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Quick Display Device with LED Spot Lights

Technical Field

The invention relates to the technical field of display device, in particular to a quick display device with LED spot lights.

Background

With the rapid development of various simple display racks on the market, various simply and quickly-built display racks can be seen everywhere, but most of them have no supplementary lighting units or light sources. These display racks have the common defects that they have no light source systems, not striking enough, and they cannot realize the effect of display and promotion in a relatively dark environment. Therefore, those skilled in the art provide a quick display device with LED spot lights to solve the problems as presented in the background above.

Summary of the Invention

The invention aims to provide a quick display device with LED spot lights, which can solve the problems as presented in the background above.

In order to achieve this purpose, the invention provides the following technical solution:

A quick display device with LED spot lights, comprising a base, wherein, a lighting system is arranged at the top side of the base, the lighting system may be installed on the surface of the base or embedded in the top side of the base, the lighting system comprises a light bar, several through holes are formed in the top side of the base on both ends, brace rods are clamped in the through holes, the brace rods are made of mutually socketed tubes, the brace rods include several vertical bars and a top bar, the vertical bars are connected by connecting lines to prevent messy assembly, and the upper end of the vertical bar is inserted at the lower end of the top bar, the vertical bar, the base and the top rod together form a rectangular frame, and a display poster is supported by the brace rods. Fixing lugs are fixed inside the lowest end of the brace rods and the

corner of the pushing rod, springs are clamped on the fixing lugs, and hooks are fixed at both ends of each spring, which are convenient for fixing the display poster and brace rods. The base is fixed on the ground, the brace rods are socketed, and the display poster is fixed by the springs, so as to complete the installation of the display device.

5 As a further solution of the invention, the base is an internally hollow shell, the surface of the shell is a water-injected blister base, and the shell is made of materials such as metal or wood.

As a much further solution of the invention, one or several bars may be arranged, the light bar is the naked light bar without an optical effect increased (light emitting angle in original state), or the bar with a primary or secondary optical effect increased, and the dispensing process or lenses are added for the primary or secondary optical effect.

As a much further solution of the invention, T-shaped fittings are arranged at the lower side of the brace rods, the brace rods penetrate the middle of the T-shaped fittings, and the fixing lugs are fixed at the top side of the T-shaped fittings on both ends. The joint display can be realized for two display posters on the device via the T-shaped fittings, so as to improve the flexibility in use.

As a much further solution of the invention, two sets of brace rods are arranged when four through holes are arranged in the base, several adjusting fittings are clamped between different brace rods after the brace rods are assembled, the adjusting fittings have two sheet plastic blocks which are nested together, bolts are connected in a rotatable way at the nested portion, and snap joints are hinged at the left and right ends of the adjusting fittings. The adjusting fittings are clamped on the brace rods through the snap joints, to achieve the fixation of the angle of the brace rods, and the brace rods can be adjusted into the opening status in a shape of rectangle, triangle, trapezoid, etc. so as to improve the practicability.

25 As a much further solution of the invention, after the brace rods are arranged in two rows,

the gaps at the side and the top may be untreated or closed, a supporting plate is needed when the gap is closed, the supporting plate comprises a middle strip block, an elastic cloth and snap joints, a slot is formed in the position of the middle strip block facing the pushing rod, and a light bar or a light curtain is clamped in the slot, to increase the light effect.

5 As a much further solution of the invention, the light curtain may be naked lights, lights with optical lenses, lights with flexible printed circuits, or lights with flexible printed circuits and integral lenses, to increase the display effect.

As a much further solution of the invention, an external or built-in adapter or a battery is adopted for supplying power to the light source of the display device.

10 Compared with the prior art, the invention has the following beneficial effects:

1. The invention is built as easily as the traditional display rack.

2. The invention has the light source with LED light bars, to increase the display effect, and work well in a dark environment.

15 3. There are multiple light source installation methods. Various brightness requirements can be met.

4. The invention features secure structure, quick assembly, simple storage, and strong applicability and practicability, applicable to popularization.

Brief Description of the Drawings

20 FIG. 1 is the structural view of the assembly method 1 of the quick display device with LED spot lights.

FIG. 2 is the structural view of the assembly method 2 of the quick display device with LED spot lights.

FIG. 3 is the structural view of the T-shaped fitting of the quick display device with LED spot lights.

FIG. 4 is the structure view of the adjusting fitting of the quick display device with LED spot lights.

FIG. 5 is the structural view of the assembly method 4 of the quick display device with LED spot lights.

5 FIG. 6 is the structural view of the supporting plate of the quick display device with LED spot lights.

FIG. 7 is the structure view of the different bases of the quick display device with LED spot lights.

10 FIG. 8 is the structure view of the different lighting systems of the quick display device with LED spot lights.

FIG. 9 is the structural view of the different light curtains of the quick display device with LED spot lights.

Notation in the figures: 1. base; 2. lighting system; 3. light bar; 4. brace rod; 5. T-shaped fitting; 6. adjusting fitting; 7. snap joint; 8. supporting plate; 9. light curtain; 10. spring; 11. fixing lug; 12. connecting lines; 13. vertical bars ; 14. top bar.

Detailed Description of the Preferred Embodiments

The technical solution in the embodiments of the invention is described clearly and completely below in combination with the drawings in the embodiments of the invention. Obviously, the embodiments described are only a part but not the whole of the embodiments of the invention. Based on the embodiments of the invention, all other embodiments obtained by those skilled in the art without any creative work are within the protection scope of the invention.

As shown in FIG. 1-9, a quick display device with LED spot lights is provided in the embodiments of the invention, comprising a base 1, wherein, the base 1 is an internally hollow shell, the surface of the shell is a water-injected blister base, and the shell is made of materials such as metal or wood; a lighting system 2 is arranged at the top side of the base 1, the lighting

system 2 may be installed on the surface of the base 1 or embedded in the top side of the base 1, and the lighting system 2 comprises a light bar 3; one or several light bars may be arranged, the light bar is the naked light bar without an optical effect increased (light emitting angle in original state), or the bar with a primary or secondary optical effect increased, and the dispensing process or lenses are added for the primary or secondary optical effect; several through holes are formed in the top side of the base 1 on both ends, brace rods 4 are clamped in the through holes, the brace rods 4 are made of mutually socketed tubes the brace rods 4 include several vertical bars 13 and a top bar 14, the vertical bars 13 are connected by connecting lines 12 to prevent messy assembly, and the upper end of the vertical bar 13 is inserted at the lower end of the top bar 14, the vertical bar 13, the base 1 and the top rod 14 together form a rectangular frame, and a display poster is supported by the brace rods 4. Fixing lugs 11 are fixed inside the lowest end of the brace rods 4 and the corner of the pushing rod, springs 10 are clamped on the fixing lugs 11, and hooks are fixed at both ends of each spring 10, which are convenient for fixing the display poster and brace rods 4. The base 1 is fixed on the ground, the brace rods 4 are socketed, and the display poster is fixed by the springs 10, so as to complete the installation of the display device;

T-shaped fittings 5 are arranged at the lower side of the brace rods 4, the brace rods 4 penetrate the middle of the T-shaped fittings 5, and the fixing lugs 11 are fixed at the top side of the T-shaped fittings 5 on both ends. The joint display can be realized for two display posters on the device via the T-shaped fittings 5, so as to improve the flexibility in use.

Two sets of brace rods 4 are arranged when four through holes are arranged in the base 1, several adjusting fittings 6 are clamped between different brace rods 4 after the brace rods 4 are assembled, the adjusting fittings 6 have two sheet plastic blocks which are nested together, bolts are connected in a rotatable way at the nested portion, and snap joints 7 are hinged at the left and right ends of the adjusting fittings 6. The adjusting fittings 6 are clamped on the brace rods 4 through the snap joints 7, to achieve the fixation of the angle of the brace rods 4, and the brace

rods 4 can be adjusted into the opening status in a shape of rectangle, triangle, trapezoid, etc. so as to improve the practicability.

After the brace rods 4 are arranged in two rows, the gaps at the side and the top may be untreated or closed, a supporting plate 8 is needed when the gap is closed, the supporting plate 8 comprises a middle strip block, an elastic cloth and snap joints 7, a slot is formed in the position of the middle strip block facing the pushing rod 4, and a light bar 3 or a light curtain 9 is clamped in the slot, to increase the light effect.

The light curtain may be naked lights, lights with optical lenses, lights with flexible printed circuits, or lights with flexible printed circuits and integral lenses, to increase the display effect.

An external or built-in adapter or a battery is adopted for supplying power to the light source of the display device.

The working principle of the invention is as follows: When in use, place the base 1 on a stable platform, directly use the base 1 or fill the base 1 with water to improve the stability of the base 1, and select different assembly methods according to the display poster;

(I) After the brace rods 4 are assembled, hang the poster by the springs 10 to display the poster (as shown in FIG. 1);

(II) Arrange the T-shaped fittings 5 on the brace rods 4, and connect the springs 10 through the fixing lugs 11 on the T-shaped fittings 5 to display two posters (as shown in FIG. 2);

(III) When two sets of brace rods 4 are inserted, adjust the brace rods 4 into a shape of rectangle, triangle, trapezoid, etc. to display the poster through the adjusting fittings 6. The opening is untreated (which is formed by adding the brace rods 4 based on the first assembly method);

(IV) Add the supporting plate 8 at the side based on the third assembly method, to achieve the purpose of sealing, and clamp the light bar 3 or light curtain 9 in the different positions of the supporting plate 8, so as to increase the display effect.

Finally, connect the adapter to the external power source or turn on the internal power source, so the installation of the device is completed.

The invention is built as easy as the traditional display rack. It has the light sources with LED light bars 3, to increase the display effect, and work well in a dark environment. There are multiple light source installation methods. Various brightness requirements can be met. The invention features secure structure, quick assembly, simple storage, and strong applicability and practicability, applicable to popularization.

The above are the detailed description of the preferred embodiments of the invention only, but the protection scope of the invention is not limited hereof. The equivalent substitutions or modifications made to the technical solution and inventive concept of the invention by those skilled in the art within the technical scope disclosed by the invention shall be covered in the protection scope of the invention.

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Claims

1. A quick display device with LED spot lights, comprising a base (1), characterized in that a lighting system (2) is arranged at the top side of the base (1), the lighting system (2) may be installed on the surface of the base (1) or embedded in the top side of the base (1), the lighting system (2) comprises a light bar (3), several through holes are formed in the top side of the base (1) on both ends, brace rods (4) are clamped in the through holes, the brace rods (4) are made of mutually socketed tubes, the brace rods (4) include several vertical bars (13) and a top bar (14), the vertical bars (13) are connected by connecting lines (12) and the upper end of the vertical bar (13) is inserted at the lower end of the top bar (14), the vertical rod (13), the base (1) and the top rod (14) together form a rectangular frame, and a display poster is supported by the brace rods, fixing lugs (11) are fixed inside the lowest end of the brace rods (4) and at the corner of the pushing rod, springs (10) are clamped on the fixing lugs (11), and hooks are fixed at both ends of each spring (10).

2. The quick display device with LED spot lights according to Claim 1, characterized in that the base (1) is an internally hollow shell, the surface of the shell is a water-injected blister base, and the shell is made of materials including but not limited to metal or wood; one or several light bars (3) may be arranged, T-shaped fittings (5) are arranged at the lower side of the brace rods (4), the brace rods (4) penetrate the middle of the T-shaped fittings (5), and the fixing lugs (11) are fixed at the top side of the T-shaped fittings (5) on both ends.

3. The quick display device with LED spot lights according to Claim 1, characterized in that two sets of brace rods (4) are arranged when four through holes are arranged in the base (1), several adjusting fittings are clamped between different brace rods (4), the adjusting fittings (6) have two sheet plastic blocks which are nested together, bolts are connected in a rotatable way at the nested portion, and snap joints (7) are hinged at the left and right ends of the adjusting fittings (6).

4. The quick display device with LED spot lights according to Claim 1, characterized in

Claims

that a supporting plate (8) is connected between the brace rods (4), the supporting plate (8) comprises a middle strip block, an elastic cloth and snap joints (7), a slot is formed in the position of the middle strip block facing the pushing rod (4), and a light bar (3) or a light curtain (9) is clamped in the slot; the light curtain (9) may be naked lights, lights with optical lenses, 5 lights with flexible printed circuits, or lights with flexible printed circuits and integral lenses.

5. The quick display device with LED spot lights according to Claims 1-4, characterized in that an external or built-in adapter or a battery is adopted for supplying power to the light source of the display device.

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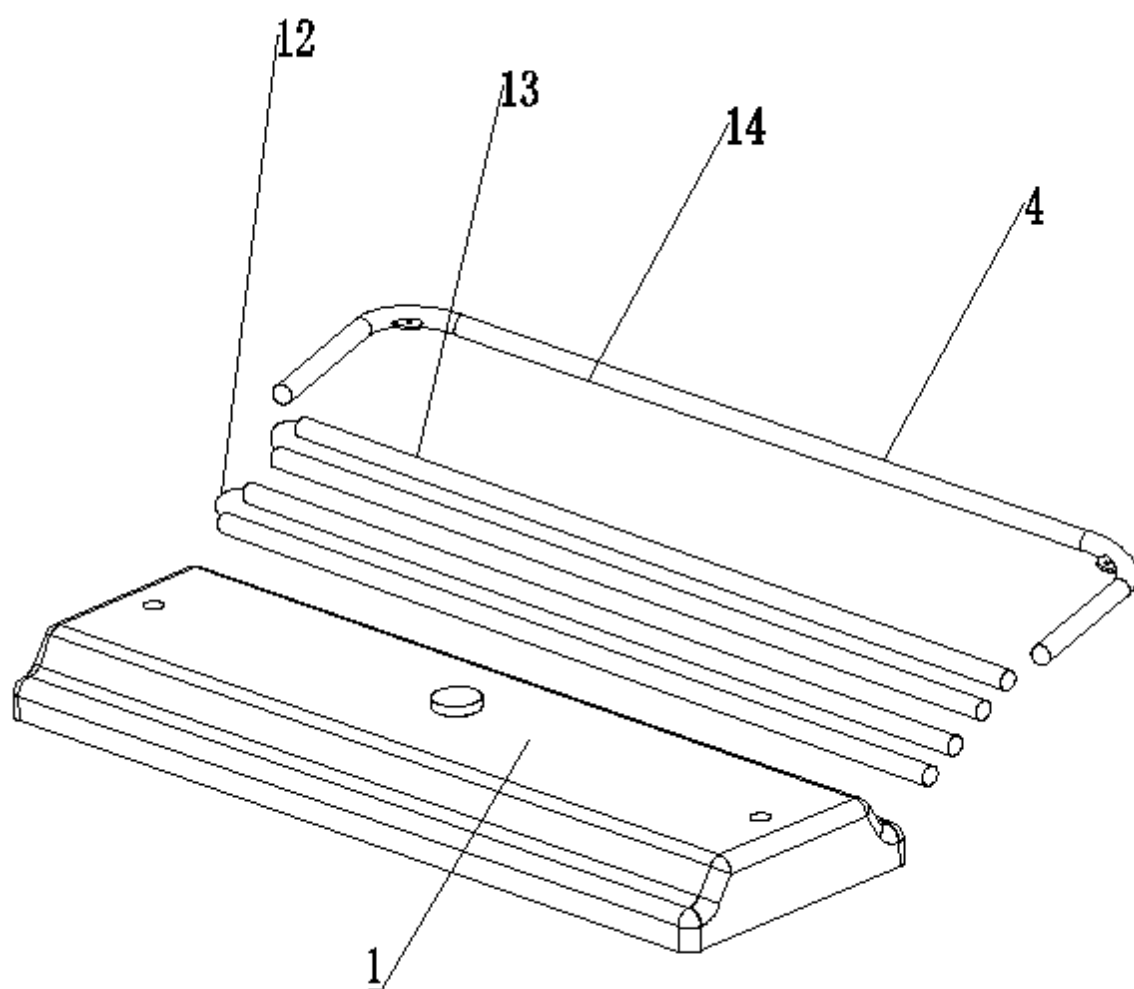


FIG.1

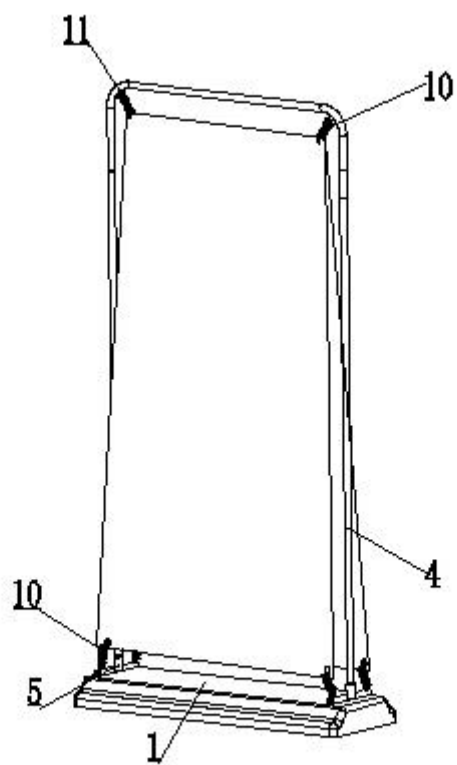


FIG. 2

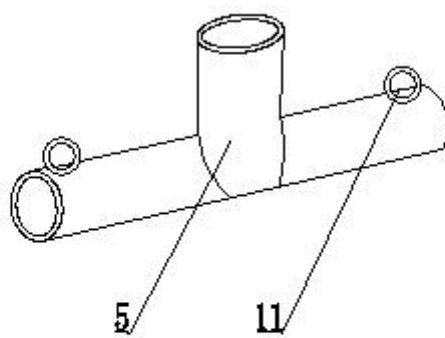


FIG. 3

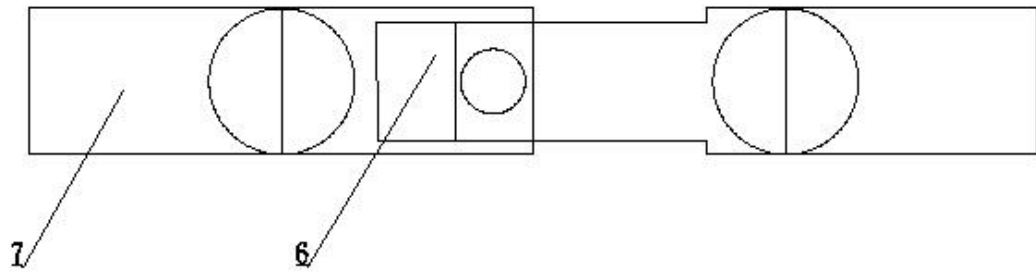


FIG. 4

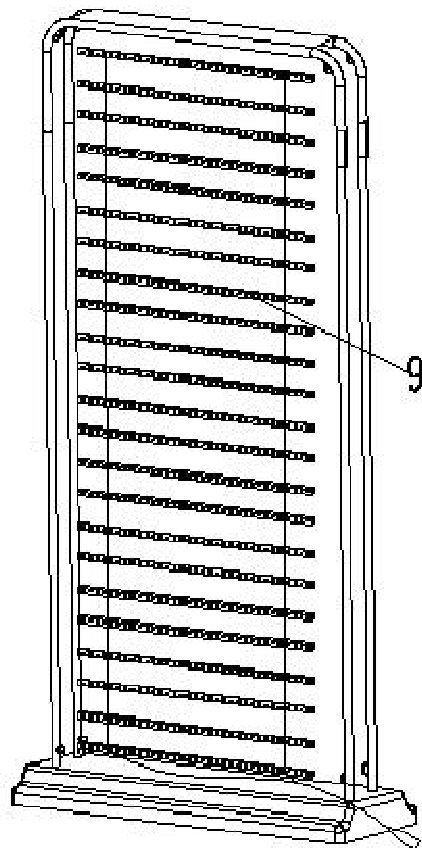


FIG. 5

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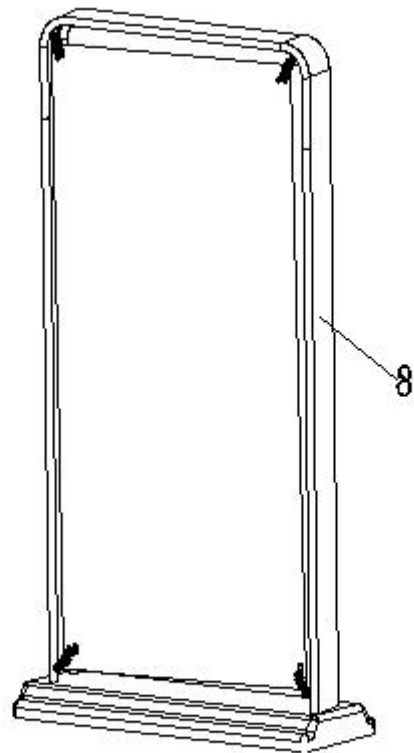


FIG. 6

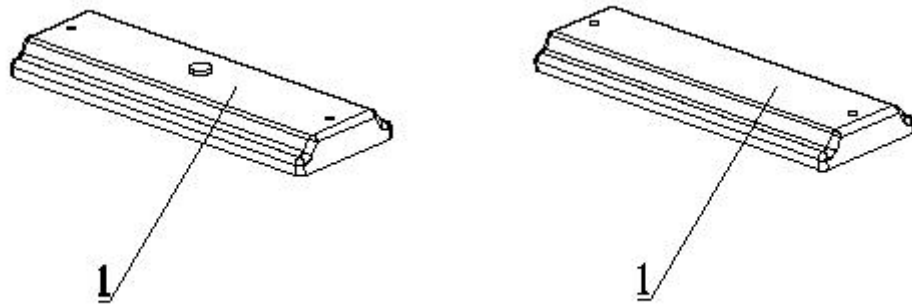


FIG. 7



FIG. 8

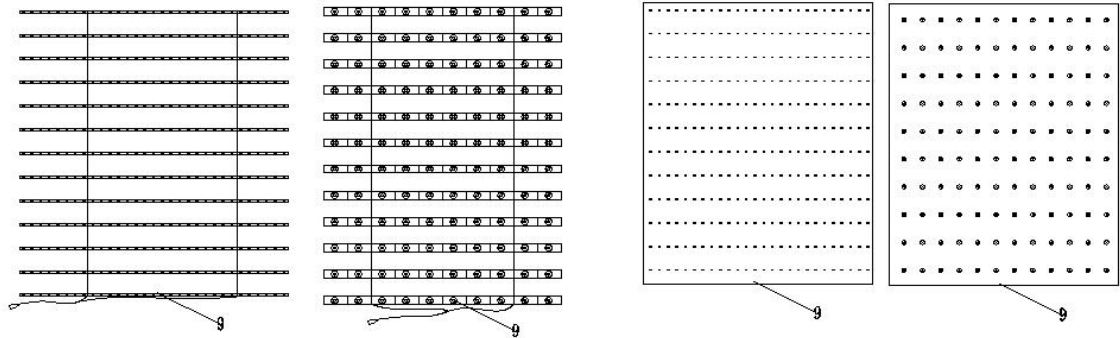


FIG. 9