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### (54) Swimming pool comprising a safety support system for a protective cover

Schwimmbecken mit einem Sicherheitsstützsystem für eine Schutzabdeckung

Piscine comportant un système de support de sécurité pour une couverture de protection

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**CH-A- 608 553** **FR-A- 2 678 974**  
**US-A- 3 144 665**

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## Description

**[0001]** The present invention relates to a safety support system for a protective cover for a swimming pool. The present invention also relates to a swimming pool comprising such a safety support system.

**[0002]** A safety support system for a protective cover for a swimming pool is for example known from US-A-3.144.665. US-A-3.144.665 discloses a protective cover comprising a multitude of buoyant, elongated rigid cover members flexibly connected in side by side relationship and freely floating on the surface of the water in the pool when extended. The cover members extend transversely between opposed walls of the pool with the ends of the cover members closely adjacent the walls of the pool. The swimming pool is provided with safety support means which extend along the walls below the surface of the water in closely spaced relationship below the ends of the rigid cover members adapted to be connected by and support the cover members if these are forcibly immersed. The protective cover further comprises means for winding the flexibly connected cover members for storage at one end of the pool and for unwinding them onto the pool's surface for use. The safety support system has the purpose to avoid that a person, for instance a child, or another object falling onto the cover of the swimming pool when the latter is not in use causes the cover to dip deep into the water whereby the person glides from the cover into the water and possibly below the cover in the case the person glides in between two adjacent cover members. The safety support system can have any desired form, such as a hand-rail or a track or a shelf in the pool wall. In each case, the support means extend over a certain distance away from the wall to which they are connected towards the opposite wall. Only in that way the support means can fulfil their supporting function.

**[0003]** The safety support system of US-A-3.144.665 has the disadvantage that the safety support means are mounted in a fixed position with respect to the delimiting wall of the swimming pool. Thus, these safety support means are always in the position for supporting the cover members, thereby extending over a certain distance from the wall to which they are connected in the direction towards the opposite wall. When the swimming pool is in use, a person swimming in the pool can therefore be hindered by these safety support means. Moreover, the person swimming in the pool can hurt himself on these support means.

**[0004]** It is the object of the present invention to provide a swimming pool with a safety support system for a protective cover for the swimming pool whereby the risk of hindering persons swimming in the swimming pool can be reduced.

**[0005]** This can be achieved with the technical features of the first claim.

**[0006]** The swimming pool provided with the safety support system of the present invention comprises supporting means which are movable between a first position

in which they rest against the delimiting wall or are countersunk into the delimiting wall of the swimming pool and a second position in which they protrude from the delimiting wall. The supporting means extend along at least a part of the delimiting wall of the swimming pool. In this way, the supporting means of the safety support system of the present invention can be moved to a position in which they do not substantially extend away from the delimiting wall of the swimming pool towards the opposite wall. Therefore, the risk of hindering persons swimming in the pool can be reduced.

**[0007]** CH-A-608553 discloses a moveable bottom for a swimming pool which can be used as a cover for the swimming pool. The bottom can support loads so that when it covers the swimming pool it can be used to, for example, host a reception. When the bottom covers the swimming pool, the bottom is supported by bolts which are provided in walls of the swimming pool. The bolts are movable between a first position in which they are countersunk into the wall of the swimming pool and a second position in which they protrude from the wall. The bolts are received in corresponding openings in the bottom when the bottom covers the swimming pool. The diameter of the bolts extends along part of the wall of the swimming pool. To bolts are moved into their corresponding openings by moving the bolts along their longitudinal axis.

**[0008]** It is an object of the present invention to provide a swimming pool with an alternative safety support system for a protective cover for the swimming pool.

**[0009]** This can be achieved with the technical features of the characterising portion of the first claim.

**[0010]** Thereto, the supporting means are movable between the first and second position in a canting way.

**[0011]** The canting of the supporting means may be provided by connecting the supporting means to an axle for driving the supporting means between the first and second position, whereby the axle extends along or in the delimiting wall of the swimming pool and is connected to a driving for driving the axle. The supporting means are thus rotatable by means of the axle from the first to the second position. This allows the supporting means to be easily brought from the first to the second position, and enhances the use-friendliness of the system.

**[0012]** The invention and preferred embodiments of the invention are further elucidated in the following figures and description of the figures.

**[0013]** Figure 1 shows a top view of the swimming pool comprising a preferred embodiment of the safety support system for a protective cover according to the present invention.

**[0014]** Figure 2 is a cross section of the swimming pool along line A-A of Figure 1.

**[0015]** The swimming pool 1 shown in Figure 1 has a rectangular shape with opposite transverse sides or delimiting walls 2, 3, opposite longitudinal sides or delimiting walls 4, 5, an outer tiled border 6, and an inner border 7. The swimming pool may however have also another

shape, for instance a round or a square. The inner border 7 is separated from the outer border 6 by a joint 11, through which water can flow away.

**[0016]** The protective cover (not shown) may comprise a plurality of parallel elongated cover members connected in side by side relationship to each other, which are enroled to form a roll. This roll is mounted on a first side of the swimming pool 1. From there, the roll may be enroled by hand or automatically. The roll may be mounted on one of the transverse sides 2, 3 of the swimming pool 1. However, it may also be mounted on one of the longitudinal sides 4, 5.

**[0017]** When unrolled, the cover members are parallel to the transversal sides 2, 3 and extend transversely between the opposed longitudinal sides 4, 5, with the opposite ends of each cover member closely adjacent these longitudinal sides 4, 5 of the swimming pool 1. When unrolled, the cover members thus substantially completely cover the surface of the water from the transverse side 2 to the opposite transverse side 3. The cover members freely float on the surface of the water (line B in Figure 2) when unrolled.

**[0018]** The cover members can be made of any suitable material which allows them to float on the surface of the water. Examples of suitable materials include plastics, such as polyvinyl chloride, polyethylene or polypropylene. The cover members may be hollow or may be filled with foam, for instance polyurethane foam. The material of the cover members itself and its thickness must be such that the cover member can carry a person or another object falling on the protective cover.

**[0019]** The cover members are connected in side by side relationship in longitudinal direction to each other. The cover members may be connected to each other by any connecting means suited thereto. Preferably, the cover members are connected to each other in such a way that allows them to be wound on the roll without being bent in their longitudinal direction.

**[0020]** In Figure 1, the safety support system 9 is mounted on at least one and preferably on both longitudinal sides 4, 5 perpendicular to the transversal sides 2, 3 where the protective cover is installed. It is also possible to provide an additional support system 9 on at least one of the first transversal sides 2, 3.

**[0021]** In case the protective cover is installed on one of the longitudinal sides 4, 5, the safety support system 9 is mounted on at least one and preferably on both transversal sides 2, 3 perpendicular to these longitudinal sides 4, 5. In this case, it is also possible to provide an additional support system 9 on at least one of the longitudinal sides 4, 5.

**[0022]** The safety support system 9 comprises an axle 8 to which supporting means 13 are connected.

**[0023]** The axle 8 is positioned against the longitudinal side 4, 5 of the swimming pool 1 at a certain distance below the water surface (line B in Figure 2) and extends parallel to the longitudinal side 4, 5 along at least part of the length of the longitudinal side 4, 5. It is also possible

that the axle is positioned at a certain distance above the water surface. The axle 8 is preferably supported at various positions, such that bending in longitudinal direction of the axle is prevented. The axle 8 drives the support system 9 and is extended to a driving, for instance a reduction motor 18, which is situated outside the water and drives the axle 8.

**[0024]** As illustrated in Figure 2, the supporting means 13 are rotatable by means of an axle 8 between a first 10 and a second position. In the first position, the supporting means 13 are countersunk or rest against the longitudinal side 5 of the swimming pool 1, or take any other suitable position. In the second position, the supporting means 13 protrude from the longitudinal side 5 and support the 15 cover members. Hereby, the supporting means 13 extend substantially parallel to the water surface. In this second position, the supporting means 13 extend perpendicular with respect to the longitudinal direction of the cover members. It is however also possible that the supporting means 13, in this second position, extend in an angle with respect to the longitudinal direction of the cover members. Also, in the second position, the supporting means 13 are present at a certain distance below the 20 water surface (line B) such that the floating of the cover members is not affected. This floating of the cover members entails the advantage that only small forces are 25 needed for winding or unwinding the cover members on or from the roll.

**[0025]** Alternatively, it is possible that the supporting 30 means 13 in the second position are located at a certain height above the water surface (line B). In this case, the cover members are also located at a distance above the water surface. To achieve this, the cover members are at their opposite ends in longitudinal direction of the cover 35 members for instance provided with wheels which are movable on rails mounted on the longitudinal sides of the swimming pool at a certain height above the water surface and extending along substantially the entire length of the side. Due to the moving of the wheels in the rails, again only small forces are needed for winding or unwinding the cover members on or from the roll.

**[0026]** Alternatively, it is possible that the supporting 40 means are movable between the first and the second position in a sliding way. Thereto, in the first position, the 45 supporting means may for instance be received in a corresponding groove present in the longitudinal side of the swimming pool. This may be a groove extending parallel to the bottom of the swimming pool and extending along substantially the entire length of the in longitudinal side 50 of the swimming pool, the groove being present at a height below the water surface. It is however also possible that the groove extends perpendicular to the bottom of the swimming pool. The sliding of the supporting means from the first to the second position can be 55 achieved by any mechanism suited thereto.

**[0027]** The supporting means 13 may for instance be a plate or a grid or a profile. They can be made of any suitable material which allows them to support the cover

members in a stable way. Examples of suitable materials include plastics, such as polyvinyl chloride, polyethylene or polypropylene.

**[0028]** The profile 13 extends along substantially the entire length of the longitudinal side 4, 5, of the swimming pool 1 in order to be able to support all the cover members floating on the water surface. It is also possible that per side of the swimming pool more than one profile 13 is connected to the axle 8. In this case, however, the profiles 13 are preferably mounted adjacent to each other such that the cover members are supported along the entire length of the longitudinal side 4, 5.

**[0029]** The protective cover and the safety support system 9 are positioned relative to each other in such a way that an optimal safety is achieved. When the safety support system 9 is present at one only side perpendicular to the side where the protective cover is installed, so at one of the longitudinal sides 4, 5, the supporting means 13 preferably support the protective cover over substantially the entire length of the cover members. When the safety support system 9 is present at both opposite sides perpendicular to the side where the protective cover is installed, so at both opposed longitudinal sides 4, 5, it is sufficient that the supporting means 13 support the cover members over only part of their length. Indeed, the cover members rest in this case in the middle on the water surface which results in a sufficient support for the cover members.

**[0030]** It may also be possible that the supporting means 13 comprise a profile 13 which is telescopic or alternatively, collapsible. This may be necessary in the case where the supporting means 13 have to support the protective cover over substantially the entire length of the cover members, extending parallel to the transverse sides of the swimming pool, and where the swimming pool has a width which is larger than the depth. In order to bring the supporting means from the second position to the first position in which they for instance rest against the delimiting longitudinal wall, the telescopic parts of the profile are moved into each other such that the profile, in its collapsed state, can rest against the delimiting wall.

## Claims

1. A swimming pool (1) having a first delimiting wall (2, 3, 4, 5) in which a safety support system (9) for a protective cover for the swimming pool (1) is mounted on the first delimiting wall (2, 3, 4, 5), in which the safety support system (9) comprises supporting means (13) which are movable between a first position in which they rest against the first delimiting wall (2, 3, 4, 5) or are countersunk into the first delimiting wall (2, 3, 4, 5) of the swimming pool (1) and a second position in which they protrude from the first delimiting wall (2, 3, 4, 5) and extend along at least a part of the first delimiting wall (2, 3, 4, 5) of the swimming pool (1), **characterized in that** the supporting

means (13) are movable between the first and second position in a canting way.

2. A swimming pool (1) as claimed in claim 1, **characterized in that** the supporting means (13) are mounted on an axle (8) for driving the supporting means (13) between the first and second position, the axle (8) extending along or in the first delimiting wall (2, 3, 4, 5) of the swimming pool (1), the axle (8) being connected to a driving (18) for driving the axle (8).
3. A swimming pool as claimed in any one of the preceding claims, **characterized in that** the supporting means (13) comprise a longitudinal profile or plate or grid.
4. A swimming pool (1) according to any one of claims 1 - 3, **characterized in that** the safety support system (9) is mounted on a height which is below the water surface in the swimming pool (1) during normal use.
5. A swimming pool (1) according to any one of claims 1-4, **characterized in that** the swimming pool (1) is provided with a protective cover which is mounted on a second delimiting wall (2, 3, 4, 5) of the swimming pool (1) perpendicular to the first delimiting wall (2, 3, 4, 5), the protective cover comprising a plurality of elongated cover members connected to each other in longitudinal direction in side by side relationship, in which the cover members extend parallel to the second delimiting wall (2, 3, 4, 5) of the swimming pool (1), and **in that** the swimming pool has a third delimiting wall (2, 3, 4, 5) opposite the first delimiting wall (2, 3, 4, 5), the ends of the cover members lying closely adjacent the first and third delimiting walls (2, 3, 4, 5) of the swimming pool (1).
6. A swimming pool (1) according to claim 5, **characterized in that** a second safety support system (9) is mounted on the third delimiting wall (2, 3, 4, 5).
7. A swimming pool (1) according to claim 6, **characterized in that** a third safety support system (9) is mounted on the second delimiting wall (2, 3, 4, 5).
8. A swimming pool (1) according to claim 7, **characterized in that** a fourth safety support system is mounted on a fourth delimiting wall (2, 3, 4, 5) of the swimming pool (1) opposite the second delimiting wall (2, 3, 4, 5).

## Patentansprüche

1. Swimmingpool (1) mit einer ersten Begrenzungswand (2, 3, 4, 5), wobei ein Sicherheitsträgersystem (9) für eine Schutzabdeckung für das Swimmingpool

(1) an der ersten Begrenzungswand (2, 3, 4, 5) montiert ist, wobei das Sicherheitsträgersystem (9) Trägermittel (13) umfasst, die zwischen einer ersten Position, in der sie gegen die erste Begrenzungswand (2, 3, 4, 5) liegen oder in der ersten Begrenzungswand (2, 3, 4, 5) des Swimmingpools (1) versenkt sind, und einer zweiten Position, in der sie von der ersten Begrenzungswand (2, 3, 4, 5) vorstehen und sich entlang mindestens einem Teil der ersten Begrenzungswand (2, 3, 4, 5) des Swimmingpools (1) erstrecken, bewegbar sind, **dadurch gekennzeichnet, dass** die Trägermittel (13) zwischen der ersten und zweiten Position kippend bewegbar sind.

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2. Swimmingpool (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Trägermittel (13) auf einer Achse (8) zum Antreiben der Trägermittel (13) zwischen der ersten und der zweiten Position montiert sind, wobei sich die Achse (8) entlang oder in der ersten Begrenzungswand (2, 3, 4, 5) des Swimmingpools (1) erstreckt, wobei die Achse (8) mit einem Antrieb (18) zum Antreiben der Achse (8) verbunden ist.

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3. Swimmingpool nach einem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die Trägermittel (13) ein Längsprofil oder eine Platte oder ein Gitter umfassen.

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4. Swimmingpool (1) nach einem der Ansprüche 1 bis 3, **dadurch gekennzeichnet, dass** das Sicherheitsträgersystem (9) in einer Höhe montiert ist, die unter der Wasseroberfläche in dem Swimmingpool (1) während des Normalgebrauchs liegt.

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5. Swimmingpool (1) nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** das Swimmingpool (1) mit einer Schutzabdeckung bereitgestellt ist, die an einer zweiten Begrenzungswand (2, 3, 4, 5) des Swimmingpools (1) senkrecht zu der ersten Begrenzungswand (2, 3, 4, 5) montiert ist, wobei die Schutzabdeckung mehrere längliche Abdeckelemente umfasst, die in Längsrichtung miteinander in einem Seite-an-Seite-Verhältnis verbunden sind, wobei sich die Abdeckelemente parallel zu der zweiten Begrenzungswand (2, 3, 4, 5) des Swimmingpools (1) erstrecken, und dass das Swimmingpool eine dritte Begrenzungswand (2, 3, 4, 5) aufweist, die der ersten Begrenzungswand (2, 3, 4, 5) gegenüber liegt, wobei die Enden der Abdeckungselemente eng neben der ersten und dritten Begrenzungswand (2, 3, 4, 5) des Swimmingpools (1) liegen.

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6. Swimmingpool (1) nach Anspruch 5, **dadurch gekennzeichnet, dass** ein zweites Sicherheitsträgersystem (9) an der dritten Begrenzungswand (2, 3, 4, 5) montiert ist.

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7. Swimmingpool (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** ein drittes Sicherheitsträgersystem (9) an der zweiten Begrenzungswand (2, 3, 4, 5) montiert ist.

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8. Swimmingpool (1) nach Anspruch 7, **dadurch gekennzeichnet, dass** ein viertes Sicherheitsträgersystem an einer vierten Begrenzungswand (2, 3, 4, 5) gegenüber der zweiten Begrenzungswand (2, 3, 4, 5) montiert ist.

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## Revendications

1. Piscine (1) ayant une première paroi de délimitation (2, 3, 4, 5) dans laquelle un système de support de sécurité (9) pour une couverture de protection pour la piscine (1) est monté sur la première paroi de délimitation (2, 3, 4, 5), dans laquelle le système de support de sécurité (9) comprend des moyens de support (13) qui peuvent être déplacés entre une première position dans laquelle ils reposent contre la première paroi de délimitation (2, 3, 4, 5) ou sont noyés dans la première paroi de délimitation (2, 3, 4, 5) de la piscine (1) et une deuxième position dans laquelle ils font saillie de la première paroi de délimitation (2, 3, 4, 5) et s'étendent le long d'au moins une partie de la première paroi de délimitation (2, 3, 4, 5) de la piscine (1), **caractérisée en ce que** les moyens de support (13) peuvent être déplacés entre la première et la deuxième position de manière inclinée.

2. Piscine (1) telle que revendiquée dans la revendication 1, **caractérisée en ce que** les moyens de support (13) sont montés sur un axe (18) pour entraîner les moyens de support (13) entre la première et la deuxième position, l'axe (8) s'étendant le long ou dans la première paroi de délimitation (2, 3, 4, 5) de la piscine (1), l'axe (8) étant relié à un entraînement (18) destiné à entraîner l'axe (8).

3. Piscine (1) telle que revendiquée dans l'une quelconque des revendications précédentes, **caractérisée en ce que** les moyens de support (13) comprennent un profilé ou une plaque ou une grille longitudinal.

4. Piscine (1) selon l'une quelconque des revendications 1 - 3, **caractérisée en ce que** le système de support de sécurité (9) est monté à une hauteur qui se situe en dessous de la surface de l'eau de la piscine (1) pendant l'utilisation normale.

5. Piscine (1) selon l'une quelconque des revendications 1 - 4, **caractérisée en ce que** la piscine (1) est pourvue d'une couverture de protection qui est montée sur une deuxième paroi de délimitation (2, 3, 4,

5) de la piscine (1) perpendiculaire à la première paroi de délimitation (2, 3, 4, 5), la couverture de protection comprenant une pluralité d'organes de couverture allongés reliés les uns aux autres dans le sens longitudinal dans un rapport de juxtaposition, 5 dans lequel les organes de couverture s'étendent parallèlement à la deuxième paroi de délimitation (2, 3, 4, 5) de la piscine (1), et **en ce que** la piscine a une troisième paroi de délimitation (2, 3, 4, 5) opposée à la première paroi de délimitation (2, 3, 4, 5), 10 les extrémités des organes de couverture étant étroitement adjacents aux première et troisième parois de délimitation (2, 3, 4, 5) de la piscine (1).

6. Piscine (1) selon la revendication 5, **caractérisée** 15 **en ce qu'** un deuxième système de support de sécurité (9) est monté sur la troisième paroi de délimitation (2, 3, 4, 5).

7. Piscine (1) selon la revendication 6, **caractérisée** 20 **en ce qu'** un troisième système de support de sécurité (9) est monté sur la deuxième paroi de délimitation (2, 3, 4, 5).

8. Piscine (1) selon la revendication 7, **caractérisée** 25 **en ce qu'** un quatrième système de support de sécurité est monté sur une quatrième paroi de délimitation (2, 3, 4, 5) de la piscine (1) opposée à la deuxième paroi de délimitation (2, 3, 4, 5).

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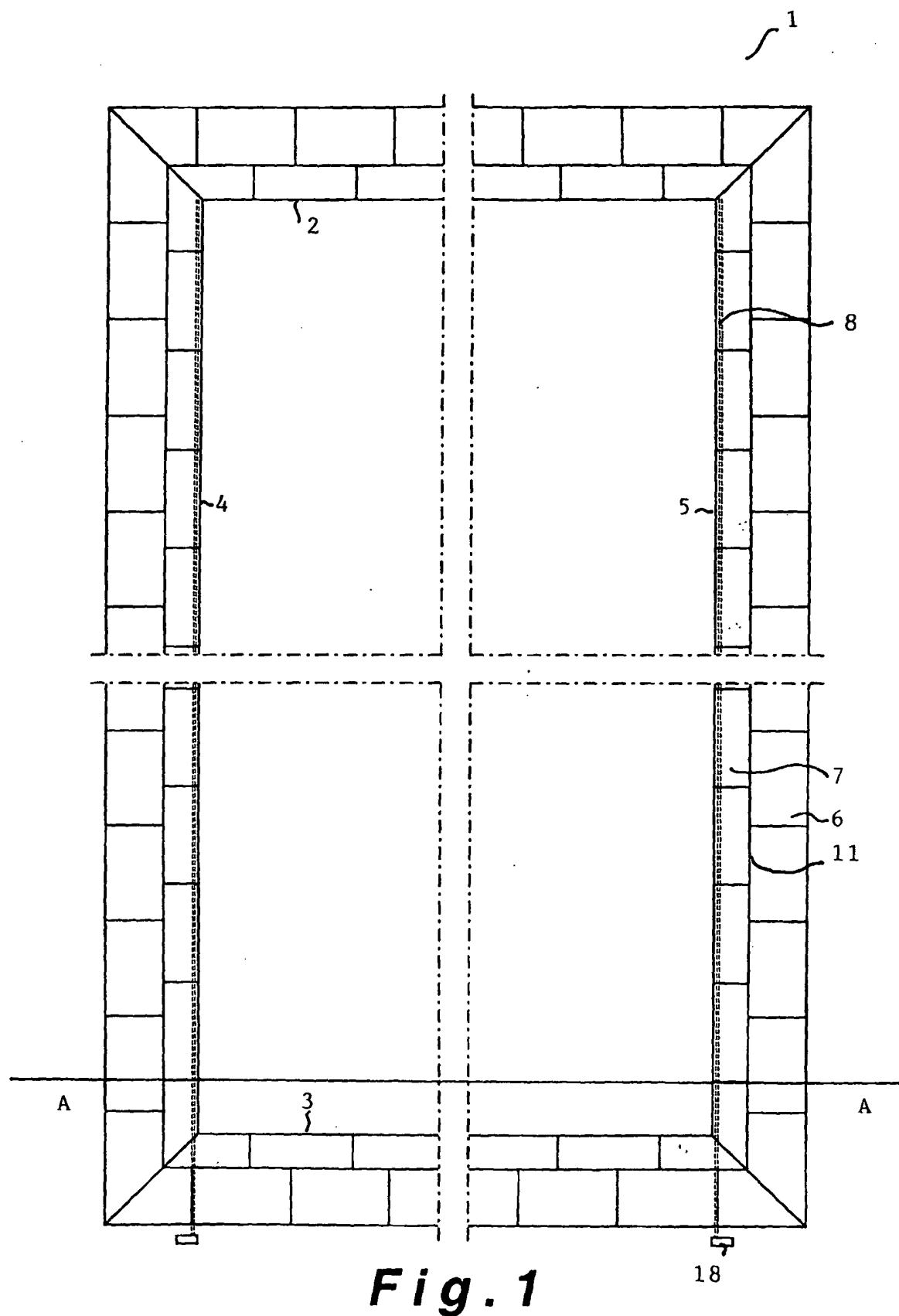
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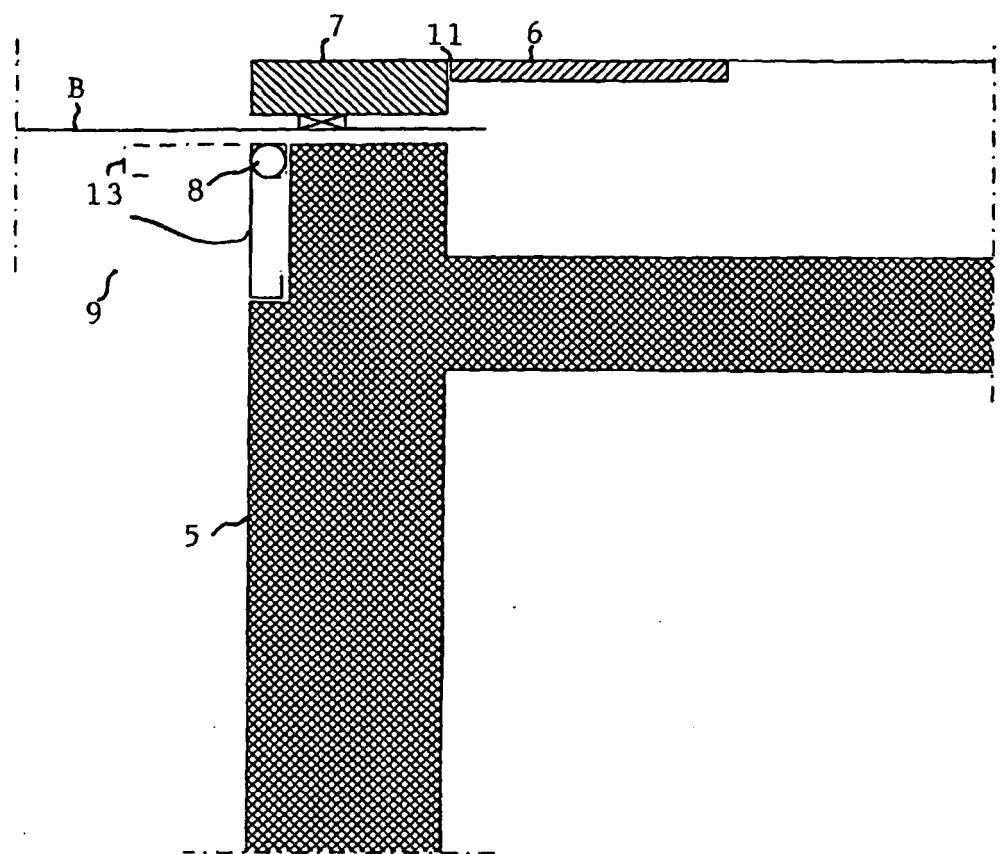
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*Fig. 1*



**REFERENCES CITED IN THE DESCRIPTION**

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