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(54) **Fence able to be made in situ, and method for making it**

In situ herstellbarer Zaun, und Herstellungsverfahren des Zaunes.

Clôture à réaliser in situ, et méthode pour la réaliser.

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Description

Field of application

[0001] The present invention concerns a fence able to be made *in situ,* and a method for making it, according to the preamble of the respective independent claims.

[0002] The fence according to the invention is intended to advantageously be used to fence off areas, in particular with great dimensions, like for example, airports, customs areas, construction sites, forests, roads etc., or else to separate different areas by being placed between them.

[0003] The fence object of the present invention thus fits in the field of road or building constructions, or else in the field of the industry of prefabricated structures.

State of the art

[0004] Fences able to be made *in situ* are known on the market, comprising hollow tubular posts, which are transported to the area to be fenced off, to be inserted one after the other at substantially regular distances inside holes made in the ground.

[0005] The posts are thus filled with cement conglomerates and are then connected to one another with mesh or cables.

[0006] One example of such a known type of fence is described in patent US 5580489, and foresees making each post of the fence with two half-shells which are closed by connecting one first longitudinal edge thereof through hinges and by fixing the other longitudinal edge through hooking means. Once they are closed, the two half-shells defines a tubular cavity intended to receive the cement conglomerate, which penetrates inside the hole of the ground making the supporting base of the post.

[0007] The two shells are obtained from shaped metal sheet that substantially carries out the function of shuttering for making cement posts.

[0008] The fences of the type described above although they are faster and easier to make with respect to those obtained with completely prefabricated cement posts, have proven in practice to still have drawbacks.

[0009] First of all, they require the shuttering for forming the posts to be built *in situ* as well as making the holes to which the shutterings are moved to *in situ.* Such operations require considerable labour and take a rather long time to make the fence.

[0010] A further drawback of the aforementioned known type of fence lies in the fact that the posts made from cement do not form a sufficiently resistant barrier and it can consequently be easily violated by breaking or cutting the mesh between two adjacent posts.

[0011] Fences consisting of safety barriers are also known usually used in road works for the separation of two lanes. These have the main task of preventing vehicles travelling in opposite directions from coming out from their own lane invading that in the opposite direction with the risk of causing particularly serious accidents.

[0012] Such barriers are usually obtained with blocks of reinforced concrete that are prefabricated in house and are then transported *in situ* where they are positioned side by side for making the desired protection fence or barrier.

[0013] The main drawback of this fence lies in the need of transporting very heavy and bulky manufactured products therefore having high transport, and installation costs, in particular for moving the single cement barriers with forklifts.

[0014] In order to overcome the drawbacks of such fences obtained with barriers in cement from patent EP 373279 or rather patent FR 2585047 in the field of roadworks it is known to make fences made up of safety barriers by providing hollow containment bodies made from rigid material, like for example plastic, which are transported *in situ,* set alongside one another along the division line which is desired to be made between the lanes, and then filled there with cement agglomerate.

[0015] Such known barriers, in any case, have the drawback of being particularly bulky during transportation and of requiring a rather long time to form the row of containment bodies to be filled with the concrete.

[0016] Another fence of this latter kind able to be constructed in situ is disclosed in patent US 4,138,095. The fence therein described comprises a plurality of hollow containment bodies made of an impact-resistant sturdy plastic and each provided with a front wall extending forwardly so that the upper portion thereof overhangs the highway. The hollow containment bodies comprise a top wall provided with an elongated longitudinal opening covered by an elongated cover and are aimed to contain ballast of liquid, solid or granular material, which material is susceptible of forcing upwardly the cover and exiting the correspondent hollow bodies upon impact of a vehicle with such bodies.

[0017] The fence over described, however, cannot be easily transported due to the high amount of space occupied by the hollow bodies.

[0018] Patent US 5,269,623 discloses an inflatable sight barrier for temporarily hiding from view accident scenes. The barrier therein described comprises a main base conduit, outwardly projecting leg members and upwardly projecting stanchions supporting a plurality of sight barriers therebetween. The main base conduit, the outwardly projecting leg members and the upwardly projecting stanchions are in fluid communication with each other in order to allow the introduction of a pressurized gas to be inflated and expand from a stowed position to an operative position.

[0019] The barrier disclose in patent US 5,269,623 is easily transportable. However such barrier is not suitable for realizing fixed fence due to its light weight, which renders such barrier easily movable or removable, either accidentally or intentionally.

Presentation of the invention

[0020] In this situation, the problem forming the basis of the present invention is to eliminate the aforementioned drawbacks of the prior art, by providing a fence that is able to be made *in situ,* which has limited bulk.

[0021] Another purpose of the present finding is that of providing a fence that is able to be made *in situ,* which is easy to transport.

[0022] Another purpose of the present finding is that of providing a fence that can be made *in situ,* which is cost-effective to make.

[0023] Another purpose of the present finding is that of providing a method for making a fence that is able to be made *in situ,* which makes it possible to install the fence in a versatile manner on different terrains, be it on flat ground, on steep slopes or on ground with varying slopes.

[0024] Another purpose of the present finding is that of providing a method for making a fence that is able to be made *in situ,* which is simple and fast to carry out.

[0025] Another purpose of the present finding is that of providing a method for making a fence that is able to be *made in situ,* which is cost-effective to carry out.

[0026] These purposes and yet others, are all achieved with a fence that is able to be made *in situ,* and with a method for making it, object of the present invention, as indicated in the attached claims.

Brief description of the drawings

[0027] The technical characteristics of the finding, according to the aforementioned purposes, can be clearly seen in the content of the claims below and the advantages thereof shall become clearer from the following detailed description, given with reference to the attached drawings, which represent one embodiment purely as an example and not for limiting purposes, in which:

- fig. 1 shows a side view of a portion of fence object of the present invention;
- fig. 2 shows a front view of the fence of figure 1;
- fig. 3 shows a top view of the fence of figure 1, with the containment body in the transportation configuration;
- fig. 4 shows a top view of the fence of figure 1 with the containment body in the configuration of application;
- fig. 5 shows a perspective view of a portion of the fence of the previous figures.

Detailed description of a preferred embodiment -

[0028] With reference to the attached drawings a fence that is able to be made *in situ,* object of the present invention is wholly indicated with reference numeral 1.

[0029] The fence 1, according to the present invention, is intended to advantageously be used to fence off areas, in particular with great dimensions, or rather to be placed between different areas.

[0030] The fence 1 comprises a flexible containment body 2, which extends along a direction of longitudinal extension X, for example for a length of some metres and advantageously comprised in the range of 3 - 5 metres.

[0031] Such a flexible containment body 2 is provided with a base portion 3, which is intended to rest on the ground along the line of the fence be made.

[0032] A plurality of stiffening elements 4 are mechanically associated to the containment body 2 and are advantageously arranged at regular distances with constant pitch along the aforementioned direction of longitudinal extension X and are suitable for supporting the containment body 2 with its base portion 3 resting on the ground.

[0033] The flexible containment body 2 is preferably made from a fabric and in particular from geotextile, suitable for forming a kind of very long sack.

[0034] Advantageously, the geotextile can be obtained with warp and weft filaments of high-density polyethylene, or rather with a high-tenacity polyester or rather again with strips of high tenacity polypropylene. The term geotextile however, can also include non-textile material, mechanically needled and thermo-calendered.

[0035] The stiffening elements 4 form the reinforcements that are suitable for mechanically stiffening the flexible containment body 2 so as to allow the latter to contain inside it a mass of cement material withstanding the mechanical stresses and without bulging in an undesired manner, as shall be described in detail in the rest of the description.

[0036] In accordance with one preferred solution of the present invention, the stiffening elements 4 are obtained in the form of ribs, preferably made from plastic inserted inside a plurality of peripheral pockets advantageously formed at thickened annular portions of the containment body 2. Such pockets are advantageously formed for example through fabric bands or more in general through preferably flexible elements, which are fixed (preferably through seams) on the inner surface of the containment body 2. The pockets otherwise can be obtained by sewing folds or overlapping edges of the end portions of separate portions of the containment body 2 while joining them together one after the other.

[0037] The aforementioned ribs 4 extend at least partially transversally with respect to the direction of longitudinal extension X of the containment body 2.

[0038] Advantageously, such ribs 4 extend as a closed loop in planes that are transversal to the direction of longitudinal extension X of the containment body 2 and are shaped to make a communication between adjacent portions 2' of the containment body 2 so as to make it possible to fill the entire containment body with the cement material.

[0039] In accordance with one preferred embodiment of the present invention, such ribs

[0040] 4 are provided in the centre with a passage

opening 7, which places two adjacent portions 2' of the containment body 2 in communication with one another. In accordance with the embodiment illustrated in the attached figures, the stiffening annular element has a T-shaped generatrix section with the leg 4' defining the passage opening 7.

[0041] The containment body 2 can be made as a single body or it can be made in separate portions 2' that are then fixed to one another in succession at the ends through sewing so as to make a single elongated containment body 2. Preferably, the stiffening elements 4 delimit the separate portions 2' of the containment body 2, which define the separate containment chambers, placed in communication with one another from the passage opening 7 formed in the stiffening elements 4.

[0042] The containment body 2 thus made is thus deformable between a transportation configuration A, in which it is compacted through folds 6 along its direction of longitudinal extension X, and a configuration of application B, in which it is opened out along the direction of longitudinal extension X with the stiffening elements 4 that support it arranging the base portion 3 resting on the ground.

[0043] The stiffening elements 4, advantageously each project from the pockets with cup-shaped portions 8 facing upwards, which define housing seats 9 for a plurality of support posts 10 of a mesh 11.

[0044] Preferably, the stiffening elements 4 are in a number that is greater than that of the posts 10 and for this purpose the cup-shaped portions 8 can be closed with lids where there is not the insertion of a post 10. Otherwise, it is possible to foresee stiffening element 4 without cup-shaped portions 8 alternating - with a frequency to be defined as a function of the characteristics of the fence that is desired to be made (height, resistance etc.) - with stiffening elements 4 that are equipped with cup-shaped portions 8 for supporting the posts 10.

[0045] The containment body 2 is moreover advantageously provided with portions projecting outwards 12, preferably in the form of eyelets, formed at the base portion 3, which can undergo mechanical engagement with stakes that are suitable for holding the containment body 2 in the ground in the application position B before filling it with cement material 20.

[0046] The containment body 2 is for this purpose provided with at least one hole 13 for accessing its inner volume intended to convey the cement material 20 to transform the flexible containment body 2 into a rigid body for supporting the mesh 11.

[0047] The flexible containment body 2 is advantageously obtained from a breathable material, indeed like geo-textile previously mentioned, so as to promote the rapid drying of the casting of cement material (preferably concrete obtained with a cement and mixtures of aggregates such as sand and gravel) which has been introduced inside the containment body 2 through the aforementioned hole 13 and that has distributed along the containment body 2 itself thanks to the through openings 7.

[0048] The access hole 13 is for example obtained with a check valve 14 arranged at the bottom of a cup-shaped portion of a stiffening element 4, and preferably at an end portion 2' of the flexible containment body 2.

[0049] In such a way, the containment body 2 can be filled with cement material 20, for example concrete, from one end thereof. Of course holes 13 can be foreseen at each stiffening element, or else, at further dedicated bushings that are attached to the flexible containment body 2.

[0050] In the case in which the containment body 2 is made from breathable material, there is no need for a vent hole to be made to allow the air to come out while casting the cement inside the containment body 2 itself.

[0051] In the step of application of the fence 1, many containment bodies 2 are advantageously set alongside one another along the line of the fence to be made.

[0052] Also a method for making a fence *in situ* forms the object of the present invention, which in particular can use the fence 1 described above of which, the reference numerals and nomenclature are kept for the sake of simplicity.

[0053] The method initially foresees a step of providing or rather making a sufficient number of flexible containment bodies 2 to fence off the desired area or rather to make the fence 1 of the desired length.

[0054] Once the flexible containment bodies 2 have been loaded in the compact transportation configuration A onto a means of transport (for example a small truck is sufficient), they are then taken near to the area to be fenced off.

[0055] Then an opening out step is carried out, in which each containment body 2, arranged in the transportation configuration A, is opened out moving it into the application configuration B, in which it is indeed opened with its longitudinal direction X which is arranged along the line of the fence 1 to be made. In such an application configuration B, the stiffening elements 4 are advantageously distributed at regular distances along the longitudinal development of the containment body 2.

[0056] Every containment body 2 is arranged in succession until the perimeter of the area to be fenced off is made, or rather, until the division line between two areas to be separated is made.

[0057] During the aforementioned opening out step, the stiffening elements 4 support the containment body 2 arranging the base portion 3 resting on the ground.

[0058] Advantageously, the aforementioned opening out step of the containment bodies 2 on the ground takes place with an accordion-like extension operation.

[0059] Once it has been opened out, each containment body preferably undergoes an attaching step in which it is blocked in position on the ground through stakes, which are engaged with the projecting portions 12 of the containment 2 arranged at the base portion 3.

[0060] A filling step is thus made, in which the inner volume of each containment body 2 receives a flow of cement material from the mouth of a concrete mixer with

autoclave, through at least one through hole 13 formed in the containment body 2 itself (and advantageously foreseen at the bottom of a cup-shaped portion 8 of a stiffening element 4).

[0061] Once a solidification step of the cement material has finished and a rigid support body has formed, it is foreseen for there to be an engagement step of a plurality of posts 10 that support a mesh 11 with the housing seats 9.

[0062] During the filling step the air contained in the inner volume of the containment body 2 is replaced by the cement material 20 and comes out passing through the fabric made from breathable material of the containment body 2.

[0063] The fabric of the containment body allows the water in excess to come out and the cement 20 to dry.

[0064] Thanks to the present invention, it is possible to make a fence in a very short time even on steep uneven ground, since it is possible to easily get there with the flexible containment body in the compact transportation configuration A and then easily open it out, for example along a slope, in the application configuration B.

[0065] The fence object of the present invention as described above advantageously makes it possible to be installed in inaccessible areas without using a crane or similar apparatuses and more in general it can be adapted to be easily installed on surfaces that are in any case irregular.

[0066] The finding thus conceived therefore reaches the aforementioned purposes.

[0067] Of course, it can take up, in its practical embodiment also forms and configurations that are different from those illustrated above without for this reason departing from the present scope of protection.

[0068] Moreover, all the details can be replaced by technically equivalent elements and the dimensions, the shapes and materials used can be any according to the appended claims.

Claims

1. Fence able to be made *in situ,* comprising:

- at least one containment body (2) extending along a direction of longitudinal extension (X), equipped with at least one base portion (3) intended to rest on the ground;
- a plurality of stiffening elements (4) mechanically associated at regular distances with said containment body (2);

characterised in that said at least one containment body (2) is flexible and deformable between a transportation configuration (A), in which it is compacted through folds along said direction of longitudinal extension (X), and a configuration of application (B), in which it is opened out along said direction of longitudinal extension (X) with said stiffening elements (4) that support it arranging said base portion (3) resting on the ground;

at least some of said stiffening elements (4) being provided with a housing seat and the fence further comprising:

- a plurality of posts (10), each of which is inserted in a seat (9) of said stiffening elements (4) with said containment body (2) arranged in said configuration of application (B);
- a mesh (11) supported by said posts (10).

2. Fence able to be made *in situ* according to claim 1, **characterised in that** said stiffening elements (4) are obtained with ribs extending at least partially transversally with respect to the direction of longitudinal extension (X) of said containment body (2).

3. Fence able to be made *in situ* according to claim 1, **characterised in that** said containment body (2) is provided with a plurality of peripheral pockets, in which said stiffening elements (4) are inserted.

4. Fence able to be made *in situ* according to claim 2, **characterised in that** at least one part of said ribs extends annularly transversally with respect to the direction of longitudinal extension (X) of said containment body (2) and are shaped, in particular through an opening (7), to make a communication between adjacent portions of the containment body (2).

5. Fence able to be made *in situ* according to any one of the previous claims, **characterised in that** said containment bodies (2) are able to be moved between said configuration of application (B) and said transportation configuration (A) through their deformation like an accordion.

6. Fence able to be made *in situ* according to any one of the previous claims, **characterised in that** said containment body (2) is provided with a hole (13), in particular formed at one said seat (9), intended to convey cement material (20) to fill the inner volume of said containment body (2).

7. Fence able to be made *in situ* according to any one of the previous claims, **characterised in that** said containment body (2) is provided with projecting portions (12) formed at the base portion (3) to stop said containment body (2) in application position (B) through ropes, stakes or similar.

8. Fence able to be made *in situ* according to any one of the previous claims, **characterised in that** said containment body (2) is made from breathable ma-

terial, in particular geotextile.

9. Method for making a fence *in situ* in accordance with any of claim 1 to 8, **characterised in that** it comprises:

- a step of providing at least one flexible containment body (2) having a direction of longitudinal extension (X) and a plurality of stiffening elements (4) mechanically associated at regular distances with said containment body (2), and provided with housing seats (9);
- an opening out step, in which said containment body (2) organised in a transportation configuration (A), in which it is compacted along said direction of longitudinal extension (X), is moved into a configuration of application (B), in which it extends in said direction of longitudinal extension (X) along the line of the fence to be made, with said stiffening elements (4) that support it arranging said base portion (3) resting on the ground;
- a filling step, in which the inner volume of said containment body (2) receives a flow of cement material (20) through at least one passage opening (7) of said containment body (2), in particular formed at a said stiffening elements (4);
- a solidification step of said cement material (20) with the formation of a rigid support body;
- an engagement step of a plurality of support posts (10) of a mesh (11) in said housing seats (9).

10. Method for making a fence *in situ* according to claim 9, **characterised in that** the opening out of said containment bodies (2) on the ground takes place with accordion-type extension.

11. Method for making a fence *in situ* according to claim 9, **characterised in that** during said filling step the air contained in the inner volume of said containment body (2) is replaced by said cement material (20) and comes out passing through said containment body (20), which is made from a breathable material.

12. Method for making a fence *in situ* according to claim 9, **characterised in that** it comprises at least one step of attaching said containment body (2) to the ground after said opening out step through stakes for engaging with projecting portions (12) of said containment body (2) arranged at said base portion (3).

Patentansprüche

1. In situ herstellbarer Zaun, der Folgendes umfasst:

- mindestens einen Umhüllungskörper (2), der sich entlang einer Längsverlaufsrichtung (X) erstreckt, der mit mindestens einem Fußabschnitt (3) ausgestattet ist, der dazu bestimmt ist, auf den Boden gestellt zu werden;
- eine Vielzahl von Versteifungselementen (4), die in regelmäßigen Abständen mechanisch mit dem genannten Umhüllungskörper (2) verbunden sind;

dadurch gekennzeichnet, dass der genannte mindestens eine Umhüllungskörper flexibel ist und von einer Transportkonfiguration (A), in der er durch Biegungen entlang der genannten Längsverlaufsrichung (X) in eine kompakte Form gebracht wurde, in eine Aufstellkonfiguration (B), in der er entlang der genannten Längsverlaufsrichtung (X) mit den genannten Versteifungselementen (4) aufgeklappt wird, die ihn stützen, indem der genannte Fußabschnitt (3) auf den Boden gestellt wird, gebracht werden kann,
wobei mindestens einige der Versteifungselemente (4) mit einer Unterbringung ausgestattet sind und der Zaun außerdem Folgendes umfasst:

- eine Vielzahl von Pfosten (10), von denen jeder in eine Unterbringung (9) der genannten Versteifungselemente (4) eingeführt ist, wobei der Umhüllungskörper (2) in der genannten Aufstellkonfiguration (B) angeordnet wird;
- ein Gitter (11), das von den genannten Pfosten (10) getragen wird.

2. In situ herstellbarer Zaun nach Anspruch 1, **dadurch gekennzeichnet, dass** die genannten Versteifungselemente (4) durch Rippen erzielt werden, die mindestens teilweise im Verhältnis zur Längsverlaufsrichtung (X) des genannten Umhüllungskörpers (2) quer verlaufen.

3. In situ herstellbarer Zaun nach Anspruch 1, **dadurch gekennzeichnet, dass** der genannte Umhüllungskörper (2) mit einer Vielzahl peripherer Taschen ausgestattet ist, in die die genannten Versteifungselemente (4) eingesetzt sind.

4. In situ herstellbarer Zaun nach Anspruch 2, **dadurch gekennzeichnet, dass** mindestens ein Teil der genannten Rippen ringförmig quer zur Längsverlaufsrichtung (X) des genannten Umhüllungskörpers (2) verläuft und diese insbesondere mittels einer Öffnung (7) so geformt sind, dass eine Verbindung zwischen angrenzenden Abschnitten des Umhüllungskörpers (2) erzielt wird.

5. In situ herstellbarer Zaun nach einem beliebigen der vorangegangenen Ansprüche, **dadurch gekenn-**

zeichnet, dass die genannten Umhüllungskörper (2) von der genannten Aufstellkonfiguration (B) durch ihre Klappkonstellation in die genannte Transportkonfiguration (A) gebracht werden können.

6. In situ herstellbarer Zaun nach einem beliebigen der vorangegangenen Ansprüche, **dadurch gekennzeichnet, dass** der genannte Umhüllungskörper (2) mit einer Öffnung (13) ausgestattet ist, die insbesondere auf einer der genannten Unterbringungen (9) angebracht und dazu bestimmt ist, Betonmaterial (20) aufzunehmen, um das Innenvolumen des genannten Umhüllungskörpers (2) zu füllen.

7. In situ herstellbarer Zaun nach einem beliebigen der vorangegangenen Ansprüche, **dadurch gekennzeichnet, dass** der genannte Umhüllungskörper (2) mit vorstehenden Abschnitten (12) versehen ist, die auf dem Fußabschnitt (3) realisiert wurden, um den genannten Umhüllungskörper (2) durch Seile, Pflöcke oder Ähnliches in der Aufstellposition zu halten.

8. In situ herstellbarer Zaun nach einem beliebigen der vorangegangenen Ansprüche, **dadurch gekennzeichnet, dass** der genannte Umhüllungskörper (2) aus atmungsaktivem Material besteht, insbesondere aus Geotextil.

9. Herstellungsverfahren eines in situ herstellbaren Zauns nach einem beliebigen der Ansprüche 1 bis 8, **dadurch gekennzeichnet, dass** dieses Folgendes umfasst:

- eine Phase der Vorbereitung mindestens eines flexiblen Umhüllungskörpers (2) mit einer Längsverlaufsrichtung (X) und einer Vielzahl von Versteifungselementen (4), die mechanisch in regelmäßigen Abständen mit dem genannten Umhüllungskörper (2) verbunden und mit Unterbringungen (9) versehen sind;
- eine Aufstellphase, in der der genannte Umhüllungskörper (2), der in einer Transportkonfiguration (A) angeordnet ist, in der er durch Biegungen entlang der genannten Längsverlaufsrichung (X) in eine kompakte Form gebracht ist, in eine Aufstellkonfiguration (B), in der er entlang der genannten Längsverlaufsrichtung (X) entlang des Verlaufs des herzustellenden Zauns mit den genannten Versteifungselementen (4) aufgeklappt ist, die ihn stützen, indem der genannte Fußabschnitt (3) auf den Boden gestellt wird, gebracht wird;
- eine Phase des Auffüllens, in der das Innenvolumen des genannten Umhüllungskörpers (2) einen Fluss aus Betonmaterial über mindestens eine Durchgangsöffnung (7) des genannten Umhüllungskörpers (2) aufnimmt, die insbesondere auf einem Versteifungselement (4) angebracht ist;
- eine Phase der Aushärtung des genannten Betonmaterials (20) unter Ausbildung eines steifen Trägerkörpers;
- eine Phase des Einsetzens einer Vielzahl von Trägerpfosten (10) eines Gitters (11) in die genannten Unterbringungen (9).

10. Herstellungsverfahren eines in situ herstellbaren Zauns nach Anspruch 9, **dadurch gekennzeichnet, dass** das Aufstellen der genannten Umhüllungskörper (2) auf dem Boden durch Verlängerung durch Aufklappen erfolgt.

11. Herstellungsverfahren eines in situ herstellbaren Zauns nach Anspruch 9, **dadurch gekennzeichnet, dass** während der genannten Auffüllphase die im Innenvolumen des genannten Umhüllungskörpers (2) enthaltene Luft durch das genannte Betonmaterial (20) ersetzt wird und über den genannten Umhüllungskörper austritt, der aus einem atmungsaktiven Material hergestellt ist.

12. Herstellungsverfahren eines in situ herstellbaren Zauns nach Anspruch 9, **dadurch gekennzeichnet, dass** es nach der genannten Aufstellphase mindestens eine Phase der Befestigung des genannten Umhüllungskörpers (2) am Boden mittels Pflöcken an den vorstehenden Abschnitten (12) des genannten Umhüllungskörpers (2) umfasst, die auf dem genannten Fußabschnitt (3) angebracht sind.

Revendications

1. Clôture à réaliser in situ comprenant :

- au moins un corps de retenue (2) s'allongeant le long d'une direction de développement longitudinal (X), muni d'au moins une partie de base (3) destinée à être posée sur le sol ;
- une pluralité d'éléments de raidissement (4) mécaniquement associés à distances régulières audit corps de retenue (2) ;

caractérisée en ce que ledit au moins un corps de retenue (2) est flexible et déformable entre une configuration de transport (A), dans laquelle il est compacté par le biais de pliures le long de ladite direction de développement longitudinal (X), et une configuration de pose (B), dans laquelle il est déployé le long de ladite direction de développement longitudinal (X) avec lesdits éléments de raidissement (4) qui le soutiennent en posant ladite partie de base (3) en appui sur le sol,

au moins certains des éléments de raidissement (4) étant pourvus d'un siège de logement et la clôture comprenant en outre :

- une pluralité de poteaux (10) chacun d'eux étant inséré dans un siège (9) desdits éléments de raidissement (4) avec ledit corps de retenue (2) disposé dans ladite configuration de pose (B) ;
- une grille (11) soutenue par lesdits poteaux (10).

2. Clôture à réaliser in situ, selon la revendication 1, **caractérisée en ce que** lesdits éléments de raidissement (4) sont obtenus au moyen de nervures s'allongeant au moins partiellement transversalement par rapport à la direction de développement longitudinal (X) dudit corps de retenue (2).

3. Clôture à réaliser in situ, selon la revendication 1, **caractérisée en ce que** ledit corps de retenue (2) est pourvu d'une pluralité de poches périphériques, dans lesquelles sont insérés lesdits éléments de raidissement (4).

4. Clôture à réaliser in situ selon la revendication 2, **caractérisée en ce qu'**au moins une partie desdites nervures se développent annulairement transversalement par rapport à la direction de développement longitudinal (X) dudit corps de retenue (2) et sont façonnées, en particulier moyennant une ouverture (7), pour réaliser une communication entre parties contiguës du corps de retenue (2).

5. Clôture à réaliser in situ selon une quelconque des revendications précédentes, **caractérisée en ce que** lesdits corps de retenue (2) sont déplaçables entre ladite configuration de pose (B) et ladite configuration de transport (A) moyennant une leur déformation en accordéon.

6. Clôture à réaliser in situ selon une quelconque des revendications précédentes, **caractérisée en ce que** ledit corps de retenue (2) est muni d'un trou (13), en particulier taillé au niveau dudit siège (9), destiné à acheminer du matériau cimentaire (20) pour le remplissage du volume interne dudit corps de retenue (2).

7. Clôture à réaliser in situ selon une quelconque des revendications précédentes, **caractérisée en ce que** ledit corps de retenue (2) est muni de parties saillantes (12) réalisées au niveau de la partie de base (3) pour bloquer ledit corps de retenue (2) en position de pose (B) moyennant des cordes, piquets ou similaires.

8. Clôture à réaliser in situ selon une quelconque des revendications précédentes, **caractérisée en ce que** ledit corps de retenue (2) est en matériau transpirant, en particulier en géotextile.

9. Méthode pour la réalisation d'une clôture à réaliser in situ selon une quelconque des revendications de 1 à 8, **caractérisée en ce qu'**elle comprend :

- une phase de préparation d'au moins un corps de retenue flexible (2) ayant une direction de développement longitudinal (X) et une pluralité d'éléments de raidissement (4) mécaniquement associés à distances régulières audit corps de retenue (2) et munis de sièges de logement (9) ;
- une phase de déploiement, dans laquelle ledit corps de retenue (2) organisé en une configuration de transport (A), dans laquelle il est compacté le long de ladite direction de développement longitudinal (X), est déplacé en une configuration de pose (B), dans laquelle il est allongé en ladite direction longitudinale (X) le long de la trace de la clôture à réaliser, avec lesdits éléments de raidissement (4) qui le soutiennent en posant ladite portion de base (3) en appui sur le sol ;
- une phase de remplissage, dans laquelle le volume interne dudit corps de retenue (2) reçoit un flux de matériau cimentaire (20) à travers au moins une ouverture de passage (7) dudit corps de retenue (2), en particulier réalisée au niveau dudit élément de raidissement (4) ;
- une phase de solidification dudit matériau cimentaire (20) avec la formation d'un corps de soutien rigide ;
- une phase d'engagement d'une pluralité de poteaux de soutien (10) d'une grille (11) dans lesdits sièges de logement (9).

10. Méthode pour réaliser une clôture in situ, selon la revendication 9, **caractérisée en ce que** le déploiement desdits corps de retenue (2) sur le sol est effectué moyennant une opération d'allongement de type en accordéon.

11. Méthode pour réaliser une clôture in situ, selon la revendication 9, **caractérisée en ce que** pendant ladite phase de remplissage l'air contenu dans le volume interne dudit corps de retenue (2) est remplacé par ledit matériau cimentaire (20) et s'échappe en traversant ledit corps de retenue (20), lequel est réalisé en matériau transpirant.

12. Méthode pour réaliser une clôture in situ, selon la revendication 9, **caractérisée en ce qu'**elle comprend au moins une phase de fixation dudit corps de retenue (2) au sol suivant ladite phase de déploiement moyennant des piquets d'engagement à parties saillantes (12) dudit corps de retenue (2), situés au niveau de ladite partie de base (3).

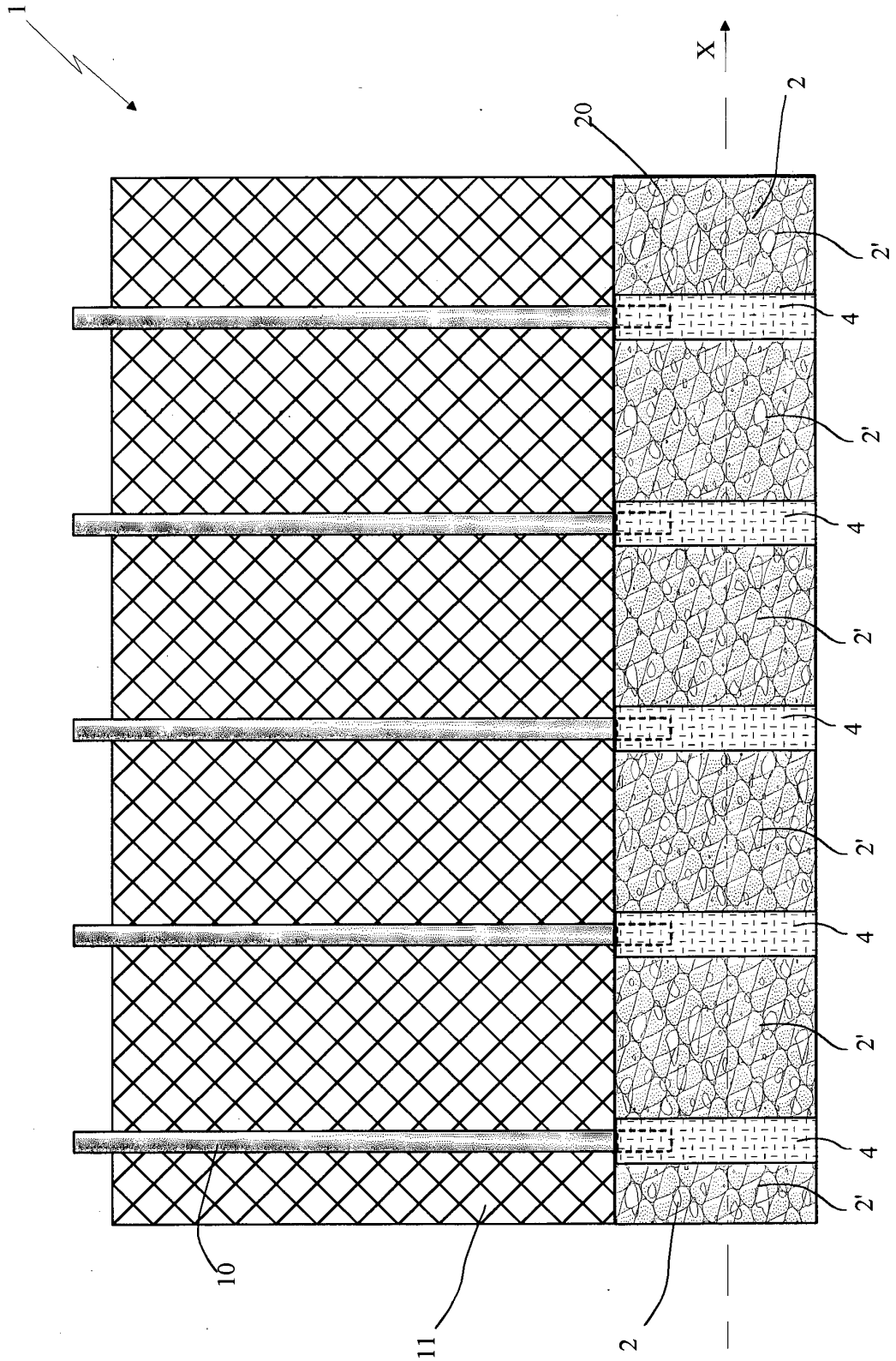

Fig. 1

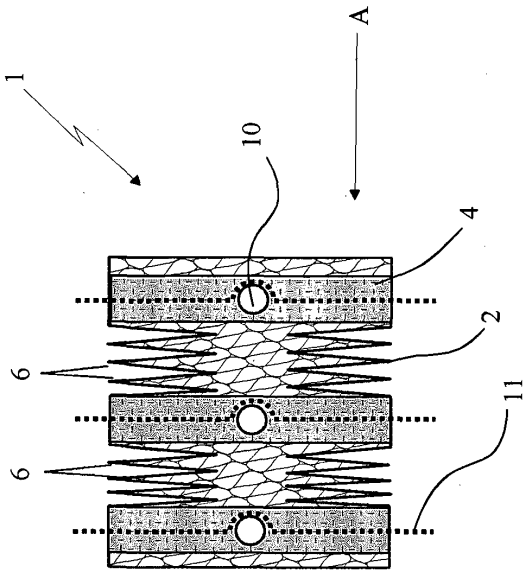

Fig. 3

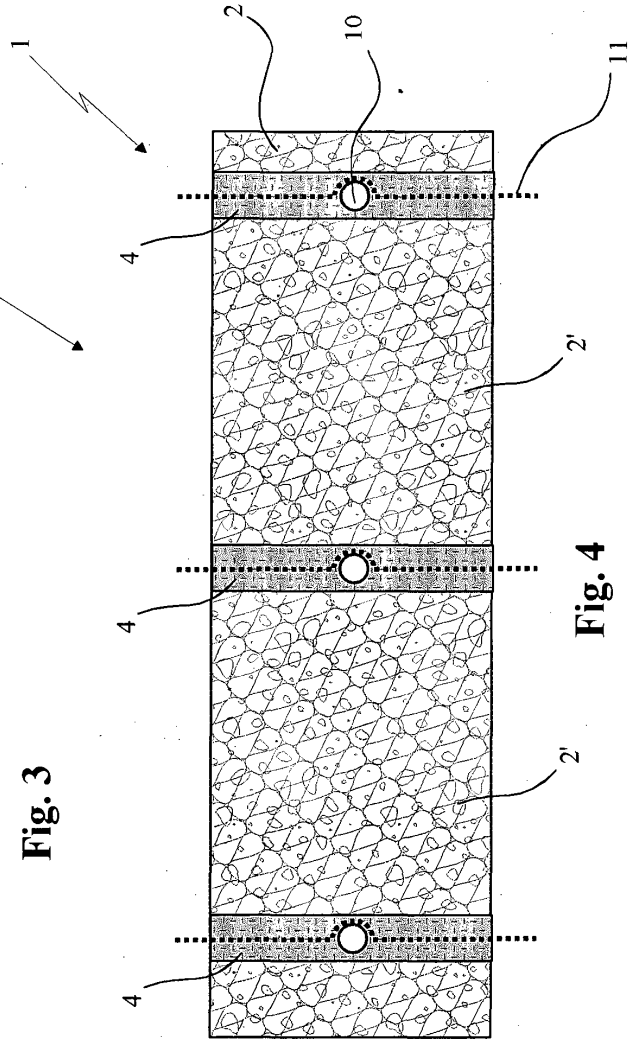

Fig. 4

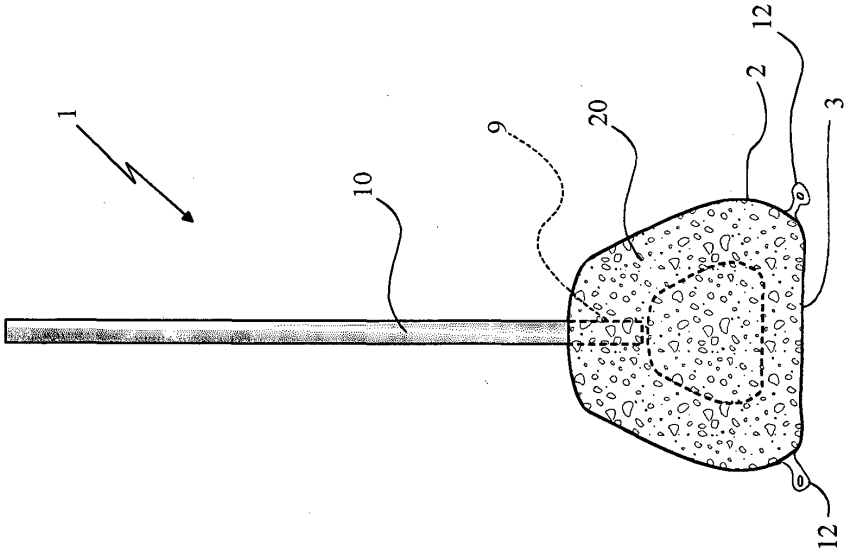

Fig. 2

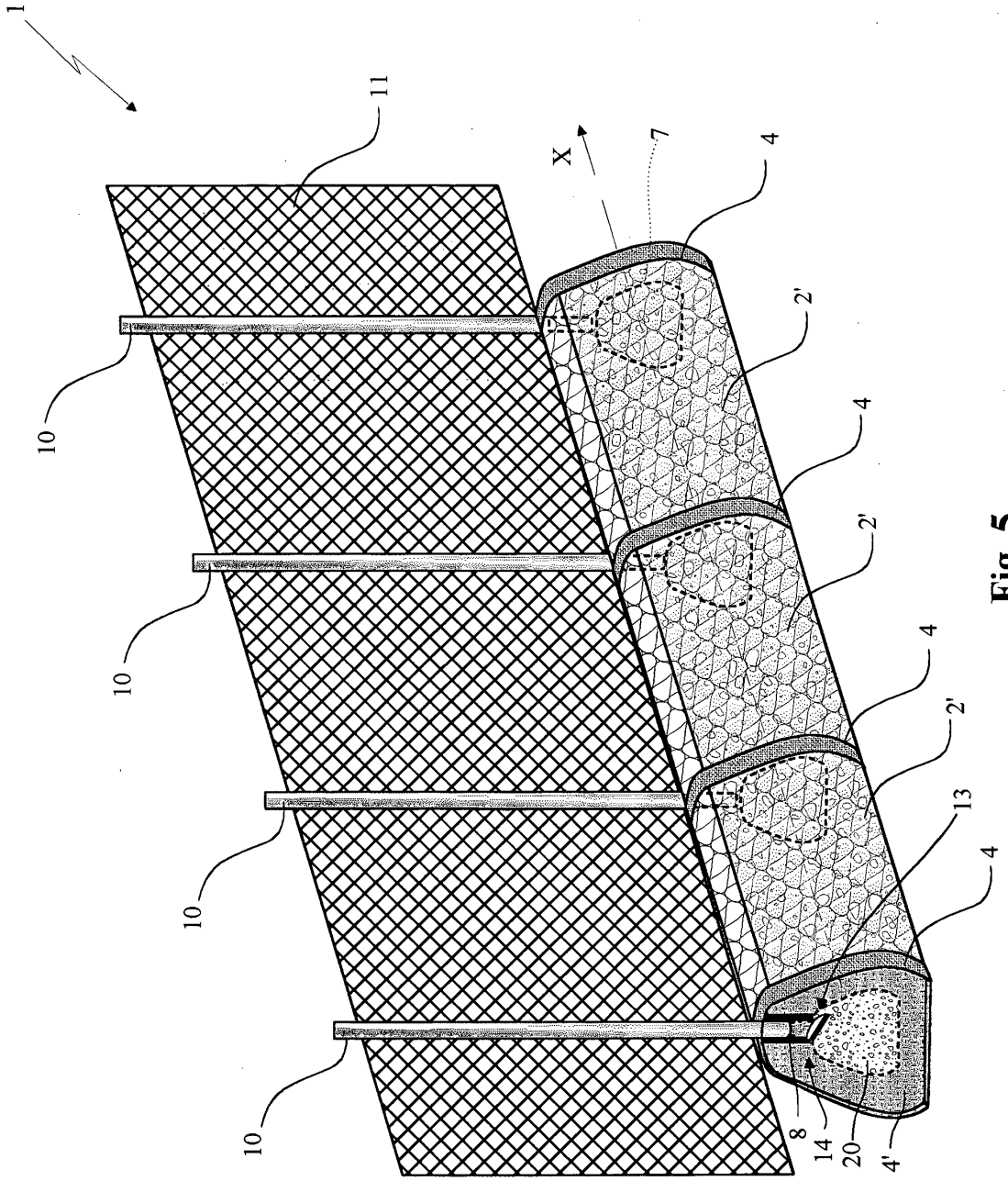

Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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