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# (54) FLEXIBLE SPLICED ASSEMBLY OF LAMP BODIES

(57) The present application relates to a flexible spliced assembly of lamp bodies. Two splicing seats (10) are connected through a flexible mechanism (20), achieving a large angle bending between the two splicing seats (10). During the splicing process, the splicing seat (10) matching a second lamp body can be bent out, there is therefore no need for the second lamp body to be on the same straight line as a first lamp body, it thus reduces the requirement of matching accuracy and facilitates installation, meanwhile, it avoids deformation and damage to the terminals of the lamp body and the pins (30) of the splice element. Therefore, it is unnecessary to reserve enough space for the second lamp body, as it is able to satisfy the splicing operation of the lamp bodies in a confined space. Meanwhile, it is suitable for splicing of corner lamp bodies and solves the problem of corner installation.

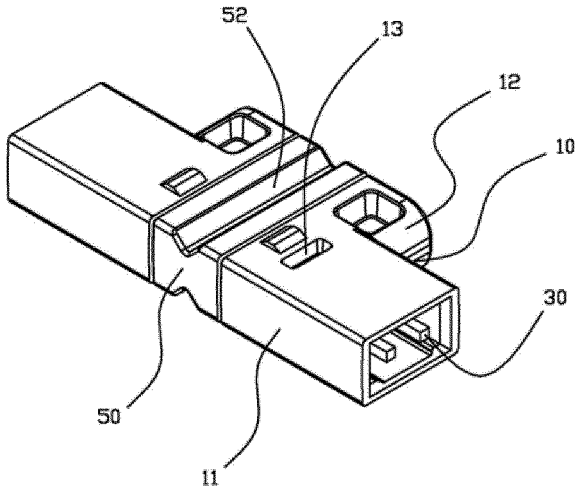


FIG.2

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## Description

### TECHNICAL FIELD

**[0001]** The present application relates to lamp fittings, and more particularly to a flexible spliced assembly of lamp bodies.

### BACKGROUND

**[0002]** In prior arts, as shown in FIG. 1, the splice element for realizing a splicing of lamp bodies is an integrated rigid connection mechanism. During a splicing process, it is necessary to strictly control a second lamp body being horizontally aligned with to a first lamp body when splicing the second lamp body to the first lamp body, that is to say, only on the same straight line can the splicing be implemented.

**[0003]** There are following disadvantages when the lamp bodies are spliced with the rigid splice element in the prior arts.

1. It requires an extremely high matching accuracy during an installation of the second lamp body, which makes it uneasy to install, and the terminals of the lamp body and the pins of the splice element are easily deformed and damaged.

2. It is necessary to reserve enough space for the second lamp body to accommodate the second lamp body, otherwise the operation of splicing cannot be completed.

3. Since the rigid splice element is unable to bend, it thus cannot be used for splicing of lamp bodies located in the corner.

4. Since the rigid splice element is unable to bend, the splicing effect of the lamp bodies can only achieve a linear splicing, and the application scenario is single.

### SUMMARY OF INVENTION

**[0004]** The general objective of the present disclosure is to overcome the above deficiencies existed in prior arts, and provide a flexible spliced assembly of lamp bodies that can be bent to meet a variety of application scenarios.

**[0005]** The present application provides a technical solution as follows:

A flexible spliced assembly of lamp bodies, which includes two splicing seats and pins, where the splicing seats are connected by a flexible mechanism, and the pins are arranged to pass through and locate inside the two splicing seats.

**[0006]** Preferably, the splicing seat comprises a standard plug-in part and a connecting part, the flexible mechanism is connected between the connecting part of each splicing seat, and the pins are arranged to pass through the standard plug-in part.

**[0007]** Preferably, the splicing seat and the flexible mechanism is integrally formed.

**[0008]** Preferably, the flexible mechanism is a flexible plate.

**[0009]** Preferably, the flexible spliced assembly of lamp bodies further includes a clip fitting seat, and the pins are penetrated through the clip fitting seat and fixed in the splicing seat through the clip fitting seat.

**[0010]** Preferably, two opposite sides of the clip fitting seat are provided with protruding blocks, and slots corresponding the blocks are provided on the splicing seat; the clip fitting seat is positioned in the splicing seat by matching the slots with the blocks.

**[0011]** Preferably, one side of the slot facing an installation direction of the clip fitting seat extends a limit protrusion inwardly on an inner wall of the clip fitting seat, and one side of the block facing the limit protrusion is set as an inclined surface.

**[0012]** Preferably, one side of the limit protrusion facing the installation direction of the clip fitting seat is set as an inclined guide surface.

**[0013]** Preferably, one end of the clip fitting seat facing the splicing seat during installation is set as a wedge-shaped head.

**[0014]** Preferably, the flexible spliced assembly of lamp bodies further includes a flexible cladding member disposed between the splicing seats, two sides of the flexible cladding member are respectively connected with the splicing seat, where the flexible mechanism is wrapped in the flexible cladding member.

**[0015]** Preferably, the opposite ends of the splicing seats extend oppositely to form a connection portion, where one or both sides of the connection portion are provided with a plurality of positioning holes, where the flexible cladding member provides positioning posts corresponding to the positioning holes, and the positioning ports are inserted into the positioning holes.

**[0016]** Preferably, one or both sides of the flexible cladding member is provided with a groove in a width direction.

**[0017]** The advantage effects of the present application are as follows:

The present application provides a flexible spliced assembly of lamp bodies, in which two splicing seats are connected through a flexible mechanism, and achieves a large angle bending between the two splicing seats. Furthermore, during the splicing process, the splicing seat matching the second lamp body is bent out, there is no need for the second lamp body to be on the same straight line as the first lamp body, it thus reduces the requirement of matching accuracy and facilitates installation, meanwhile, it avoids deformation and damage to the terminals of the lamp body and the pins of the splice element.

**[0018]** Since the splicing seat for matching the second

lamp body can be folded out, and then for splicing of the second lamp body. Therefore, it is unnecessary to reserve enough space for the second lamp body, as it is able to satisfy the splicing operation of the lamp bodies in a confined space. Meanwhile, it is suitable for splicing of corner lamp bodies and solves the problem of corner installation.

**[0019]** The flexible spliced assembly of lamp bodies disclosed herein can be bent, so that the angle between adjacent lamp bodies is adjustable, which can not only meet a variety of modeling requirements, but also meet the layout needs for different angle requirements, which greatly expands the application scenarios for splicing of lamp bodies.

## BRIEF DESCRIPTION OF DRAWINGS

**[0020]**

FIG. 1 is a schematic structural view of rigid splice element in the prior art;

FIG. 2 is a schematic structural view in accordance with the present application;

FIG. 3 is an exploded view of the structure in accordance with the present application;

FIG. 4 is a transverse sectional view in accordance with the present application;

FIG. 5 is a longitudinal sectional view in accordance with the present application;

**[0021]** In the drawings: 10 a splicing seat, 11 a standard plug-in part, 12 a connecting part, 13 a slot, 14 a limit protrusion, 15 a guide surface, 16 a connection portion, 17 a positioning hole, 20 a flexible mechanism, 30 a pin, 40 a clip fitting seat, 41 a block, 42 an inclined surface, 43 a wedge-shaped head, 50 a flexible cladding member, 51 a positioning post, and 52 a groove.

## DETAILED DESCRIPTION

**[0022]** The present disclosure is further described in detail herebelow with reference to the accompanying drawings and embodiments.

**[0023]** In order to overcome the defects caused by the inability to bend in the prior arts, such as requirements for high installation accuracy, needs for large enough reserved space, being unsuitable for corner installation and single splicing effect, etc., the present application provides a flexible spliced assembly of lamp bodies, which solves the problems that the pins of the terminal and the splice element are easily deformed and the corner space limits the installation, and achieves a non-linear splicing of multiple lamp bodies, meet the requirements for various shapes and space layouts.

**[0024]** As shown in FIGS. 2 and 3, the flexible spliced assembly of lamp bodies according to the present application includes two splicing seats 10 and pins 30. The splicing seats 10 may be connected through a flexible mechanism 20.

**[0025]** Based on the bendable or bending characteristics of the flexible mechanism 20, an angle of 0-60 degrees can be formed between the two splicing seats 10, that is, the present application realizes bending. The pins 30 may be arranged to pass though an inner side of the two splicing seats 10 for conducting connection of the lamp bodies at both ends. During a splicing process, firstly inserting the first lamp body with one of the splicing seats 10, then swing and bending the other splicing seat 10 in the direction of the installation direction, and then inserting the second lamp body. The pins 30 are deformed following the bending and returning of the present application. Theoretically, no matter the pins 30 are flexible deformation or elastic deformation, the bending and returning of the present application are not affected.

**[0026]** In order to ensure the adaptability between the splicing seat 10 and the interface of the lamp bodies and the effective setting of the flexible mechanism 20, in this embodiment, the splicing seat 10 includes a standard plug-in part 11 and a connecting part 12, and the standard plug-in part 11 can be implemented as a connector of any standard specification based on product requirements, so as to adapt to terminals of different lamp bodies. The flexible mechanism 20 is connected between the connecting parts 12 of the splicing seat 10, and the pins 30 are disposed through the standard plug-in part 11. Specifically, if the arrangement direction of the pins 30 are regarded as the width direction of the splicing seat 10 and the length direction of the pins 30 are regarded as the length direction of the splicing seat 10, a swing bend is formed between the splicing seats 10 in the length direction. To ensure large-angle swing bending, in this embodiment, the connecting part 12 is provided on the side of the splicing seat 10 in the width direction, and the flexible mechanism 20 is connected to the opposite end of the connecting end of the splicing seat 10. The present application generally forms a "T" structure; The pins 30 are arranged to pass through the through hole of the standard plug-in part 11. Since the connecting part 12 is not disposed on the path of the splicing seat 10 performing the swing bending, the connecting part 12 does not affect the swinging bending angle of the splicing seat 10. In addition, the connecting part 12 is located outside the standard plug-in part 11, there is no need for the flexible mechanism 20 to reserve a space for the penetration setting of the pins 30. Therefore, the flexible mechanism 20 can be implemented as wide as possible to ensure structural strength of the flexible mechanism 20 and provide a bending performance with a larger angle.

**[0027]** In order to simplify the assembly process, in this embodiment, the splicing seat 10 and the flexible mechanism 20 may be an integrally formed structure, and the flexible mechanism 20 may be a flexible plate. The flex-

ible plate is generally implemented in a wider size, and the thickness of the flexible plate is smaller than the thickness of the splicing seat 10, which not only ensures the structural strength, but also facilitates bending and returning.

**[0028]** During the splicing process of the lamp bodies, the bending of the present application causes the pins 30 to be slightly stretched. Therefore, the pins 30 need to be fixedly installed in the splicing seat 10 to prevent the pins 30 from disengaging from the first lamp body due to the bending, resulting in poor contact during the splicing process, that is, no conduction between adjacent lamp bodies. As shown in FIG. 3, FIG. 4, and FIG. 5, the present application further includes a clip fitting seat 40, and the pins 30 are fixedly penetrated through the clip fitting seat 40, and are fixed in the splicing seat 10 through the clip fitting seat 40. Specifically, the two opposite sides of the clip fitting seat 40 are provided with protruding blocks 41. The splicing seat 10 is provided with a slot 13 corresponding to the block 41; the clip fitting seat 40 is positioned within the splicing seat 10 by matching the slot 13 with the block 41. In this embodiment, the blocks 41 are respectively disposed on upper and lower surfaces of the clip fitting seat 40 in the thickness direction, that is, the thickness direction of the splicing seat 10. Correspondingly, the upper and lower surfaces of the splicing seat 10 in the thickness direction are provided with slots 13, and the slots 13 are arranged throughout the splicing block 10. During production and assembly, firstly assembling the pins 30 and the clip fitting seat 40 into an integrated structure, and then inserting the clip fitting seat 40 together with the pins 30 into the splicing seat 10, when the block 41 slides to the position of the slot 13, it forms a buckle connection with the slot 13, thereby completing the fixation of the clip fitting seat 40 and the pins 30.

**[0029]** In order to facilitate the installation and ensure the fixation strength, the side of the slot 13 facing the installation direction of the clip fitting seat 40 extends a limit protrusion 14 inwardly on an inner wall of the splicing seat 10, and the side of the block 41 facing the limit protrusion 14 is set as an inclined surface. In this embodiment, the block 41 is a right-angled triangular body provided on the upper and lower surfaces of the mounting seat 40. During the installation process, the inclined surface 42 of the block 41 first abuts against the limit protrusion 14, and then the block 41 is pressed and slid over the limit protrusion 14, the vertical surface of the block 41 and the limit protrusion 14 form a snap limit. In order to make the installation process easier and labor-saving, the side of the limit protrusion 14 facing the installation direction of the clip fitting seat 40 is set as an inclined guide surface 15. With the cooperation of the guide surface 15 and the inclined surface 42, during the installation, a smaller force can be used to complete the squeezing and sliding of the block 41 and the limit protrusion 14 to complete the snap limit.

**[0030]** As the height between the upper and lower limit protrusions 14 is smaller than the height between the upper and lower inner walls of the splicing seat 10, an oversized clip fitting seat 40 will increase the difficulty of the clip fitting seat 40 passing through the upper and lower limit protrusions 14, in order to make the installation process smoother, an end of the clip fitting seat 40 facing the splicing seat 10 is set as a wedge-shaped head 43, that is, the end of the clip fitting seat 40 facing the splicing seat 10 is smaller than the other end. In this embodiment, the inclination angle of the wedge-shaped head 43 is the same as the angle of the inclined surface 42 of the block 41, forming a same plane, such that the thickness of the wedge-shaped head 43 is much smaller than the height between the upper and lower limit protrusions 14, thus, it is easier to pass through the upper and lower limit protrusions 14 during installation. Meanwhile, there is a guiding function, when the surface of the wedge-shaped head 43 and the inclined surface 42 of the block 41 are in contact with the position- limit protrusions 14, which further facilitates the installation.

**[0031]** In order to prevent dust from entering the interior of the spliced assembly, resulting in poor connection or short circuit, the present application also includes a flexible cladding member 50, which is disposed between the splicing seat 10, and two sides of the flexible cladding member 50 are respectively in connection with the splicing seat 10, the flexible mechanism 20 is wrapped in the flexible cladding member 50, which can completely cover the space between the splicing seats 10 to prevent dust from falling in. Specifically, the opposite end of the splicing seat 10 extends oppositely to form a connection portion 16. One or both sides of the connection portion 16 are provided with a plurality of positioning holes 17. The flexible cladding member 50 is provided with positioning posts 51 corresponding to the positioning holes 17, and the positioning posts 51 are inserted into the positioning holes 17. With the cooperative installation of the positioning post 51 and the positioning hole 17, the connection strength of the flexible cladding member 50 and the connection portion 16 on both sides can be guaranteed.

**[0032]** Due to the swing and bending of the splicing seat 10, the flexible cladding member 50 will be stretched and squeezed to a certain extent, that is, the side facing the bending may be squeezed, and the side facing away from the bending may be stretched, Both stretching and squeezing will increase the risk of the flexible cladding member 50 falling off the connection portion 16 of the splicing seat 10. In order to further ensure the connection strength, one or both sides of the flexible cladding member 50 in the width direction are provided with a groove 52. The groove 52 facing the bending side forms a reserving space, which prevents or greatly alleviates the surface of the flexible cladding member 50 from being squeezed, and the groove 52 facing the opposite of bending side increases the deformation space, which prevents or greatly alleviates of the surface of the flexible cladding member 50 from being stretched. With actions of the groove 52, whether the side is facing the bend or facing

the back of bend, a pushing or pulling force on the positioning post 51 caused by squeezing or stretching can be avoided or greatly relieved, thereby preventing the pushing or pulling force drives the positioning post 51 out of the positioning hole 17.

**[0033]** In this embodiment, the splicing seat 10 and the flexible mechanism 20 may be made of plastic such as ABS, PC, the flexible cladding member 50 may be made of TPU, PU, PP, or flexible material, and the pins 30 may be made of phosphor bronze plated with tin, brass or other metal, and the clip fitting seat 40 may be made of plastic such as ABS, PC, etc..

**[0034]** The above embodiments are merely used to illustrate the present application, and are not intended to limit the present application. As long as it is in accordance with the spirit and principles of the present disclosure, variations, modifications and the like to the above embodiments should be understood as being included within the scope of the present application.

## Claims

1. A flexible spliced assembly of lamp bodies, comprising two splicing seats and pins, the splicing seats are connected by a flexible mechanism, and the pins are arranged to pass through and locate inside the two splicing seats.

2. The flexible spliced assembly of lamp bodies according to claim 1, wherein the splicing seat comprises a standard plug-in part and a connecting part, wherein the flexible mechanism is in connection with the connecting part of the splicing seat, and the pins are arranged to pass through the standard plug-in part.

3. The flexible spliced assembly of lamp bodies according to claim 1 or 2, wherein the splicing seat and the flexible mechanism are configured to be integrally formed.

4. The flexible spliced assembly of lamp bodies according to claim 3, wherein the flexible mechanism is a flexible plate.

5. The flexible spliced assembly of lamp bodies according to claim 1, further comprising a clip fitting seat, the pins are penetrated through the clip fitting seat, and fixed in the splicing seat through the clip fitting seat.

6. The flexible spliced assembly of lamp bodies according to claim 5, wherein the two opposite sides of the clip fitting seat are provided with protruding blocks, and slots corresponding the blocks are provided on the splicing seat; the clip fitting seat is positioned in the splicing seat by matching the slots with the blocks.

7. The flexible spliced assembly of lamp bodies according to claim 6, wherein one side of the slot facing an installation direction of the clip fitting seat extends a limit protrusion inwardly on an inner wall of the clip fitting seat, and one side of the block facing the limit protrusion is set as an inclined surface.

8. The flexible spliced assembly of lamp bodies according to claim 7, wherein one side of the limit protrusion facing the installation direction of the clip fitting seat is set as an inclined guide surface.

9. The flexible spliced assembly of lamp bodies according to claim 7, wherein one end of the clip fitting seat facing the splicing seat during installation is set as a wedge-shaped head.

10. The flexible spliced assembly of lamp bodies according to claim 1, further comprising a flexible cladding member disposed between the splicing seats, and two sides of the flexible cladding member are respectively connected with the splicing socket, wherein the flexible mechanism is wrapped in the flexible cladding member.

11. The flexible spliced assembly of lamp bodies according to claim 10, wherein the opposite ends of the splicing seats extend oppositely to form a connection portion, wherein one or both sides of the connection portion are provided with a plurality of positioning holes, wherein the flexible cladding member is configured to provide positioning posts corresponding to the positioning holes, and wherein the positioning posts are inserted into the positioning holes.

12. The flexible spliced assembly of lamp bodies according to claim 10 or 11, wherein one or both sides of the flexible cladding member are provided with a groove in a width direction.

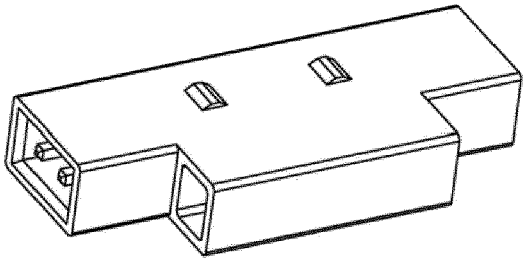

FIG.1

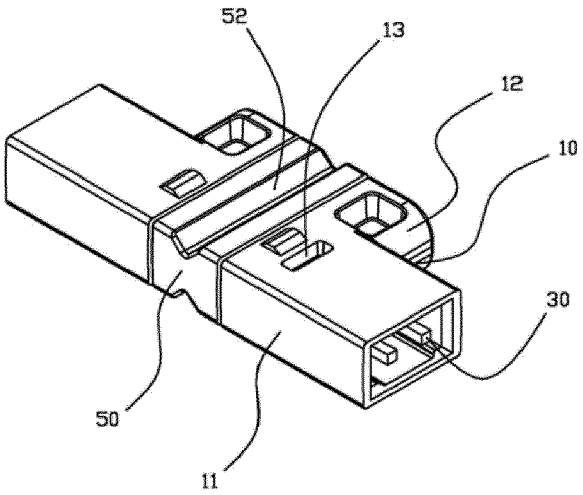


FIG.2

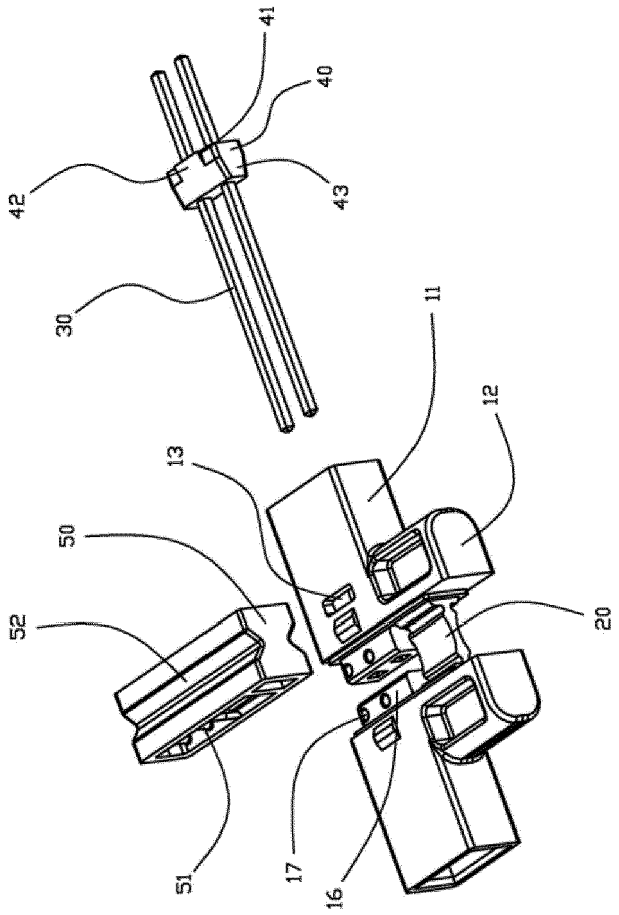


FIG.3

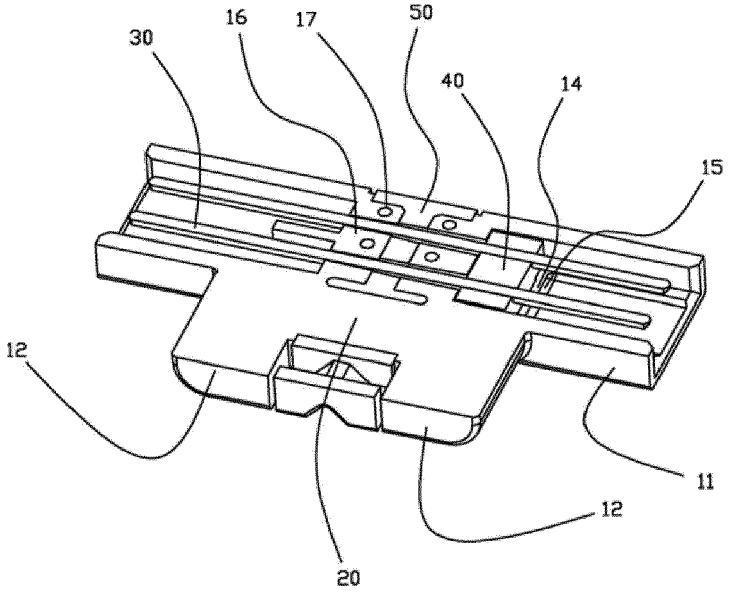
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FIG.4

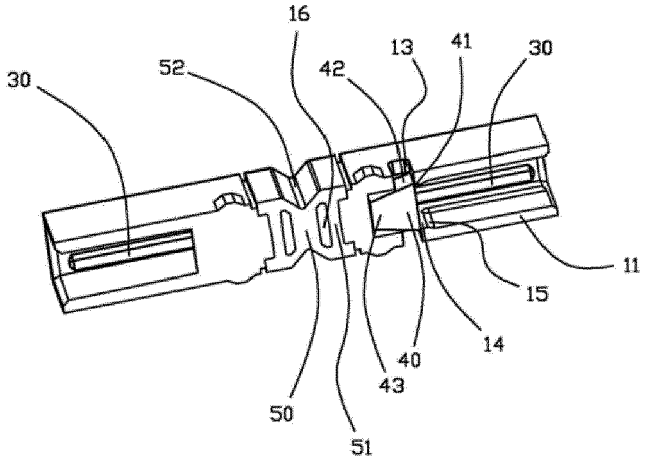
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FIG.5

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Application Number
EP 20 16 3154

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The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| The Hague | 28 August 2020 | Hugueny, Bertrand |

CATEGORY OF CITED DOCUMENTS

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