United States Patent Application Publication	20250256497
Kind Code	A1
Publication Date	August 14, 2025
Inventor(s)	YANG; Zeming et al.

SUPPORT COMPONENT AND LAMINATION DEVICE

Abstract

The embodiments of the present application provide a support component and a lamination device. The support component is configured to laminate a curved cover plate with a flexible screen, and the support component includes: a base having a support surface on one side in a first direction; and a flexible support table arranged on the support surface and configured to support the flexible screen, the flexible support table including a body, a strip-shaped portion connected to the body, and an edge portion arranged on a side of the strip-shaped portion facing away from the body, at least part of the strip-shaped portion being spaced apart from the base, and the edge portion abutting against the support surface.

Inventors: **YANG; Zeming (Langfang, CN), XU; Zhipeng (Langfang, CN), CHEN; Yuanyuan (Langfang, CN), FAN; Liubin (Langfang, CN), LIU; Mingxing (Langfang, CN), ZHAO; Jingjing (Langfang, CN)**

Applicant: **Yungu (Gu'an) Technology Co., Ltd.** (Langfang, CN)

Family ID: **85731696**

Assignee: **Yungu (Gu'an) Technology Co., Ltd. (Langfang, CN)**

Appl. No.: **19/193916**

Filed: **April 29, 2025**

Foreign Application Priority Data

CN	202211484296.X	Nov. 24, 2022

Related U.S. Application Data

parent WO continuation PCT/CN2023/090839 20230426 PENDING child US 19193916

Publication Classification

Int. Cl.: **B32B37/00** (20060101); **B32B37/10** (20060101)

U.S. Cl.:

CPC **B32B37/0046** (20130101); **B32B37/10** (20130101); B32B2457/20 (20130101)

Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS [0001] The present application a continuation of International Application No. PCT/CN2023/090839 filed on Apr. 26, 2023, which claims priority to Chinese Patent Application No. 202211484296.X, filed on Nov. 24, 2022. All of the aforementioned patent applications are hereby incorporated by reference in their entireties.

FIELD

[0002] The present application relates to the field of flexible screen lamination equipment, and in particular to a support component and a lamination device.

BACKGROUND

[0003] With the advent of the ubiquitous screen era, people's demand for full screens is becoming stronger and stronger. In order to increase the screen-to-body ratio, dual-curved lamination technology and quad-curved lamination technology have emerged.

[0004] In the prior art, the flexible characteristics of the flexible screen are mainly used to achieve a full screen. At present, the lamination methods for the flexible screen are mainly to use a silicone pad to press the flexible screen to an inner side of a glass curved cover plate. During lamination, the silicone pad is deformed due to the pressures from upper and lower jigs, to complete the lamination of the flexible screen with the curved cover plate. When the silicone pad is not deformed enough, it is possible to cause bubbles between the flexible screen and the curved cover plate.

SUMMARY

[0005] Embodiments of the present application provide a support component and a lamination device, which are intended to solve the problem of the generation of bubbles during lamination of a flexible screen with a curved cover plate.

[0006] In an aspect, the embodiments of the present application provide a support component for laminating a curved cover plate with a flexible screen, the support component including: a base having a support surface on one side in a first direction; and a flexible support table arranged on the support surface and configured to support the flexible screen, the flexible support table including a body, a strip-shaped portion connected to the body, and an edge portion arranged on a side of the strip-shaped portion facing away from the body, at least part of the strip-shaped portion being spaced apart from the base, and the edge portion abutting against the support surface.

[0007] In a second aspect, the embodiments of the present application further provide a lamination device for laminating a curved cover plate with a flexible screen, the lamination device including a support component according to any of the above embodiments of the first aspect, and a pressing table, the pressing table being arranged on one side of the support component, the pressing table having a receiving recess for receiving the curved cover plate, and an opening of the receiving recess facing the support component.

[0008] The support component provided in the embodiments of the present application is configured to support the flexible screen during the lamination of the curved cover plate with the flexible screen. The support component includes a base and a flexible support table. A support

surface of the base is configured to provide support to the flexible support table. The flexible support table includes a body, a strip-shaped portion and an edge portion. At least part of the strip-shaped portion is spaced apart from the base, and the edge portion abuts against the support surface of the base. During the lamination of the curved cover plate with the flexible screen, when the curved cover plate exerts a force toward the strip-shaped portion, at least part of the strip-shaped portion will be recessed and deformed toward the support surface due to a large gap between the at least part of the strip-shaped portion and the support surface, the edge portion is warped and deformed away from the support surface under this effect, so that the flexible screen and a specially-shaped portion of the curved cover plate are laminated more tightly, and the problem of the presence of lamination bubbles between the specially-shaped portion of the curved cover plate and the flexible screen can be effectively solved.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. **1** is a structural schematic view of a curved cover plate and a flexible screen according to an embodiment of the present application;

[0010] FIG. **2** is a structural schematic perspective view of a support component according to an embodiment of the present application;

[0011] FIG. **3** is a front view of a support component according to an embodiment of the present application;

[0012] FIG. **4** is a top view of a support component according to an embodiment of a first aspect of the present application;

[0013] FIG. **5** is a cross-sectional view along line A-A in FIG. **4**;

[0014] FIG. **6** is a structural schematic view of a base of a support component according to an embodiment of the present application;

[0015] FIG. **7** is a partial cross-sectional view of a base of a support component according to an embodiment of the present application;

[0016] FIG. **8** is a structural schematic partial enlarged view of FIG. **7** in an example;

[0017] FIG. **9** is a structural schematic partial enlarged view of FIG. **7** in another example;

[0018] FIG. **10** is a structural schematic partial enlarged view of FIG. **7** in still another example;

[0019] FIG. **11** is a structural schematic partial enlarged view of FIG. **5**;

[0020] FIG. **12** is a structural schematic view of a base of a support component according to another embodiment of the present application; and

[0021] FIG. **13** is a structural schematic view of a lamination device according to an embodiment of the present application.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0022] As shown in FIG. **1**, FIG. **1** shows a structural schematic exploded view of a display device including a flexible screen **20** and a curved cover plate **10** which are laminated with each other. The curved cover plate **10** includes a flattened portion **12** and a specially-shaped portion **11** located on at least one side in a circumferential direction of the flattened portion **12**. The specially-shaped portion **11** is bent with respect to the flattened portion **12**, and the flexible screen **20** is laminated with the flattened portion **12** and the specially-shaped portion **11** so that the specially-shaped portion **11** is also available for display, thereby increasing the screen-to-body ratio of the display device.

[0023] During the lamination of the flexible screen **20** with the curved cover plate **10**, the flexible screen **20** is generally arranged on a deformable flexible support table **200**, such that the flexible screen **20** can be better laminated with the specially-shaped portion **11** of the curved cover plate **10** by means of the deformation of the flexible support table **200**. In the prior art, since the shape of

the specially-shaped portion **11** is irregular, the specially-shaped portion **11** has a specially-shaped curved surface, resulting in lamination bubbles between the specially-shaped portion **11** and the flexible screen **20**.

[0024] In order to solve the above problem, the present application is provided. In order to better understand the present application, a support component and a lamination device according to the embodiments of the present application will be described in detail below with reference to FIGS. **2** to **12**.

[0025] Referring to FIGS. **2** to **5** together, FIG. **2** is a structural schematic perspective view of a support component according to an embodiment of a first aspect of the present application, FIG. **3** is a front view of a support component according to an embodiment of the first aspect of the present application, and FIG. **4** is a top view of a support component according to an embodiment of the first aspect of the present application. FIG. **5** is a cross-sectional view along line A-A in FIG. **4**.

[0026] As shown in FIGS. **2** to **5**, the embodiments of the first aspect of the present application provide a support component for laminating a curved cover plate **10** with a flexible screen **20** as shown in FIG. **1**. The support component includes a base **100** and a flexible support table **200**. The base **100** has a support surface **110** on one side in a first direction Z. The flexible support table **200** is arranged on the support surface **110** and configured to support the flexible screen **20**. The flexible support table **200** includes a body **230**, a strip-shaped portion **210** connected to the body **230**, and an edge portion **270** arranged on a side of the strip-shaped portion **210** facing away from the body, at least part of the strip-shaped portion **210** is spaced apart from the base **100**, and the edge portion **270** abuts against the support surface **110**.

[0027] By at least part of the strip-shaped portion **210** being spaced apart from the base **100**, for example, the strip-shaped portion **210** includes a first surface **211** facing the support surface **110**, and the first surface **211** is spaced apart from the support surface **110**. The edge portion **270** includes a second surface **221** facing the support surface **110**. The second surface **221** and the support surface **110** abut against each other.

[0028] The base **100** may be configured in a variety of ways. In one embodiment, the base **100** may be formed from a rigid material such as metal and plastic, such that the base **100** can provide good support for the flexible support table **200**.

[0029] The flexible support table **200** may be configured in a variety of ways. In one embodiment, the flexible support table **200** may be formed from a flexible material such as silicone, such that the flexible support table **200** has a good deformation capability. The flexible support table **200** may alternatively be formed from another elastic material with deformation capability, as long as the flexible support table **200** has a certain flexibility, and the surface of the flexible support table **200** for supporting the flexible screen **20** can be deformed.

[0030] The strip-shaped portion **210** and the bent portion **220** may be configured in a variety of ways. For example, the strip-shaped portion **210** is arranged on one side of the body **230** and extends in the form of a strip in a certain direction, and a plurality of strip-shaped portions **210** enclose the body **230** in different directions.

[0031] In one embodiment, the surface of the flexible support table **200** for supporting the flexible screen **20** is adapted to the shape of the curved cover plate **10**.

[0032] The support component provided in the embodiments of the present application is configured to support the flexible screen **20** during the lamination of the curved cover plate **10** with the flexible screen **20**. The support component includes a base **100** and a flexible support table **200**. A support surface **110** of the base **100** is configured to provide support to the flexible support table **200**. The flexible support table **200** includes a body **230**, a strip-shaped portion **210** and an edge portion **270**. At least part of the strip-shaped portion **210** is spaced apart from the base **100**, and the edge portion **270** abuts against the support surface **110** of the base **100**. During the lamination of the curved cover plate **10** with the flexible screen **20**, when the curved cover plate **10** exerts a force

toward the strip-shaped portion **210**, at least part of the strip-shaped portion **210** will be recessed and deformed toward the support surface **110** due to a large gap between the at least part of the strip-shaped portion **210** and the support surface **110**, and the edge portion **270** is warped and deformed away from the support surface **110** under this effect, so that the flexible screen **20** and a specially-shaped portion **11** of the curved cover plate **10** are laminated more tightly, and the problem of the presence of lamination bubbles between the specially-shaped portion **11** and the flexible screen **20** can be effectively solved.

[0033] There are various ways in which the strip-shaped portion **210** is spaced apart from the support surface **110**. For example, a blind recess may be provided in the strip-shaped portion **210**. The blind recess is formed by recessing in a direction away from the support surface **110** to increase the distance between a bottom wall surface of the blind recess and the support surface **110**, and the distance between the strip-shaped portion **210** and the support surface **110** is thus increased so that the strip-shaped portion **210** is spaced apart from the base **100**.

[0034] Referring to FIGS. **2** to **6** together, FIG. **6** is a structural schematic view of a base **100** of a support component according to an embodiment of the present application.

[0035] In some other embodiments, as shown in FIGS. **2** to **6**, the support surface **110** is provided with a recess **120**. An orthographic projection of the recess **120** in the first direction Z at least partially overlaps an orthographic projection of the strip-shaped portion **210** in the first direction Z. The strip-shaped portion **210** is spaced apart from a bottom wall surface of the recess **120**.

[0036] In these embodiments, by providing a recess **120** on the support surface **110**, and by making the orthographic projections of the recess **120** and the strip-shaped portion **210** at least partially overlap each other, at least part of the strip-shaped portion **210** is spaced apart from the bottom wall surface of the recess **120**, and there is a gap between the at least part of the strip-shaped portion **210** and the bottom wall surface of the recess **120**. During the lamination of the curved cover plate **10** with the flexible screen **20**, at least part of the strip-shaped portion **210** can be recessed and deformed in the direction of the bottom wall surface of the recess **120** under the force of the curved cover plate **10**, and the edge portion **270** is warped toward the curved cover plate **10** under this effect, to increase the laminating force between the specially-shaped portion **11** and the flexible screen **20**, thereby reducing lamination bubbles between the specially-shaped portion **11** and the flexible screen **20**.

[0037] In one embodiment, the strip-shaped portion **210** includes a first strip-shaped portion **212** located on at least one side of the body **230** in a second direction X, a second strip-shaped portion **213** located on at least one side of the body **230** in a third direction Y, and a bent portion **220** connecting the first strip-shaped portion **212** and the second strip-shaped portion **212**. The orthographic projection of the recess **120** in the first direction Z at least partially overlaps an orthographic projection of the first strip-shaped portion **212** and/or the second strip-shaped portion **213** in the first direction Z.

[0038] The recess **120** may be configured in a variety of ways. In one embodiment, the recess **120** may be integrally formed, and the recess **120** may be arranged corresponding to the first strip-shaped portion **212** and/or the second strip-shaped portion **213** on a one-to-one basis. Alternatively, as shown in FIG. **6**, the recess **120** includes a plurality of sub-recesses. The plurality of sub-recesses are spaced apart from each other in the third direction Y, and are arranged corresponding to the same first strip-shaped portion **212** and/or second strip-shaped portion **213**.

[0039] During the lamination of the curved cover plate **10** with the flexible screen **20**, the middle of the first strip-shaped portion **212** and/or the second strip-shaped portion **213** may be deformed toward the bottom wall surface of the recess **120** under the force of the curved cover plate **10**, and parts of the first strip-shaped portion **212** and/or the second strip-shaped portion **213** and the bent portion **220** may be warped toward the curved cover plate **10** in a direction from the middle of the first strip-shaped portion **212** and/or the second strip-shaped portion **213** to the bent portion **220**, to increase the warpage height of the bent portion **220**. In some other embodiments, it is also possible

that the first strip-shaped portion **212** and/or the second strip-shaped portion **213** is deformed as a whole toward a bottom wall of the recess **120**, while the bent portion **220** is warped and deformed toward the curved cover plate **10**. In the embodiments of the present application, the provision of the recess **120** in the base **100** instead of the flexible support table **200** can ensure that the flexible support table **200** has a sufficient thickness and thus has a sufficient deformation capability, thereby better alleviating the problem of lamination bubbles being likely to be generated between the curved cover plate **10** and the flexible screen **20**.

[0040] In one embodiment, the edge portion **270** and the support surface **110** are laminated with each other, so that the support surface **110** can provide better support to the flexible support table **200**.

[0041] In one embodiment, the surface of the edge portion **270** facing the base **100** is coplanar with the surface of the strip-shaped portion **210** facing the base **100**, that is, the first surface **211** is coplanar with the second surface **221**, so that the structure of the flexible support table **200** can be simplified, and the preparation and formation of the flexible support table **200** can be facilitated. In addition, the thickness variation of the flexible support table **200** can be made more uniform, and the force exerted by the flexible support table **200** on the flexible screen **20** can be more balanced without sudden changes, thereby alleviating the problem of the curved cover plate **10** being prone to crack during the lamination.

[0042] In one embodiment, the recess **120** has a depth greater than or equal to 1 mm to alleviate the problem of too small deformation distance of the strip-shaped portion **210** toward the recess **120** caused by the insufficient depth of the recess **120**, which results in that the bent portion **220** or at least the rest of the strip-shaped portion **210** is warped toward the curved cover plate **10** by a small distance and the problem of lamination bubbles generated between the curved cover plate **10** and the flexible screen **20** thus cannot be properly alleviated. The depth of the recess **120** is the extension depth of the recess **120** in the first direction Z.

[0043] In one embodiment, a distance H between the recess **120** and an outer edge of the support surface **110** may be equal to 0, to increase the distribution area of the recess **120** and improve the deformation capability of the strip-shaped portion **210**.

[0044] In one embodiment, the distance H between the recess **120** and the outer edge of the support surface **110** is greater than or equal to 1.5 mm, such that the distance between the recess **120** and the support surface **110** is large enough, and the problem of non-tight lamination between the edge of the curved cover plate **10** and the flexible screen **20** due to the too small distance between the recess **120** and the edge of the support surface **110** can be thus alleviated. In some embodiments, still referring to FIG. **2**, the surface of the body **230** for supporting the flexible screen **20** is planar and the surface of the strip-shaped portion **210** for supporting the flexible screen **20** is curved, and the strip-shaped portion **210** includes a first strip-shaped portion **212** located on at least one side of the body **230** in the second direction X, but does not include a second strip-shaped portion **212**.

[0045] In these embodiments, the curved cover plate **10** is a dual-curved or single-curved cover plate. The recess **120** may then be configured to traverse in the third direction to better alleviate the problem of the presence of lamination bubbles between the flexible screen **20** supported by the first strip-shaped portion **212** and the curved cover plate **10**.

[0046] In some other embodiments, as described above, the strip-shaped portion **210** includes a first strip-shaped portion **212**, a second strip-shaped portion **213**, and a bent portion **220**. Surfaces of the first strip-shaped portion **212**, the second strip-shaped portion **213** and the bent portion **220** for supporting the flexible screen **20** are all curved. For example, the flexible support table **200** includes an arc-shaped region **240**. The first strip-shaped portion **212**, the second strip-shaped portion **213** and the bent portion **220** are arranged in the arc-shaped region **240**.

[0047] In one embodiment, when the surfaces of the first strip-shaped portion **212** and the second strip-shaped portion **213** for supporting the flexible screen **20** are both curved, the orthographic projection of the recess **120** in the first direction Z and the orthographic projection of the bent

portion **220** in the first direction Z are misaligned with each other.

[0048] In these embodiments, the flexible screen **20** supported by the bent portion **220** and the curved cover plate **10** are more prone to the generation of lamination bubbles as compared to the first strip-shaped portion **212** and the second strip-shaped portion **213**. By the orthographic projection of the recess **120** in the first direction Z and the orthographic projection of the bent portion **220** in the first direction Z being misaligned with each other, it is meant that the support surface **110** is flatter and the flexible support table **200** is more tightly laminated with the support surface **110** at a position where the bent portion **220** is located, so that the bent portion **220** can provide better support to the flexible screen **20**, and the problem of lamination bubbles between the flexible screen **20** supported by the bent portion **220** and the curved cover plate **10** can be better alleviated.

[0049] In an embodiment of the present application, the recess **120** corresponds to the strip-shaped portion **210** and the bent portion **220** of the arc-shaped region **240** rather than to the body **230**, enabling an increase in the support force provided by the support surface **110** to the body **230** of the flexible support table **200**, thereby reducing the influence of the recess **120** on the mutual lamination between the flexible screen **20** supported by the body **230** and the curved cover plate **10**.

[0050] The curved cover plate **10** may be configured in a variety of ways. It is possible that the curved cover plate **10** is a dual-curved cover plate, and the curved cover plate **10** includes two specially-shaped portions **11** on two sides of the flattened portion **12** in the second direction X. Alternatively, the curved cover plate **10** is a quad-curved cover plate, and the curved cover plate **10** includes four specially-shaped portions **11** located on the peripheral side of the flattened portion **12** and bent portions for connecting every two adjacent specially-shaped portions **11**.

[0051] Correspondingly, the arc-shaped region **240** is configured in a variety of ways. When the curved cover plate **10** is a dual-curved cover plate, the arc-shaped region **240** includes a first arc-shaped region **241** located on at least one side of a planar region **230** in the second direction X. The first arc-shaped region **241** extends in the third direction Y. The first strip-shaped portion **212** is located in the first arc-shaped region **241**.

[0052] In one embodiment, when the curved cover plate **10** is a quad-curved cover plate, the arc-shaped region **240** includes a first arc-shaped region **241** as described above, and a second arc-shaped region **242** located on at least one side of the planar region **230** in the third direction Y. The second arc-shaped region **242** extends in the second direction X. The arc-shaped region **240** may further include a bent region **243** connecting the first arc-shaped region **241** and the second arc-shaped region **242**. The first strip-shaped portion **212** is located in the first arc-shaped region **241**, the second strip-shaped portion **213** is located in the second arc-shaped region **242**, and the bent portion **220** is located in the bent region **243**.

[0053] Still referring to FIGS. **2** to **6**, when the arc-shaped region **240** includes the first arc-shaped region **241** as described above, the strip-shaped portion **210** includes a first strip-shaped portion **212** located in the first arc-shaped region **241**. That is, the strip-shaped portion **210** includes a first strip-shaped portion **212** located on at least one side of the body **230** in the second direction X. The bent portion **220** includes a first bent portion **222** located on at least one side of the first strip-shaped portion **212** in the third direction Y, the recess **120** includes a first recess **121**, and an orthographic projection of the first recess **121** in the first direction Z is arranged to at least partially overlap an orthographic projection of the first strip-shaped portion **212** in the first direction Z.

[0054] In these embodiments, the orthographic projection of the first recess **121** in the first direction Z is arranged to at least partially overlap the orthographic projection of the first strip-shaped portion **212** in the first direction Z, and at least part of the first strip-shaped portion **212** in the first arc-shaped region **241** can be deformed toward a bottom wall of the first recess **121** under the action of the specially-shaped portion **11**, so that the first bent portion **222** and at least the rest of the first strip-shaped portion **212** can be warped in the first direction Z along two ends of the specially-shaped portion **11** in the third direction Y, thereby alleviating the problem of lamination

bubbles between the two ends of the specially-shaped portion **11** in the third direction Y and the flexible screen **20**.

[0055] In one embodiment, the first recess **121** and the first strip-shaped portion **212** are both symmetrically arranged with respect to a first reference plane P. The first reference plane P is parallel to a plane in which the first direction Z and the second direction X are located. In one embodiment, the first reference plane P is perpendicular to the third direction Y. In these embodiments, the first recess **121** and the first strip-shaped portion **212** are both symmetrically arranged with respect to the first reference plane P, and when the first strip-shaped portion **212** is deformed toward the bottom wall surface of the first recess **121**, the first bent portion **222** is warped toward the specially-shaped portion **11**, so that the warpage shapes of the first bent portion **222** on two sides of the third direction Y tend to be consistent, thereby better alleviating the problem of lamination bubbles between the two ends of the specially-shaped portion **11** in the third direction Y and the flexible screen **20**.

[0056] In one embodiment, the orthographic projection of the first recess **121** in the first direction Z is located within the orthographic projection of the first strip-shaped portion **212** in the first direction Z. In these embodiments, the orthographic projection of the first recess **121** is located within the orthographic projection of the first strip-shaped portion **212**, so that the first recess **121** can better alleviate the problem of the presence of lamination bubbles between the flexible screen **20** supported by the first strip-shaped portion **212** and the specially-shaped portion **11**. Moreover, the influence of the first recess **121** on the mutual lamination between the flexible screen **20** supported by the body **230** and the curved cover plate **10** can be reduced.

[0057] Referring to FIGS. **7** to **8** together, FIG. **7** is a cross-sectional view of a base **100** of a support component according to an embodiment of the present application. FIG. **8** is a structural schematic partial enlarged view of FIG. **7**. In the embodiment shown in FIG. **7**, the recess **120** is integrally formed, and the recess **120** is arranged corresponding to the first strip-shaped portion **212** and/or the second strip-shaped portion **213** on a one-to-one basis.

[0058] In one embodiment, the depth of the first recess **121** is constant in the third direction Y to simplify the shape of the first recess **121** and facilitate the preparation of the base **100**.

[0059] Referring to FIG. **7** and FIGS. **9** to **10** together, FIG. **9** is a structural schematic partial enlarged view of a base of a support component according to another embodiment, and FIG. **10** is a structural schematic partial enlarged view of a base of a support component according to still another embodiment.

[0060] In some other embodiments, as shown in FIG. **7** and FIGS. **9** to **10**, the depth of the first recess **121** gradually decreases in a direction from the first reference plane to at least one side of the first recess **121** in the third direction Y.

[0061] In these embodiments, the first recess **121** has a maximum depth at the position where the first reference plane P is located, and the closer to the bent portion **220**, the smaller the depth of the first recess **121**. During the lamination of the curved cover plate **10** with the flexible screen **20**, the closer to the position where the first reference plane P is located, the greater the deformation capability of the first strip-shaped portion **212**, and the closer to the vicinity of the first bent portion **222**, the smaller the deformation capability of the first strip-shaped portion **212**, so that it is possible to ensure that the first bent portion **222** has a sufficient thickness and deformation capability, and the first bent portion **222** can better support the lamination of the flexible screen **20** with the specially-shaped portion **11**.

[0062] The depth of the first recess **121** may decrease in a variety of ways. For example, as shown in FIG. **9**, the first recess **121** includes a first bottom wall surface **121***a* and first side wall surfaces connected to the first bottom wall surface **121***a* and located on two sides of the third direction Y. The first bottom wall surface **121***a* includes two first inclined surfaces connected to each other. The connection between the first inclined surfaces is located at the position where the first reference plane P is located. The first inclined surfaces are planar, and are inclined in a direction close to the

flexible support table **200** from the position where the first reference plane P is located to the first side wall surfaces, so that the depth of the first recess **121** gradually decreases in the direction from the first reference plane P to at least one side of the first recess **121** in the third direction Y. In some other embodiments, it is also possible that, as shown in FIG. **10**, the first bottom wall surface **121***a* is in the shape of a step.

[0063] Referring to FIGS. **4** and **12** together, FIG. **12** is a structural schematic view of a base of a support component according to another embodiment of the present application.

[0064] In some embodiments, as shown in FIGS. **4** and **12**, the arc-shaped region **240** further includes a second arc-shaped region **242** located on at least one side of the body **230** in the third direction Y, and the strip-shaped portion **210** includes a second strip-shaped portion **213** in the second arc-shaped region **242**. That is, the strip-shaped portion **210** includes a second strip-shaped portion **213** located on at least one side of the body **230** in the third direction Y. The bent portion **220** includes a second bent portion **223** located on at least one side of the second strip-shaped portion **213** in the second direction X. The recess **120** includes a second recess **122**. An orthographic projection of the second recess **122** in the first direction Z is arranged to at least partially overlap an orthographic projection of the second strip-shaped portion **213** in the first direction Z.

[0065] In these embodiments, the orthographic projection of the second recess **122** in the first direction Z is arranged to at least partially overlap the orthographic projection of the second strip-shaped portion **213** in the first direction Z, and the second strip-shaped portion **213** in the second arc-shaped region **242** can be deformed toward a bottom wall of the second recess **122** under the action of the specially-shaped portion **11**, so that the second bent portion **223** can be warped toward two ends of the specially-shaped portion **11** in the second direction X, thereby alleviating the problem of lamination bubbles between the two ends of the specially-shaped portion **11** in the second direction X and the flexible screen **20**.

[0066] In one embodiment, the second recess **122** and the second strip-shaped portion **213** are both symmetrically arranged with respect to a second reference plane. The second reference plane is parallel to a plane in which the first direction Z and the third direction Y are located. In one embodiment, the second reference plane is perpendicular to the second direction X. In these embodiments, the second recess **122** and the second strip-shaped portion **213** are both symmetrically arranged with respect to the second reference plane, and when at least part of the second strip-shaped portion **213** is deformed toward the bottom wall surface of the second recess **122**, the second bent portion **223** and at least the rest of the second strip-shaped portion **213** are warped toward the specially-shaped portion **11**, so that the warpage shapes of the second bent portion **223** on two sides of the second direction X tend to be consistent, thereby better alleviating the problem of lamination bubbles between the two ends of the specially-shaped portion **11** in the second direction X and the flexible screen **20**.

[0067] In one embodiment, the orthographic projection of the second recess **122** in the first direction Z is located within the orthographic projection of the second strip-shaped portion **213** in the first direction Z. In these embodiments, the orthographic projection of the second recess **122** is located within the orthographic projection of the second strip-shaped portion **213**, so that the second recess **122** can better alleviate the problem of the presence of lamination bubbles between the flexible screen **20** supported by the second strip-shaped portion **213** and the specially-shaped portion **11**. Moreover, the influence of the second recess **122** on the mutual lamination between the flexible screen **20** supported by the body **230** and the curved cover plate **10** can be reduced.

[0068] In one embodiment, the depth of the second recess **122** is constant in the second direction X to simplify the shape of the second recess **122** and facilitate the preparation of the base **100**.

[0069] In some other embodiments, the depth of the second recess **122** gradually decreases in a direction from the second reference plane to at least one side of the second recess **122** in the second direction X.

[0070] In these embodiments, the depth of the second recess **122** is greatest at the position where the second reference plane is located, and the closer to the bent portion **220**, the smaller the depth of the second recess **122**. During the lamination of the curved cover plate **10** with the flexible screen **20**, the closer to the position where the second reference plane is located, the greater the deformation capability of the second strip-shaped portion **213**, and the closer to the vicinity of the second bent portion **223**, the smaller the deformation capability of the second strip-shaped portion **213**, so that it is possible to ensure that the second bent portion **223** has a sufficient thickness and deformation capability, and the second bent portion **223** can better support the lamination of the flexible screen **20** with the specially-shaped portion **11**.

[0071] The depth of the second recess **122** may decrease in a variety of ways. For example, the second recess **122** includes a second bottom wall surface **121***b* and second side wall surfaces connected to the second bottom wall surface **121***b* and located on two sides of the third direction Y. The second bottom wall surface **121***b* includes two second inclined surfaces connected to each other. The connection between the second inclined surfaces is located at the position where the second reference plane is located. The second inclined surfaces are planar, and are inclined in a direction close to the flexible support table **200** from the second reference plane to the second side wall surfaces, so that the depth of the second recess **122** gradually decreases in the direction from the second reference plane to at least one side of the second recess **122** in the second direction X. In some other embodiments, it is also possible that the second bottom wall surface **121***b* is in the shape of a step.

[0072] In some embodiments, as shown in FIG. **12**, the base **100** includes a body portion **130** and a stopper **140**. The stopper **140** is configured to support at least part of the second strip-shaped portion **213**, and the stopper **140** is provided with the second recess **122**. The stopper **140** is relatively small in size to facilitate the manufacturing and formation of the second recess **122**.

[0073] In one embodiment, the body portion **130** includes a first boss **131** and a second boss **132** for supporting the first strip-shaped portion **212**. The first boss **131** and the second boss **132** are spaced apart from each other in the second direction X, and two stoppers **140** are spaced apart from each other in the third direction Y between the first boss **131** and the second boss **132**. By adjusting the distance between the two stoppers **140**, the base **100** can be adapted to different sizes of flexible support tables **100**, so that the adaptability of the base **100** can be improved.

[0074] In one embodiment, the second recess **122** is configured to traverse the stopper **140** in the second direction X. For example, when the stopper **140** is used to support the middle of the second strip-shaped portion **213**, the second recess **122** traverses the stopper **140** in the second direction X, to improve the deformation capability of the second strip-shaped portion **213**.

[0075] In some other embodiments, it is also possible that the second recess **122** is configured not to traverse the stopper **140** in the second direction X.

[0076] As described above, when the surfaces of the first strip-shaped portion **212** and the second strip-shaped portion **213** for supporting the flexible screen **20** are both curved, the orthographic projection of the recess **120** in the first direction Z and the orthographic projection of the bent portion **220** in the first direction Z are misaligned with each other. The recess **120** includes a first recess **121** in the first arc-shaped region **241** and a second recess **122** in the second arc-shaped region **242**, and the bent portion **220** of the flexible support table **200** is warped and deformed when the first strip-shaped portion **212** and the second strip-shaped portion **213** are deformed toward the support surface **110**, so that the problem of lamination bubbles between the flexible screen **20** supported by the bent portion **220** and the curved cover plate **10** can be better alleviated.

[0077] In one embodiment, the first bent portion **222** and the second bent portion **223** are both located in the bent region **243** to better alleviate the problem of lamination bubbles between the flexible screen **20** supported in the bent region **243** and the curved cover plate **10**.

[0078] Referring to FIGS. **4** and **11** together, FIG. **11** is a structural schematic partial enlarged view of FIG. **4**.

[0079] In some embodiments, as shown in FIGS. **4** and **11**, a surface of the strip-shaped portion **210** facing away from the base **100** includes a first arc-shaped surface **250** and a second arc-shaped surface **260** arranged side by side in a direction from the body **230** to the strip-shaped portion **210**. The first arc-shaped surface **250** has a curvature greater than the curvature of the second arc-shaped surface **260**, and a first orthographic projection of the first arc-shaped surface **250** in the first direction Z at least partially overlaps a second orthographic projection of the recess **120** in the first direction Z.

[0080] In these embodiments, the first arc-shaped surface **250** has a greater curvature, the first arc-shaped surface **250** has a greater degree of bending, and it is more likely to generate lamination bubbles when the flexible screen **20** supported by the first arc-shaped surface **250** is laminated with the specially-shaped portion **11**. By the first orthographic projection of the first arc-shaped surface **250** in the first direction Z at least partially overlapping the second orthographic projection of the recess **120** in the first direction Z, it is meant that the recess **120** is arranged corresponding to the first arc-shaped surface **250**, and the recess **120** can reduce the thickness of the flexible support table **200** in a region where the first arc-shaped surface **250** is located. It is possible to improve the bending deformation capability of the flexible support table **200** at this position, thereby better alleviating the problem of lamination bubbles being likely to be generated when the flexible screen **20** supported by the first arc-shaped surface **250** is laminated with the specially-shaped portion **11**.

[0081] In one embodiment, the first orthographic projection is located within the second orthographic projection so that the entire region where the first arc-shaped surface **250** is located is correspondingly provided with the recess **120**, thereby better alleviating the problem of lamination bubbles being likely to be generated when the flexible screen **20** supported by the first arc-shaped surface **250** is laminated with the specially-shaped portion **11**.

[0082] In one embodiment, in the direction from the body **230** to the strip-shaped portion **210**, the width of the first orthographic projection is less than the width of the second orthographic projection. The larger the width of the second orthographic projection, the better the problem of lamination bubbles being likely to be generated when the flexible screen **20** supported by the first arc-shaped surface **250** is laminated with the specially-shaped portion **11** can be alleviated.

[0083] In some embodiments, still referring to FIGS. **2** to **6**, the thickness of the body **230** of the flexible support table **200** is greater than the thicknesses of the strip-shaped portion **210** and the bent portion **220**. The support surface **110** includes a first support surface **111** for supporting the strip-shaped portion **210** and the bent portion **220**, a second support surface **112** for supporting the body **230**, and a first connecting surface **113** connecting the first support surface **111** and the second support surface **112**, and the recess **120** is provided on a side of the second support surface **112** facing the first connecting surface **113**.

[0084] In these embodiments, the body **230** has a greater thickness, enabling the flattened portion **12** to be better laminated with the flexible screen **20**. The recess **120** is arranged on the side of the second support surface **112** close to the first connecting surface **113**, so that the distance between the recess **120** and an edge of the second support surface **112** can be increased, thereby alleviating the problem of bubbles being likely to be generated when the edge of the specially-shaped portion **11** away from the flattened portion **12** is not tightly laminated with the flexible screen **20**.

[0085] In one embodiment, the recess **120** is in communication with the first connecting surface **113** to facilitate the preparation and formation of the recess **120**.

[0086] In one embodiment, when the recess **120** includes a first recess **121** and/or a second recess **122**, the first recess **121** and/or the second recess **122** is in communication with the first connecting surface **113**.

[0087] Referring to FIG. **13**, FIG. **13** is a structural schematic view of a lamination device according to an embodiment of the present application.

[0088] As shown in FIG. **13**, in a second aspect, the embodiments of the present application further provide a lamination device for laminating a curved cover plate **10** with a flexible screen **20**. The

lamination device includes a support component according to any of the above embodiments of the first aspect, and a pressing table **300**. The pressing table **300** is arranged on one side of the support component, and the pressing table **300** has a receiving recess **310** for receiving the curved cover plate **10**. An opening of the receiving recess **310** faces the support component. Since the lamination device according to the embodiments of the present application includes the support component as described above, the lamination device of the embodiments of the present application has the beneficial effects of the support component as described above, which will not be repeated herein.

Claims

1. A support component for laminating a curved cover plate with a flexible screen, the support component comprising: a base having a support surface on one side in a first direction; and a flexible support table arranged on the support surface and configured to support the flexible screen, the flexible support table comprising a body, a strip-shaped portion connected to the body, and an edge portion arranged on a side of the strip-shaped portion facing away from the body, at least part of the strip-shaped portion being spaced apart from the base, and the edge portion abutting against the support surface.
2. The support component according to claim 1, wherein the support surface is provided with a recess, an orthographic projection of the recess in the first direction at least partially overlapping an orthographic projection of the strip-shaped portion in the first direction, and there is a gap between the strip-shaped portion and a bottom wall surface of the recess.
3. The support component according to claim 2, wherein the depth of the recess is greater than or equal to 1 mm; and the distance between the recess and an outer edge of the support surface is greater than or equal to 1.5 mm.
4. The support component according to claim 2, wherein the strip-shaped portion comprises a first strip-shaped portion located on at least one side of the body in a second direction, a second strip-shaped portion located on at least one side of the body in a third direction, and a bent portion connecting the first strip-shaped portion and the second strip-shaped portion, and the orthographic projection of the recess in the first direction and an orthographic projection of the bent portion in the first direction are misaligned with each other.
5. The support component according to claim 4, wherein surfaces of the first strip-shaped portion and the second strip-shaped portion that are configured to support the flexible screen are both curved.
6. The support component according to claim 4, wherein the recess comprises a first recess, an orthographic projection of the first recess in the first direction being located within an orthographic projection of the first strip-shaped portion in the first direction.
7. The support component according to claim 6, wherein the first recess is symmetrically arranged with respect to a first reference plane, the first reference plane being parallel to a plane where the first direction and the second direction are located, and a depth of the first recess gradually decreases in a direction from the first reference plane to at least one side of the first recess in the third direction.
8. The support component according to claim 7, wherein the depth of the first recess gradually decreases in directions from the first reference plane to two sides of the first recess in the third direction.
9. The support component according to claim 7, wherein the first strip-shaped portion is symmetrically arranged with respect to the first reference plane.
10. The support component according to claim 6, wherein the recess comprises a second recess, an orthographic projection of the second recess in the first direction being arranged to at least partially overlap an orthographic projection of the second strip-shaped portion in the first direction.
11. The support component according to claim 10, wherein the second recess is symmetrically

arranged with respect to a second reference plane, the second reference plane being parallel to a plane where the first direction and the third direction are located, and a depth of the second recess gradually decreases in a direction from the second reference plane to at least one side of the second recess in the second direction.

12. The support component according to claim 10, wherein the second strip-shaped portion is symmetrically arranged with respect to the second reference plane; and an orthographic projection of the second recess in the first direction is located within the orthographic projection of the second strip-shaped portion in the first direction.

13. The support component according to claim 10, wherein the base comprises a body portion and a stopper arranged at the body portion, the stopper being configured to support at least part of the second strip-shaped portion, and the stopper being provided with the second recess.

14. The support component according to claim 13, wherein the body portion comprises a first boss and a second boss for supporting the first strip-shaped portion, the first boss and the second boss being spaced apart from each other in the second direction, and two stoppers are spaced apart from each other in the third direction between the first boss and the second boss.

15. The support component according to claim 13, wherein the second recess is configured to traverse the stopper in the second direction.

16. The support component according to claim 2, wherein a surface of the strip-shaped portion facing away from the base comprises a first arc-shaped surface and a second arc-shaped surface arranged side by side in a direction from the body to the strip-shaped portion, a curvature of the first arc-shaped surface is greater than the curvature of the second arc-shaped surface, and a first orthographic projection of the first arc-shaped surface in the first direction at least partially overlapping a second orthographic projection of the recess in the first direction.

17. The support component according to claim 16, wherein the first orthographic projection is located within the second orthographic projection; and in the direction from the body to the strip-shaped portion, a width of the first orthographic projection is less than a width of the second orthographic projection.

18. The support component according to claim 2, wherein a thickness of the body is greater than a thickness of the strip-shaped portion; and the support surface comprises a first support surface for supporting the strip-shaped portion, a second support surface for supporting the body, and a first connecting surface connecting the first support surface and the second support surface, and the recess is provided on a side of the second support surface facing the first connecting surface.

19. The support component according to claim 18, wherein the recess is in communication with the first connecting surface.

20. A lamination device for laminating a curved cover plate with a flexible screen, the lamination device comprising: a support component of claim 1, and a pressing table arranged on one side of the support component, the pressing table comprising a receiving recess for receiving the curved cover plate, and an opening of the receiving recess facing the support component.