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Dalsgaard et al.

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(54) **BASE ELEMENT FOR MOVING HEAD
LIGHT FIXTURE**

(58) **Field of Classification Search**

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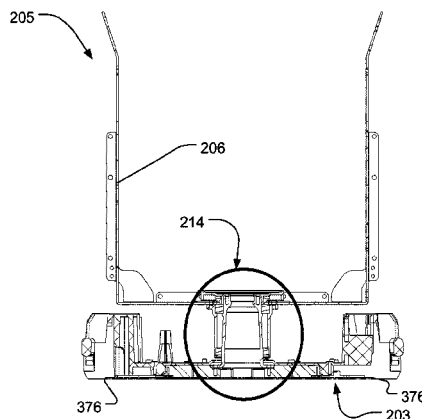
(57) **ABSTRACT**

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The present invention comprising a base having a base element comprising a mounting surface and at least two edged sides protruding outwards in relation to the mounting surface and where a number of electronic components are mounted at the mounting surface and between the edged sides; a yoke is connected to and rotatable relative to the base and a head is connected to and rotatable relative to the yoke. The head comprises at least one light source generating a light and the base element is formed as one piece molded body.

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2131/406 (2013.01)

20 Claims, 11 Drawing Sheets



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USPC 362/427, 428, 420

See application file for complete search history.

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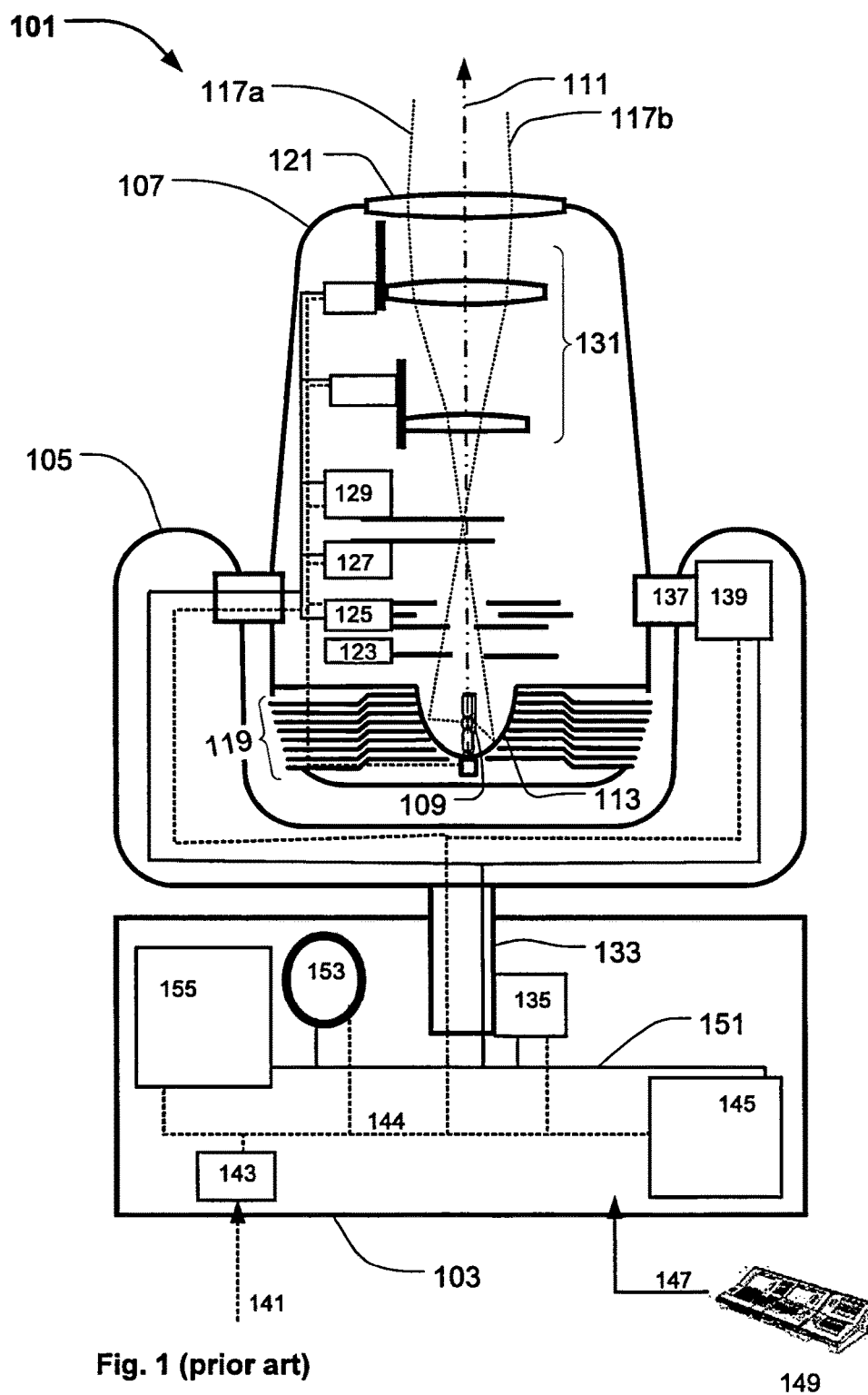
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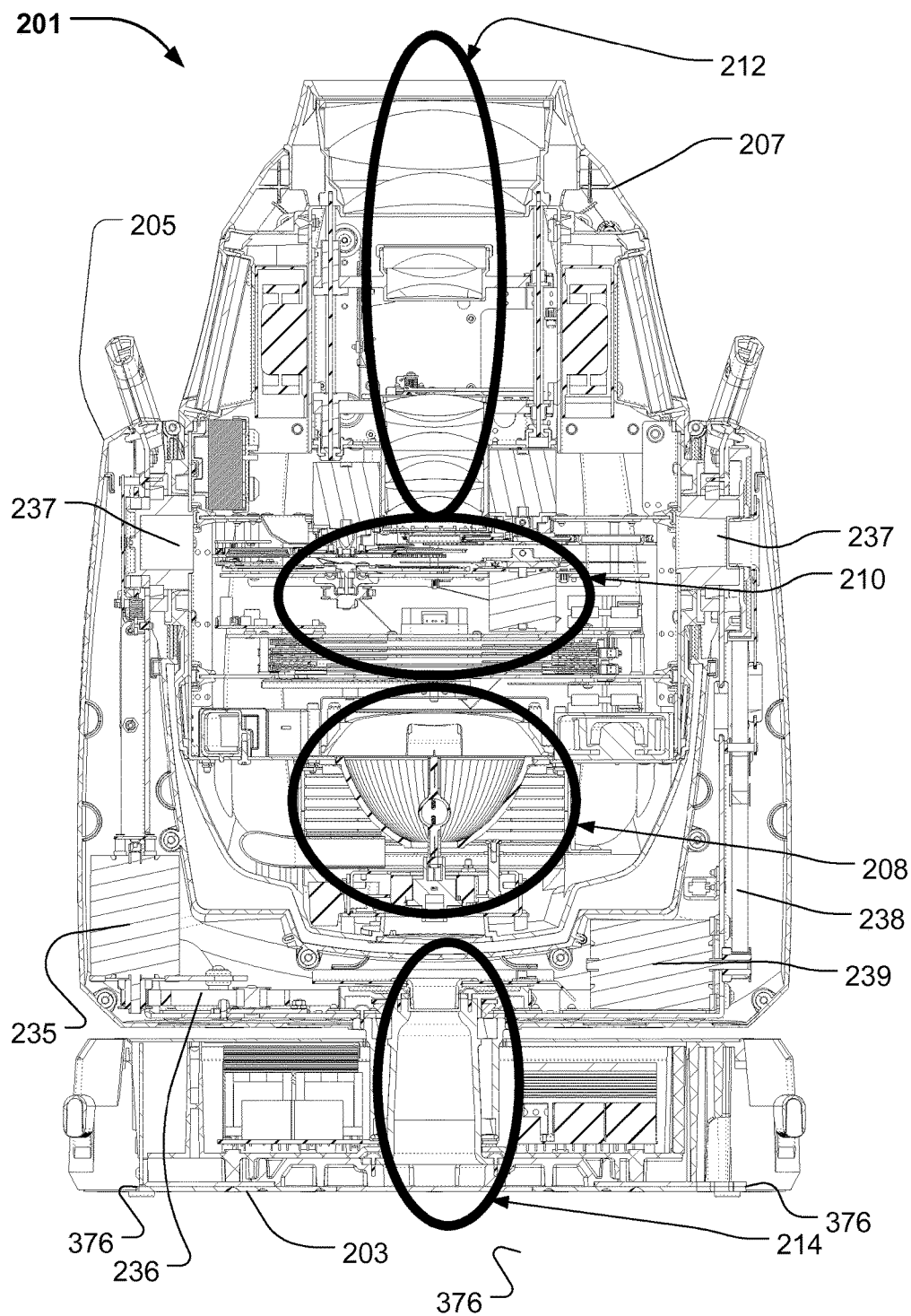
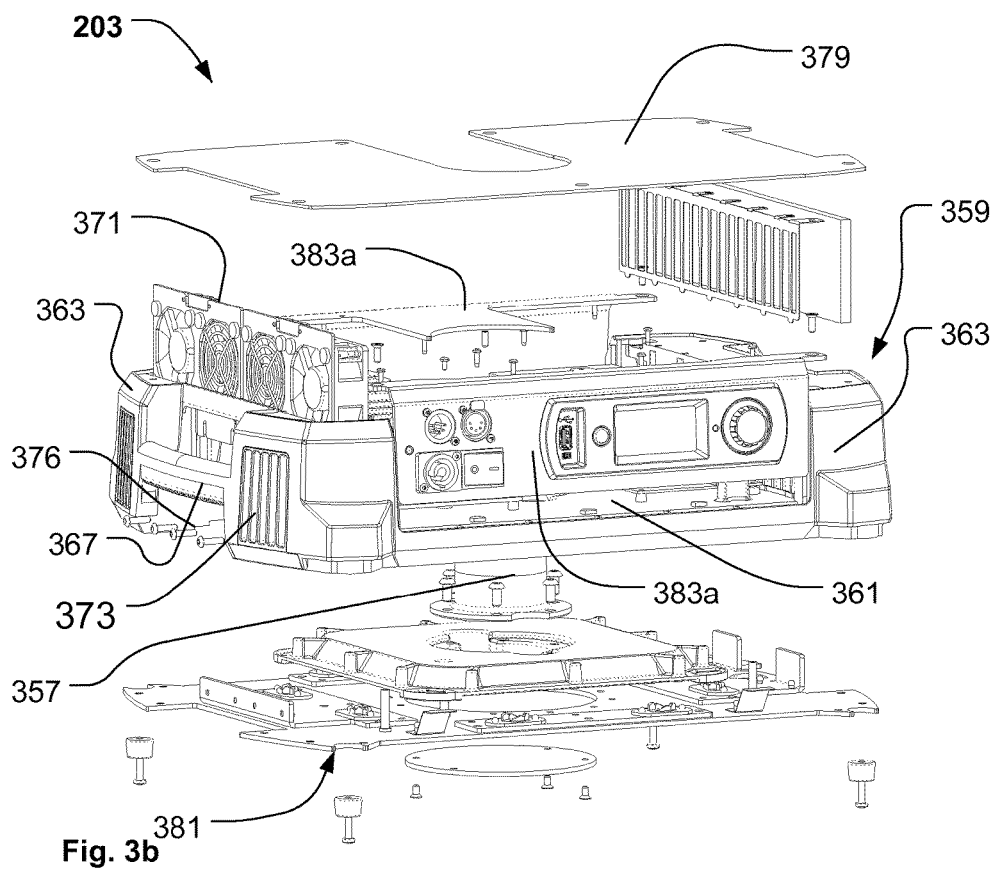
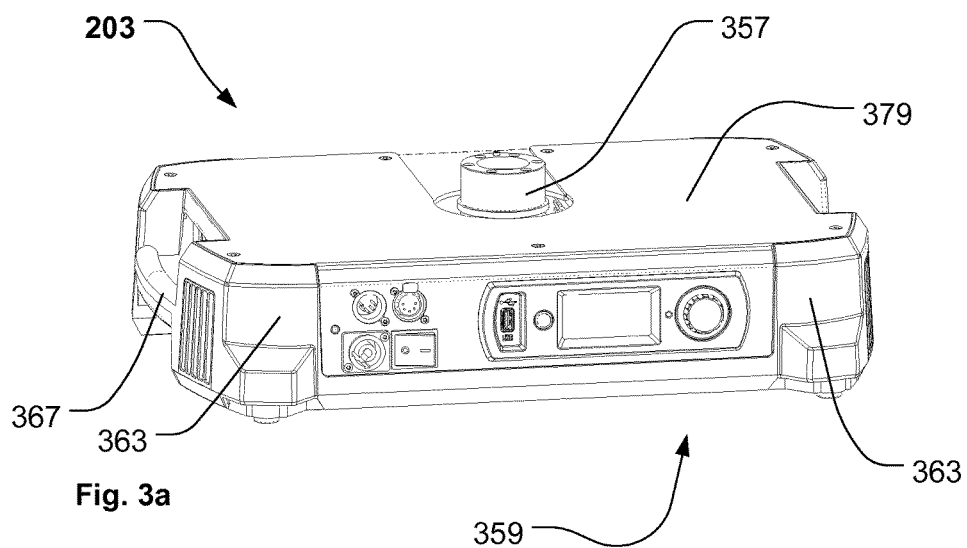


Fig. 2



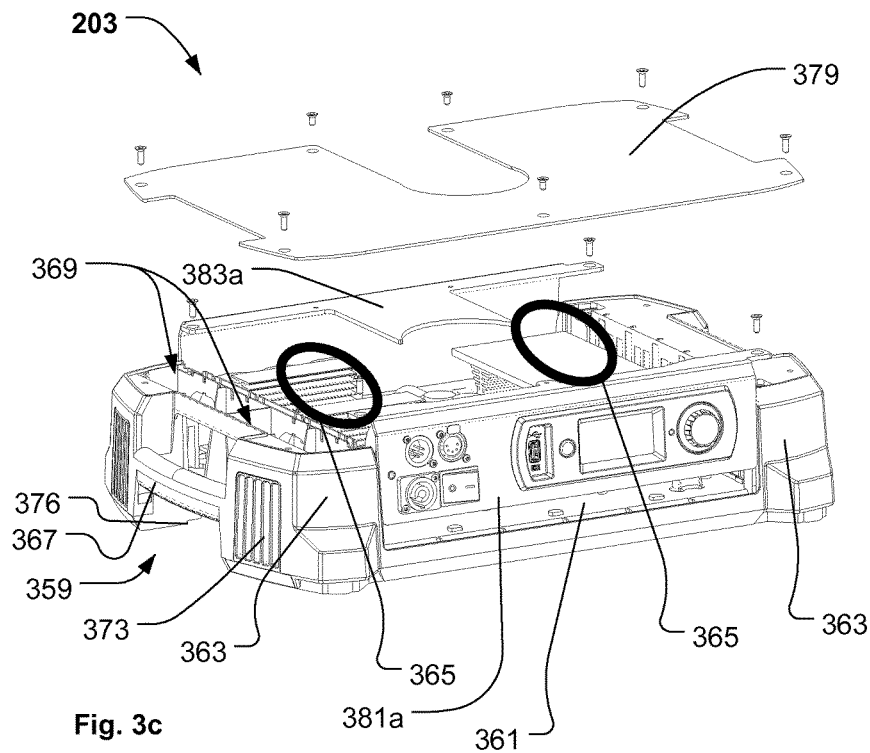


Fig. 3c

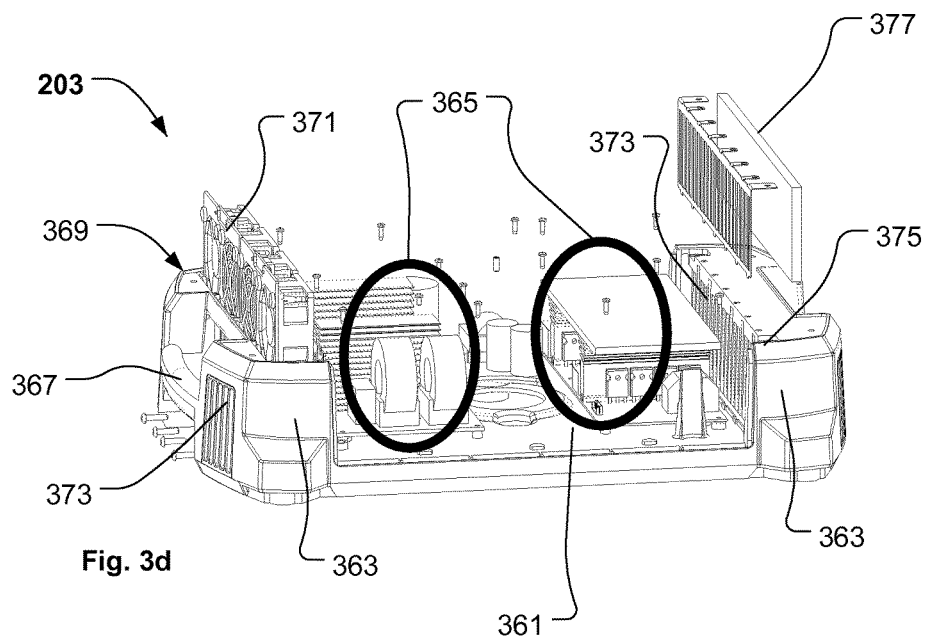


Fig. 3d

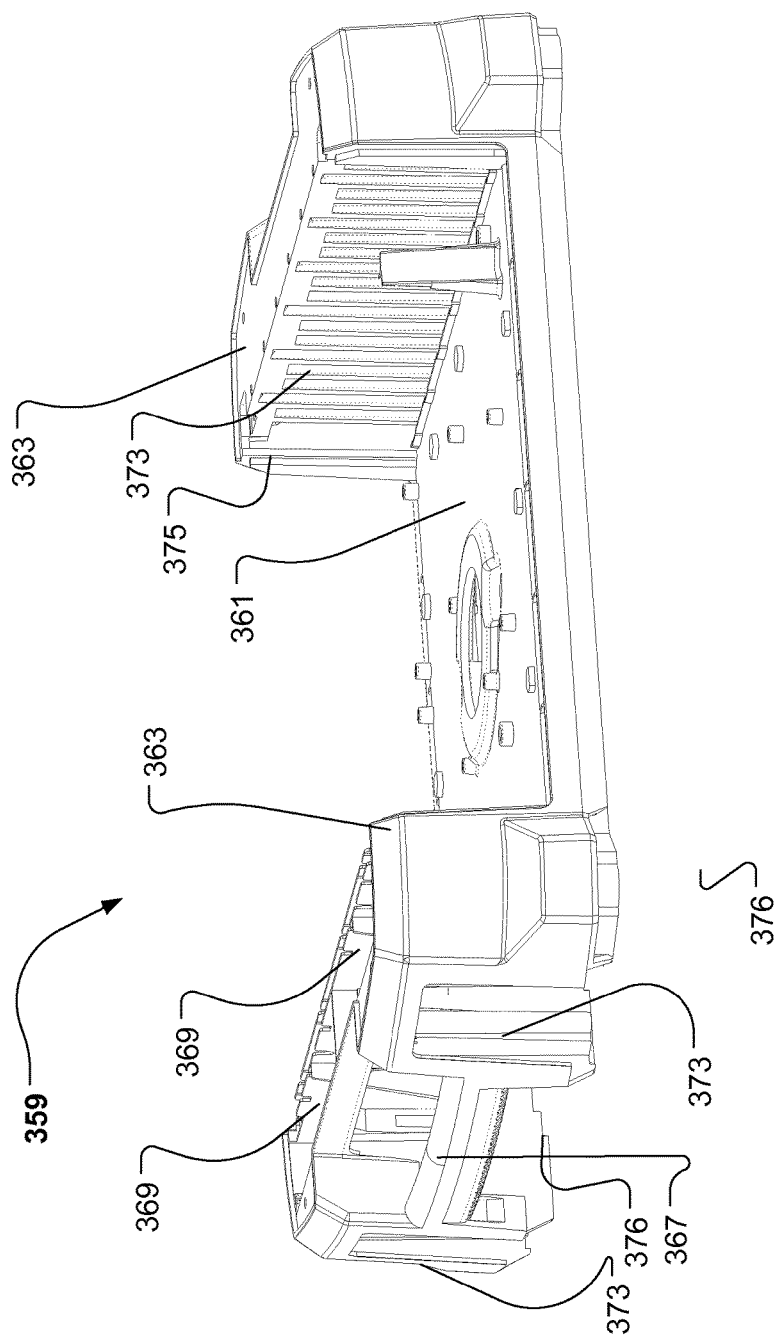


Fig. 4

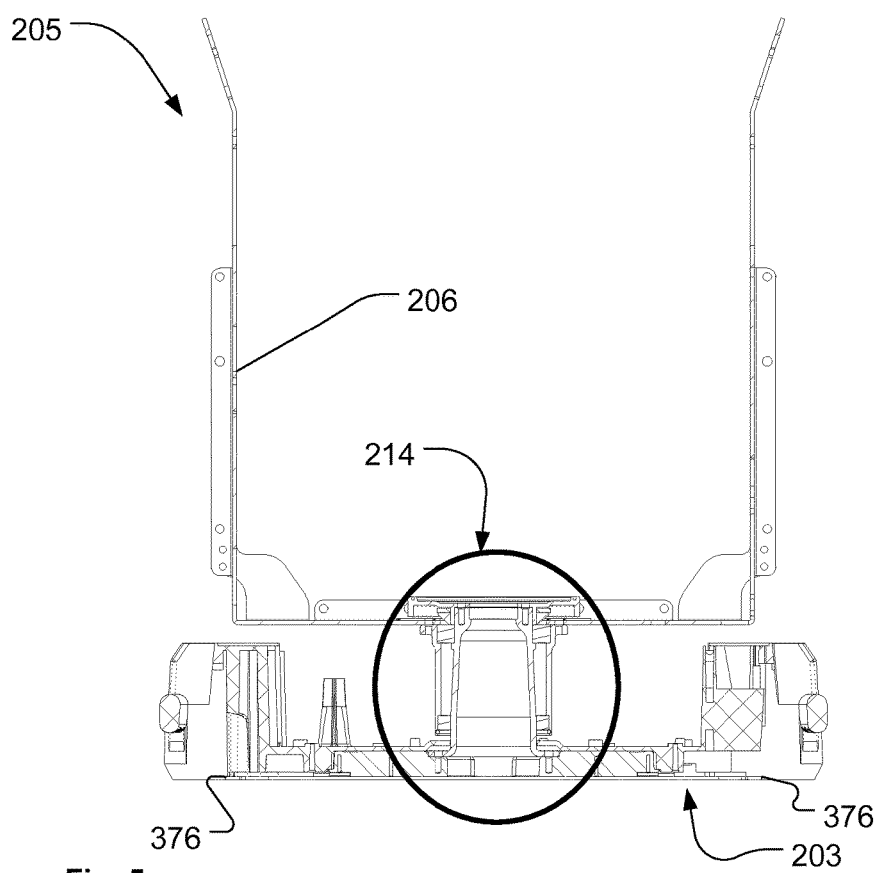


Fig. 5

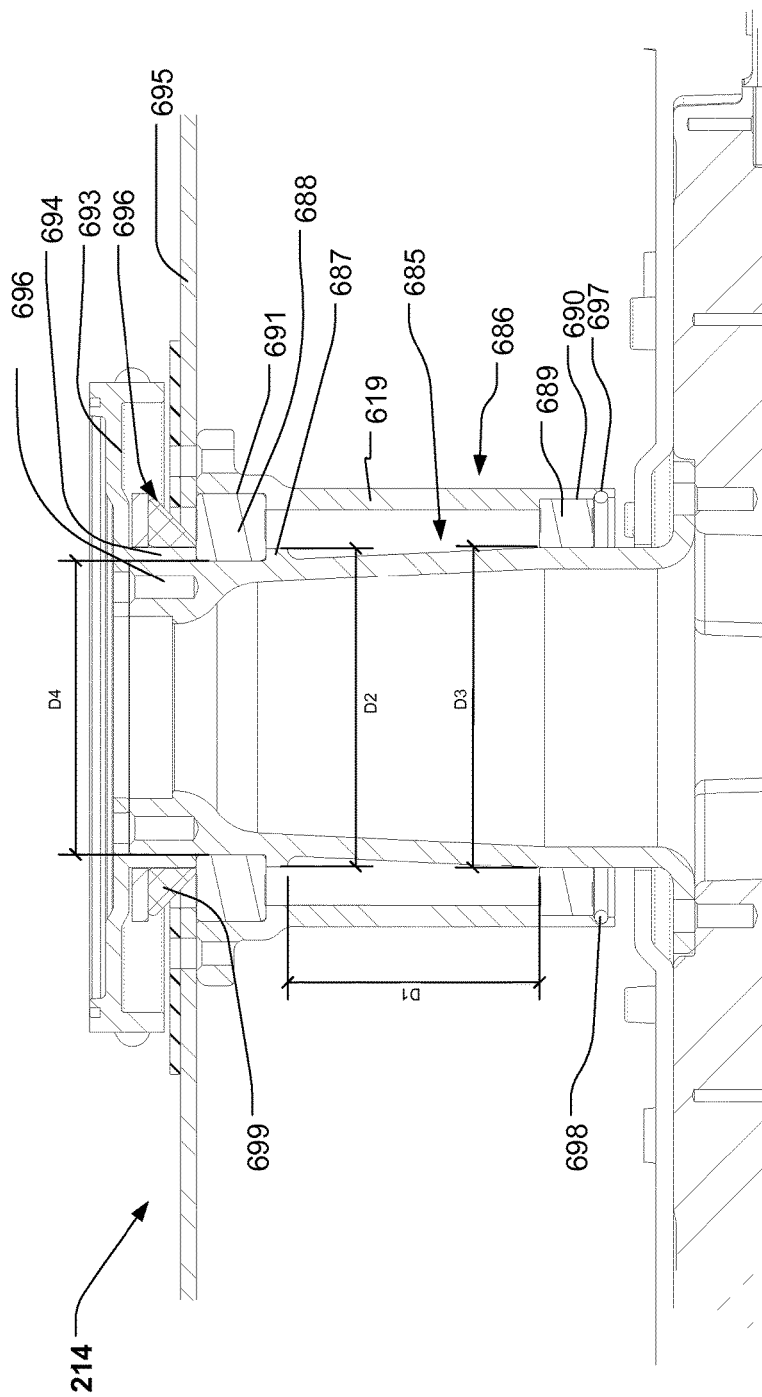


Fig. 6a

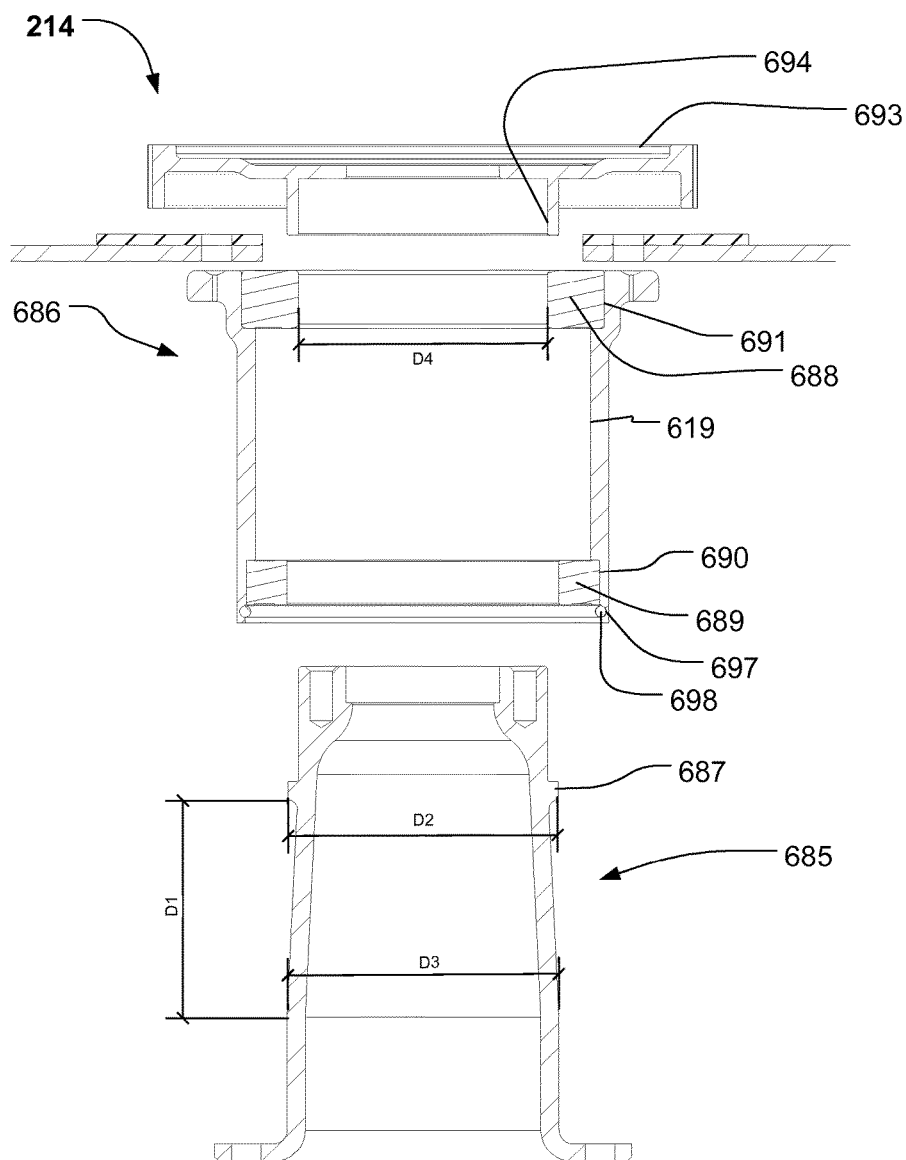


Fig. 6b

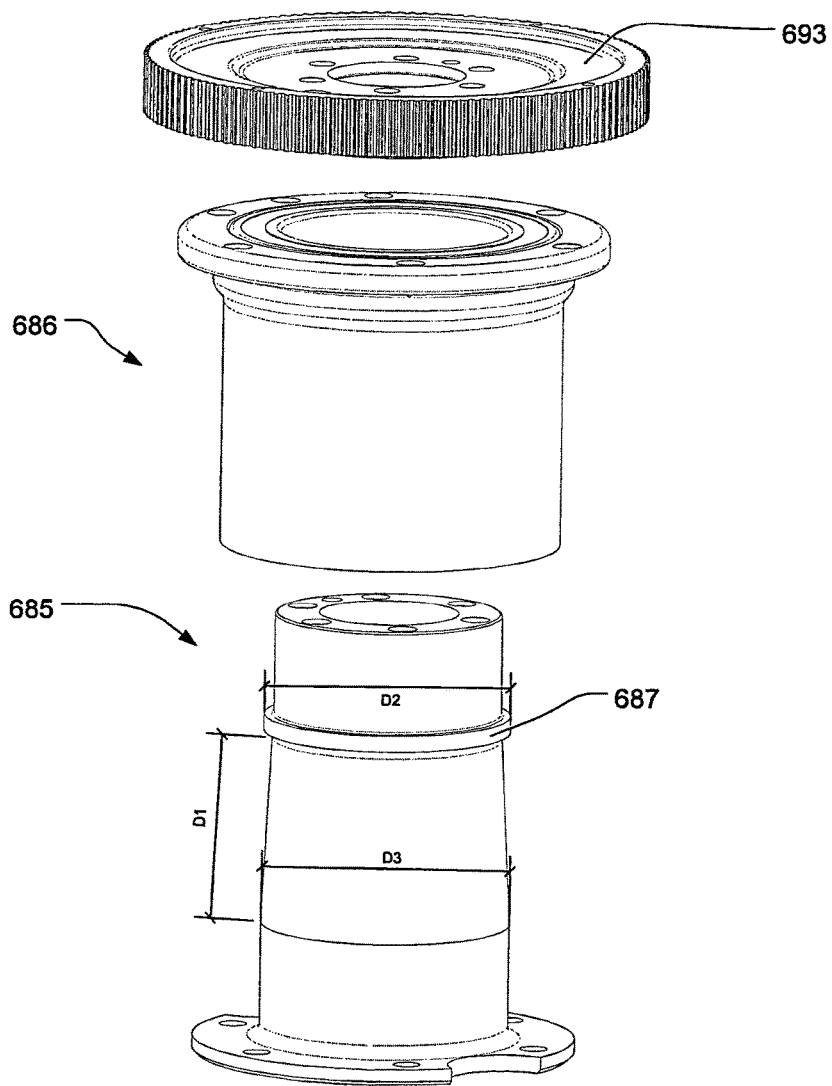


Fig.6c

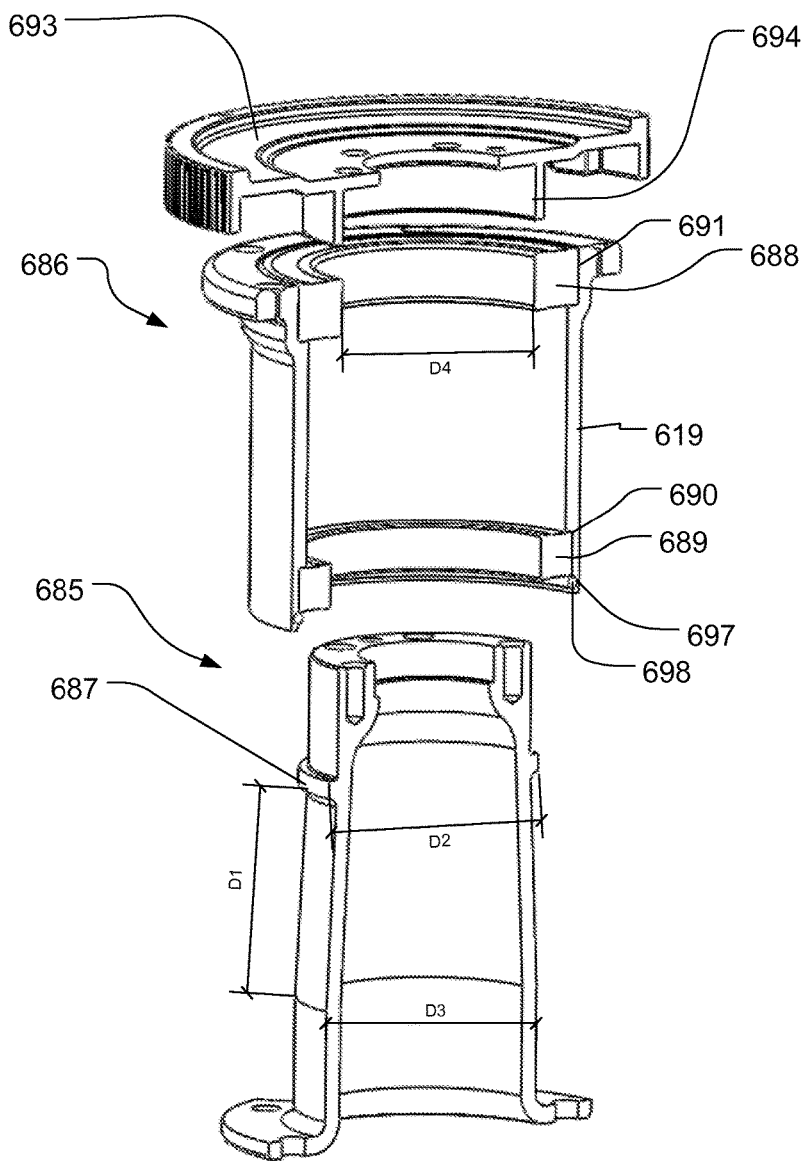


Fig.6d

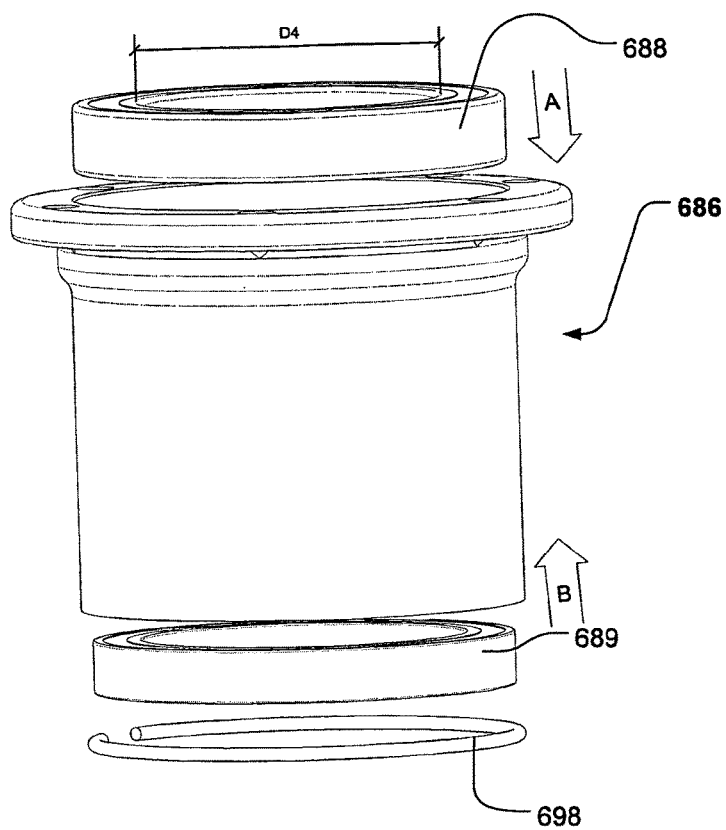


Fig. 7

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BASE ELEMENT FOR MOVING HEAD LIGHT FIXTURE

RELATED APPLICATIONS

This application is claiming priority to Danish Patent Application No.PA201270222 filed May 1, 2012 and Danish Patent Application No.PA201270060 filed Feb. 6, 2012, which applications are incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates to mechanical parts of a moving head light fixture where the moving head light fixture comprises a head with a light source generating a light beam. The head is rotatable connected to a yoke, which yoke is rotatable connected to base. The present invention relates specifically to a base element for a moving head light fixture and to a base-yoke connection mechanism for a moving head light fixture.

BACKGROUND OF THE INVENTION

Moving head lighting fixtures are commonly known in the art of lighting and especially used in entertainment lighting. Typically a moving head light fixture comprises a head having a number of light sources which creates a light beam and number of light effect means adapted to create various light effects. The head is rotatable connected to a yoke and the yoke is rotatable connected to a base and the result is that the head can rotate and direct the light beam in many directions.

The competition in the market has traditionally been based on the optical performance of the moving head such as light output, number of light effects, color mixing etc. The competition in the market has lately changed such that parameters such as quality, serviceability and price have become the most important factors. There is thus a need for a competitive moving head lighting fixture with regard to quality, serviceability and price. Especially the base construction and base-yoke connection is relatively complex, expensive and complicated to manufacture.

DESCRIPTION OF THE INVENTION

The object of the present invention is to solve the above described limitations related to prior art. This is achieved by an illumination device comprising base element formed as one piece molded body as described in the independent claims. The dependent claims describe possible embodiments of the present invention. The advantages and benefits of the present invention are described in the detailed description of the invention.

DESCRIPTION OF THE DRAWING

FIG. 1 illustrates a structural diagram of a moving head light fixture where the base element and base-yoke connection according to the present invention can be integrated;

FIG. 2 illustrates a cross section of a moving head light fixture wherein the base element and base-yoke connection according to present invention have been integrated.

FIG. 3a-3d illustrates a base for a moving head light fixture and according to the present invention;

FIG. 4 illustrates a perspective view of a the base element formed as one piece molded body;

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FIG. 5 illustrates basis components of a yoke and base of a moving head light fixture;

FIG. 6a-6d illustrates a base-yoke connection according to the present invention;

FIG. 7 illustrates an exploded perspective view of a hollow shaft of the base-yoke connection according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

The present invention is described in view of a moving head lighting fixture including a discharge lamp generating a light beam, however the person skilled in the art realizes that any kind of light source such as discharge lamps, OLEDs, LED, plasma sources, halogen sources, fluorescent light sources, etc. can be used. Further the skilled person realizes that the present invention can be used in a various embodiments of moving head light fixtures.

FIG. 1 is a structural diagram illustrating a typical moving head light fixture according to prior art and wherein the present invention can be used. The moving head light fixture 101 comprises a base 103 rotatable connected to a yoke 105 and a head 107 rotatable carried in the yoke. The head comprises at least one light source 109 which generates a light beam propagating along an optical axis 111.

The light source 109 is arranged in a reflector 113 wherein the light source 109 is arranged. The reflector 113 is adapted to reflect a part of the light generated by the light source along the optical axis 111 as illustrated by dotted line 117a and 117b shows light rays, which are reflected by the main reflector before they propagate along the optical axis and through the rest of the optical system. It is noted the illustrated light rays only serve to illustrate the principles of the reflector and do not illustrate exact and precise light beams, further some light rays will also be directed directly along the optical axis from the light source. The person skilled in the art of optics will be able to design the shape of the reflector such the light leaving the reflector has a predetermined divergence, for instance in order to focus the light beams through an optical gate.

Typically the reflector is a dichroic ceramic reflector at least partially surrounded by a number of cooling fins 119. The dichroic ceramic reflector is adapted to transmit infrared light and reflect visible light in order to remove heat from the light. The infrared light will transmit through the ceramic dichroic reflector and hit the cooling fins 119 where infrared light are absorbed as heat which can be dissipated to the surroundings the cooling fins. The moving head light fixture can further be supplied with cooling means adapted to cool some of the components, for instance by using blowing means and cooling air.

The light is directed along the optical axis 111 by the reflector system and passes through a number of light effects before exiting the head through a front lens 121. The light effects can for instance be any light effects known in the art of intelligent lighting for instance a dimmer 123, a CMY color mixing system 125, color filters (not shown), gobos 127, animation effects 129, focus and zoom system 131, prism effects (not shown), framing effects (not shown), iris effects (not shown) or any other light effects known in the art.

The moving head light fixture comprises first rotating means for rotating the yoke in relation to the base, for instance by rotating a shaft 133 connected to the yoke by using a motor 135 positioned in the base or yoke (shown in base). The moving head light fixture comprises also second

rotating means for rotating the head in relation to the yoke, for instance by rotating a shaft **137** connected to the head by using a motor **139** positioned in the yoke or head (shown in yoke). The skilled person knows that the rotation means can be constructed in many different ways using mechanical components such as motors, shafts, gears, cables, chains, transmission systems, bearings etc. However known prior art rotating means are rather complicated and thus difficult to manufacture. Especially the retirements for the first rotating means **133** connecting the base and yoke are complicated as the base-yoke rotating means must be able to take up many forces, when the yoke and head rotates in relation to the head. The moving head light fixture receives electrical power **141** from an external power supply (not shown). The electrical power is received by an internal power supply **143** which adapts and distributes electrical power through internal power lines **144** (dotted lines) to the subsystems of the moving head. The internal power system can be constructed in many different ways and the illustrated power lines is for simplicity illustrated as one system where all subsystems are connected to the same power line. The skilled person will however realize that some of the subsystems in the moving head need different kind of power and that a ground line also can be used. The light source will for instance in most applications need a different kind of power than step motors and driver circuits.

The light fixture comprises also a controller **145** which controls the other components (other subsystems) in the light fixture based on an input signal **147** indicative light effect parameters, position parameters and other parameters related to the moving head lighting fixture. The controller receives the input signal from a light controller **149** as known in the art of intelligent and entertainment lighting for instance by using a standard protocol like DMX, ArtNET, RDM etc. Typically the light effect parameter is indicative of at least one light effect parameter related to the different light effects in the light system. The controller **145** is adapted to send commands and instructions to the different subsystems of the moving head through internal communication lines **151** (solid lines). The internal communication system can be based on a various type of communications networks/systems and the illustrated communication system is just one illustrating example. The moving head can also comprise user input means enabling a user to interact directly with the moving head instead of using a light controller **149** to communicate with the moving head. The user input means **153** can for instance be bottoms, joysticks, touch pads, keyboard, mouse etc. The user input means can also be supported by a display **155** enabling the user to interact with the moving head through menu system shown on the display using the user input means **155**. The display device and user input means can in one embodiment also be integrated as a touch screen.

FIG. 2 is a cross sectional view of a moving head light fixture **201**, comprising a base **203** rotatable connected to a yoke **205** and a head **207** rotatable carried in the yoke. The head comprises a reflecting and cooling system marked with circle **208** as for instance as described in the patent applications DK PA201270060 filed by the applicant Feb. 6, 2012 and DK PA2012 70221 filed by the applicant May 1, 2012 and. However the reflecting and cooling system can be embodied in any way as known in the art. Circle **210** indicated a number of light effects for instance as described in connection with FIG. 1. Circle **212** indicate a zoom and focus system comprising a number of optical lenses, which

can be implemented as known in the art. The base **203** has been embodied as described below and as illustrated in FIG. 3a-3d and FIG. 4.

In this embodiment the first rotating means adapted to rotate the yoke **205** in relation the base **203** comprises a base-yoke connection as described below and as illustrated in FIG. 5 and FIG. 6a-6d. Circle **214** indicates the base-yoke connection. A pan motor **235** is arranged in the yoke and adapted to drive a drive wheel at the base-yoke connection through a drive belt **236**, whereby the yoke rotates in relation to the base.

Further the second rotating means for rotating the head in relation to the yoke, comprises a tilt motor **239** arranged in the yoke and adapted to rotate a shaft **237** through a drive belt **238**, whereby the head rotates in relation to the yoke.

FIG. 3a-3d illustrates the base **203** of moving head light fixture in FIG. 2 and is embodied according to the present invention. FIG. 3a illustrates a front perspective view; FIG. 3b illustrates a front perspective and exploded view; FIG. 3c illustrates a second (different view angle) front perspective and exploded view and FIG. 3d illustrates a third (different view angle) front perspective and exploded view with the top plate remove.

The basic structure of the moving head light fixture is described in FIGS. 1 and 2 and the illustrated base **203** illustrates a possible embodiment the base. As described in connection with FIGS. 1 and 2 the base is rotatable connected to a yoke (not shown) through a base-yoke connection **357** enabling the yoke to rotate in relation to the base. The base **203** comprises a base element **359** comprising a mounting surface **361** and at least two edged sides **363** protruding outwards in relation to the mounting surface. In the illustrated embodiment the edged sides **363** protrude substantially perpendicular and upward in relation to the mounting surface (the skilled person realize that moving head light fixtures can be hung upside down in a truss system, but understands that the upward direction of the moving light head fixture refers the to the situation where the moving head stands on its base at the ground). A number of electronic components **365** (illustrated by circles) are arranged at the mounting surface **361**. The electronic components **365** will not be described herein in details; however the electronic components may be any kind of components which can be used in a moving head light fixture. The base element is formed as one piece molded body, which compared to the known (known from small moving head base structures) bended pieces of metal makes it possible to provide a cheaper main construction for carrying the electric components. Another advantages achieved by molding the base element is that a single base element also can be used in large moving head light fixture, as the edged sides can be molded to have a larger crosses sectional dimension then the mounting side, which is not possible when using bended pieces of metal, where additional strengthening components need to be added in order to strengthen the edged sides.

Further a multiple number of additional "functions" can be molded into the mounting surface and side edges. These additional functions can for instance be handles **367** integrated into the side edges. The handles make it possible to carry the moving head light fixture and the manufacturing costs is reduced as these handles does not need to be mounted manual as known in the prior art. Further the side edges can comprise at least one cavity **369** wherein a number of components can be arranged. For instance in the illustrated embodiment a number of base blowers **371** are arranged in the cavities **369** and can thus force cooling air through the base. The side edge can also comprise a number

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of ventilation holes 373 where through cooling air can flow. Guides 375 for mounting air filters 377 can also be integrated into the side edges which again simplifies the manufacturing process. By providing the base element as a one piece molded body results thus in the fact the manufacturing cost is reduced as the molded body makes it possible to provide multiple functions into a one-piece component. Further by molding the base element makes it possible to provide a base element for large moving head light fixtures which does not need further strengthen material at the sides, as the edged sides can be provided with a larger cross sectional dimension that the mounting structure.

In the illustrated embodiment the base element is sandwiched between a cover plate 379 and a bottom plate 381 where the cover plate is arranged on top of the side edges 363 sides and where the bottom plate 381 is arranged at the bottom side of the mounting surface. This closes the compartment defined between the two edged sides and mounting surface and do also provide some strength the base. The rotatable base-yoke connection 357 means is secured to the bottom plate 381 and extends through an aperture in the base element 359 and top plate 374. Some of the forces applied when rotating the yoke is thus taken up by the bottom plate.

The base element comprises a recess 376 delimited by the outer contour of the bottom side of the base element, and the bottom plate 381 is arranged in this recess. This provides a very esthetic looking base as the bottom plate can be hidden in the bottom side of the base element. The side plates serve to close the base entirely. Side plate 383a comprises also user interface means, DMX connectors, power connector and on/off switch as known in the art.

The electric components mounted at the mounting surface 361 are in electrical connection with the bottom plate and/or the cover plate. This makes it possible to ground the electric components whereby electromagnetic radiation can be reduced.

The base element 359 can be formed in in polymer whereby a very light structure can be provide. Alternatively the base element can be molded in metal which increase the base housing capacity of dissipating heat. The skilled person may provide the molded base element in any suitable material as desired and depending on weight requirement, cooling capacity etc.

FIG. 4 illustrates a front perspective view of a one-piece base element 359 according to the present invention and the reference numbers is described in connection with FIG. 3a-3d.

FIG. 5 illustrates a cross sectional of the basic components of the yoke 205 and the base 203 of the moving head light fixture illustrated in FIG. 2. In general moving head light fixtures the yoke 205 comprises some kind of yoke frame 206 which constitutes the basic structure of the yoke. The skilled person realizes that the yoke frame can comprise many different elements, be surrounding by one or more shell parts and be constructed in many different ways. In general the base 203 comprises a main compartment, where the base illustrated in FIG. 5 corresponds the base 203 illustrated in FIG. 3a-3d and FIG. 4. The base and yoke are rotatable connected to each other using a base-yoke connection (illustrated by circle 214) embodied according to the present invention and shown in FIG. 6a-6d and described below. It is to be understood that the base-yoke connection can be used to connect any kind of yoke and base and is not limited to the embodiments of the yoke and/or base illustrated and described in this document.

FIG. 6a-6d illustrates a base-yoke connection 214 according to the present invention and embodied in the moving

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head light fixture in FIG. 2. Where FIG. 6a is an enlarged cross sectional of the base-yoke connection illustrated in FIG. 5; FIG. 6b is an exploded cross sectional view of the base-yoke connection; FIG. 6c is an exploded perspective view of the base-yoke connection and FIG. 6d is an exploded perspective and partial cross section view.

The base-yoke mechanism comprises:

a main shaft 685;

a hollow shaft 686 surrounding the main shaft 685.

The main shaft has increasing cross sectional dimensions and comprises a first annular flange 687 located a distance D1 from the part of the main shaft having the largest cross sectional dimension D3. Further the cross sectional dimension D2 of the first annular flange 687 is smaller than the largest cross sectional dimension D3 of the main shaft. A first bearing 688 having a smaller inner cross sectional dimension D4 than the cross sectional dimension D2 of the first annular flange and is adapted to fit on the part of the main shaft besides the first annular flange 687.

A second bearing 689 is adapted to fit on the part of the main shaft having the largest cross sectional dimension D3 and has a larger inner dimension than the first annular flange D2. The second bearing can thus be arranged at the part of the main shaft 685 having the largest cross sectional dimension D3 from the top of the main shaft as it can be moved over the first annular flange 687.

The inner dimension of the hollow shaft 686 comprises a second recess 690 adapted to fit the outer dimension of the second bearing 689. The second recess comprises further a locking recess 697 wherein a resilient locking ring 698 can be arranged. The resilient locking ring 698 can thus secure the second bearing in the second recess of the hollow shaft.

Also the main shaft can comprise a second annular flange (not shown) located at the part of the main shaft having the largest cross sectional dimension than the larger cross sectional of the main shaft D3 and the second bearing can be adapted to be arranged beside and on the second annular flange.

The hollow shaft comprises also a first recess 691 adapted to fit the outer dimension of the first bearing 688.

The first 691 and the second recess 690 are separated by an intermediate part 619 having a smaller inner dimension than the recesses.

A first locking plate 693 comprises a hollow shaft part 694, where the hollow shaft part 694 is adapted to fit around the main shaft 685 and adapted to engage to inner part of the first bearing 688. The first locking plate comprises fastening means for fastening the first locking plate to the main shaft. The fastening means can for instance be screws, which engages threaded holes in the top of the main shaft. The inner part of the first bearing 688 is locked between the hollow shaft part 694 of the locking plate 693 and the first annular flange 687.

The base-yoke mechanism comprises also a second locking plate 695 comprising an aperture 696 wherein the hollow shaft part 694 of the locking plate and the main shaft can be positioned. The part of the second locking plate delimiting the aperture are adapted to engage with the outer part of the first bearing whereby the outer part of the first bearing 688 is locked between the second locking plate and the first recess 691 of the hollow shaft 686. Fastening means such as screws are used for fastening the second locking plate 695 to the hollow shaft 686 whereby the outer part of the first bearing 688 is locked between second locking plate and the first recess 691 of the hollow shaft 686.

In the illustrated embodiment the yoke is connected to the hollow shaft 686 and the main shaft 685 is connected to the

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base and the yoke can be rotated in relation to the base. This is achieved by the fact that the lower part of the yoke frame **206** shown in FIG. **5** constitutes the second locking plate **695**. The bottom part of the main shaft is secured to the bottom part of the base **203** using fastenings means and the main shaft is thus fixed in relation to the base.

The first locking plate **693** is further embodied as a driving wheel comprising a number of teeth which can engage with a drive belt **236** (illustrated in FIG. **2**). As consequence the pan motor **235** can rotate the yoke around the driving wheel when activated.

However it is to be understood that the setup also can be mirrored meaning that the hollow shaft can be secured to the base and that the main shaft can be secured to the yoke.

In FIG. **6a** is further illustrated a braking and damping mechanism **699** which is secure to the hollow shaft part and the first locking plate. The braking and damping mechanism serve to break and take up vibrations. In this embodiment the braking and damping mechanism is embodied in polymer.

The base-yoke connection provides an alternative and simpler base-yoke connection which is easier to manufacture than prior art base-yoke connections, which typically comprises are complicated to manufacture.

FIG. **7** illustrates an exploded view of the hollow shaft **686** of the base-yoke connection illustrated in FIG. **6a-6d**. The first bearing **688** can be inserted into the first recess from top of the hollow shaft **686** as illustrated by arrow A. The second bearing **689** can be inserted into the second recess from the bottom as illustrated by arrow B. The second bearing can be locked therein by inserting a resilient locking ring **698** into the locking recess of the second recess. Once the first and second bearings have been inserted into the hollow shaft it will appear as shown in FIG. **6c**. The hollow shaft can then be arranged at the main shaft whereby the second bearing will slide over the first annular flange and be arranged at the part of the main shaft having the largest cross sectional dimension. At the same time the first bearing will be arranged at the first annular flange. Thereafter the second locking plate (the yoke frame) can be secured to the hollow shaft and the first locking plate **693** (the driving wheel) can be arranged to main haft as described above.

The main shaft can also comprise a second annular flange (not shown) located at the part of the main shaft having the largest cross sectional dimension and the second bearing can be adapted to be arranged beside and on the second annular flange. The base-yoke connection can be manufactured by firstly arranging the second bearing **689** at the second annual flange (not shown) and thereafter arrange the hollow shaft **686** arranged on top of the second bearing **689** such that the second bearing is situated in the second recess **690** and such that the intermediate part **619** rest on the outer part of the second bearing. Then the first bearing **688** is arranged at the first annular flange **687** and the top part of the intermediate part **619**. The second locking plate **695** is then arranged on top of the outer part of the first bearing and fastened to the hollow shaft **686**. The hollow shaft part of the first locking plate is then arranged on top inner part of the first bearing and secured to the main shaft. The main shaft and hollow shaft is thus rotatable connected through the first bearing, where the outer part of the first bearing have be tightened between the second locking plate and the hollow shaft and where the inner part of the first bearing have been tightened between the first locking plate and the main shaft.

The invention claimed is:

1. An illumination device comprising:
a base element having a mounting surface and at least two edged side sections extending substantially perpendicu-

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larly and upwardly in relation to said mounting surface, each of the at least two edged side sections including at least two side surfaces extending substantially perpendicularly and upwardly in relation to said mounting surface;

wherein:

said base element is formed as a one-piece molded body;

a number of electronic components can be mounted on top of said mounting surface and between said edged side sections; and

at least one of said at least two edged side sections further includes two additional side surfaces extending substantially perpendicularly and upwardly in relation to said mounting surface, the two additional side surfaces being angled with the at least two side surfaces of the at least one of said at least two edged side sections, whereby the at least two side surfaces and the two additional side surfaces provide a complete wall enclosure for a top accessible cavity therebetween;

a yoke connected to and rotatable relative to said base around an axis substantially perpendicular to said mounting surface; and

a head connected to and rotatable relative to said yoke, said head comprising at least one light source generating a light.

2. The illumination device according to claim **1**, wherein said base element is sandwiched between a cover plate and a bottom plate, wherein said cover plate is arranged on top of said edged sides, above and spanning the mounting surface, and wherein said bottom plate is arranged at a bottom side of said mounting surface.

3. The illumination device according to claim **2**, wherein said base comprises rotatable yoke connecting means secured to said bottom plate and extending through an aperture in said base element and said cover plate.

4. The illumination device according to claim **1**, wherein said base element comprises a recess delimited by an outer contour of a bottom side of said base element, and wherein a bottom plate is arranged in said recess.

5. The illumination device according to claim **1**, wherein said base element comprises at least one handle integrated in at least one of said edged sides.

6. The illumination device according to claim **1**, wherein at least one of said at least two edged sides alone forms a top accessible cavity, between internal and external walls of said respective one of said at least two edged sides, wherein said internal and external walls of said respective one of said at least two edged sides are substantially perpendicular to and extend upwardly in relation to said mounting surface, wherein a number of components can be arranged within said cavity, surrounded by the internal walls of said respective one of said at least two edged sides.

7. The illumination device according to claim **1**, wherein at least one of said edged sides comprises a number of ventilation holes through which cooling air can flow.

8. The illumination device according to claim **1**, wherein said base comprises at least one side plate interconnecting said two edged sides.

9. The illumination device according to claim **2**, wherein at least one of said electric components mounted on said mounting surface is in electrical connection with one of said bottom plate or said cover plate.

10. The illumination device according to claim **1**, wherein said base element is formed in polymer.

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11. The illumination device according to claim 1, wherein said base element is formed in metal.

12. An illumination device comprising:

a base element having a mounting surface and at least two edged side sections extending substantially perpendicu- 5
larly and upwardly in relation to said mounting surface;
wherein each of the at least two edged side sections includes at least two side surfaces extending sub-
stantially perpendicularly and upwardly in relation to
said mounting surface;

wherein said base element is formed as a one-piece
molded body and a transverse cross sectional dimen-
sion of each edged side section, between respective
side surfaces, is larger than a transverse cross sec-
tional dimension of said mounting surface;

wherein a number of electronic components can be
mounted on top of said mounting surface and
between said edged side sections;

wherein at least one of said at least two edged side
sections forms a top accessible cavity, between the at
least two side surfaces of the respective one of said
at least two edged side sections, wherein a number of
components can be arranged within said cavity,
surrounded by the perpendicularly and upwardly
extending side surfaces of said respective one of said
at least two edged side sections;

wherein each of the at least two edged side sections
further includes two additional side surfaces extend-
ing substantially perpendicularly and upwardly in
relation to said mounting surface, the two additional
side surfaces being angled with the at least two side
surfaces, whereby the at least two side surfaces and
the two additional side surfaces provide complete
wall enclosure of the top accessible cavity;

a yoke connected to and rotatable relative to said base
substantially perpendicular to said mounting surface;
and

a head connected to and rotatable relative to said yoke,
said head comprising at least one light source gener-
ating a light.

13. The illumination device according to claim 12,
wherein said base element is formed in metal.

14. The illumination device according to claim 12,
wherein said base element is sandwiched between a cover
plate and a bottom plate, wherein said cover plate is
arranged on top of said edged sides, above and spanning said
internal and said external walls of said respective edged
sides, said cover plate and said bottom plate enclosing said
top accessible cavity.

15. The illumination device according to claim 14,
wherein said base comprises a rotatable yoke connecting
device secured to said bottom plate and extending through
an aperture in said base element and said cover plate.

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16. The illumination device according to claim 14,
wherein said base element comprises a recess delimited by
an outer contour of a bottom side of said base element, and
wherein said bottom plate is arranged in said recess.

17. The illumination device according to claim 12,
wherein each of the at least two edged side sections alone
forms a top accessible cavity, between the at least two side
surfaces of each of said edged side sections, wherein a
number of components can be arranged within said cavity,
surrounded by the perpendicularly and upwardly extending
side surfaces of each of said edged side sections.

18. The illumination device according to claim 12,
wherein no components, other than the side surfaces, con-
nect the side surfaces of each side section to the mounting
surface.

19. An illumination device comprising:

a base element having a mounting surface and at least two
edged side sections extending substantially perpendicu-
larly and upwardly in relation to said mounting surface;
wherein:

each of the at least two edged side sections includes at
least two side surfaces extending substantially per-
pendicularly and upwardly in relation to said mount-
ing surface, and

said mounting surface is configured to have one or
more electronic components mounted on top thereof,
between said edged side sections;

at least one of said at least two edged side sections
forms a top accessible cavity, between the at least
two side surfaces of the respective one of said at least
two edged side sections, wherein a number of com-
ponents can be arranged within said cavity, sur-
rounded by the perpendicularly and upwardly
extending side surfaces of said respective one of said
at least two edged side sections;

the at least one of said at least two edged side sections
further includes two additional side surfaces extend-
ing substantially perpendicularly and upwardly in
relation to said mounting surface, the two additional
side surfaces being angled with the at least two side
surfaces, whereby the at least two side surfaces and
the two additional side surfaces provide complete
wall enclosure of the top accessible cavity.

20. The illumination device according to claim 19, further
comprising:

a yoke connected to and rotatable relative to said base
substantially perpendicular to said mounting surface;
and

a head connected to and rotatable relative to said yoke,
said head comprising at least one light source gener-
ating a light.

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