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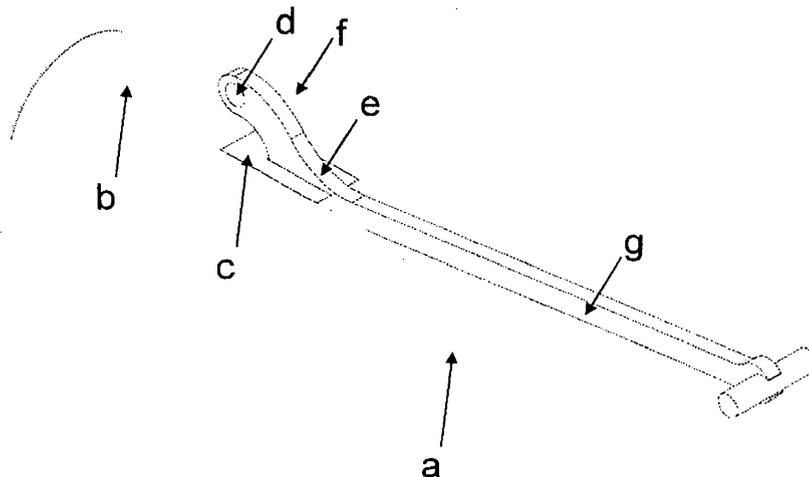
(54) **Anchor system for a fabric**

(57) The present invention is directed to an anchor system for a fabric, the system comprising:

- a profile (a) having a groove (b) with a sliding block (c) slidably fixed in the groove;
- an anchoring point (d) for anchoring the fabric to the system;
- a clamping lever for clamping the sliding block in the groove, the lever having a fulcrum (e), a load arm (f) and

an effort arm (g);

**characterized in that** the anchoring point is located at the load arm (f) of the clamping lever. Additionally the present invention is directed to the use of such anchor system in umbrella or sunbrella equipment, shade sail equipment, wind screen equipment, tent equipment, boating equipment, decoration equipment, stage set equipment, and partitioning screen equipment.



**FIG 1**

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## Description

### FIELD OF THE INVENTION

**[0001]** The present invention relates to an anchor system for a fabric. Further, it relates to the use of such system in umbrella and sunbrella equipment, shade sail equipment, wind screen equipment, tent equipment, boating or surfing equipment, decoration equipment, stage set equipment, and partitioning screen equipment.

### BACKGROUND OF THE INVENTION

**[0002]** Anchoring systems for a fabric are used in a wide variety of applications, such as in umbrellas, sunbrellas, shade sails or wind screens for protection against rain, sun or wind, in tent equipment, in boating or surfing equipment for anchoring a fabric, in decoration equipment, in stage set equipment, and in partitioning screen equipment for separating two parts of a room.

**[0003]** Generally, such anchoring systems may be very simple, for example a hook for connecting a rope anchored to the fabric. The fabric may also be anchored directly to the hook in case the it is provided with rings or holes. The hook may be for example a screw eye anchored to a wall or a tree, or simply a tent peg pushed into the ground.

**[0004]** In order to be capable of anchoring a fabric in case anchoring points are not present, more complex anchoring systems provide rails to be fixed to a wall or poles with a shaped groove wherein a metallic, plastic or wooden sliding block matching with the groove is slidably fixed. This sliding block comprises then an anchoring point in the form of a hook or ring to anchor a rope connected to the fabric. These sliding blocks are kept at a desired position in the groove by a clamping system, resulting in horizontal and/or vertical flexibility in choosing the anchoring points location relative to the rail or the pole.

**[0005]** The clamping system comprises usually a screw and nut or wing nut, which unfortunately can get lost easily when mounting or during periods the fabric and its anchoring system is stored.

**[0006]** Further, mounting such anchoring systems usually requires additional equipment, such as a spanner and the like.

**[0007]** Still another problem of using screw and nut systems is that every time one seeks to change the position of the sliding blocks to change the fabric's position, the nuts have to be released and tightened again.

**[0008]** In attempt to solve the above problems, quick release skewers are used. However, such skewers require a relatively high force to move them in locking position or again in release position.

**[0009]** A general problem with the above conventional anchor systems is that usually a ladder or stool is required to allow mounting the anchor system at relatively high position on the wall or pole or to allow changing the sliding

block position, resulting in ergonomic inefficiency and often also in unsafe situations.

**[0010]** Another general problem with the above conventional anchor systems is that, since the fabric is anchored to the sliding block, thereby generating a pulling force on that sliding block, a tension adjuster is required between anchor system and fabric allowing diminishing the pulling force on the sliding block before changing its position in the groove.

**[0011]** From the above, there is a clear need for an anchoring system which is simple and can easily, quickly, without additional equipment, and with ergonomic efficiency be mounted, while achieving reliable and safe anchoring of the fabric.

**[0012]** Another object of the present invention is that anchoring the fabric can be achieved without requiring a relatively high force from the user.

**[0013]** Further another object of the invention is to provide an anchoring system for a fabric that provides horizontal and/or vertical flexibility in choosing the location of the anchoring points of the fabric relative to the rail or the pole.

**[0014]** Another object of the invention is to provide an anchoring system for a fabric that can be safely mounted by a person standing on the ground without the need of using cumbersome and dangerous ladders or stools.

**[0015]** Still another object of the invention is to provide an anchoring system for a fabric wherein it is not needed anymore to provide tension adjusters or to diminish the pulling force of the fabric on the sliding blocks before changing its position.

**[0016]** A still further object of the invention is to provide an anchoring system that is economical to manufacture.

**[0017]** The present invention meets the above objects by providing an anchor system for a fabric having a clamping lever for clamping the sliding block in the groove at a desired position, wherein the anchoring point for anchoring the fabric is located at the load arm of the clamping lever.

### SUMMARY OF THE INVENTION

**[0018]** The present invention is directed to an anchor system for a fabric, the system comprising:

- a profile having a groove with a sliding block slidably fixed in the groove;
- an anchoring point for anchoring the fabric to the system;
- a clamping lever for clamping the sliding block in the groove, the lever having a fulcrum, a load arm and an effort arm;

characterized in that the anchoring point is located at the load arm of the clamping lever.

**[0019]** Additionally the present invention is directed to the use of such anchor system in umbrella or sunbrella equipment, shade sail equipment, wind screen equip-

ment, tent equipment, boating or surfing equipment, decoration equipment, stage set equipment, and partitioning screen equipment.

#### BRIEF DESCRIPTION OF THE DRAWINGS

##### [0020]

FIG 1 illustrates an embodiment of an anchor system in accordance with the present invention.

FIG 2 illustrates a clamping lever used in a preferred embodiment in accordance with the present invention.

#### DESCRIPTION OF THE INVENTION

[0021] According to a first embodiment of the present invention and as illustrated in FIG 1, an anchor system is provided comprising:

- a profile (a) having a groove (b) with a sliding block (c) slidably fixed in the groove;
- an anchoring point (d) for anchoring the fabric to the system;
- a clamping lever for clamping the sliding block in the groove, the lever having a fulcrum (e), a load arm (f) and an effort arm (g);

characterized in that the anchoring point is located at the load arm of the clamping lever.

[0022] Since the anchoring point is located at the load arm of the clamping lever, the lever may be moved in locking position without using relatively high force or even without using any force. The fabric continuously generates a pulling force to the load arm of the clamping lever such that upon slightly pushing the effort arm or even just upon releasing it, the lever is moved into locking position.

[0023] Consequently, such anchor system is simple in use and can easily, quickly, without additional equipment, and with ergonomic efficiency be mounted, while achieving reliable and safe anchoring of the fabric.

[0024] A further advantage is that such anchor system provides horizontal and/or vertical flexibility in choosing the location of the anchoring points of the fabric relative to the profile. Indeed, the position of the sliding block may be changed very easily. It may be sufficient to move the lever slightly in release position to release the sliding block in the groove and to slide it into another position. Upon slightly pushing then the effort arm again in locking direction of even just upon releasing it, the sliding block may be clamped in the groove again.

[0025] Still another advantage is that it is not needed anymore to provide tension adjusters to allow diminishing the pulling force of the fabric on the sliding blocks before changing its position. Indeed, since the fabric is anchored at the load arm of the clamping lever, the pulling force of the fabric may easily be defeated by moving the effort

arm slightly into releasing position.

[0026] The clamping lever may be any lever suitable for clamping the sliding block at a desired position in the groove of the profile.

5 [0027] The lever fulcrum may be pivotally fixed to the profile and/or to the sliding block. In case the lever fulcrum is fixed to the sliding block only, manufacturing may be easier.

10 [0028] The effort arm may have any length, but may be sufficiently long such that a fabric can be safely mounted by a person standing on the ground without the need of using cumbersome and dangerous ladders or stools.

[0029] In an embodiment in accordance with the present invention, an anchor system for a fabric may be provided, wherein the groove has an inner groove surface, wherein the clamping lever load arm is fixed to the sliding block, and wherein the clamping lever fulcrum is pivotally and slidably fixed into the groove and has a protrusion pressing against the inner groove surface upon moving the lever into clamping position.

20 [0030] In a preferred embodiment in accordance with the present invention, an anchor system for a fabric may be provided, wherein the groove has an inner groove surface, and wherein the clamping lever fulcrum is pivotally fixed to the sliding block and has a protrusion pressing against the inner groove surface upon moving the lever into clamping position. A clamping lever with protrusion (h) as used in the latter embodiment is illustrated in FIG 2.

30 [0031] In a further embodiment, an anchor system in accordance with the present invention may further comprise a tension adjuster placed between the anchoring point and the fabric for increasing the pulling force of the fabric to the load arm of the lever and to increase the reliability of clamping.

35 [0032] In accordance with the present invention, the profile may be any rigid profile, or any profile which is flexible, but sufficiently rigid for holding the sliding block in the groove. Preferably, the profile may be a rail, a pole or a wall bracket, and/or may be collapsible for easier transport and storage.

40 [0033] Further, the profile, sliding block and clamping lever may be made of any material suitable for using in anchor systems in accordance with the present invention. Preferably, they may be made of aluminum, stainless steel, plastics, composite materials, or combinations thereof. These materials have the advantage that they can be made lightweight and rustproof.

45 [0034] Anchor systems in accordance with present invention may be used in umbrella or sunbrella equipment, shade sail equipment, wind screen equipment, tent equipment, boating or surfing equipment, decoration equipment, stage set equipment, and partitioning screen equipment.

50 [0035] In a further embodiment an assembly is provided comprising a fabric and one or more anchor systems in accordance with the present invention. Preferably, such assembly may have as many anchor systems as

the fabric has anchoring means.

**[0036]** The fabric may be any material used for the above mentioned applications. Preferably it may be made of canvas, cloth, or all kinds of natural or synthetic fibers, such as acrylic, polyester, textylene, polypropylene and nylon, or a combination thereof. Even plastic foil may be used.

**[0037]** The fabric may have any form and size and may have one or more anchoring means. Such anchoring means may be any means suitable for anchoring to the anchoring points, such as anchoring holes, rings or ropes, or a combination thereof.

in umbrella or sunbrella equipment, shade sail equipment, wind screen equipment, tent equipment, boating or surfing equipment, decoration equipment, stage set equipment, and partitioning screen equipment.

## Claims

1. An anchor system for a fabric, the system comprising:
  - a profile having a groove with a sliding block slidably fixed in the groove;
  - an anchoring point for anchoring the fabric to the system;
  - a clamping lever for clamping the sliding block in the groove, the lever having a fulcrum, a load arm and an effort arm;

**characterized in that** the anchoring point is located at the load arm of the clamping lever.
2. An anchor system for a fabric according to claim 1, wherein the groove has an inner groove surface, wherein the clamping lever load arm is fixed to the sliding block, and wherein the clamping lever fulcrum is pivotally and slidably fixed into the groove and has a protrusion pressing against the inner groove surface upon moving the lever into clamping position.
3. An anchor system for a fabric according to claim 1, wherein the groove has an inner groove surface, and wherein the clamping lever fulcrum is pivotally fixed to the sliding block and has a protrusion pressing against the inner groove surface upon moving the lever into clamping position.
4. An anchor system for a fabric according to claims 1 to 3 wherein a tension adjuster is placed between the anchoring point and the fabric.
5. An anchor system for a fabric according to any of the above claims wherein the profile is a rail, a pole or a wall bracket.
6. An assembly comprising a fabric and one or more anchor systems according to any of the above claims.
7. Use of the anchor system according to claims 1 to 5

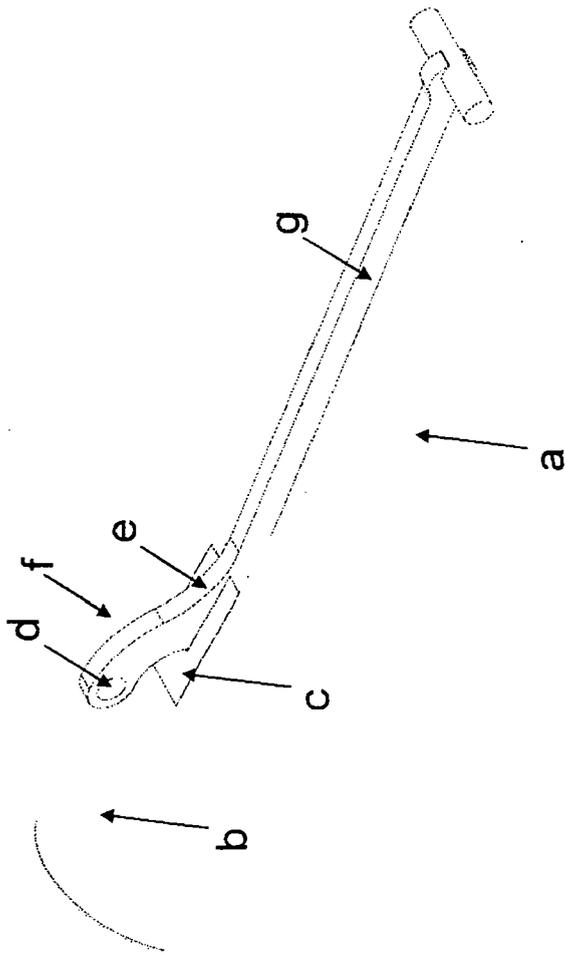


FIG 1

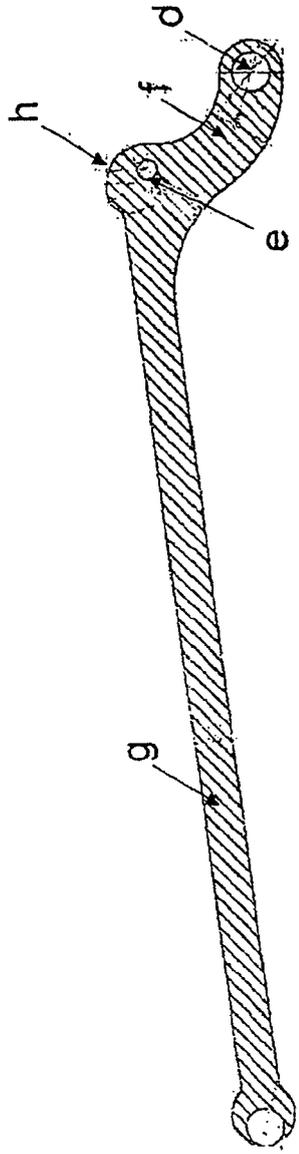


FIG 2



Europäisches  
Patentamt  
European  
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Office européen  
des brevets

## EUROPEAN SEARCH REPORT

Application Number  
EP 09 01 5778

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 3 928 897 A (TOMBU GERARD J) 30 December 1975 (1975-12-30) * column 1, line 54 - column 2, line 63; figures 1-5 *	1-7	INV. E04H15/64 A45B23/00 F16B5/06
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A	----- US 2007/256800 A1 (ARMSTRONG LAURENCE P [US]) 8 November 2007 (2007-11-08) * page 2, right-hand column, paragraph 42 - page 3, right-hand column, paragraph 52; figures 3B,6-11C *	1,4-7	
A	----- DE 25 34 901 A1 (HUENNEBECK GMBH) 30 June 1977 (1977-06-30) * page 3, line 8 - page 4, line 26; figure * -----	1,4-7	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			E04H A45B F16B E04F E04B B44C B60J
Place of search		Date of completion of the search	Examiner
Munich		8 February 2011	Stefanescu, Radu
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		& : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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