least one unfolding or folding-up track (2, 2a)
formed by a rigid beam sealingly passing through these
inflatable beams. The rigid beam is formed by a pipe (3)
for conveying pressurized fluid for inflating or deflat-
ing the beams communicating, on the one hand, at least at
20 one of its ends, with the pressurized-fluid supply means
(4) and, on the other hand, with the interior of at least
one inflatable beam via at least one orifice (5, 5a, 5b
...) made in the wall of the pipe (3) and equipped with
means for blocking it off.

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Fig. 1