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(54) **LAMP FOR USE IN A DISPLAY CABINET AND DISPLAY CABINET THEREOF**

LAMPE ZUR VERWENDUNG IN EINEM SCHAUKASTEN UND SCHAUKASTEN DAFÜR

LAMPE DESTINÉE À ÊTRE UTILISÉE DANS UNE VITRINE ET VITRINE ASSOCIÉE

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Description

FIELD OF THE TECHNOLOGY

[0001] The invention relates to the technical field of lighting equipment, in particular to a lamp used in a display cabinet and a display cabinet.

BACKGROUND

[0002] In order to solve the glare problem of the existing lamps, a line-shaped (linear) light source is used to replace the conventional point-like light source. The main procedure to implement such a configuration is as follows: an optical diffusion film is interspersed to the lampshade to form a line-shaped (linear) light source. The light of this kind of lamp passes through the lens, optical diffusion film and lampshade, resulting in a large loss of optical efficiency of the lamp. Optical efficiency may be only about 0.75. Another problem is that the light passes through the lens and then passes through the lampshade with a micro-convex lens structure. Although the optical efficiency of this kind of configuration is higher than that of the previous form, only a certain improvement can be achieved, as the optical efficiency will only be of the order of about 0.8. In this configuration, the light still passes through a two-layer structure, which cannot meet the actual demand for higher optical efficiency of lamps in display cabinets.

[0003] US 2021/048164 A1 discloses a lamp embodied as a line source lighting lamp according to the preamble of claim 1. The line source lighting lamp adopts a strip-shaped convex lens array that diffuses light from the point light sources only in the length direction of the lamp holder to form a line source. On a plane perpendicular to the length direction of a LED light fixture, a reflection wall may be provided on both sides of the point light source for reflecting the lateral light from the point light source to the light incident plane of the strip-shaped convex lens array. A diffuse reflector plate is not disclosed.

[0004] US 2009/207592 A1 discloses a display cabinet comprising at least one lamp for use in a display cabinet.

BRIEF SUMMARY THE TECHNOLOGY

[0005] It is an object of the present invention to provide a lamp for use in a display cabinet, which enables a higher optical efficiency to thereby overcome the aforementioned deficiencies of conventional lamps of low optical efficiency of the array-type for display cabinets.

[0006] This problem is solved by a lamp for use in a display cabinet as claimed in claim 1, and by a display cabinet as claimed in claim 11. Further advantageous embodiments are the subject-matter of the dependent claims.

[0007] A lamp for use in a display cabinet according to the present invention can meet the actual needs with an

efficient and low-cost configuration, and enables in particular a high optical efficiency for display cabinets.

[0008] A lamp for use in a display cabinet comprises: a bracket, arranged on a bottom plate of the display cabinet; a circuit board, provided on the bracket; a plurality of point-like light sources arranged on the circuit board at intervals along the length direction of the circuit board, preferably at equidistant intervals. A lens structure extends (is arranged) along the length direction of the circuit board and is disposed in the light output direction of the plurality of point-like light sources and is connected with the bracket to cover the plurality of point-like light sources. The lens structure comprises an integrally formed light distribution lens and a lens array for extending respective two adjacent point-like light sources of the plurality of point-like light sources to form a line (linear-shaped) light source. The lamp further comprises a first reflector provided on a first side of the lens structure and a second reflector provided on a second side of the lens structure opposite to the first side, each of the first and second reflector extending in the longitudinal direction, wherein the first reflector, the second reflector and the lens structure enclose an accommodating space accommodating the plurality of the point-like light sources.

[0009] According to the present invention, the first reflector is a diffuse reflector plate and the second reflector is a non-transparent lens integrally formed with the lens structure.

[0010] According to a further embodiment, the light distribution lens and the lens array are both convex lenses.

[0011] According to a further embodiment, the bracket is provided with a support plate extending toward the circuit board, wherein the first reflector is attached to the support plate.

[0012] According to a further embodiment, the first reflector is formed integrally with the lens structure and the first reflector is provided with a connecting portion connected with the bracket and a reflection portion extending toward the plurality of point-like light sources.

[0013] According to a further embodiment, the bracket is provided with a plug-in board extending toward the lens structure, and one end of the first reflector is inserted with the plug-in board, and the other end abuts on the circuit board.

[0014] A display cabinet according to the present invention comprises at least one lamp as described above and hereinafter in more details.

[0015] The technical scheme of the present invention has the following advantages:

1. In the lamp for use in a display cabinet provided by the present invention, the light emitted by the plurality of point-like light sources directly passes through the lens structure, so that the two adjacent point-like light sources are elongated by the lens array to form a line (linear) light source, and because the output light only pass through one layer of the

lens structure, the optical efficiency can be enhanced and the lighting needs of display cabinets can be easily met.

2. The lamp for use in a display cabinet provided by the present invention is provided with a reflection structure on the side of the lens structure, which extends along the length direction. The reflection structure can further utilize the light emitted by the plurality of point-like light sources that does not enter (is not received by) the lens structure, and then the light is emitted through the lens structure after reflection, so as to guide this part of the light to the near end of the irradiation surface and improve the overall light efficiency of the lamp.

3. In the lamp for use in a display cabinet provided by the present invention, the reflection structure includes a first reflector and a second reflector respectively arranged on opposite sides of the lens structure. Thus, the light emitted from the plurality of point-like light sources that does not illuminate to both sides of the lens structure can be utilized to the maximum extent to further improve the light efficiency.

4. In the lamp for use in a display cabinet provided by the present invention, the first reflector is a diffuse reflector, which can reflect the light not received by the lens structure at multiple angles and increase the irradiation area; the second reflector is a non-transparent lens integrally formed with the lens structure, which reduces the assembly process, reduces the assembly cost and improves the assembly efficiency, thereby providing a low-cost and efficient set-up.

5. In the lamp for use in a display cabinet provided by the present invention, the first reflector has various forms, which can be flexibly selected according to actual needs.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] In order to more clearly illustrate the specific embodiments of the present invention or the technical solutions as compared to the prior art, the following will briefly introduce the accompanying drawings that need to be used in the description of the specific embodiments or the prior art. Obviously, the following descriptions of the accompanying drawings are some embodiments of the present invention. For those of ordinary skill in the art, other drawings can also be obtained based on these drawings without creative efforts.

Fig.1 is a schematic diagram of a lamp for use in a display cabinet provided by the present invention;

Fig.2 is a schematic cross-sectional view of the lamp shown in the Fig.1 perpendicular to the length direction;

Fig.3 is a schematic cross-sectional view of a lamp for use in a display cabinet according to a second embodiment of the present invention;

Fig.4 is a schematic cross-sectional view of a lamp for use in a display cabinet according to a third embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0017] The technical solutions of the present invention will be clearly and completely described below with reference to the accompanying drawings. Obviously, the described embodiments are a part of the embodiments of the present invention, and the present invention shall not be construed to be delimited to only these specific embodiments.

[0018] As shown in Figs. 1 and 2, a specific embodiment of the lamp for use in a display cabinet includes a bracket 1 configured to be arranged horizontally on the bottom plate of a display cabinet (not shown). In particular, the bracket 1 may include a more or less flat, planar surface for mounting on such a bottom plate of a display cabinet. The lamp further comprises a circuit board 2 and a lens structure arranged on the bracket 1, and a plurality of point-like light sources 3 arranged on the circuit board 2 at intervals, preferably at equidistant intervals, along the length direction of the circuit board 2.

[0019] The bracket 1 is integrally processed and preferably made of aluminum. The bracket 1 includes a base 4 for fixing with the bottom plate of the display cabinet, a support portion 5 for installing the circuit board 2, and a first installation portion 6 and a second installation portion 7 for connecting with the two ends of the lens structure respectively. The base 4 preferably has a flat, planar surface, and is configured to match the bottom plate of the display cabinet. The support portion 5 may be formed as an integrally formed boss or protrusion, and preferably includes a groove for accommodating an end surface of the circuit board 2 for mounting. The circuit board 2 may be tightly accommodated in such a groove. Moreover, the first installation portion 6 and the second installation portion 7 are preferably grooves integrally formed with the bracket. More specifically, the first and second installation portion 6, 7 may be configured to accommodate a respective end surface of the lens structure in a form-fitting manner, in particular by snap-fitting.

[0020] The circuit board 2 is a printed circuit board mounted on the support portion 5 of the bracket 1. Each point-like light source 3 may be an LED chip.

[0021] The lens structure extends along the length direction of the circuit board 2 and is disposed in the light output direction of the point-like light sources 3 and connected with the bracket 1 to cover a plurality of the point-like light sources 3, thereby reducing the lampshade setup and volume. The lens structure includes

an integrally formed light distribution lens 8 of an appropriate shape for light distribution and a lens array 9 for extending two adjacent point-like light sources 3 to form a line-shaped light source. Specifically, the light distribution lens 8 and the lens array 9 are both convex lenses, which are processed and formed by an extrusion process, particularly a plastic extrusion process. One end of the light distribution lens 8 connected with the bracket 1 may be provided with a protruding portion 10, and the protruding portion 10 may be inserted in a form-fitting manner into the first installation portion 6 of the bracket 1 to be fixed at least in a direction in parallel with the light output direction. The lens array 9 is arranged on the light exit surface of the light distribution lens 8. As an alternative, the lens array 9 may also be arranged on the light entrance surface of light distribution lens 8.

[0022] In order to improve the optical light efficiency of the lamp, reflection structures are arranged on each of the opposite sides of the lens structure along the length direction of the circuit board 2, namely the first reflector 11 and the second reflector 12. As shown in Fig. 2, the first reflector 11 and second reflector 12 are each linear structure extending along the length direction of the bracket 1. As shown in Fig. 2, the first reflector 11, the second reflector 12 and the lens structure enclose an accommodating space for the plurality of the point-like light sources 3, which is more or less of triangular shape, if viewed in a cross-sectional view and extends along the length direction of the bracket 1.

[0023] More specifically, the first reflector 11 is a diffuse reflector plate and the second reflector 12 is a non-transparent lens integrally formed with the lens structure, which may be accomplished e.g. by means of a two-color extrusion process. Preferably, the lens structure is a transparent part and the second reflector 12 is a white part. Most of the light emitted by the point-like light sources 3 is guided to the far end of the illuminated surface through the light distribution lens 8. The first reflector 11 and the second reflector 12 reflect a small portion of the light not received by the light distribution lens 8 and then emit or guide this light portion towards and through the light distribution lens 8 so that it is guided towards the near end of the illuminated surface.

[0024] As shown in Fig. 2, a first plug portion 13 may be provided at an end of the second reflector 12, which is preferably formed of a plastic material and includes a resilient hook that extends into a groove provided at the second installation portion 7. More specifically, the first plug portion or its resilient hook may be snap-fitted into the groove shown in Fig. 2, and grips behind a corresponding protrusion formed in the second installation portion 7 of the bracket 1, so as to install and fix the lens structure with the bracket 1.

[0025] In order to prevent dust from entering the accommodating space, an end cover 14 may be provided at each end of the bracket 1, and each end cover 14 may be detachably connected to the bracket 1, e.g. by means of screws.

[0026] As shown in Fig. 2, the bracket 1 is provided with a support plate 15 extending toward the circuit board 2, and the support plate 15 is connected with the first installation portion 6 and is set at an angle without contacting the circuit board 2. The first reflector 11 is attached to the support plate 15, e.g. by means of an adhesive. The supporting plate 15 and the first reflecting plate 11 are inclined and extend towards the point-like light sources 3 to collect the light emitted by the point-like light sources 3 away from the irradiating surface as much as possible, and the reflected light is emitted through the light distribution lens 8 to minimize the energy loss and improve the light efficiency. According to a further embodiment, the first reflector 11 may also be replaced by diffuse paper.

[0027] In the second embodiment as shown in Fig. 3, the first reflector 11 is integrally formed with the lens structure, and the first reflector 11 is provided with a connecting portion 16 connected with the bracket 1. The front end of the connecting portion may be formed as a resilient hook, configured to be snap-fitted into a groove of the first installation portion. The reflection portion 17 extends toward the point-like light source 3. The connecting portion 16 of the first reflector 11 is inserted into the first installation portion 6 of the bracket 1, more particularly into a groove disposed therein, to be fixed. The connecting portion 16 may approximately horizontally arranged, and the reflection portion 17 is arranged obliquely.

[0028] As to the third embodiment as shown in Fig. 4, the bracket 1 is provided with a plug-in board 18 extending toward the convex lens structure, and one end of the first reflector 11 is provided with a second plug-in portion 18 which is fixed with the plug-in board 18 in a form-fitting manner, and the other end abuts on the circuit board 2. One end of the light distribution lens 8 connected with the bracket 1 is provided with a protruding portion 10, which is inserted into the first installation portion 6 of the bracket 1 and fixed, more specifically into a groove provided therein.

[0029] The present invention also provides a display cabinet, which includes the lamp used for the display cabinet, and the display cabinet is a vertical freezer, a refrigerator, and the like.

[0030] The above are only preferred embodiments of the present invention, and are not used to limit the protection scope of the present invention.

Claims

1. A lamp for use in a display cabinet, comprising:

a bracket (1) configured to be arranged on a bottom plate of the display cabinet;
a circuit board (2) provided on the bracket (1);
a plurality of point-like light sources (3) arranged on the circuit board (2) at intervals along the

- length direction of the circuit board (2);
 a lens structure (8) extending along the length direction of the circuit board (2) and disposed in the light output direction of the plurality of point-like light sources (3), wherein
 the lens structure (8) is connected with the bracket (1) to cover the plurality of the point-like light sources (3) and comprises an integrally formed light distribution lens (8) and a lens array (9) for extending respective two adjacent point-like light sources (3) of the plurality of point-like light sources (3) to form a line light source; wherein
 a first reflector (11) is provided on a first side of the lens structure (8) and second reflector (12) is provided on a second side of the lens structure (8) opposite to the first side, said first reflector (11) and said second reflector (12) each extending along the longitudinal direction, and wherein the first reflector (11), the second reflector (12) and the lens structure (8) enclose an accommodating space accommodating the plurality of the point-like light sources (3);
characterized in that the first reflector (11) is a diffuse reflector plate and the second reflector (12) is a non-transparent lens integrally formed with the lens structure (8).
2. The lamp for use in a display cabinet as claimed in claim 1, wherein the light distribution lens (8) and the lens array (9) are both convex lenses.
 3. The lamp for use in a display cabinet as claimed in any of the preceding claims, wherein the lens structure (8) is a transparent part and the second reflector (12) is a white part.
 4. The lamp for use in a display cabinet as claimed in any of the preceding claims, wherein the bracket (1) is provided with a support plate (15) extending toward the circuit board (2), wherein the first reflector (11) is attached to or provided on the support plate (15).
 5. The lamp for use in a display cabinet as claimed in claim 4, wherein the support plate (15) is inclined at an acute angle relative to the circuit board (2) without contacting the circuit board (2) and extends towards the plurality of point-like light sources (3) so as to collect light emitted by the plurality of point-like light sources (3) and reflect the collected light towards the lens structure (8).
 6. The lamp for use in a display cabinet as claimed in any of the preceding claims, wherein the first reflector (11) is formed integrally with the lens structure (8), and wherein the first reflector (11) is provided with a connecting portion (16) configured to be connected with the bracket (1) and a reflection portion (17) extending toward the plurality of point-like light sources (3).
 7. The lamp for use in a display cabinet as claimed in claim 6, wherein a front end of the connecting portion (16) is formed as a resilient hook configured to be snap-fitted into a groove of a first installation portion (6) of the bracket (1).
 8. The lamp for use in a display cabinet as claimed in any of claims 1 to 5, wherein the bracket (1) is provided with a plug-in board (18) extending toward the lens structure (8), and wherein a first end of the first reflector (11) is provided with a second plug-in portion (19) configured to be fixed with the plug-in board (18) in a form-fitting manner and a second end of the first reflector (11) opposite to the first end of the first reflector (11) abuts on the circuit board (2).
 9. The lamp for use in a display cabinet as claimed in any of the preceding claims, further comprising end covers (14) provided at opposite ends of the bracket (1), for preventing dust from entering the accommodating space.
 10. The lamp for use in a display cabinet as claimed in claim 9, wherein each end cover (14) is detachably connected to the bracket (1).
 11. A display cabinet comprising at least one lamp for use in a display cabinet as claimed in any of the preceding claims.

Patentansprüche

1. Leuchte zur Verwendung in einer Vitrine, umfassend:
 - eine Halterung (1), die so ausgebildet ist, dass sie auf einer Bodenplatte der Vitrine angeordnet werden kann;
 - eine Leiterplatte (2), die an der Halterung (1) vorgesehen ist;
 - eine Vielzahl von punktförmigen Lichtquellen (3), die auf der Leiterplatte (2) in Abständen entlang der Längsrichtung der Leiterplatte (2) angeordnet sind;
 - eine Linsenstruktur (8), die sich entlang der Längsrichtung der Leiterplatte (2) erstreckt und in der Lichtausgangsrichtung der Mehrzahl von punktförmigen Lichtquellen (3) angeordnet ist, wobei
 - die Linsenstruktur (8) mit der Halterung (1) verbunden ist, um die Mehrzahl der punktförmigen Lichtquellen (3) abzudecken, und eine einstückig ausgebildete Lichtverteilungslinse (8) und

- eine Linsenanordnung (9) umfasst, um jeweils zwei benachbarte punktförmige Lichtquellen (3) der Mehrzahl der punktförmigen Lichtquellen (3) zu verlängern, um eine längliche Lichtquelle zu bilden; wobei
- ein erster Reflektor (11) auf einer ersten Seite der Linsenstruktur (8) vorgesehen ist und ein zweiter Reflektor (12) auf einer zweiten Seite der Linsenstruktur (8) gegenüberliegend der ersten Seite vorgesehen ist, wobei der erste Reflektor (11) und der zweite Reflektor (12) sich jeweils entlang der Längsrichtung erstrecken, und wobei
- der erste Reflektor (11), der zweite Reflektor (12) und die Linsenstruktur (8) einen Aufnahme-
raum umschließen, der die Vielzahl der punktförmigen Lichtquellen (3) aufnimmt;
- dadurch gekennzeichnet, dass** der erste Reflektor (11) eine diffus reflektierende Platte ist und der zweite Reflektor (12) eine nicht-transparente Linse ist, die einstückig mit der Linsenstruktur (8) ausgebildet ist.
2. Leuchte zur Verwendung in einer Vitrine nach Anspruch 1, wobei die Lichtverteilungslinse (8) und die Linsenanordnung (9) beide konvexe Linsen sind.
 3. Leuchte zur Verwendung in einer Vitrine nach einem der vorhergehenden Ansprüche, wobei die Linsenstruktur (8) ein transparentes Teil und der zweite Reflektor (12) ein weißes Teil ist.
 4. Leuchte zur Verwendung in einer Vitrine nach einem der vorhergehenden Ansprüche, wobei die Halterung (1) mit einer Trägerplatte (15) versehen ist, die sich in Richtung der Leiterplatte (2) erstreckt, wobei der erste Reflektor (11) an der Trägerplatte (15) befestigt oder auf dieser vorgesehen ist.
 5. Leuchte zur Verwendung in einer Vitrine nach Anspruch 4, wobei die Trägerplatte (15) unter einem spitzen Winkel relativ zu der Leiterplatte (2) geneigt ist, ohne die Leiterplatte (2) zu berühren, und sich in Richtung der Mehrzahl der punktförmigen Lichtquellen (3) erstreckt, um das von der Mehrzahl der punktförmigen Lichtquellen (3) emittierte Licht zu sammeln und das gesammelte Licht in Richtung der Linsenstruktur (8) zu reflektieren.
 6. Leuchte zur Verwendung in einer Vitrine nach einem der vorhergehenden Ansprüche, wobei der erste Reflektor (11) einstückig mit der Linsenstruktur (8) ausgebildet ist, und wobei der erste Reflektor (11) mit einem Verbindungsabschnitt (16), der so ausgebildet ist, dass er mit der Halterung (1) verbunden werden kann, und einem Reflexionsabschnitt (17) versehen ist, der sich in Richtung der Mehrzahl von punktförmigen Lichtquellen (3) erstreckt.
 7. Leuchte zur Verwendung in einer Vitrine nach Anspruch 6, wobei ein vorderes Ende des Verbindungsabschnitts (16) als federnder Haken ausgebildet ist, der so ausgebildet ist, dass er in eine Nut eines ersten Montageabschnitts (6) der Halterung (1) einrastet.
 8. Leuchte zur Verwendung in einer Vitrine nach einem der Ansprüche 1 bis 5, wobei die Halterung (1) mit einer sich zu der Linsenstruktur (8) hin erstreckenden Steckplatine (18) versehen ist, und wobei ein erstes Ende des ersten Reflektors (11) mit einem zweiten Steckabschnitt (19) versehen ist, der zur formschlüssigen Befestigung an der Steckplatine (18) ausgebildet ist, und ein dem ersten Ende des ersten Reflektors (11) gegenüberliegendes zweites Ende des ersten Reflektors (11) an der Leiterplatte (2) anliegt.
 9. Leuchte zur Verwendung in einer Vitrine nach einem der vorhergehenden Ansprüche, weiterhin umfassend Endabdeckungen (14), die an einander gegenüberliegenden Enden der Halterung (1) vorgesehen sind, um das Eindringen von Staub in den Aufnahme-
raum zu verhindern.
 10. Leuchte zur Verwendung in einer Vitrine nach Anspruch 9, wobei jede Endabdeckung (14) abnehmbar mit der Halterung (1) verbunden ist.
 11. Vitrine mit mindestens einer Leuchte zur Verwendung in einer Vitrine nach einem der vorhergehenden Ansprüche.

Revendications

1. Une lampe destinée à être utilisée dans une vitrine, comprenant :

un support (1) configuré pour être disposé sur une plaque de fond de la vitrine ;
une carte de circuit imprimé (2) placée sur le support (1) ;
une pluralité de sources lumineuses ponctuelles (3) disposées sur la carte de circuits imprimés (2) à intervalles réguliers dans le sens de la longueur de la carte de circuits imprimés (2) ;
une structure de lentille (8) s'étendant le long de la direction de la longueur de la carte de circuit imprimé (2) et disposée dans la direction de sortie de la lumière de la pluralité de sources lumineuses ponctuelles (3), dans laquelle la structure de lentille (8) est reliée au support (1) pour couvrir la pluralité de sources lumineuses ponctuelles (3) et comprend une lentille de distribution de la lumière (8) formée intégralement et un réseau de lentilles (9) pour étendre res-

- pectivement deux sources lumineuses ponctuelles adjacentes (3) de la pluralité de sources lumineuses ponctuelles (3) pour former une source de lumière linéaire ; dans lequel un premier réflecteur (11) est placé sur un premier côté de la structure de la lentille (8) et un second réflecteur (12) est placé sur un second côté de la structure de la lentille (8) opposé au premier côté, ledit premier réflecteur (11) et ledit second réflecteur (12) s'étendant chacun le long de la direction longitudinale, et dans lequel le premier réflecteur (11), le second réflecteur (12) et la structure de la lentille (8) entourent un espace de logement pour la pluralité de sources lumineuses ponctuelles (3) ;
- caractérisé par le fait que** le premier réflecteur (11) est une plaque réfléchissante diffuse et que le second réflecteur (12) est une lentille non transparente formée intégralement avec la structure de lentille (8).
2. La lampe destinée à être utilisée dans une vitrine selon la revendication 1, dans laquelle la lentille de répartition de la lumière (8) et le réseau de lentilles (9) sont tous deux des lentilles convexes.
 3. La lampe destinée à être utilisée dans une vitrine selon l'une quelconque des revendications précédentes, dans laquelle la structure de lentille (8) est une pièce transparente et le second réflecteur (12) est une pièce blanche.
 4. La lampe destinée à être utilisée dans une vitrine selon l'une quelconque des revendications précédentes, dans laquelle le support (1) est pourvu d'une plaque de support (15) s'étendant vers la carte de circuit imprimé (2), le premier réflecteur (11) étant fixé ou prévu sur la plaque de support (15).
 5. La lampe destinée à être utilisée dans une vitrine selon la revendication 4, dans laquelle la plaque de support (15) est inclinée à un angle aigu par rapport à la carte de circuit imprimé (2) sans entrer en contact avec la carte de circuit imprimé (2) et s'étend vers la pluralité de sources lumineuses ponctuelles (3) de manière à collecter la lumière émise par la pluralité de sources lumineuses ponctuelles (3) et à réfléchir la lumière collectée vers la structure de lentille (8).
 6. La lampe destinée à être utilisée dans une vitrine selon l'une quelconque des revendications précédentes, dans laquelle le premier réflecteur (11) est formé d'un seul tenant avec la structure de lentille (8), et dans laquelle le premier réflecteur (11) est pourvu d'une partie de connexion (16) configurée pour être reliée au support (1) et d'une partie de réflexion (17) s'étendant en direction de la pluralité de sources lumineuses ponctuelles (3).
 7. La lampe destinée à être utilisée dans une vitrine selon la revendication 6, dans laquelle une extrémité avant de la portion de connexion (16) est formée d'un crochet élastique configuré pour être encliqueté dans une rainure d'une première portion d'installation (6) du support (1).
 8. La lampe destinée à être utilisée dans une vitrine selon l'une quelconque des revendications 1 à 5, dans laquelle le support (1) est pourvu d'une carte enfichable (18) s'étendant vers la structure de lentille (8), et dans laquelle une première extrémité du premier réflecteur (11) est pourvue d'une deuxième partie enfichable (19) configurée pour être fixée avec la carte enfichable (18) de manière à s'adapter à la forme, et une deuxième extrémité du premier réflecteur (11) opposée à la première extrémité du premier réflecteur (11) vient en butée sur la carte de circuit imprimé (2).
 9. La lampe destinée à être utilisée dans une vitrine selon l'une quelconque des revendications précédentes, comprenant en outre des couvercles d'extrémité (14) prévus aux extrémités opposées du support (1), pour empêcher la poussière de pénétrer dans l'espace de logement.
 10. La lampe destinée à être utilisée dans une vitrine selon la revendication 9, dans laquelle chaque couvercle d'extrémité (14) est relié de manière amovible au support (1).
 11. Une vitrine comprenant au moins une lampe destinée à être utilisée dans une vitrine selon l'une quelconque des revendications précédentes.

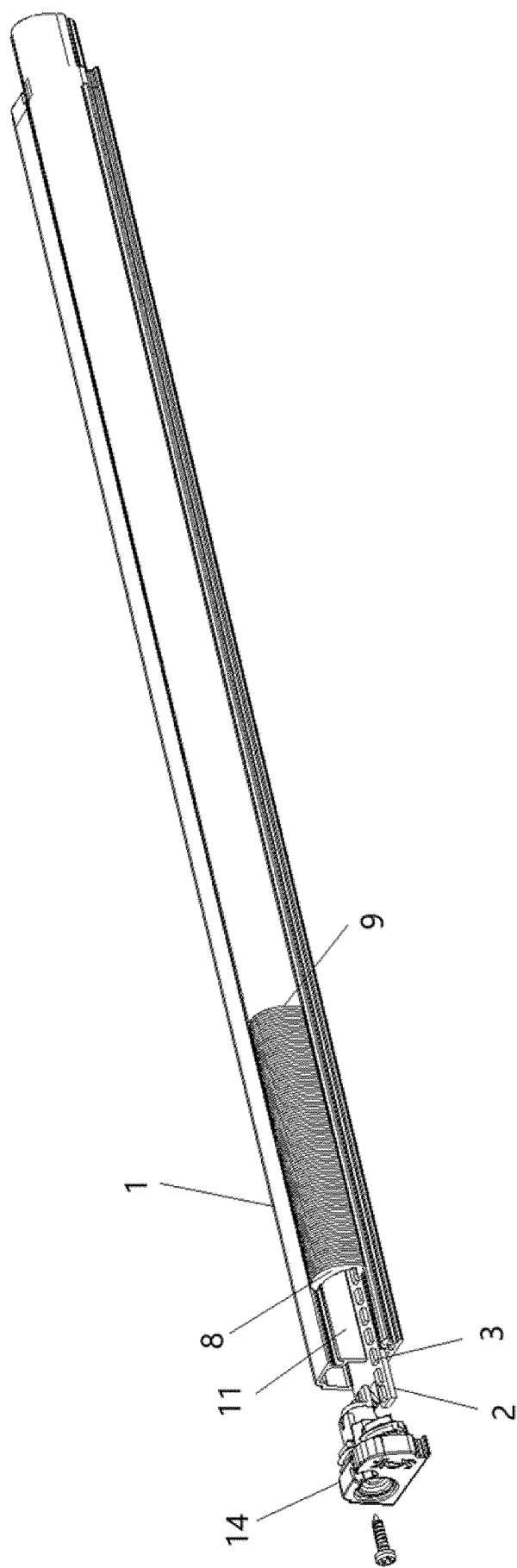


Fig. 1

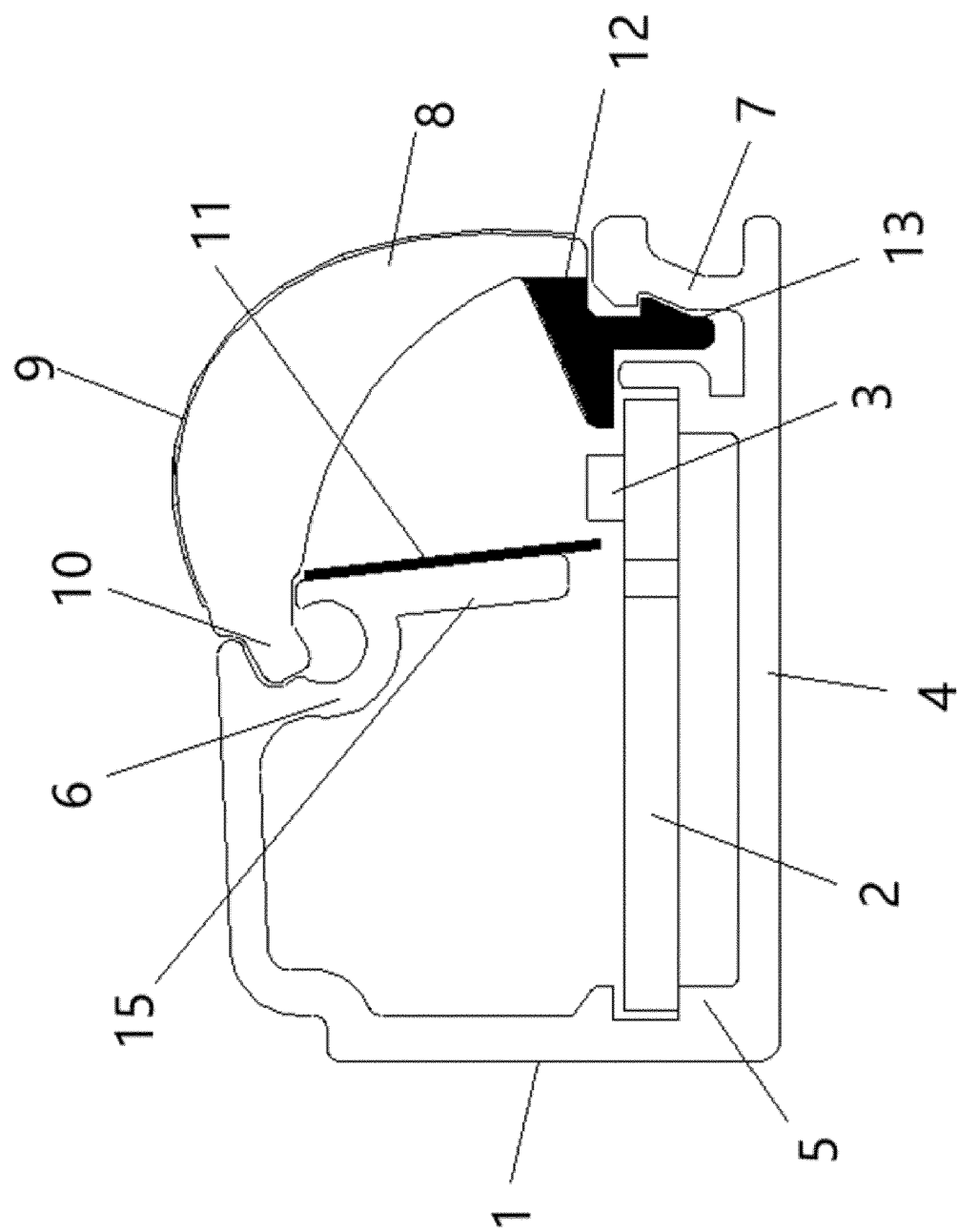


Fig. 2

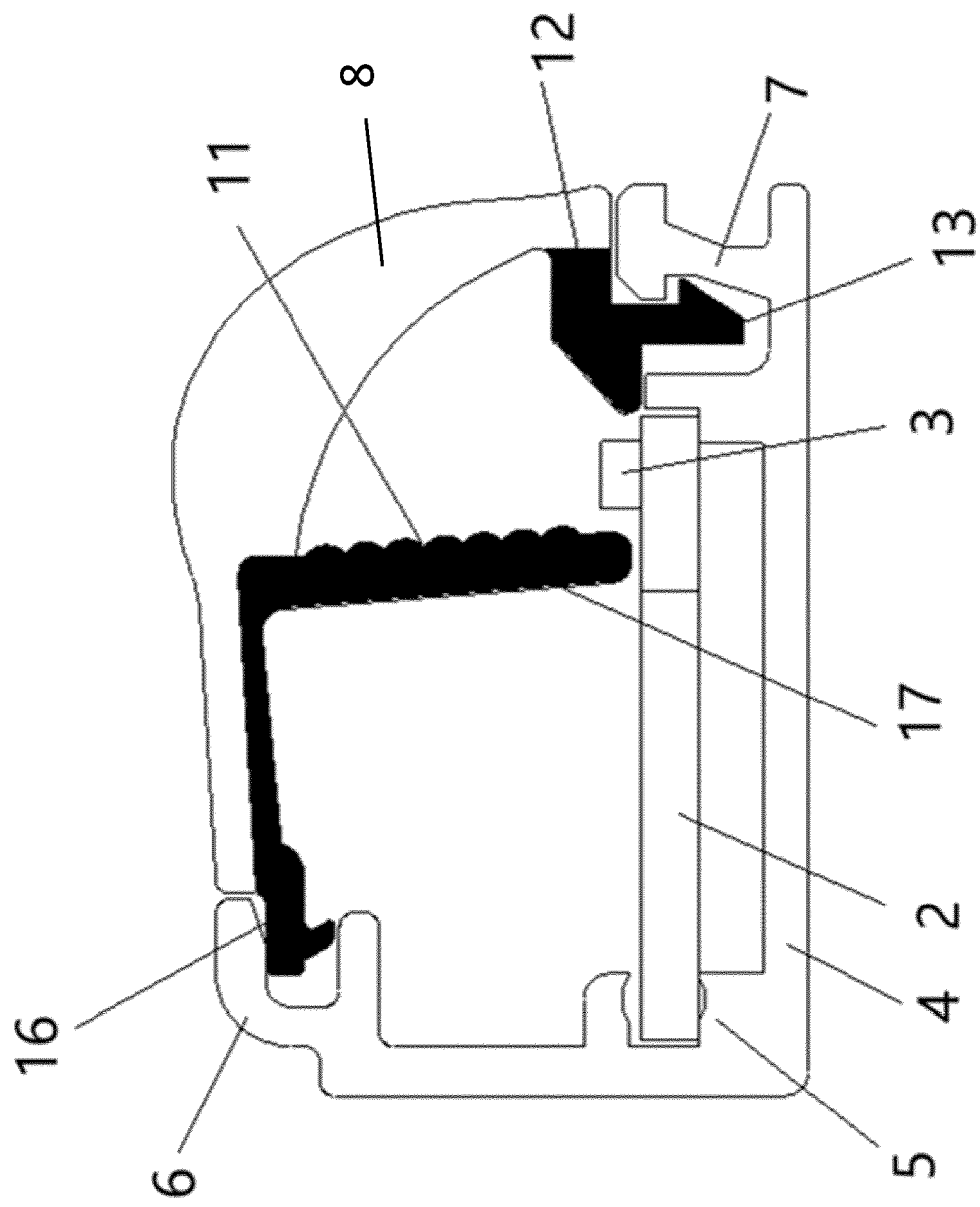


Fig. 3

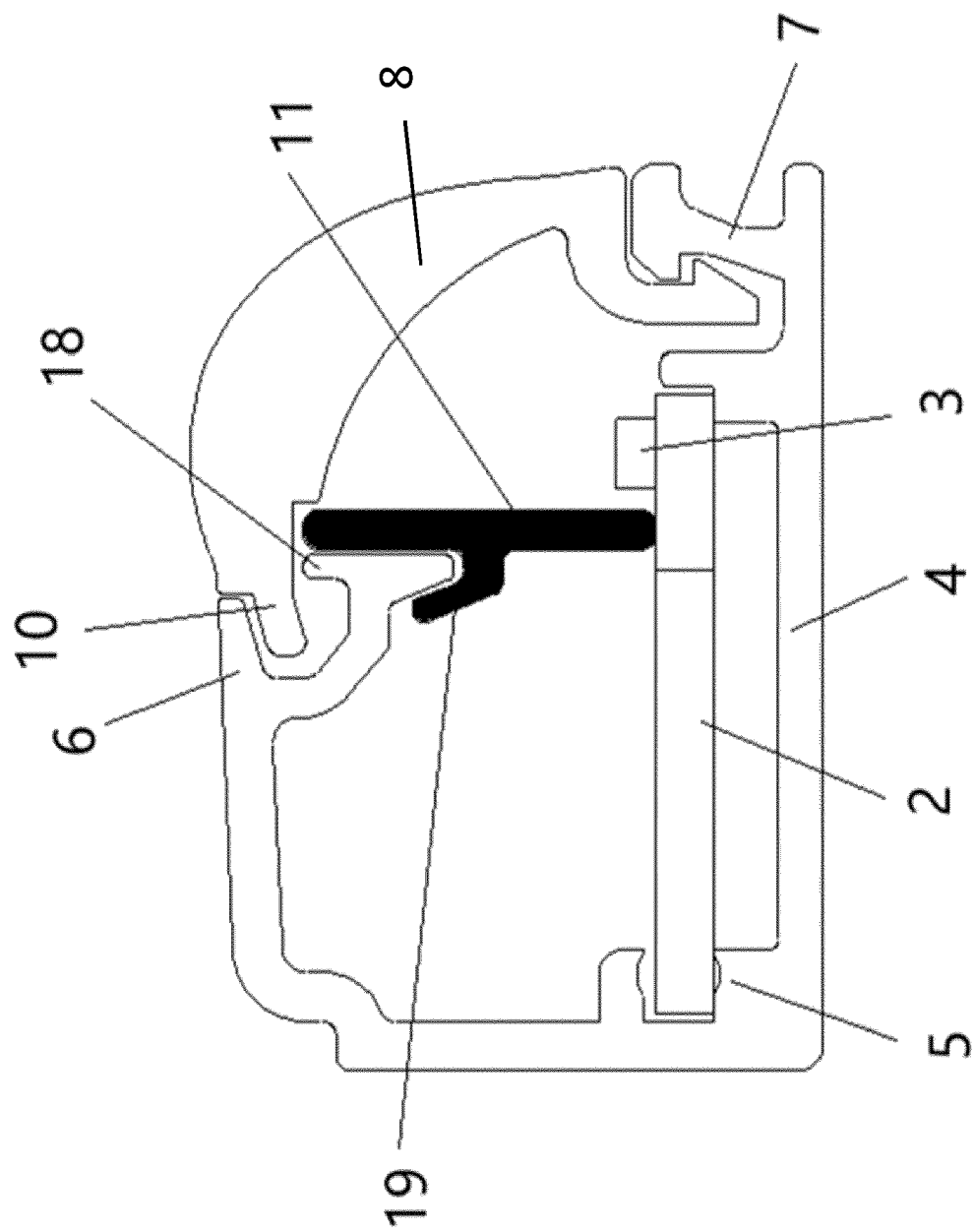


Fig. 4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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