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<td>Title</td>
<td>A fence support</td>
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<tr>
<td>Application No</td>
<td>2007201301</td>
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<tr>
<td>Date of Filing</td>
<td>2007.03.27</td>
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<td>Application N</td>
<td>546194</td>
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<td>Date</td>
<td>2006.03.27</td>
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<tr>
<td>Country</td>
<td>NZ</td>
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<tr>
<td>Publication Date</td>
<td>2007.10.11</td>
</tr>
<tr>
<td>Publication Journal Date</td>
<td>2007.10.11</td>
</tr>
<tr>
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ABSTRACT

A support means for fencing material is described. The support means allows for adjustability of the position of the fencing material and is particularly suitable for transparent fencing material such as glass.
AUSTRALIA

PATENTS ACT 1990

COMPLETE SPECIFICATION

FOR A STANDARD PATENT

ORIGINAL

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Invention Title: A FENCE SUPPORT

Details of Original Application No. New Zealand 546194 dated 27 March 2006

The following statement is a full description of this invention, including the best method of performing it known to me:-
A FENCE SUPPORT

FIELD OF THE INVENTION

The invention relates to a support means for fencing material. In particular, the invention relates to a support means for transparent fencing material such as glass.

BACKGROUND OF THE INVENTION

Walls around areas such as decks and swimming pools are well known. Frequently, glass walls are used as a fencing material for these purposes due to their aesthetic appeal and due to the increase in safety associated with their use. Traditionally, these glass walls have been surrounded by wood, aluminum, or like, framing. It is becoming more desirable to have little or no framing around the glass in order to increase the aesthetic appeal and in order to ensure visibility, particularly when in a pool environment.

One available method of mounting glass walls with little or no framing involves a U shaped channel in which the glass is placed and grout or resin poured into, this holding the glass tightly. This method has a number of problems associated with it. It is a labour intensive process and failures associated with the grout or resin are frequent. Predominantly, these failures are associated with there being no ability for the position of the glass to be adjusted. Should the surface on which the fencing material (e.g. glass) is mounted (such as a deck) move, without the ability to re-adjust the position of the glass substantial strain and weakening of the stability of the fencing material can be caused. There are also a variety of other reasons that may lead to someone wanting to adjust the position of the glass, such as the substrate on which the fence is mounted being uneven, and traditional methods of mounting glass do not readily allow for this. It would be particularly advantageous if the position of the glass was able to be adjusted angularly, vertically and horizontally, whilst maintaining the stability of the glass. The ability to move such fences, should that be needed, can be limited when using commonly known options. Finally, achieving this adjustability by means of an aesthetically pleasing apparatus is clearly highly desirable.

As will be readily apparent, the fencing material can be of any type but it will preferably be transparent, to take maximum advantage of the benefits of the invention.
OBJECTS OF THE INVENTION

It is an object of the invention to provide a support means for a fencing material which at least reduces some of the disadvantages of the prior art or which provides the public with a useful alternative.

SUMMARY OF THE INVENTION

In a first aspect the invention provides a support for a fencing material, the support including a base part, a support part, and a clamping part, the support part being adapted to support the fencing material and being adapted to act with the clamping part to clamp the fencing material in the desired position within the support, the support also allowing for adjustment of the position of the fencing material by means of internal packers within the support.

Preferably the position of the fencing material relative to the support part and clamping part does not alter as a result of the adjustment of the fencing material.

Preferably the base of the fencing material abuts the substantially horizontal portion of the support part.

Preferably the base part is adapted to include an attachment means to attach the support to a surface.

Preferably the packers are formed from aluminium.

Preferably the support allows for adjustment of the fencing material in the vertical and/or horizontal direction.

Preferably the adjustment is carried out after the fencing material has been mounted.

Preferably the support is substantially formed from aluminium.

Preferably the support is releasably attachable to a surface, such as deck or floor.
Preferably the support is attached to the surface by a bolt or clamp.

Preferably the fencing material is glass or other suitable transparent material.

Preferably the base part has a hole through it such that it may be bolted to a surface.

Preferably there is a fastening means adapted to fasten the base part, the support part and the clamping part together.

Preferably the fencing material is adapted to allow the fastening means to fasten the fencing material to at least the support part and the clamping part.

Preferably the fastening means includes a nut and bolt arrangement.

Preferably the nut is slidably held in a channel in the base part and is adapted to receive the bolt, the bolt passing through the support part, the clamping part and the fencing material, to fasten the support and fencing material together, in use.

Preferably the fastening means allows for movement of the fencing material in the vertical direction.

Preferably the bolt passes through the support part and the clamping part via elliptical holes.

Preferably, the support includes a cover.

Preferably at least one packer is positioned between the base part and the support part to allow for horizontal adjustment of the position of the fencing material.

Preferably at least one packer is positioned beneath the support part to allow for vertical adjustment of the position of the fencing material.

Alternatively, at least one packer is positioned between the base part and the support part to allow for vertical adjustment of the position of the fencing material.
The invention in another aspect provides a method for attaching a fencing material to a surface using the support according to the first aspect, the method including the steps of:

1. attaching the base part to the surface;
2. positioning the support part on the base part;
3. positioning the fencing material on the support part;
4. positioning the clamping part on the base part and against the fencing material;
5. fastening the base part, the support part, the fencing material, and the clamping part together;
6. adjusting the position of the support part and clamping part, and accordingly the fencing material in the support as desired using packers as desired.

The invention in another aspect provides a kit-of-parts for creating a fence support, the kit including at least the base part, support part, clamp part and at least one packer as described in the first aspect of the invention.

**BRIEF DESCRIPTION OF FIGURES**

The invention will now be described by example only with reference to the Figures where:

Figure 1 shows a perspective and exploded view of the preferred fence support when not in use

Figure 2 shows a perspective view of the preferred fence support with fencing material mounted

Figure 3 shows an end view of the fence support with fencing material mounted

Figure 4 shows left side view of the support part

Figure 5 shows left side view of the clamping part

Figure 6 shows an end view of the fence support with fencing material mounted according to another embodiment of the invention
DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT THEREOF

The invention in broad terms provides a support means for fencing material. This fence support enables unframed and tempered glass, in particular, to be mounted around areas such as decks or swimming pools and allows for the position of the glass while mounted in the support means to be adjustable.

Further, the present invention provides a method of adjusting the position of fencing material used when mounted in the support. The adjustment can be horizontal and vertical.

Fencing material (e.g. glass or other fencing material) with little or no framing as fencing around areas such as decks and swimming pools is becoming increasingly popular. However, the mounting of the fencing material has previously been problematic. Known options are labour intensive and usually require the fencing material to be in a permanently fixed position. This fixed position can cause problems should the surface on which the fencing material is mounted bend, buckle or expand as the fencing material does not have the ability to move with it. This causes strain, weakening the stability of the fencing material, and may cause it to crack. The present invention has the ability to reduce these detrimental effects due to its adjustability. The positioning of the support for the fencing material along the base of the material used allows for a “no frame” look which is aesthetically pleasing and also, when transparent material such as glass is used, maximises the visibility through the fence once created. The ability to adjust the position of the fencing material in the support allows the height of the formed fence to be as aligned as possible in a simple efficient manner. The ability to adjust the angle of the fencing material (i.e. a “horizontal” adjustment) allows the fence line to be as straight as possible again in a single efficient manner.

This adjustability is achieved by means of packers which are inserted internally into the support that holds the fencing material. This is particularly advantageous for a number of reasons. Firstly, the packers are hidden from view within the support. The support preferably includes covers which can be tailored to the user’s requirements, this further enhancing the aesthetic appeal of the support. The internal packers also allow for adjustability of the internal workings of the system, rather than just the fencing material. Accordingly, the fence material moves relative to the surface to which the support is attached, but it does not move relative to the parts of the support that are holding the
fencing material. This results in the fencing material being able to be adjusted without a loss in stability as it is still held in the support in the same way as it was prior to adjustment.

The fencing material will preferably be a transparent material such as glass or a suitable plastics material. Other alternatives can also be used (transparent or not) such as timber, metals etc as would be known to a skilled person.

A preferred embodiment of the invention is shown in Figure 1. Figure 1 shows an exploded view of a support 1 including a base part 2, a support part 3, a clamping part 4 and covers 7a and 7b. The support 1 in its preferred form has a nut 21 that slides along a channel 22 in the base part 2. The channel 22 is formed by two lips 23 and 24 in the base part 2. The lower lip 24 in the base part 2 has a radius protrusion 24a, which is adapted to allow the position of the support part 3 to be adjusted around this radius protrusion 24a by means of packers (as described below). The base part 2 also has a lip 25 that is adapted to sit underneath the support part 3. There are two small lips 26a and 26b along either side of the floor 29 of the base part 2, into which the covers 7a, 7b may clip. Figure 1 also shows a partially obscured hole 27, through which an attachment means (not shown in Figure 1) can pass, in order to attach the support to a surface. Base part 2 also includes elongate projection 28 adapted to interact with cover 7b.

As also shown in Figure 1, the support part 3 includes a hole 31, in which a bush 5 may sit. The support part 3 also has two channels 32 and 33. These channels allow for the clamping part 4 to sit at various distances from the supporting part 3. This allows for various thicknesses of fencing material (not shown in Figure 1) to be supported by support 1.

The clamping part 4 also includes a hole 41, which is aligned with the hole 31 in the support part 3 to accommodate fastening means 10 therethrough. Clamping part 4 also includes a lip 42 and an elongate projection 43. Lip 42 is adapted to interact with either of channels 32, 33 of support part 3. Elongate projection 43 is adapted to interact with cover 7a.
The support 1 will be held together by fastening means 10 passing through holes 41 and 31 in clamping part 4 and support part 3 respectively. Fastening means 10 includes a bolt 10a, washer 11 and nut 21 (which will lie within channel 22 of base part 2). The fencing material 9 will preferably also be held in the support 1 by the fastening means 10 (but this is not shown in Figure 1).

Covers 7a and 7b enclose the other components of support 1. The covers 7a and 7b are optional and are present to enhance the aesthetic effect of the support 1. They can be of any colour as required by the user and can therefore match with the surface colour to which the support 1 is attached for example.

The cover 7a is attached to clamping part 4 by interaction between elongate projection 43 and 72a on cover 7a. Lip 71a on cover 7a will also interact with lip 26a on base part 2. Cover 7b includes lips 71b and 72b which are adapted to interact with lip 26b on base part 2 and elongate projection 28 respectively. Thus the covers 7a and 7b can, in use, be attached releasably to the support 1.

The covers 7a and 7b are easily removable and merely protect the support 1 and add aesthetic appeal. The covers are preferably made of aluminium. Alternatively they may be made of a suitable plastics or other metal material that can be coloured if desired.

Figure 2 shows the embodiment of Figure 1 when put together and clamping a fencing material (e.g. glass or other suitable material) 9. As can be seen in Figure 2 the fencing material 9 is held securely between clamping part 4 and support part 3. Covers 7a and 7b are attached to support 1 and give a smooth external appearance to the whole unit.

Figure 3 shows an end view of the support 1 as seen in Figure 2. In particular it shows the attachment means 12 passing through floor 29 of base part 2 to attach the support 1 to a surface (not shown). Attachment means 12 includes a bolt 12a and washer 13 arrangement. This arrangement could be replaced by a number of other options as would be known to a person skilled in this art such as a clamp for example, if it is preferred that the attachment means 12 allows the support 1 to be removed from the surface to which it is attached.
Figure 3 also shows the presence of a screw 14 that attaches support part 3 to base part 2. The use of packers (not shown) inserted at B (beneath support part 3) allows for adjustment of fencing material 9 in a vertical direction (indicated by arrow X). The use of packers (not shown) inserted at A between base part 2 and support part 3 allows for adjustment in the horizontal direction (indicated by arrow Y). There may be more than one packer inserted at either or both of these positions, as is deemed necessary in order to achieve the desired position of the fencing material. The insertion of a packer at point A causes the support part 3 to pivot around the radius lip protrusion 24a on the base part 2, this causing the position of the fencing material 9 to be adjusted horizontally. Insertion of a packer at point B allows a vertical adjustment. A packer could also be positioned at other points if desired by the user. As can be seen, the fencing material 9's position relative to the support part 3 and clamping part 4 is not altered by the insertion of the packers. The base of the fencing material 9 abuts the substantially horizontal portion 40 of the of the support part 3 both before and after adjustment. Accordingly, there is no loss in stability as a result of the adjustment of the position of the fencing material 9. Further, it is clear that the packers are obscured from view when in place. The packers are preferably formed from aluminium, but may be formed from another material as would be known by a skilled person. Conveniently, the adjustment of the position of the fencing material 9 by insertion or removal of packers may be carried out at any time after the fencing material 9 has been mounted. The packers used can be of any desired thickness and length as needed by the user and are best seen with reference to Figure 6.

As will be clear, use of the terms “vertical” and “horizontal” are intended to indicate movement in relation to the support 1 as seen in Figure 3 for example. In use, horizontal movement will allow the fencing material 9 to be adjusted to create as straight as line as possible with the fence created where the surface is not conducive to this. A similar effect is created with the vertical movement of the fencing material 9.

Figure 4 shows the support part 3 having an elliptical hole 31 through which the bolt 10a of fastening means 10 passes. This elliptical shape allows for the position of the fencing material 9 to be adjusted vertically. This elliptical shape allowing the bolt 10a to hold the support 1 together, and the fencing material 9 in place, while at the same time being adjustable upwards and downwards with the fencing material 9 through which it is screwed by means of the packing. Also shown is hole 35 in the support part 3 through which the screw 14 passes.
Figure 5 shows clamping part 4 also having an elliptical hole 41. This lines up with the elliptical hole 31 in support part 3 and bolt 10a passes through them. These holes 31, 41, as discussed with reference to Figure 4, are elliptical in order to allow vertical adjustability of the position of the fencing material 9 such that the position of the fencing material 9 can be adjusted relative to the base part 2 and the surface without moving relative to the support part 3 and clamping part 4.

If desired a protective strip may be placed along the side of the support part 3 that is against the fencing material 9, the side of the clamping part 4 that is against the fencing material 9, and along the surface of the support part 3 below the fencing material 9. This protective strip is held tightly against the fencing material 9 when the support 1 is held in place by tightening the fastening means 10. This prevents the fencing material 9, e.g. glass, touching the material that the support 1 is constructed from. This allows firmer contact, prevents damage and also reduces rattling.

With reference to Figure 1 and Figure 3, in use, in a preferred embodiment, base part 2 is attached to a surface using attachment means 12, which passes through a washer 13 and through the floor 29 of the base part 2 and screws into a surface such as a deck. The support part 3 is then attached to the base part 2 by means of screw 14. The nut 21 is slid along the channel 22 and the fencing material 9 placed on the support part 3. The clamping part 4 is then placed on the support part 3. The lip 42 of the clamping part would be placed in either channel 32 or 33 depending on the thickness of the fencing material. A hole in the fencing material 9 is aligned with the hole in the clamping part 41 and the hole in the support part 31 and the bolt 10a passed therethrough and into the nut 21. The position of the fencing material 9 can then be adjusted horizontally using a packer in position A or vertically using a packer in position B depending on the situation. There may be more than one packer inserted in either position A or B, depending on the adjustment requirements. Insertion of packer(s) in position A will cause the support part 3 to rotate around the radius protrusion 24a on lip 24, which is part of base part 2. Finally the fastening means 10 is tightened and holds the support 1 and the fencing material 9 in place.
Figure 6 shows an embodiment of the invention wherein a slight variation has been made to the fence support 1. In this embodiment the screw 14 passes through the lower portion of the support part 3 and then through a clamp plate 38. The lip 25 of the base part 2 sits between the clamp plate 38 and the lower portion of the support part 3 but the screw 14 does not pass through it. A packer 39 is placed between the lower portion of the support part 3 and the lip 25 of the base part 2. This allows for vertical adjustment of the position of the fencing material 9. By changing the size of the packer 39 the support part 3 is lifted vertically relative to the base part 2, and accordingly the fencing material 9 is lifted relative to the base part 2. In this embodiment the internal packer 39, again, allows for adjustment of the position of the fencing material 9 relative to the base part 2 and the surface, but not relative to the support part 3 and the clamping part 4. The base of the fencing material 9 abuts the substantially horizontal portion of the support part 40 both before and after adjustment, this resulting in the desired maintenance of stability. In this embodiment a fastening means 36, in this Figure a screw, holds the clamping part 4 and the support part 3 together in order to further ensure that the support 1 and the fencing material 9 is stable. Figure 6 also shows an alternative means of attaching the support 1 to a surface. In this Figure the optional attachment means 37 is shown. This optional attachment means 37 allows for the support 1 to be attached to a surface such that the side of the support 1 is against the surface. In the embodiment shown in this Figure, this is achieved by means of a bolt 37a passing through a hole in the base part 2 and a hole in the cover 7b (both holes obscured from view) and screwing into a surface (surface not shown).

The invention may also be seen to include a "kit-of-parts" including at least the base part 2, the support part 3, the clamping part 4 and at least one packer. Preferably on or more of the covers 7a and 7b, fastening means 10, attachment means 12 and a set of packers will also be included. It is also possible that the support 1 could be provided with a suitable fencing material as well.

The support 1 can be made of any suitable material as would be known to a skilled person. Preferably this will be aluminium or other suitable metal material but wood or plastics material could also be used if the materials met the requisite building codes.

The foregoing describes the invention including a preferred form thereof. Alterations and modifications as will be readily apparent to a person skilled in this particular art are intended to be included within the spirit and scope of the invention.
WHAT WE CLAIM IS

1. A support for a fencing material, the support including a base part, a support part, and a clamping part, the support part being adapted to support the fencing material and being adapted to act with the clamping part to clamp the fencing material in the desired position within the support, the support also allowing for adjustment of the position of the fencing material by means of internal packers within the support.

2. A support according to claim 1 wherein the position of the fencing material relative to the support part and clamping part does not alter as a result of the adjustment of the fencing material.

3. The support according to claim 1 or claim 2 wherein the base of the fencing material abuts a substantially horizontal portion of the support part.

4. The support according to any one of the preceding claims wherein the base part is adapted to include an attachment means to attach the support to a surface.

5. The support according to any one of the preceding claims wherein the packers are formed from aluminium.

6. The support according to any one of the preceding claims wherein the support allows for adjustment of the fencing material in the vertical and/or horizontal direction.

7. The support according to any one of the preceding claims wherein the adjustment may be carried out after the fencing material has been mounted.

8. The support according to any one of the preceding claims wherein the support is substantially formed from aluminium.

9. The support according to any one of the preceding claims wherein the support is releasably attachable to a surface, such as deck or floor.
10. The support according to claim 9 wherein the support is attached to the surface by a bolt or clamp.

11. The support according to any one of the preceding claims wherein the fencing material is glass or other suitable transparent material.

12. The support according to any one of the preceding claims wherein the base part has a hole through it such that it may be bolted to a surface.

13. The support according to any one of the preceding claims wherein there is a fastening means adapted to fasten the base part, the support part and the clamping part together.

14. The support according to claim 13 wherein the fencing material is adapted to allow the fastening means to fasten the fencing material to at least the support part and the clamping part.

15. The support according to claim 13 or claim 14, wherein the fastening means includes a nut and bolt arrangement.

16. The support according to claim 15, wherein the nut is slidably held in a channel in the base part and is adapted to receive the bolt, the bolt passing through the support part, the clamping part and the fencing material, to fasten the support and fencing material together, in use.

17. The support according to any one of claims 13 to 16, wherein the fastening means allows for movement of the fencing material in the vertical direction.

18. The support according to claim 15 or claim 16, or claim 17 when dependent on claim 15 or claim 16, wherein the bolt passes through the support part and the clamping part via elliptical holes.

19. The support according to any one of the preceding claims wherein the support includes a cover.
20. The support according to any one of the preceding claims wherein at least one packer is positioned between the base part and the support part to allow for horizontal adjustment of the position of the fencing material.

21. The support according to any one of the preceding claims wherein at least one packer is positioned beneath the support part to allow for vertical adjustment of the position of the fencing material.

22. The support according to any one of the preceding claims wherein at least one packer is positioned between the base part and the support part to allow for vertical adjustment of the position of the fencing material.

23. A method for attaching a fencing material to a surface using the support according to claim 1, the method including the steps of:
   a. attaching the base part to the surface;
   b. positioning the support part on the base part;
   c. positioning the fencing material on the support part;
   d. positioning the clamping part on the base part and against the fencing material;
   e. fastening the base part, the support part, the fencing material, and the clamping part together;
   f. adjusting the position of the support part and the clamping part, and accordingly the fencing material in the support, as desired using internal packers as desired.

24. A kit-of-parts for creating a support, the kit including a base part, support part, clamping part and at least one packer.

25. A support substantially as herein described with reference to Figures 1 – 5 or Figure 6.

DATED this 27th day of March 2007
JURALCO ALUMINIUM BUILDING PRODUCTS LIMITED
By its Attorneys
BALDWIN