(19) Europäisches Patentamt
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(11) **EP 2 336 459 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
22.08.2012 Bulletin 2012/34

(51) Int Cl.:
E04H 17/14 *(2006.01)* ***E04F 11/18*** *(2006.01)*

(21) Application number: **10192769.7**

(22) Date of filing: **26.11.2010**

(54) Orientable pickets fence assembly

Ausrichtbare Pfahlzaunanordnung

Ensemble de clôture de piquets orientables

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **01.12.2009 IT PD20090363**

(43) Date of publication of application:
22.06.2011 Bulletin 2011/25

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Printed by Jouve, 75001 PARIS (FR)

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a fence assembly such as banisters, barriers and the like and in particular relates to a new fence assembly provided with a safety fastening device suitably conformed to allow a snap connection between elongated bars or fence members and fence rails, in any orientable mode.

PRIOR ART

[0002] Banisters, barriers or fence assemblies are generally known, typically made of metallic, wood or plastic material.

[0003] In particular, the metallic fences of the known type consist of bar members, pickets, rails and supporting posts of various type and dimensions, mutually and firmly connected to form a grid or a rigid board, suitable for being vertically installed and directly anchored to a ground, a base wall, and/or to a support device.

[0004] Metallic fence assemblies are also known, made and sold as modules of defined height and width, wherein each module consists in turn of substantially linear, or shaped elements, mutually welded or fastened in a permanent manner.

[0005] One or preferably at least two of linear fence elements usually are horizontally arranged to provide rails to which a plurality of vertical pickets or elongated fence members are firmly connected and arranged at modular or constant pitch.

[0006] Said rails are further firmly fastened to anchoring posts, by which each of said fence members is fixed to the ground, a base wall, or to a support device.

[0007] In a fence assembly of the known type, the geometric configuration and disposition of the pickets and rails cannot be modified at all, since the pickets are welded or in any case firmly connected to the rails.

[0008] In order to modify the geometrical aspect of a fence, the pre-existing fence assembly must be consequently removed and totally substituted with a new fence of different design, i.e. with a pattern exhibiting for example a different angular disposition between the pickets, or between pickets and rails, or a different space between the same pickets of the fence.

[0009] US-A-6.682.056 discloses a fence assembly according to the preamble of claim 1, in which fence pickets are fastened to fence rails by suitably conformed slidable clips, comprising a non-metallic member having an elastic memory. Other fence systems are known from WO-A-03/080957 and US-A-2007/0278467.

OBJECTS OF THE INVENTION

[0010] The main object of the invention is to provide a fence assembly in which use is made of a safety fastening device of different type and very low cost, conformed to allow a rapid and an easily modifiable positioning and connection of fence members of any type to a rail and the latter to support posts.

[0011] Another object of the present invention is to provide a fence assembly comprising safety fastening devices suitable to set out and modify the geometrical aspect of the fence, before or after said fence assembly has been installed.

[0012] Actually, the new fence assembly is suitable for being easily and rapidly assembled and disassembled, since welding operations between the elements are no more required.

[0013] In particular, the orientation of the pickets or some of them, with respect to the rails, and the other pickets of the fence, can be set out and modified according to any need.

[0014] The pickets can be further oriented so that they result mutually parallel or non-parallel each other, the geometrical configuration of the fence being also enabled to be adapted to the condition of the support on which the fence is to be installed.

[0015] Also the mutual space or step between the pickets can be set out and modified, before or after fence has been installed.

BRIEF DESCRIPTION OF THE INVENTION

[0016] These and other objects of the invention are achieved by the new type of fence assembly, according to claim 1.

[0017] In particular, according to the invention, a fence assembly has been provided, comprising:

at least one longitudinally extending rail having a side-surface;
post members to support said rail;
a plurality of upwardly extending picket members fastened to the rail; and
fastening devices for attaching the rail to the post members, and for attaching each picket member to the rail, each fastening device comprising a coupling member conformed to engage an opening into post members, alternatively the picket members, and/or rails of the fence assembly; and
attaching means for attaching the coupling member to a side-surface of the rail, respectively the picket members and/or the posts;
characterised in that
the coupling member comprises a C shaped body having a rear wall and two side fins forwardly extending from side edges of the rear wall;
said fins being provided with an open notch at one or both ends, and conformed with rounded opposite edges to be press-fitted into said opening, and to snap engage at least one edge of the opening into the open notches of the fins.

[0018] Each picket or fence member can be angularly

oriented with respect to the rail or rails, by differently arranging the coupling member and the pickets with respect to the same rail or rails, for example by a vertical or a slanted disposition.

[0019] Thus, the position of the rails and/or the pickets can also be adjusted when the support device, on which the fence is installed, is not perfectly horizontal. According to a preferred embodiment, the fastening device comprises a coupling member suitable for being rotatably fastened to the rail, that is to freely rotate and to be differently oriented with respect to the rail, or in alternative fastened to a picket, preferably in a firm manner.

[0020] Each coupling member can be also conformed to allow a snap rotation with respect to the rail and/or the picket, in two or more predefined angular positions.

[0021] Each coupling member, when oriented in a preferred way with respect to the rail, can also be firmly fastened in the desired position for example by screw means or other fastening means, in order to prevent any movement.

[0022] The coupling members may be preventively fastened at modular distances on the rails.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] The features of the new fence assembly will be better explained by the following description with reference to the enclosed drawings, by way of non-restrictive example, in which:

Fig. 1 is a front view of a fence assembly according to the invention, in which the picket members are orthogonally arranged in respect to the rails;
Fig. 2 is a perspective view of a coupling member;
Fig. 3 is a top view of a rail provided with a coupling member, and a picket member in a disengaged condition;
Fig. 4 is a perspective view of figure 3;
Fig. 5 is a cross-sectional view of figure 4 in an assembled condition;
Fig. 6 is a front view of a fence assembly according to the invention, in which the picket members are slanted and angularly arranged in respect to the rails.

DETAILED DESCRIPTION OF THE INVENTION

[0024] As shown in figure 1, a fence assembly according to the invention comprises one or more rails 10, for example two rails 10, longitudinally extending along the fence assembly; the rails 10 are supported by post members 11 anchored to the ground or a base wall or other support device 12.

[0025] For example, the fence assembly can be arranged so that said rails 10 longitudinally extend in a horizontal plane as shown in figures 1 and 6.

[0026] The fence assembly comprises also a plurality of picket members 13 such as elongated tubular bars of linear or any suitable shape, said picket members 13 being fastened to the rails 10 by one or more coupling members 14, shown in figure 2 and as explained further on.

[0027] The rails 10 and/or the picket members 13 may be made of any material preferably of metallic material, in the form of tubular bars, wherein the ends of the tubular bars are closed by proper plugs.

[0028] Each of said coupling members 14, shown in detail in figures 2, 3 and 5, comprises a C shaped body having a rear wall 15 and two side fins 16 forwardly extending from side edges of the rear wall 15, and provided with rounded opposite edges 16' at their ends.

[0029] Preferably, the rear wall 15 is planar, suitable for being laid against a planar side surface 17 of the rail 10, and exhibits at least one through hole 18, for example in the form of a slot, for the insertion of a rivet, a screw or other attaching means for fastening said coupling member 14 to the rail 10.

[0030] The coupling member 14 may be firmly fastened to the rail 10, or with the possibility to rotate around an axis orthogonal to the side surface 17 of the rail 10, i.e. orthogonal to said rear wall 15 of the coupling member 14.

[0031] As previously explained the coupling member 14 further comprises two side fins 16 suitable for being firmly fastened into an opening of a picket member 13 or to a post member 11.

[0032] The fins 16 are laterally spaced apart and are suitable to be press-fitted into a square or rectangular opening 19 in a side wall of a picket 13; furthermore each of the fins 16 comprises an open notch 20 at both ends for snap fixing said fins to edges 21 of the opening 19 of the picket 13.

[0033] With reference to figures 1 and 5, a plurality of coupling members 14 are fastened to each rail 10, the coupling members 14 being arranged at modular or constant pitch, in corresponding aligned positions for the pickets 13 and posts 11.

[0034] As shown in figures 3, 4 and 5 by positioning each coupling member 14 in a proper manner, for example with the fins 16 vertically arranged, i.e. orthogonally to the longitudinal direction of the rails 10, the pickets 13 can be vertically installed in a disposition orthogonal to the rails 10.

[0035] Conversely, it is possible to rotate the coupling member 14 to differently orientate the fins 16 in non-vertical position, to allow the fastening of the pickets 13 in any slanted or angular disposition, as shown in figure 5.

[0036] The pickets 13 can also be arranged so as to result mutually parallel or mutually non-parallel, as shown in figure 5.

[0037] As previously stated, the coupling member 14 may be snap fitted for example into an opening 19 of a picket 13 or post 11; to this purpose, after having fastened a required number of coupling members 14, with spaced apart dispositions to rails 10, each picket 13 is positioned with the opening 19 facing a coupling member, press fitting the side fins of the coupling member into the open-

ing 19 of the picket 13. Due to the rounded end edges of the fins, the latter ones penetrate into the opening 19 engaging by snap action the upper and/or lower edges of the opening 19, due to an elastically yielding of the fins 16, allowing the edges 21 of the opening 19 to snap engage into the open notches 20 at one or both ends of the fins, depending on the provision of an open notch at one or both ends of the fins 16.

[0038] As previously stated the coupling member 14 may be firmly fastened to the rail 10, or freely rotatable by a pin 22 or suitable attaching means, as well as to be step rotated in the fins 16, depending on the angular disposition of the pickets 13; nevertheless, other dispositions or positioning of the rails 10, posts 11, pickets 13, and coupling members 14 may be provided in a fence assembly according to the invention, for example by reversing the disposition of the coupling members 14 and opening 19, without departing from the claims.

Claims

1. A fence assembly comprising:

   at least one longitudinally extending rail (10) having a side-surface (17);
   post members (11) to support said rail (10);
   a plurality of upwardly extending picket members (13) fastened to the rail (10); and
   fastening devices for attaching the rail (10) to the post members (11), and for attaching each picket member (13) to the rail (10), each fastening device comprising a coupling member (14) conformed to engage an opening (19) into post members, alternatively the picket members (13) and/or rails (10) of the fence assembly; and
   attaching means (22) for attaching the coupling member (14) to a side-surface (17) of the rail (10), respectively the picket members (13) and/or the posts (11);
   characterised in that
   the coupling member (14) comprises a C shaped body having a rear wall (15) and two side fins (16) forwardly extending from side edges of the rear wall (15);
   said fins (16) being provided with an open notch (20) at one or both ends, and conformed with rounded opposite edges (16') to be press-fitted into said opening (19), and to snap engage at least one edge of the opening (19), into the open notches (20) of the fins (16).

2. The fence assembly according to claim 1, **characterised in that** the coupling members (14) may be fastened with different angular dispositions.

3. The fence assembly according to claim 1, **characterised in that** the coupling members (14) are rotatably and orientatably fastened to the rail (10), and/or to the picket members (13).

4. The fence assembly according to claim 1, **characterised by** comprising linearly shaped picket members (13) orthogonatly arranged to the rail (10).

5. The fence assembly according to claim 1, **characterised by** comprising linearly shaped picket members (13) angularly arranged in respect to the rail (10).

6. The fence assembly according to claim 1, **characterised by** comprising differently shaped picket members (13) parallely and/or differently arranged in respect to the rail (10).

Patentansprüche

1. Zaunanordnung, umfassend:

   mindestens eine sich längs erstreckende Traverse (10) mit einer Seitenfläche (17);
   Zaunpfahlelemente (11) zum Stützen der Traverse (10);
   mehrere sich aufrecht erstreckende Zaunlattenelemente (13), die an der Traverse (10) befestigt sind; und
   Befestigungsvorrichtungen zum Befestigen der Traverse (10) an den Zaunpfahlelementen (11) und zum Befestigen jedes Zaunlattenelements (13) an der Traverse (10), wobei jede Befestigungsvorrichtung ein Verbindungselement (14) umfasst, das angepasst ist, um in eine Öffnung (19) in den Zaunpfahlelementen beziehungsweise den Zaunlattenelementen (13) und/oder Traversen (10) der Zaunanordnung einzugreifen; und
   Befestigungsmittel (22) zum Befestigen des Verbindungselements (14) an einer Seitenfläche (17) der Traverse (10) beziehungsweise der Zaunlattenelemente (13) und/oder der Zaunpfähle (11);
   dadurch gekennzeichnet, dass
   das Verbindungselement (14) einen C-förmigen Körper mit einer Rückwand (15) und zwei Seitenflügeln (16) umfasst, die sich von Seitenrändern der Rückwand (15) nach vorne erstrecken;
   wobei die Flügel (16) mit einer offenen Einkerbung (20) an einem oder beiden Enden versehen und mit abgerundeten gegenüberliegenden Rändern (16') ausgeführt sind, die in die Öffnung (19) eingepresst werden, und um an mindestens einem Rand der Öffnung (19) in die offenen Einkerbungen (20) der Flügel (16) einzuschnappen.

2. Zaunanordnung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Verbindungselemente (14) mit unterschiedlichen Winkelanordnungen befestigt werden können.

3. Zaunanordnung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Verbindungselemente (14) drehbar und ausrichtbar an der Traverse (10) und/oder den Zaunlattenelementen (13) befestigt sind.

4. Zaunanordnung nach Anspruch 1, **dadurch gekennzeichnet, dass** sie linear geformte Zaunlattenelemente (13) umfasst, die im rechten Winkel zur Traverse (10) angeordnet sind.

5. Zaunanordnung nach Anspruch 1, **dadurch gekennzeichnet, dass** sie linear geformte Zaunlattenelemente (13) umfasst, die in Bezug auf die Traverse (10) winkelig angeordnet sind.

6. Zaunanordnung nach Anspruch 1, **dadurch gekennzeichnet, dass** sie unterschiedlich geformte Zaunlattenelemente (13) umfasst, die in Bezug auf die Traverse (10) parallel und/oder unterschiedlich angeordnet sind.

Revendications

1. Assemblage de clôture, comprenant :

au moins un rail (10) s'étendant longitudinalement et ayant une surface latérale (17) ;
des éléments formant poteaux (11) pour supporter ledit rail (10) ;
une pluralité d'éléments formant piquets (13) s'étendant vers le haut et fixés au rail (10) ; et des dispositifs de fixation pour fixer le rail (10) aux éléments formant poteaux (11) et pour fixer chaque élément formant piquet (13) au rail (10), chaque dispositif de fixation comprenant un élément de couplage (14) conformé pour s'engager dans une ouverture (19) ménagée dans les éléments formant poteaux, en variante dans les éléments formant piquets (13) et/ou dans les rails (10) de l'assemblage de clôture ; et
des moyens de fixation (22) pour fixer l'élément de couplage (14) à une surface latérale (17) du rail (10), respectivement aux éléments formant piquets (13) et/ou aux poteaux (11) ;
caractérisé en ce que
l'élément de couplage (14) comprend un corps en forme de C ayant une paroi arrière (15) et deux ailettes latérales (16) s'étendant vers l'avant depuis les bords latéraux de la paroi arrière (15) ;
lesdites ailettes (16) étant pourvues d'une encoche ouverte (20) à une ou aux deux extrémités et conformées avec des bords opposés arrondis (16') à ajuster par pression dans ladite ouverture (19), et pour engager par encliquetage au moins un bord de l'ouverture (19) dans les encoches ouvertes (20) des ailettes (16).

2. Assemblage de clôture selon la revendication 1, **caractérisé en ce que** les éléments de couplage (14) peuvent être fixés dans différentes dispositions angulaires.

3. Assemblage de clôture selon la revendication 1, **caractérisé en ce que** les éléments de couplage (14) sont fixés à rotation et de manière orientable au rail (10) et/ou aux éléments formants piquets (13).

4. Assemblage de clôture selon la revendication 1, **caractérisé en ce qu'**il comprend des éléments formant piquets de forme linéaire (13) aménagés orthogonalement au rail (10).

5. Assemblage de clôture selon la revendication 1, **caractérisé en ce qu'**il comprend des éléments formants piquets de forme linéaire (13) aménagés sous un certain angle par rapport au rail (10).

6. Assemblage de clôture selon la revendication 1, **caractérisé en ce qu'**il comprend des éléments formant piquets façonnés différemment (13) aménagés parallèlement et/ou différemment par rapport au rail (10).

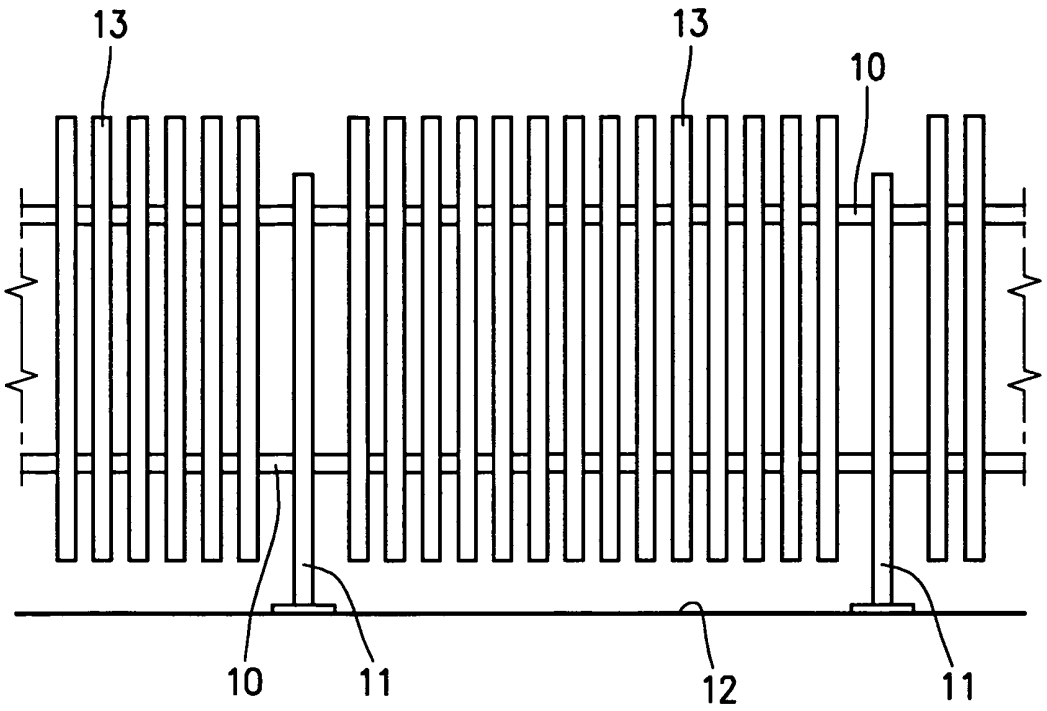


Fig. 1

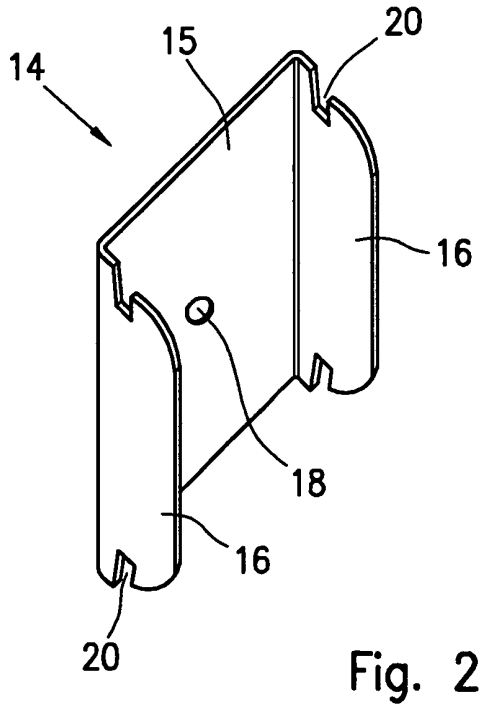


Fig. 2

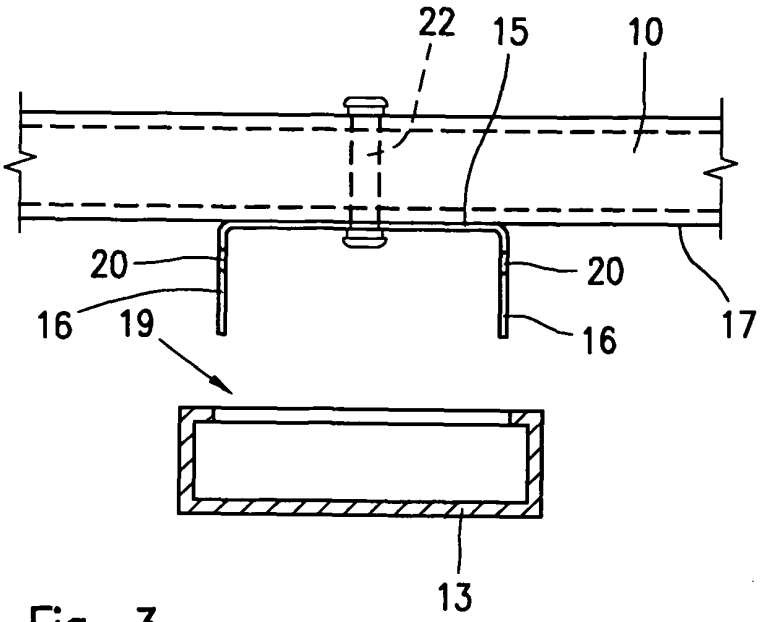


Fig. 3

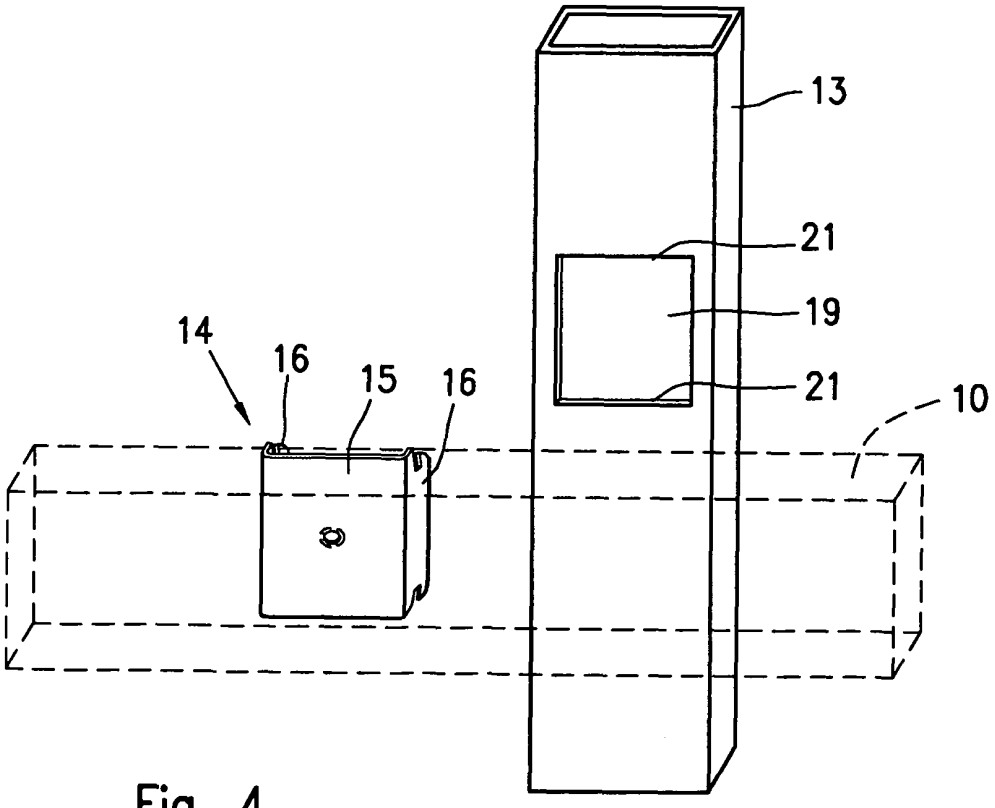


Fig. 4

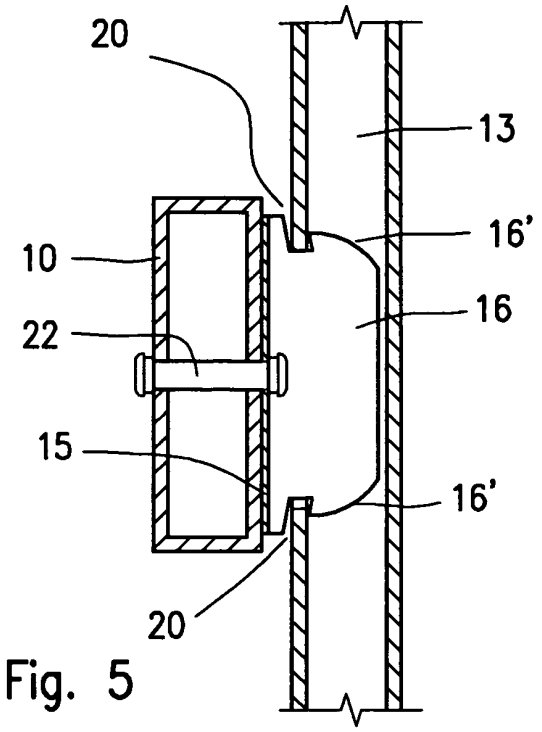


Fig. 5

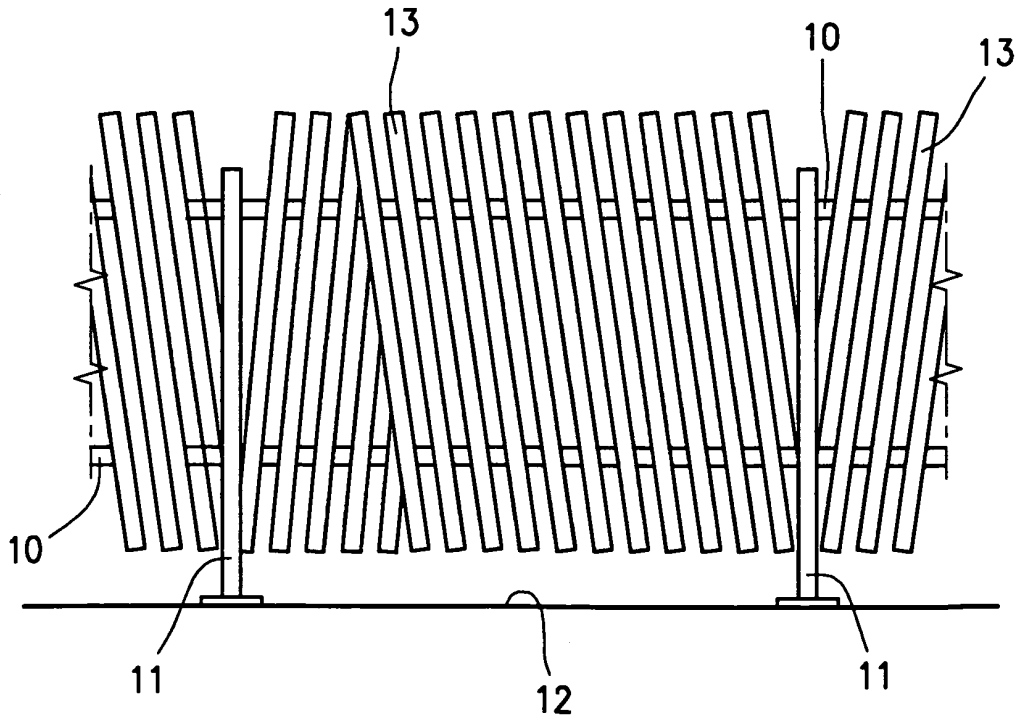


Fig. 6

REFERENCES CITED IN THE DESCRIPTION

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