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(54) RECEIVING CONTAINER FOR A DISPLAY DEVICE, LIQUID CRYSTAL DISPLAY DEVICE HAVING THE RECEIVING CONTAINER AND METHOD OF MANUFACTURING THE SAME

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(57) **ABSTRACT**

A receiving container for a display device, an LCD device having the receiving container for the display device, and a method of manufacturing the LCD device, wherein the receiving container for the display device includes a frame and a synthetic rubber spacer. The synthetic rubber spacer is provided on the frame. The synthetic rubber spacer includes a plurality of synthetic rubber pieces connected together so that the synthetic rubber spacer absorbs an externally provided impact and protects the LCD panel.

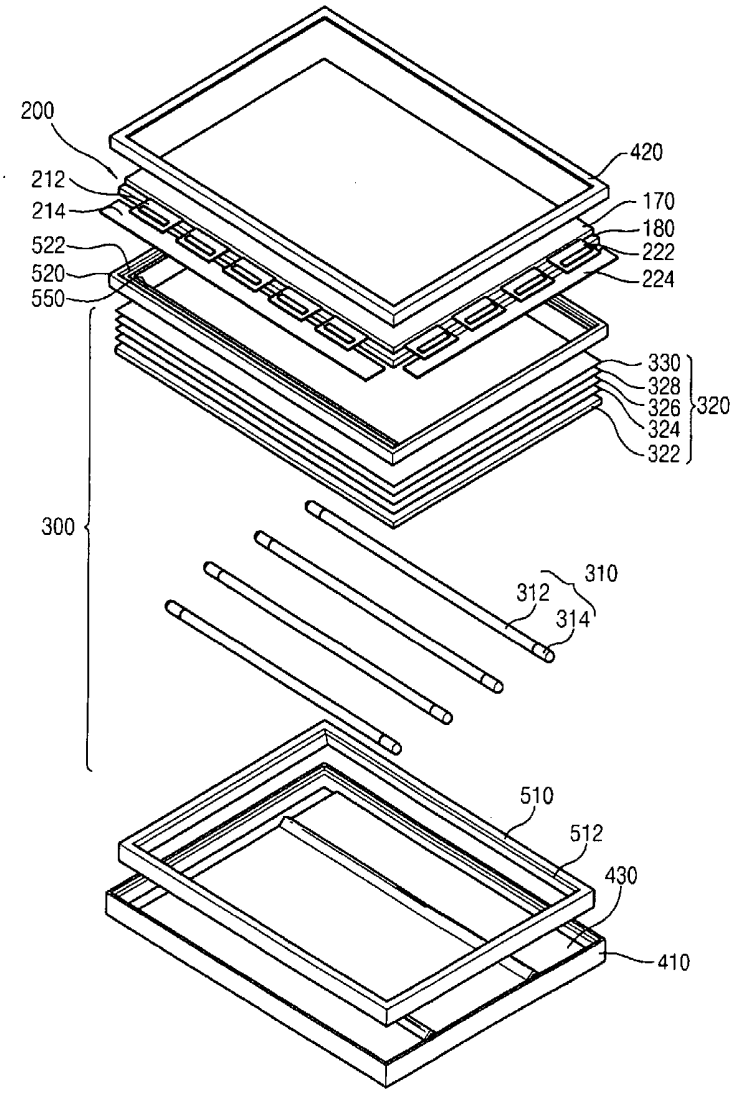
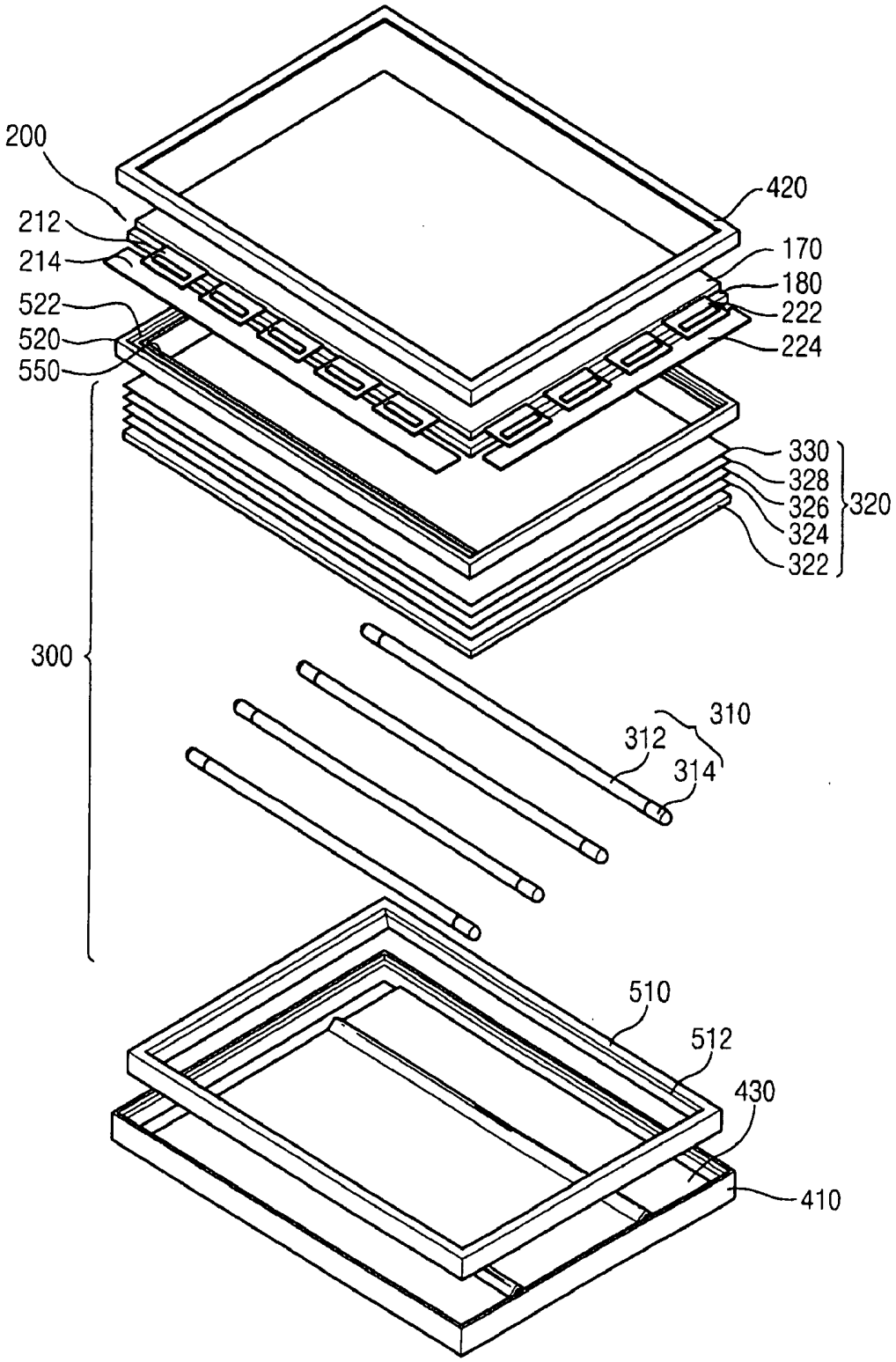


FIG. 1


200
420
212
214
170
180
522
222
520
224
550
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320
324
322
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312
314
510
512
430
410

FIG. 2

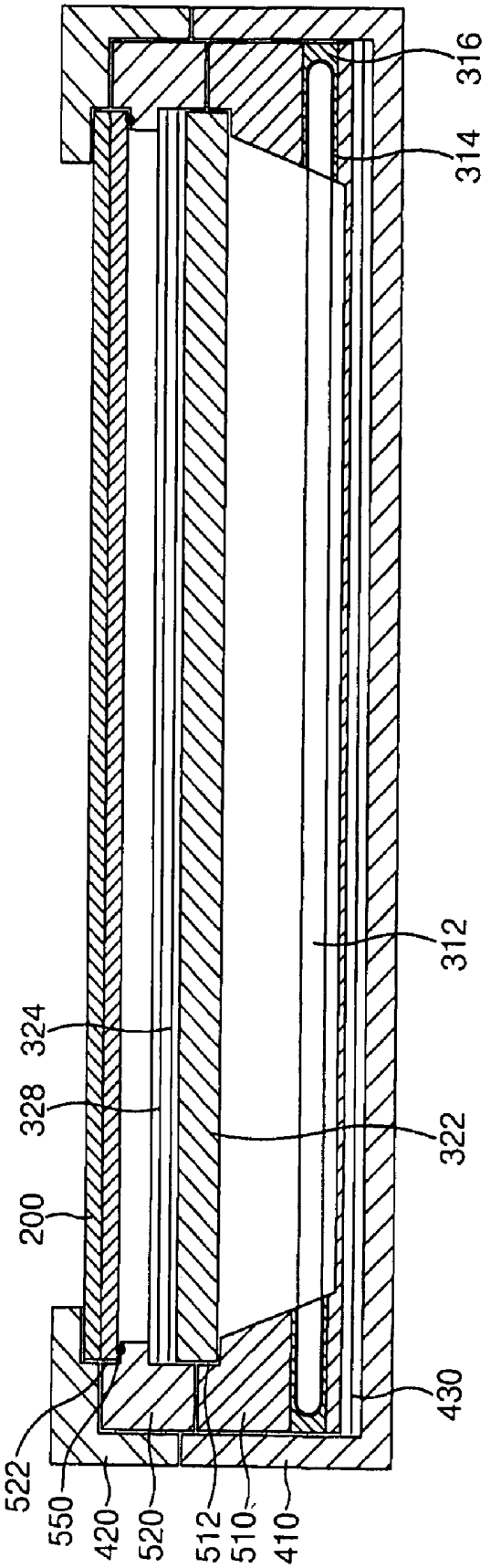


FIG. 3

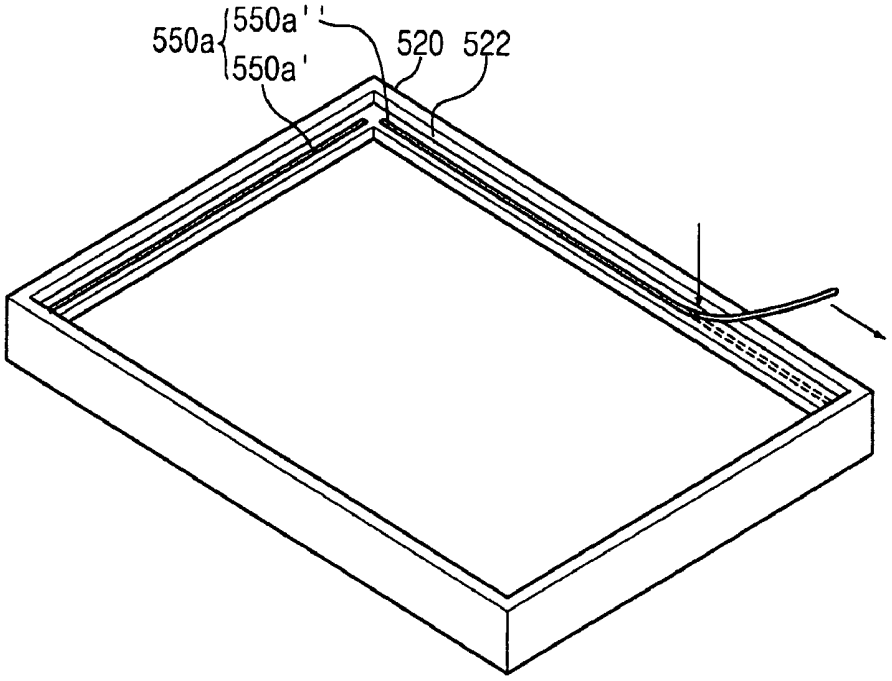


FIG. 4

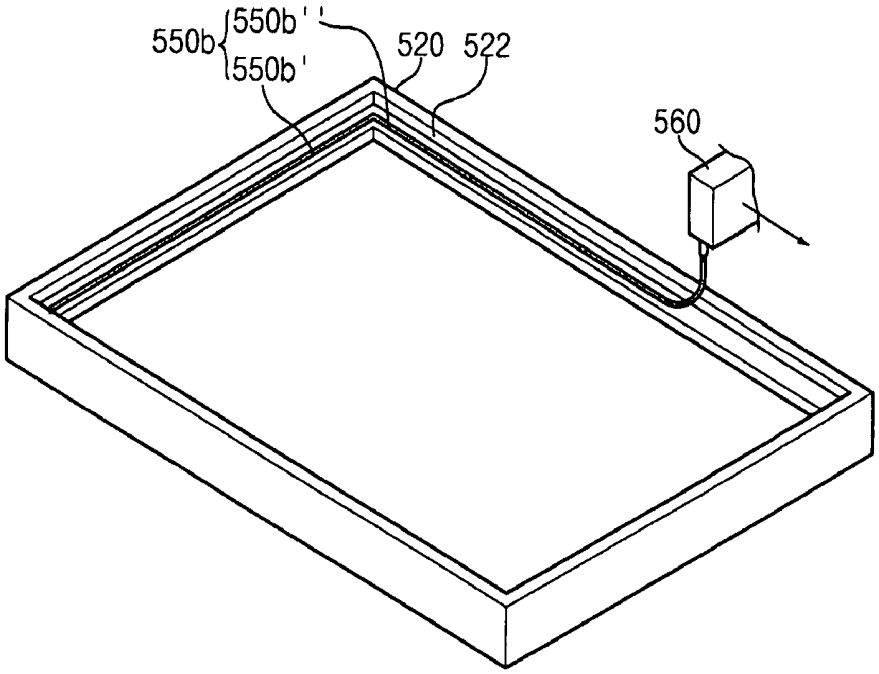


FIG. 5

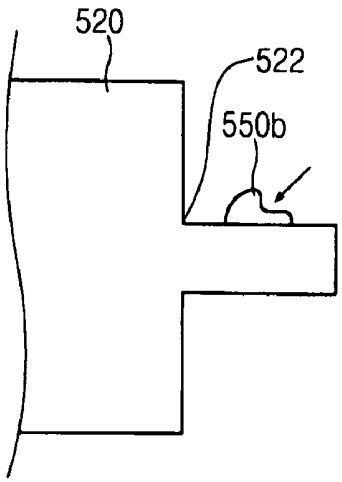


FIG. 6

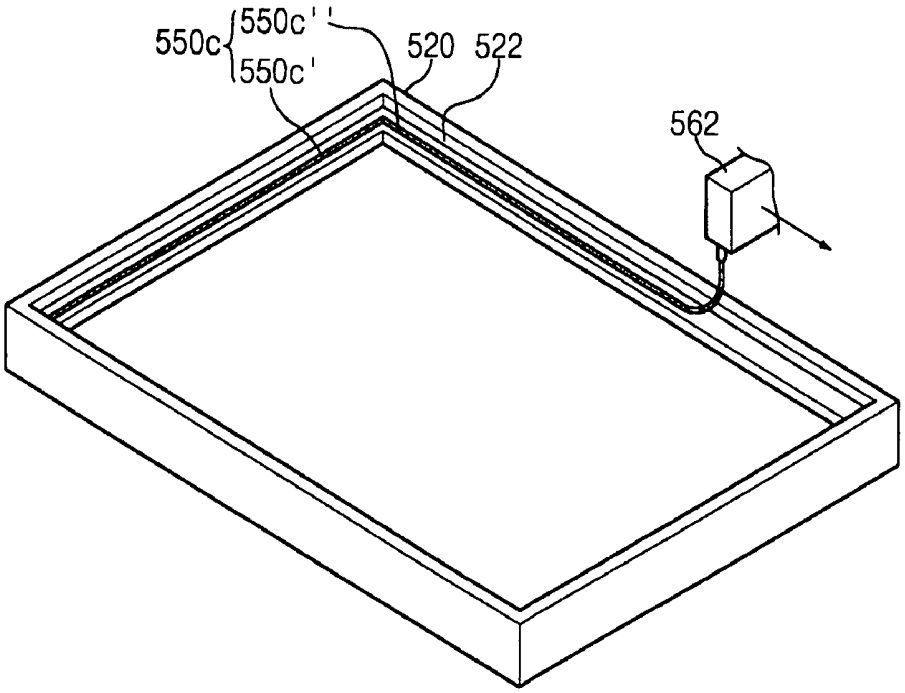


FIG. 7

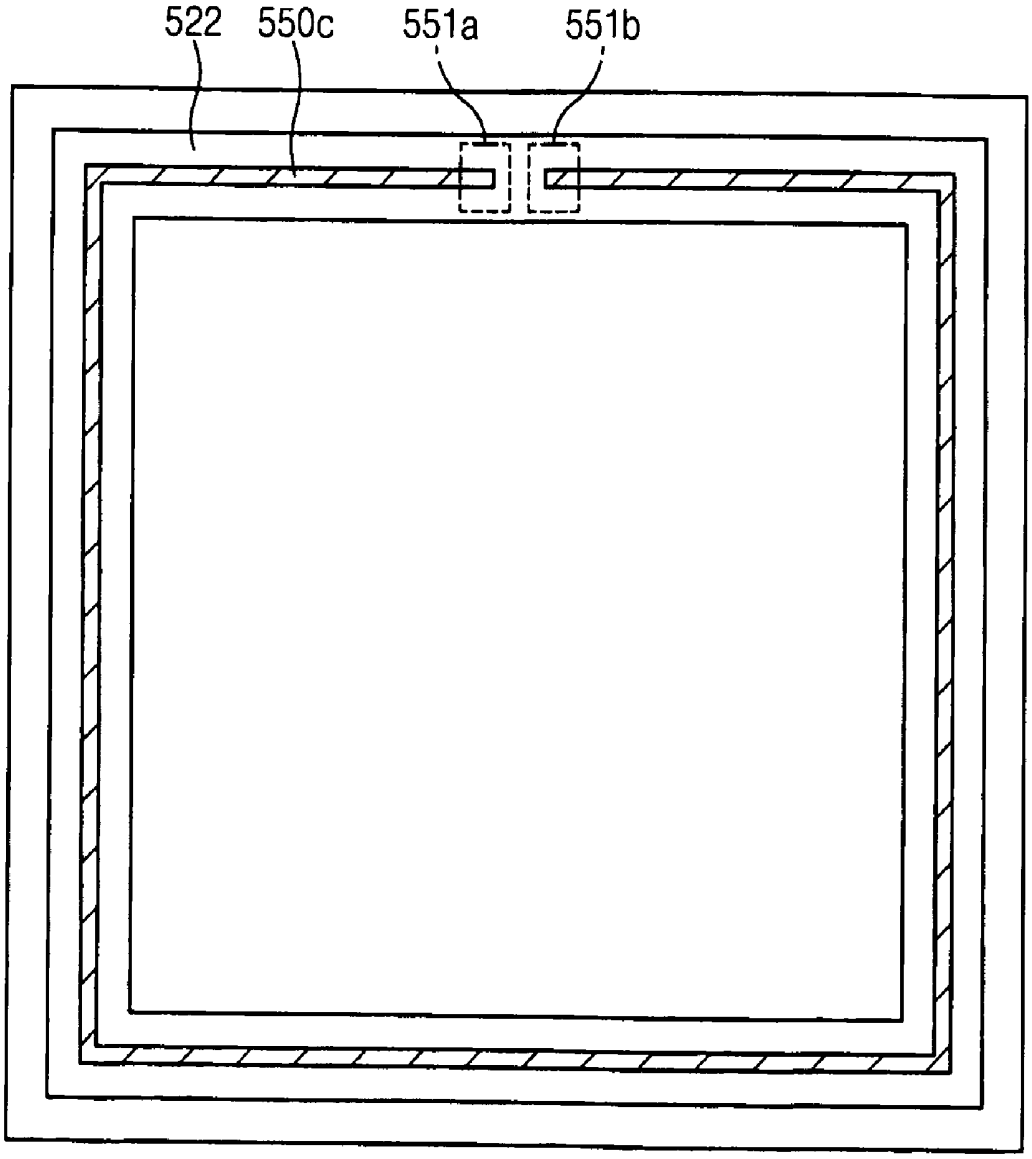


FIG. 8

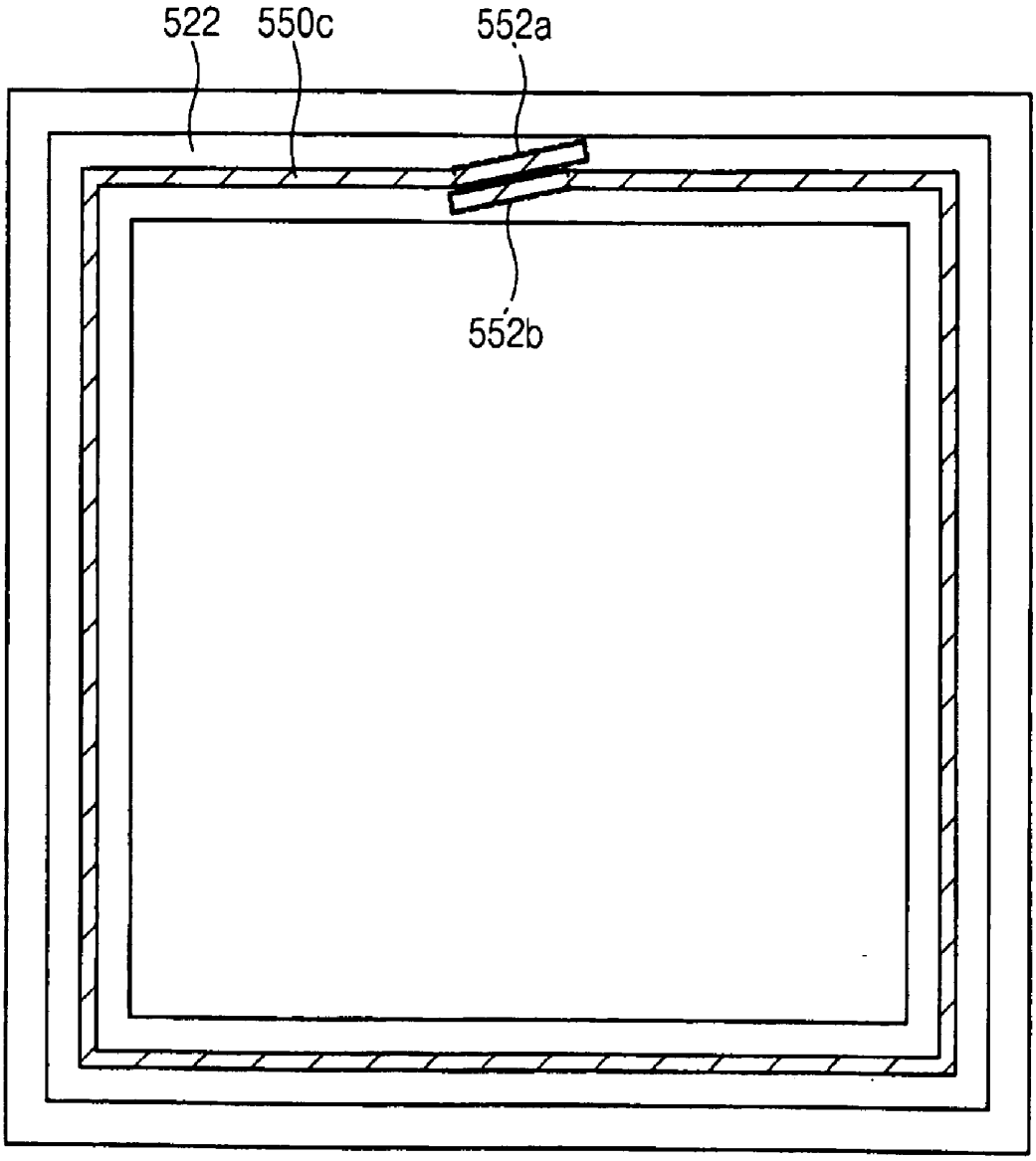


FIG. 9

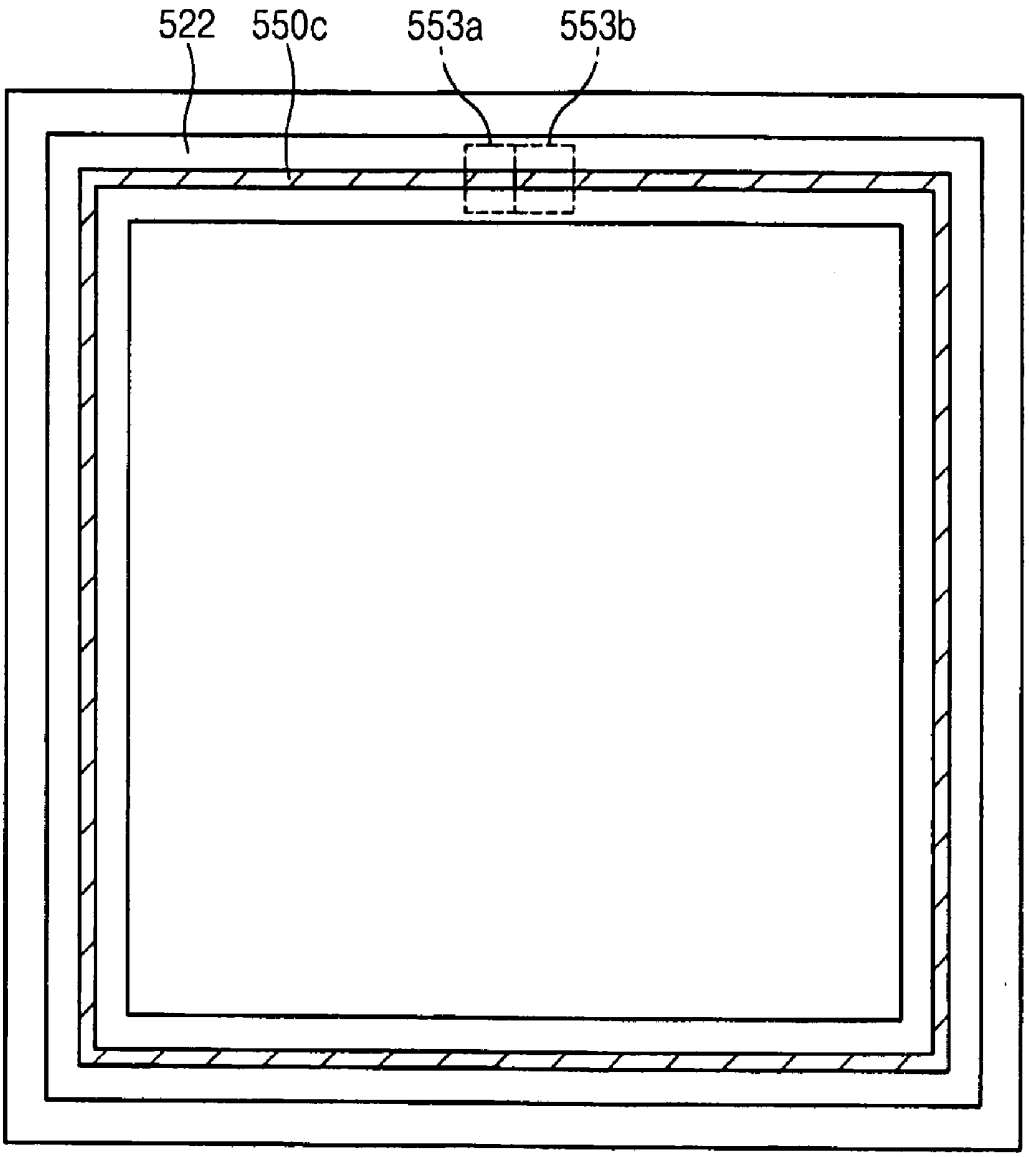


FIG. 10

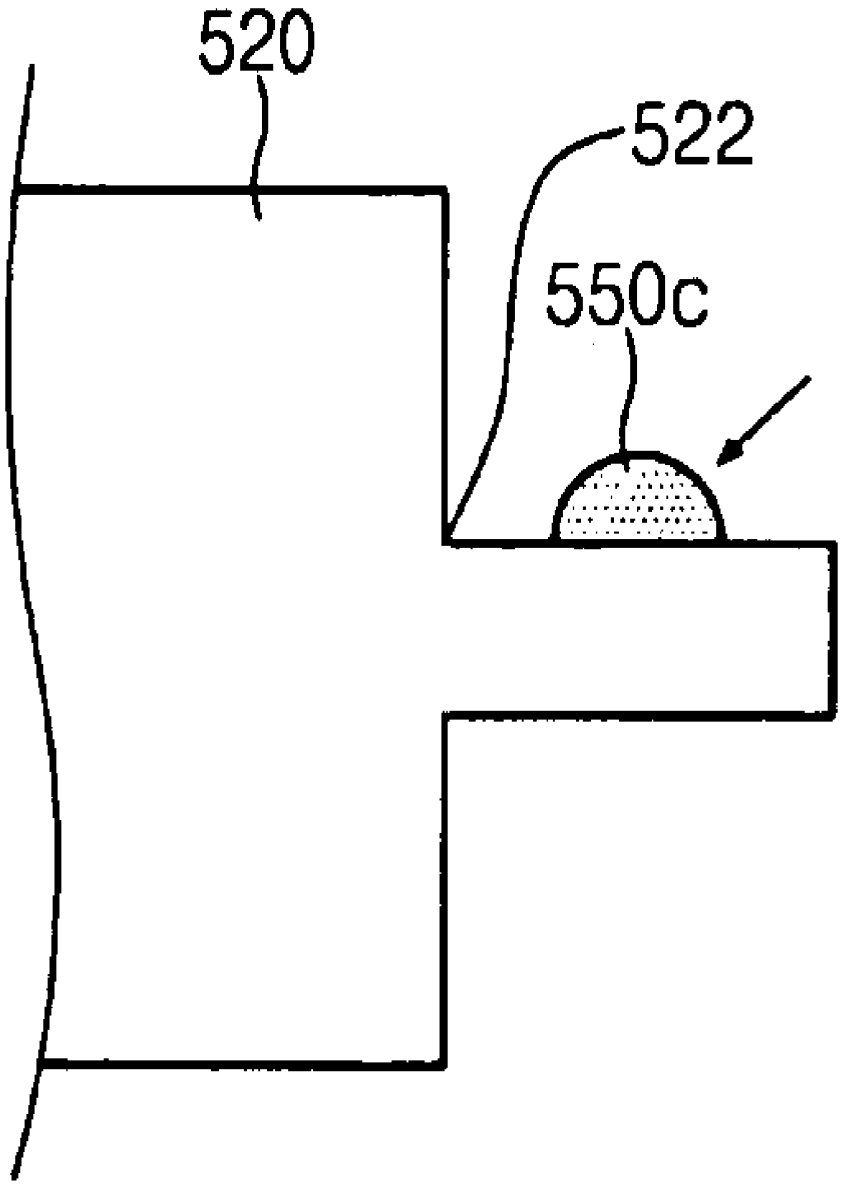


FIG. 11

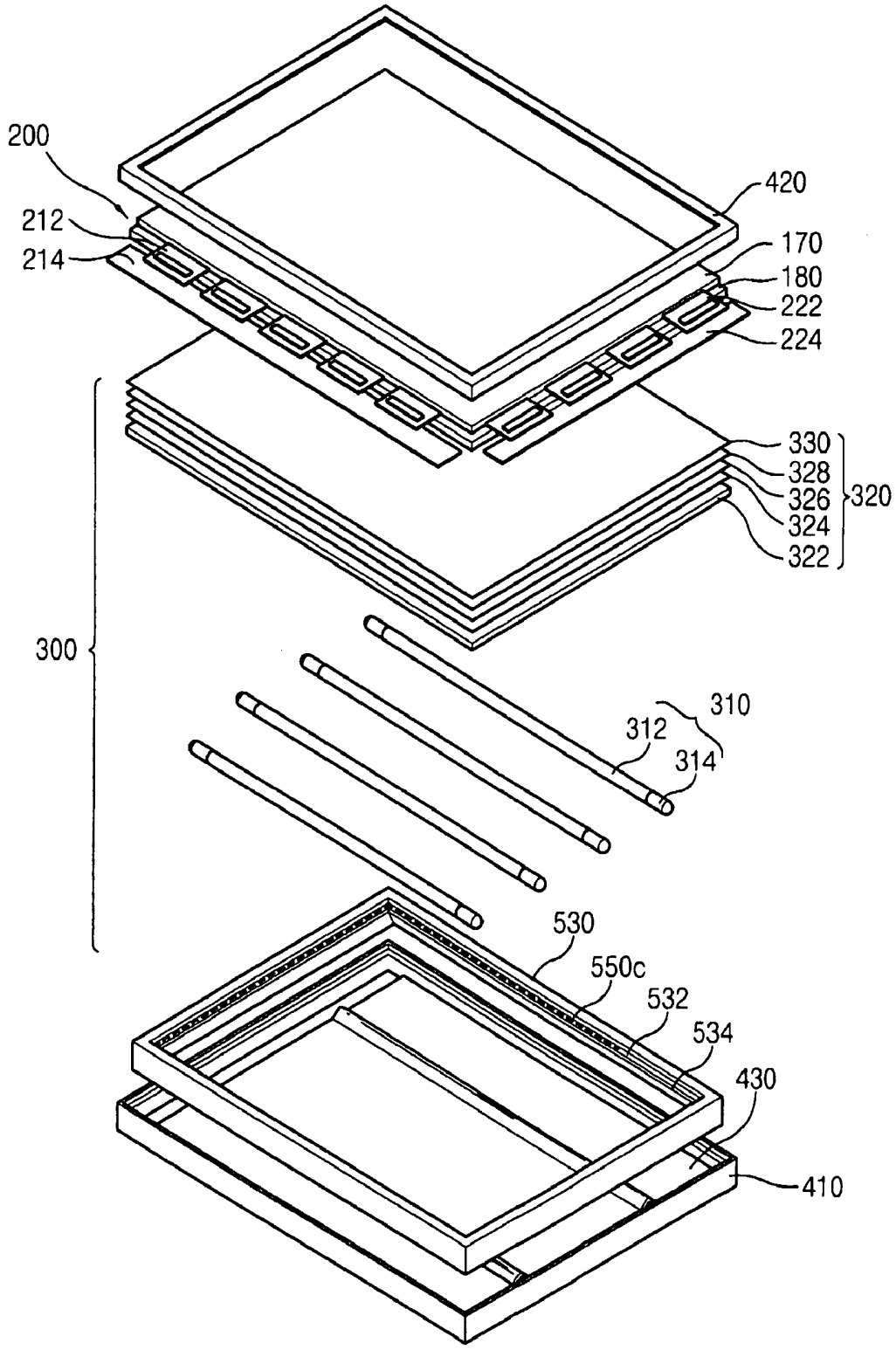

200
212
214
420
170
180
222
224
330
328
326
324
322
320
300
310
312
314
530
550c
532
534
430
410

FIG. 12

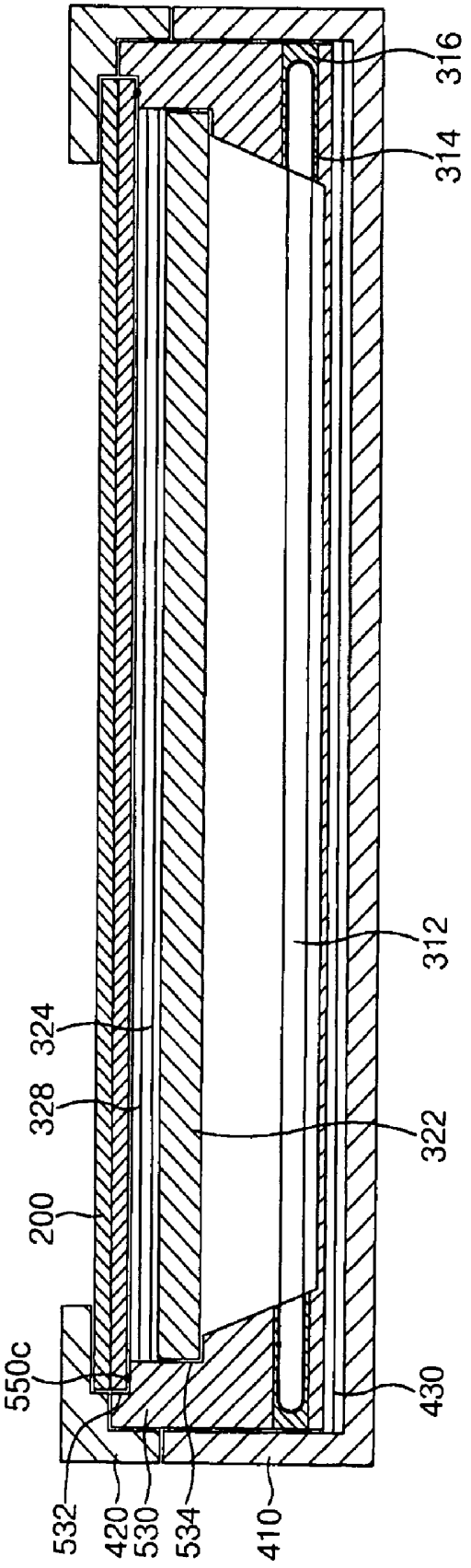


FIG. 13

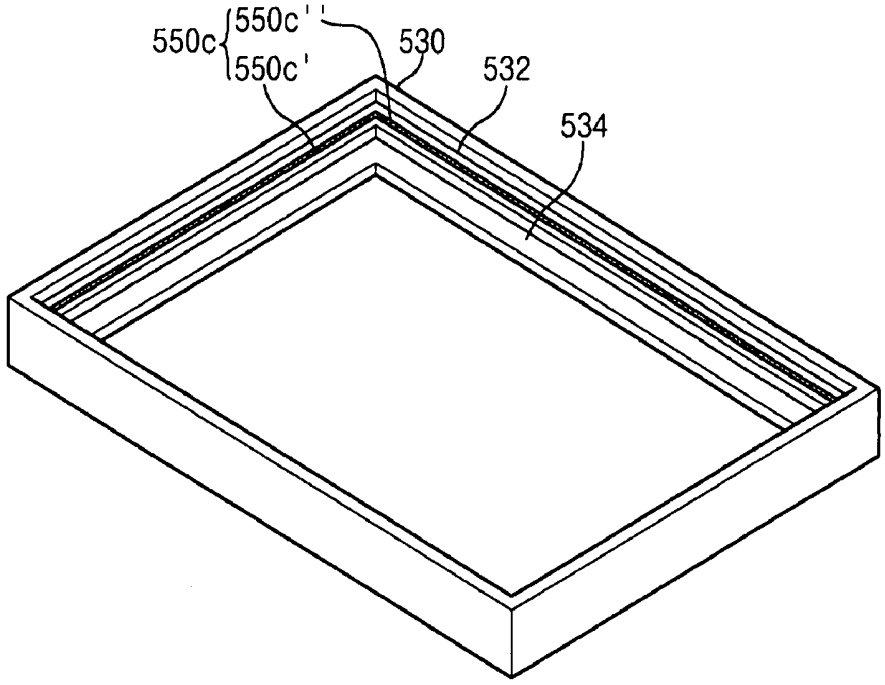

550c
550c''
550c'
530
532
534

FIG. 14

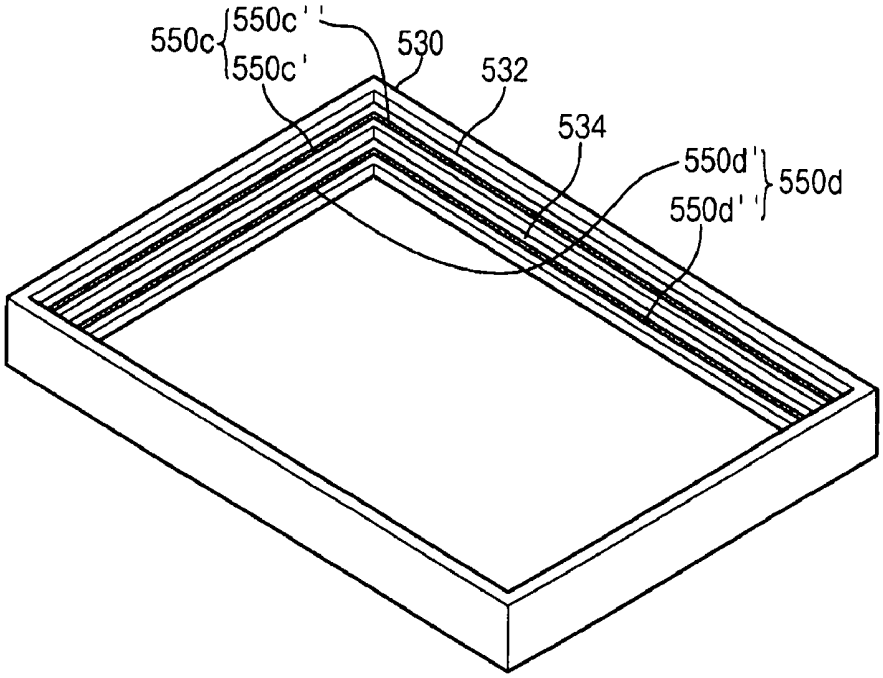
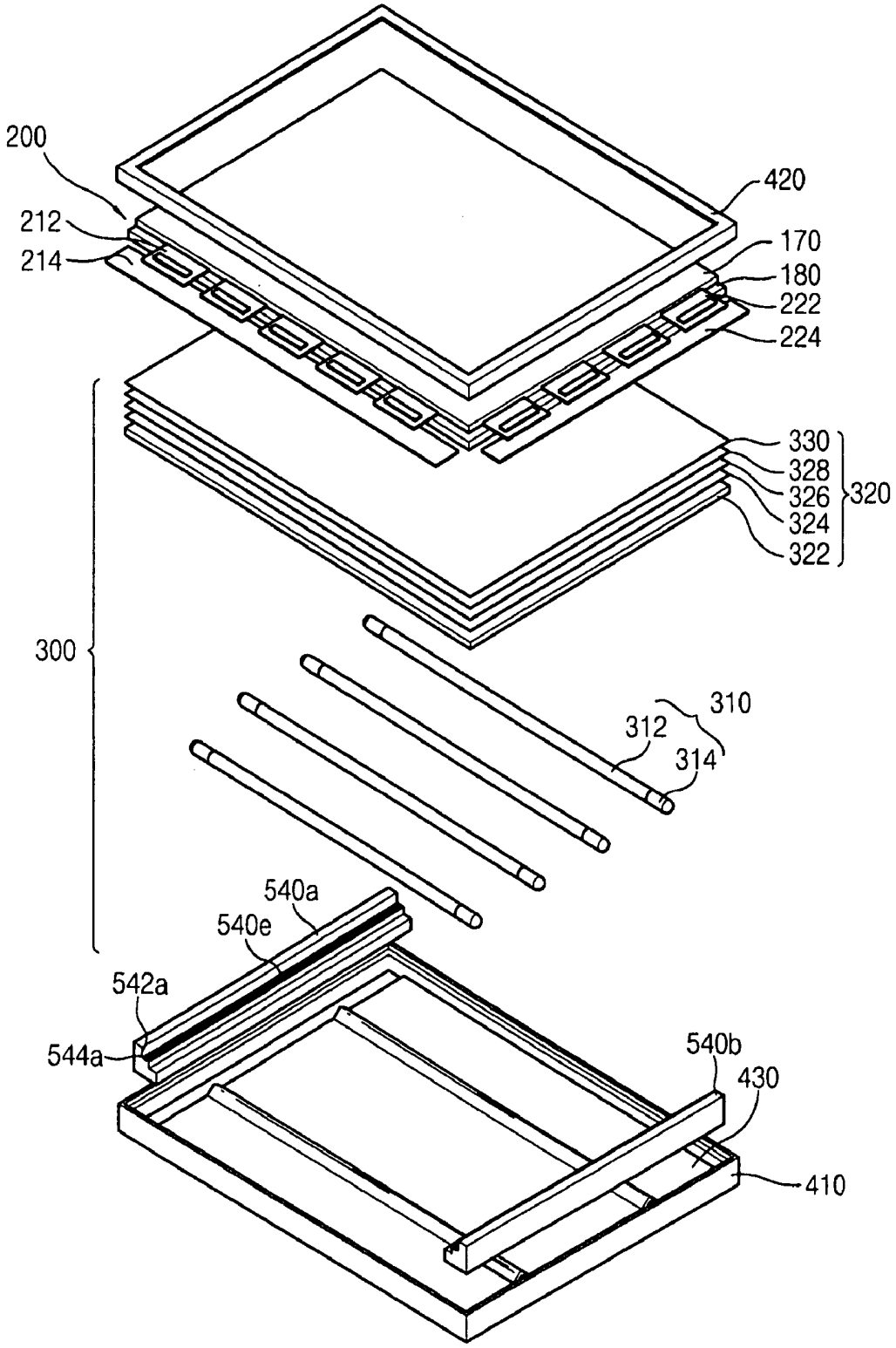

550c
550c''
550c'
530
532
534
550d'
550d''
550d

FIG. 15


200
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214
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170
180
222
224
330
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326
324
322
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312
314
540a
540e
542a
544a
540b
430
410

FIG. 16

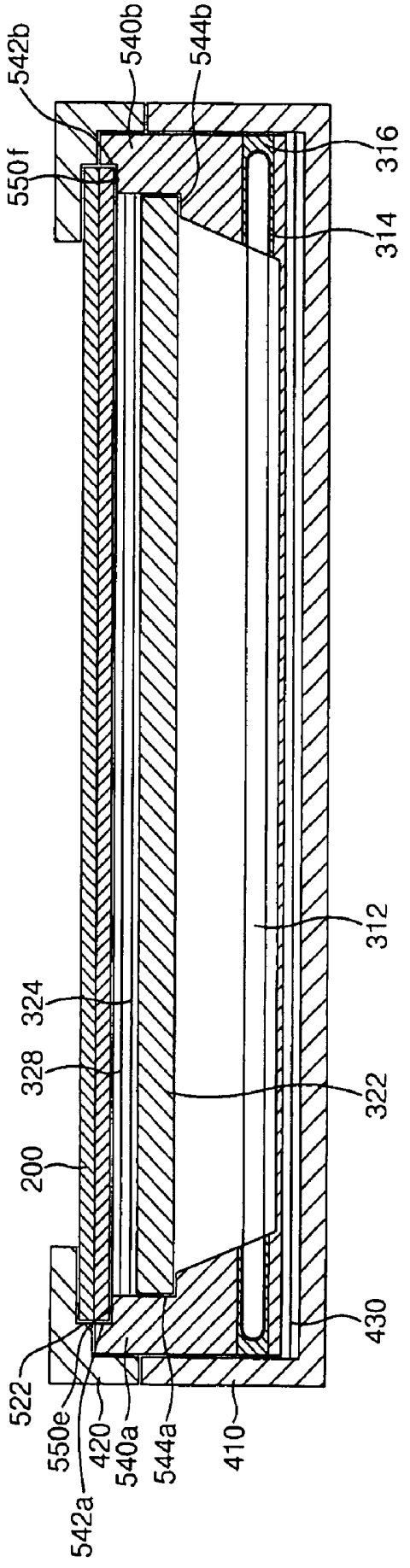

542b
540b
544b
550f
316
314
312
324
328
322
200
430
522
550e
420
540a
544a
410
542a

FIG. 17

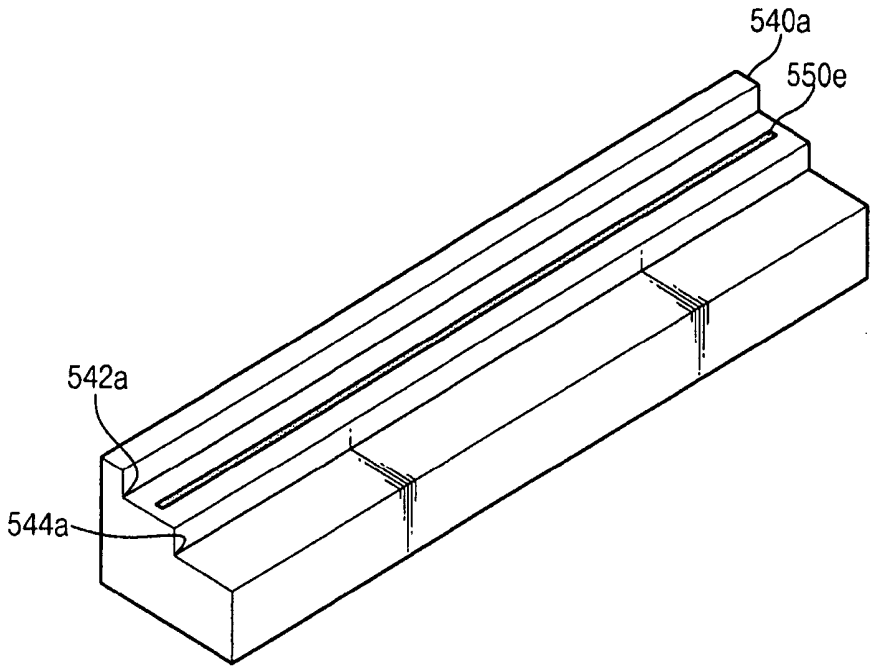
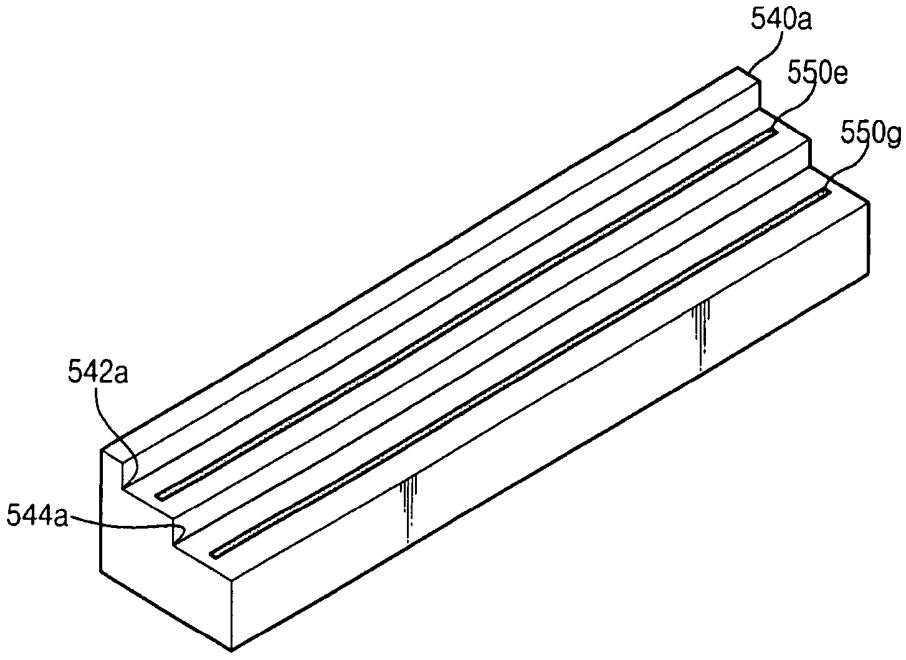


FIG. 18



RECEIVING CONTAINER FOR A DISPLAY DEVICE, LIQUID CRYSTAL DISPLAY DEVICE HAVING THE RECEIVING CONTAINER AND METHOD OF MANUFACTURING THE SAME

CROSS-REFERENCE OF RELATED APPLICATION

[0001] The present application claims priority from Korean Patent Application No. 2004-70966, filed on Sep. 6, 2004, which is hereby incorporated by reference for all purposes as if fully set forth herein.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a receiving container for a display device, a liquid crystal (LCD) device having the receiving container and a method of manufacturing the display device. More particularly, the present invention relates to a receiving container for a display device, which is capable of protecting the display device, an LCD device having the receiving container, and a method of manufacturing the LCD device, which is capable of decreasing manufacturing time and manufacturing cost.

[0004] 2. Description of the Related Art

[0005] In an LCD device, liquid crystal arrangement generally varies according to an electric field applied thereto, and thus a light transmittance thereof may be changed, thereby displaying an image.

[0006] The LCD device includes a backlight assembly, an LCD panel, and a receiving container. The backlight assembly generates a light. The LCD panel converts the light generated from the backlight assembly into the image. The receiving container receives the backlight assembly and the LCD panel.

[0007] When the backlight assembly or the LCD panel is not securely fixed in the receiving container, the backlight assembly and/or the LCD panel shifts or moves in the receiving container. In addition, an image display quality of the LCD device is deteriorated by an impurity that is provided from an environment exterior to the LCD device, such as airborne particles.

SUMMARY OF THE INVENTION

[0008] The present invention provides a receiving container for a display device, which is capable of protecting the display device. According to an embodiment of the invention, there is provided a receiving container for a display device including a frame, and a synthetic rubber spacer provided on the frame, wherein the synthetic rubber spacer includes a plurality of synthetic rubber pieces that are connected together.

[0009] According to an embodiment of the invention, there is provided a liquid crystal display device including a backlight assembly generating a light, a liquid crystal display panel provided on the backlight assembly that displays an image using the generated light, a receiving container provided between the backlight assembly and the liquid crystal display panel to secure the backlight assembly, the receiving container including a plurality of sidewalls that define an open area of the receiving container, and a synthetic rubber spacer provided between the sidewalls and the liquid crystal display panel to support the liquid crystal display panel, wherein the synthetic rubber spacer includes a plurality of synthetic rubber pieces connected together.

[0010] According to an embodiment of the invention, there is provided a liquid crystal display device including a backlight assembly generating a light, a liquid crystal display panel provided on the backlight assembly that displays an image using the generated light, a receiving container, which receives the liquid crystal display panel and the backlight assembly, and includes a plurality of sidewalls that define an open area of the receiving container, and a synthetic rubber spacer provided between the sidewalls and the liquid crystal display panel to support the liquid crystal display panel, wherein the synthetic rubber spacer includes a plurality of synthetic rubber pieces that are connected together.

[0011] According to an embodiment of the invention, there is provided a liquid crystal display device including a backlight assembly that generates a light, a liquid crystal display panel provided on the backlight assembly to display an image using the generated light, a receiving container, which receives the backlight assembly and the liquid crystal display panel, and includes a first rod shaped piece and another rod shaped piece corresponding to the first rod shaped piece, a synthetic rubber spacer provided between the first rod shaped piece and the liquid crystal display panel that supports the liquid crystal display panel, and another synthetic rubber spacer provided between the other rod shaped piece corresponding to the first rod shaped piece and the liquid crystal display panel that supports the liquid crystal display panel.

[0012] According to an embodiment of the invention, there is provided a method of manufacturing a liquid crystal display device, the method including forming a mold frame on a backlight assembly, the mold frame having a plurality of sidewalls that define an open area of the mold frame, each of the sidewalls having a stepped portion, coating synthetic rubber resin on a lower level surface area of the stepped portion, solidifying the coated synthetic resin, and forming a liquid crystal display device on the solidified synthetic resin.

[0013] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The above and other advantages of the present invention will become more apparent by describing in detail exemplary embodiments thereof with reference to the accompanying drawings, in which:

[0015] **FIG. 1** is an exploded perspective view showing an LCD device in accordance with an embodiment of the invention.

[0016] **FIG. 2** is a cross-sectional view showing the LCD device shown in **FIG. 1**.

[0017] **FIG. 3** is a perspective view showing a method of attaching a rubber tape to a middle mold frame shown in **FIG. 1**.

[0018] **FIG. 4** is a perspective view showing a method of coating a silicone resin on a middle mold frame shown in **FIG. 1**.

[0019] **FIG. 5** is a cross-sectional view showing a deformation of the silicone resin shown in **FIG. 4**.

[0020] **FIG. 6** is a perspective view showing a method of coating a synthetic rubber on a middle mold frame shown in **FIG. 1**.

[0021] **FIG. 7** is a plan view showing the coated synthetic rubber in accordance with an embodiment of the invention.

[0022] **FIG. 8** is a plan view showing the coated synthetic rubber in accordance with another embodiment of the invention.

[0023] **FIG. 9** is a plan view showing the coated synthetic rubber in accordance with another embodiment of the invention.

[0024] **FIG. 10** is a cross-sectional view showing the coated synthetic rubber after being pressed by an externally provided impact.

[0025] **FIG. 11** is an exploded perspective view showing an LCD device in accordance with another embodiment of the invention.

[0026] **FIG. 12** is a cross-sectional view showing an LCD device shown in **FIG. 11**.

[0027] **FIG. 13** is a cross-sectional view showing a mold frame assembly shown in **FIG. 11**.

[0028] **FIG. 14** is a perspective view showing a mold frame assembly in accordance with another embodiment of the invention.

[0029] **FIG. 15** is a perspective view showing an LCD device in accordance with another embodiment of the invention,

[0030] **FIG. 16** is a cross-sectional view showing an LCD device shown in **FIG. 15**,

[0031] **FIG. 17** is a perspective view showing a first piece mold and a first synthetic rubber spacer shown in **FIG. 15**.

[0032] **FIG. 18** is a perspective view showing a first piece mold, a first synthetic rubber spacer and a first auxiliary synthetic rubber spacer in accordance with an exemplary embodiment of the present invention.

DESCRIPTION OF THE EMBODIMENTS

[0033] It should be understood that the exemplary embodiments of the present invention described below may be varied modified in many different ways without departing from the inventive principles disclosed herein, and the scope of the present invention is therefore not limited to these particular following embodiments. Rather, these embodiments are provided so that this disclosure will be through and complete, and will fully convey the concept of the invention to those skilled in the art by way of example and not of limitation.

[0034] Hereinafter, the present invention will be described in detail with reference to the accompanying drawings. **FIG. 1** is an exploded perspective view showing an LCD device according to an embodiment of the invention. **FIG. 2** is a cross-sectional view showing the LCD device shown in **FIG. 1**.

[0035] Referring to **FIG. 1** and **FIG. 2**, the LCD device includes an LCD panel **200**, a backlight assembly **300**, a mold frame assembly, and a chassis assembly. The LCD panel **200** includes a first substrate **170**, a second substrate **180**, a liquid crystal layer (not shown), a data tape carrier package (TCP) **212**, a data printed circuit board (PCB) **214**, a gate TCP **222** and a gate PCB **224**.

[0036] The first substrate **170** includes an upper plate (not shown), a color filter (not shown), and a common electrode (not shown). A light having a predetermined wavelength may pass through the color filter (not shown). A common voltage is applied to the common electrode (not shown).

[0037] The second substrate **180** includes a lower plate (not shown), a thin film transistor (TFT) (not shown), a pixel electrode (not shown), a data line (not shown), and a gate line (not shown).

[0038] The data line (not shown) is coupled with a source electrode of the TFT (not shown). A data driving chip mounted on the data TCP **212** applies a data signal to the source electrode of the TFT (not shown) through the data TCP **212** and the data line (not shown). Alternatively, the data driving chip may be mounted on or directly on the second substrate **180**.

[0039] The gate line (not shown) is coupled with a gate electrode of the TFT (not shown). A gate signal is applied by a gate driving chip, located on the gate TCP **222**, to the gate electrode of the TFT (not shown) through the gate TCP **222** and the gate line (not shown). Alternatively, the gate driving chip may be mounted directly on the second substrate **180**.

[0040] The data signal is applied to the pixel electrode (not shown) when the data signal and the gate signal are applied to the source electrode and the gate electrode, respectively, of the TFT (not shown).

[0041] The liquid crystal layer (not shown) is provided or sandwiched between the first and second substrates **170** and **180**. An arrangement of the liquid crystal layer (not shown) changes when the data signal and the common voltage are applied to the pixel electrode (not shown) and the common electrode (not shown), respectively.

[0042] The second substrate **180** is coupled with the data PCB **214** by the data TCP **212**, which is provided on the second substrate **180**. The data TCP **212** includes a flexible material, which may be bent toward a rear surface of the second substrate **180**. According to an embodiment of the invention, the data TCP **212** is bent in a backward fashion so that the data PCB **214** is provided on or directly on the rear surface of the second substrate **180**.

[0043] The second substrate **180** is coupled with the gate PCB **224** by the gate TCP **22** provided on or directly on the second substrate **180**. The gate TCP **222** includes a flexible material that may be bent toward the rear surface of the second substrate **180**. Accordingly, the gate TCP **222** may be bent in a backward fashion to position the gate PCB **224** on or directly on the rear surface of the second substrate **180**.

[0044] The LCD panel **200** may further include an integrated PCB (not shown) that includes the data PCB **214** and

the gate PCB **224**. When the LCD panel **200** includes the integrated PCB (not shown), the integrated PCB is coupled with the second substrate **180** through an integrated TCP (not shown).

[**0045**] The backlight assembly **300** is provided on or directly on a rear surface of the LCD panel **200**. The backlight assembly **300** includes may include a lamp **310**, a lamp socket **316** and an optical film assembly **320**.

[**0046**] According to an embodiment of the invention, the lamp **310** includes a cold cathode fluorescent lamp (CCFL). The lamp **310** may further include a lamp body **312** and a lamp electrode **314**. The lamp body **312** includes a discharge space (not shown), a fluorescent layer (not shown), and a discharge gas (not shown) provided in the discharge space (not shown). The discharge gas includes, for example, a mercury vapor. The lamp electrode **314** is provided on or directly on the lamp body **312**. The discharge gas in the discharge space is discharged when a voltage is applied to the lamp electrode **314** so that the discharge space is provided with electrons by the lamp electrode **314**. An ultraviolet light is generated when the electrons are combined with the mercury vapor. A visible light is when generated when the ultraviolet light is irradiated onto the fluorescent layer (not shown).

[**0047**] The lamp socket **316** receives the lamp electrode **314** and applies a voltage, which is externally provided, to the lamp electrode **314**. In the above described embodiment of the invention, the lamp socket **316** is provided in the low mold frame **510**.

[**0048**] The optical film assembly **320** is provided on or directly on the lamp **310** and converts the visible light generated from the lamp **310** into a planar light. The optical film assembly **320** improves optical characteristics of the visible light. The optical film assembly **320** includes at least a diffusion plate **322**, a diffusion sheet **324**, a lower prism sheet **326**, an upper prism sheet **328** and a protecting sheet **330**.

[**0049**] The diffusion sheet **324** is provided on or directly on the diffusion plate **322**. When the visible light passes through the diffusion sheet **324** and the diffusion plate **322**, luminance of the visible light is made uniform.

[**0050**] The lower prism sheet **326** is provided on or directly on the diffusion sheet **324**, and the upper prism sheet **328** is provided on or directly on the lower prism sheet **326**. When the visible light passes through the lower prism sheet **326** and the upper prism sheet **328**, a luminance of the visible light increases when viewed in a plan view of the LCD device.

[**0051**] The protecting sheet **330** is provided on or directly on the upper prism sheet **328** and protects the diffusion plate **322**, the diffusion film **324**, the lower prism sheet **326**, and the upper prism sheet **328**.

[**0052**] The chassis assembly includes at least a bottom chassis **410**, a top chassis **420**, and a reflecting plate **430**. The bottom chassis **410** includes at least a bottom plate and a plurality of sidewalls protruding or extending from sides of the bottom plate so that the bottom chassis **410** receives the mold frame assembly, the backlight assembly **300**, and the LCD panel **200**. The reflecting plate **430** is provided or sandwiched between the backlight assembly **300** and the bottom chassis **410** to reflect a portion of the visible light from the reflecting plate **430**. It is understood that the bottom chassis **410** and the top chassis **420** refer to top/bottom structure frames, top/bottom foundations, top/bottom structural support members, over carriage/under carriage, etc.

[**0053**] According to the above-described embodiment of the invention, the reflecting plate **430** is provided under the low mold frame **510**. An opening is provided on a central portion or area of the top chassis **420**. The top chassis **420** has a quadrangular frame shape and is provided on or directly on the LCD panel to secure the LCD panel **200**.

[**0054**] The mold frame assembly includes at least the low mold frame **510**, the middle mold frame **520**, and a spacer **550**. The low mold frame **510** is provided or sandwiched between the bottom chassis **410**, which has the reflecting plate **430**, and the backlight assembly **300** to support or secure the backlight assembly **300**. The low mold frame **510** includes at least a plurality of sidewalls and an opening.

[**0055**] According to an embodiment of the invention, the low mold frame **510** includes a stepped portion **512** for an optical sheet to receive the optical film assembly **320** on a lower surface of the stepped portion **512**. Alternatively, an auxiliary spacer (not shown) may be provided between the lower surface of the stepped portion **512** and the diffusion plate **322**.

[**0056**] The middle mold frame **520**, which is provided or sandwiched between the optical film assembly **320** and the LCD panel **200**, secures the optical film assembly **320** and supports the LCD panel **200**. The middle mold frame **520** includes a plurality of sidewalls and an opening formed by the sidewalls. According to an embodiment of the invention, the middle mold frame **520** includes a lower stepped portion and a stepped portion **522** for the LCD panel such that the optical film assembly **320** is fixed by the lower stepped portion.

[**0057**] The spacer **550** is provided or sandwiched between a lower surface of the stepped portion **522** for the LCD panel and the LCD panel **200**. Alternatively, the spacer **550** may be provided or sandwiched between a lower surface of a stepped portion (not shown) for the optical film assembly and the optical film assembly **320**. The spacer **550** may be made of a rubber tape, a silicone resin, a synthetic rubber, etc. The spacer **550** is securely attached onto or with a lower surface of the stepped portion **522** for the LCD panel. A frictional force of the spacer **550** is sufficient to fix or secure the LCD panel **200**. Alternatively, the spacer **550** may be provided or sandwiched between the LCD panel **200** and the bottom chassis **410**.

[**0058**] **FIG. 3** is a perspective view showing a method of attaching a rubber tape to a middle mold frame shown in **FIG. 1**. Referring to **FIG. 3**, the spacer **550** is made of, for example, the rubber tape **550***a*. The rubber tape **550***a* includes an adhesive (not shown) and a rubber layer that is on the adhesive.

[**0059**] The rubber tape **550***a* is sized according to dimensions of the middle mold frame **520**, for example, the rubber tape **550***a* is sized or cut according to side lengths of the middle mold frame **520**. The rubber tape **550***a* includes, for example, a first rubber tape piece **550***a*', a second rubber tape piece **550***a*", a third rubber tape piece (not shown) and a fourth rubber tape piece (not shown). The first, second, third,

and fourth rubber tape pieces **550***a*' and **550***a*" correspond to the sidewalls of the middle mold frame **520**. The first, second, third and fourth rubber tape pieces **550***a*' and **550***a*" are spaced apart from each other and not overlapped with each other. As a result, an impurity may flow into a space provided between the LCD panel **200** and the backlight assembly **300**.

[**0060**] In this exemplary embodiment, the rubber tape **550***a* is physically attached to or on the lower surface of the stepped portion **522** for the LCD panel **200**. For example, the rubber tape **550***a* may attached by a worker or machine during assembly. For example, when the rubber tape **550***a* is attached onto or with the lower surface of the stepped portion **522** for the LCD panel by an automation system for the rubber tape **550***a*, the automation system for the rubber tape **550***a* may include a cutting device for cutting the rubber tape, an adhesion unit, a compressor, etc., so that size, complexity, and cost of the automation system for the rubber tape **550***a* and manufacturing cost of the LCD device are increased.

[**0061**] **FIG. 4** is a perspective view showing a method of coating a silicone resin on a middle mold frame as shown in **FIG. 1**. Referring to **FIG. 4**, the spacer **550** includes, for example, a silicone resin spacer **550** b. A silicone resin is coated or applied on a lower surface of the stepped portion **522** for the LCD panel **200** by a silicon resin coating unit **560**.

[**0062**] The silicone resin includes, for example, an organic silicone polymeric material. The silicone resin is coated on or applied to the lower surface of the stepped portion **522** for the LCD panel **200**. The silicone resin spacer **550***b* includes, for example, a first silicone resin piece **550***b*', a second silicone resin piece **550***b*", a third silicone resin piece (not shown) and a fourth silicone resin piece (not shown). The first, second, third and fourth silicone resin pieces **550***b*' and **550***b*" correspond to the sidewalls of the middle mold frame **520**. When the silicone resin is coated or applied on the lower surface of the stepped portion **522** for the LCD panel, the first, second, third and fourth silicone resin pieces **550***b*' and **550***b*" are connected with each other to prevent an inflow of an externally provided impurity into a space between the LCD panel **200** and the backlight assembly **300**.

[**0063**] When end portions of the coated silicone resin are overlapped with each other, the coated silicone resin typically has non-uniform height. Thus, in the above-described embodiment of the invention, the end portions of the coated silicone resin are not overlapped with each other and the coated silicone resin has a uniform height.

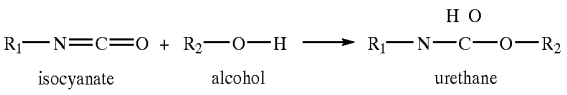
[**0064**] The coated silicone resin is aged and solidified for a sufficient period of time to form the silicone resin spacer **550***b*. For example, the coated silicone resin may be solidified for eight hours to form the silicon resin spacer **550***b*. Therefore, when the LCD device includes the silicone resin spacer **550***b*, the manufacturing processes of the LCD device must include the aging process. Although the coated silicone resin is aged, the solidified silicone resin is not resistant and the silicone resin remains fluid.

[**0065**] **FIG. 5** is a cross-sectional view showing a deformation of the silicone resin shown in **FIG. 4**. Referring to **FIG. 5**, when the silicone resin spacer **550***b* is pressed, the silicone resin spacer **550***b* deforms and has an irregular height. A distance between the LCD panel **200** and the backlight assembly **300** or between the LCD panel **200** and the top chassis **420** changes when the silicon resin spacer **550***b* is deformed by external impact.

[**0066**] **FIG. 6** is a perspective view showing a method of coating a synthetic rubber on a middle mold frame shown in **FIG. 1**. Referring to **FIG. 6**, the spacer **550** includes a synthetic rubber spacer **550***c*. A synthetic rubber is coated on a lower surface of the stepped portion **522** for the LCD panel **200** by a synthetic rubber coating unit **562**. The synthetic rubber includes, for example, at least one of polyurethane resin, neoprene resin, butadiene resin, graft resin, diene resin, etc.

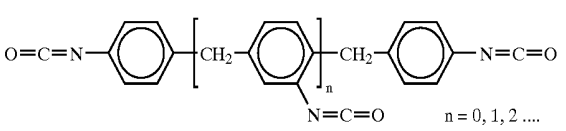
[**0067**] According to the embodiment of the invention shown in **FIG. 6**, the synthetic rubber includes polyurethane resin. The polyurethane resin is formed by a urethane bond. The urethane bond is formed by a reaction between a hydroxyl group (—OH) and an isocyanate group (—NCO). An organic polymer such as, for example, polyester, polyether, etc., forms the urethane resin. When the urethane resin forms from the polyester, the polyester reacts with naphthaline-1,5-diisocynate to form the urethane resin. When the urethane resin forms from the polyether, the polyether reacts with toluylenediisocynate to form the urethane resin. The urethane resin forms by following the reaction represented by Formula 1, shown hereinbelow:

Formula 1



[**0068**] According to an embodiment of the invention, the polyurethane resin forms from polyisocynate, polyols and additives. The polyisocynate includes, for example, methylene diphenyl isocyante (MDI), toluene diisocynate (TDI), etc. Formula 2, shown hereinbelow, represents the MDI:.

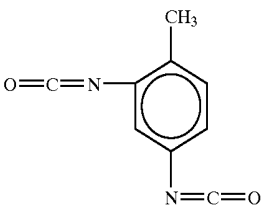
Formula 2



[**0069**] Formula 3, shown hereinbelow, represents the TDI:.

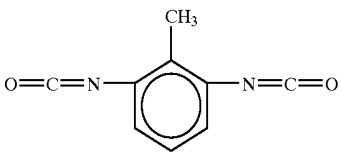
Formula 3

2,4'-TDI



-continued

2,6′-TDI

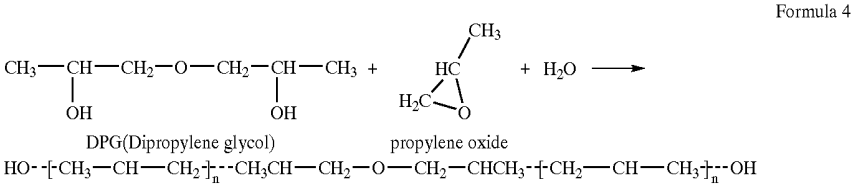


[0070] According to the above-described embodiment of the invention, the 2,4'-TDI and the 2,6'-TDI are mixed at a ratio of approximately 8:2.

[0071] The polyols include, for example, polyether polyol, polyester polyol, etc.

[0072] The polyether polyol forms from dipropylene glycol (DPG), propylene oxide and water. The polyether polyol forms by a reaction represented by Formula 4, shown hereinbelow:

Formula 4



[0073] The addictives include, for example, a surfactant, a catalyst, a foaming agent, a crosslinking agent, a flame retardant, a filler, an antioxidant, etc. The surfactant stabilizes the polyurethane resin. The catalyst accelerates the urethane combination. The foaming agent vesicates or blisters the polyurethane resin. Alternatively, the foaming agent may be omitted.

[0074] The polyurethane resin securely adheres to the middle mold frame **520**, and has a high coefficient of friction.

[0075] The neoprene resin forms by chloroprene polymerization. The butadiene resin forms by butadiene polymerization using heat, oxygen, etc. The graft resin forms by polybutadiene, styrene and acrylonitrile, copolymerization.

[0076] The synthetic rubber spacer **550***c* includes, for example, a first synthetic rubber piece **550***c*', a second synthetic rubber piece **550***c*", a third synthetic rubber piece (not shown) and a fourth synthetic rubber piece (not shown). The first, second, third and fourth synthetic rubber pieces **550***c*' and **550***c*" correspond to the sidewalls of the middle mold frame **520**, respectively. The synthetic rubber is coated on the lower surface of the stepped portion **522** for the LCD panel such that the first, second, third and fourth synthetic rubber pieces **550***c*' and **550***c*" connect with each other to prevent an impurity from entering into a space between the LCD panel **200** and the backlight assembly **300**. The impurity may be externally provided, such as through airborne particles. As shown in **FIG. 6**, for example, end portions of the coated synthetic rubber are not overlapped with each other, thereby creating a uniform height for the coated synthetic rubber. Therefore, the height of synthetic rubber spacer **550***c* is uniform.

[0077] **FIG. 7** is a plan view showing the coated synthetic rubber according to an embodiment of the invention. Referring to **FIG. 7**, a first end portion **551***a* of the coated polyurethane resin and a second end portion **551***b* of the coated polyurethane resin are provided on or directly on the lower surface of the stepped portion **522** for the LCD panel. Thus, in a non-limiting example shown in **FIG. 7**, the first end portion **551***a* and the second end portion **551***b* are spaced apart from each other.

[0078] **FIG. 8** is a plan view showing the coated synthetic rubber according to another embodiment of the invention. Referring to **FIG. 8**, a first end portion **552***a* of the coated polyurethane resin and a second end portion **552***b* of the coated polyurethane resin are provided on or directly on the lower surface of the stepped portion **522** for the LCD panel. Thus, in a non-limiting example shown in **FIG. 8**, the first end portion **552***a* is substantially parallel with the second end portion **552***b*. Since the first end portion **552***a* and the second end portion **552***b* are parallel with each other, e.g., an end portion of the first end portion **552***a* faces an end portion of the second end portion **552***b*, a path length between each said end portion **552***a* and **552***b* is at a sufficient length to decrease an amount of impurity entering or flowing into a space between the LCD panel and the optical film assembly. The impurity may be an airborne particle from an environment that is external to the liquid crystal display device.

[0079] **FIG. 9** is a plan view showing the coated synthetic rubber according to another embodiment of the invention. Referring to **FIG. 9**, a first end portion **553***a* of the coated polyurethane resin and a second end portion **553***b* of the coated polyurethane resin are provided on or directly on the lower surface of the stepped portion **522** for the LCD panel. Thus, in a non-limiting example shown in **FIG. 9**, the first end portion **553***a* and the second end portion **553***b* contact each other, preventing or decreasing an amount of impurity entering or flowing into a space between the LCD panel and the optical film assembly. As previously discussed, the impurity may be externally provided, such as an airborne particle.

[0080] The synthetic rubber spacer **550***c* is formed by aging and solidifying the coated polyurethane resin for a sufficient period of time. In a non-limiting example, the coated polyurethane resin, is aged and solidified for many minutes to form the synthetic rubber spacer **550***c*. According to the embodiment shown in **FIG. 9**, the coated synthetic rubber is solidified for approximately four minutes, which is a shorter time period than the solidification of the silicone resin. Therefore, LCD devices with a synthetic rubber spacer **550***c* have a reduced manufacturing process time than LCD devices with a silicon resin spacer **550***c*.

[0081] The synthetic rubber spacer **550***c* has a higher frictional force than the silicone resin spacer **550***b* thereby preventing drifting or moving of the LCD panel **200**. Additionally, an adhesive strength between the synthetic rubber spacer **550***c* and the middle mold frame **520** is larger than an adhesive strength between the silicone resin spacer **550***b* and the middle mold frame **520**.

[0082] **FIG. 10** is a cross-sectional view showing the coated synthetic rubber upon being pressed, for example, by an external impact. The solidified synthetic resin is sufficiently elastic such that it is resistant against an externally provided force. Referring to **FIG. 10**, the synthetic rubber spacer **550***c* has a uniform height and does not deform when pressed by an external force. The material and shape of the synthetic rubber spacer **550***c* enable the synthetic rubber spacer **550***c* to absorb on the externally provided impact, thereby protecting the LCD panel **200**.

[0083] **FIG. 11** is an exploded perspective view showing an LCD device according to another embodiment of the invention. **FIG. 12** is a cross-sectional view showing an LCD device shown in **FIG. 11**. The LCD device of **FIG. 11** and **FIG. 12** is same as the LCD device shown in **FIG. 1** and **FIG. 2**, except that the embodiments shown in **FIG. 1** and **FIG. 2** do not include a mold frame assembly. Thus, the same reference numerals are used to refer to the same and/or similar parts as those described in **FIG. 1** and **FIG. 2** and any further explanation concerning the above elements is omitted.

[0084] Referring to **FIG. 11** and **FIG. 12**, the LCD device includes an LCD panel **200**, a backlight assembly **300**, a mold frame assembly and a chassis assembly. The LCD panel **200** includes at least a first substrate **170**, a second substrate **180**, a liquid crystal layer (not shown), a data TCP **212**, a data PCB **214**, a gate TCP **222**, and a gate PCB **224**.

[0085] The backlight assembly **300** is provided on or directly on a rear surface of the LCD panel **200**. The backlight assembly **300** includes at least a lamp **310**, a lamp socket **316**, and an optical film assembly **320**. The lamp **310** includes at least a lamp body **312** and a lamp electrode **314**. The lamp body **312** includes at least a discharge space (not shown), a fluorescent layer (not shown), and a discharge gas (not shown) provided in the discharge space (not shown). The lamp socket **316** is provided or secured in a mold frame **530**.

[0086] A visible light generated from the lamp **310** is converted into a planar light by the optical film assembly **320**, which is provided on or directly on the lamp **310**, and improves optical characteristics of the visible light. The optical film assembly **320** includes at least a diffusion plate **322**, a diffusion sheet **324**, a lower prism sheet **326**, an upper prism sheet **328**, and a protecting sheet **330**.

[0087] The chassis assembly includes at least a bottom chassis **410**, a top chassis **420**, and a reflecting plate **430**. The bottom chassis **410** receives or holds the mold frame assembly, the backlight assembly **300** and the LCD panel **200**. The reflecting plate **430** is provided or sandwiched between the backlight assembly **300** and the bottom chassis **410**. The top chassis **420** fixes, holds, secures, etc., the LCD panel **200** and is provided on or directly on the LCD panel **200**.

[0088] **FIG. 13** is a cross-sectional view showing a mold frame assembly as shown in **FIG. 11**. Referring to **FIG. 11**, **FIG. 12**, and **FIG. 13**, the mold frame assembly includes the mold frame **530** and a synthetic rubber spacer **550** c.

[0089] The mold frame **530** supports the backlight assembly **300** and the LCD panel **200** and is provided or sandwiched between the bottom chassis **410** having the reflecting plate **430** thereon and the backlight assembly **300**. The mold frame **530** includes a plurality of sidewalls and an opening that is defined or shaped by the sidewalls. The mold frame **530** shown in **FIG. 11**, **FIG. 12**, and **FIG. 13** includes a first stepped portion **532** and a second stepped portion **534** and the optical film assembly **320** is provided on or directly on a lower surface of the second stepped portion **534**.

[0090] The synthetic rubber spacer **550***c* is provided or sandwiched between a lower surface of the first stepped portion **532** and the LCD panel **200**. A frictional force of the synthetic rubber spacer **550***c* is sufficient to fix, secure or hold the LCD panel **200**.

[0091] The synthetic rubber spacer **550***c* is formed with a polyurethane resin. The synthetic rubber spacer **550***c* includes a first synthetic rubber piece **550***c*', a second synthetic rubber piece **550***c*", a third synthetic rubber piece (not shown) and a fourth synthetic rubber piece (not shown). The first, second, third and fourth synthetic rubber pieces **550***c*' and **550***c*" correspond to the sidewalls of the mold frame **530**, respectively. The synthetic rubber is coated on the lower surface of the first stepped portion **532** such that the first, second, third and fourth synthetic rubber pieces **550***c*' and **550***c*" are connected with each other, thereby preventing or reducing the probability that an impurity will flow into a space located between the LCD panel **200** and the backlight assembly **300**. Therefore, as shown in **FIG. 13**, the coated synthetic rubber has a uniform height since end portions of the coated synthetic rubber are not overlapped with each other.

[0092] According to the embodiment discussed above, the mold frame assembly supports and secures the LCD panel **200** and includes the mold frame **530** and the synthetic rubber spacer **550***c*. In addition, the synthetic rubber spacer **550***c* protects the LCD panel **200** from an external impact.

[0093] **FIG. 14** is a perspective view showing a mold frame assembly according to an embodiment of the invention. The LCD device of **FIG. 14** is the same or substantially similar as the LCD device shown in **FIG. 1** and **FIG. 2**, except that the embodiments shown in **FIG. 1** and **FIG. 2** do not include a mold frame assembly. Thus, the same reference numerals are used to refer to the same and/or similar parts as those described in **FIG. 1** and **FIG. 2** and any further explanation concerning the above elements is omitted.

[0094] Referring to **FIG. 11**, **FIG. 12** and **FIG. 14**, the mold frame assembly includes a mold frame **530**, a synthetic rubber spacer **550***c* and an auxiliary synthetic rubber spacer **550***d*.

[0095] The mold frame **530** supports the backlight assembly **300** and the LCD panel **200** and is provided or sandwiched between the bottom chassis **410** having the reflecting plate **430** and the backlight assembly **300**. The mold frame **530** includes a plurality of sidewalls and an opening defined or shaped by the sidewalls. As shown in the embodiment shown in **FIG. 11**, **FIG. 12**, and **FIG. 14**, the mold frame **530** includes a first stepped portion **532** and a second stepped portion **534**.

[0096] The synthetic rubber spacer **550***c* holds, supports, secures, etc., the LCD panel **200** and is provided between a lower surface of the first stepped portion **532** and the LCD panel **200**. The synthetic rubber spacer **550***c* includes a first synthetic rubber piece **550***c*', a second synthetic rubber piece **550***c*", a third synthetic rubber piece (not shown), and a fourth synthetic rubber piece (not shown). The first, second, third and fourth synthetic rubber pieces **550***c*' and **550***c*" correspond to the sidewalls of the mold frame **530**, respectively. The synthetic rubber is coated on the lower surface of the first stepped portion **532** such that the first, second, third and fourth synthetic rubber pieces **550***c*' and **550***c*" are connected with each other, thereby preventing or reducing the probability that an impurity will flow into a space located between the LCD panel **200** and the backlight assembly **300**.

[0097] The auxiliary synthetic rubber spacer **550** d supports and secures the optical film assembly **320** and is provided between a lower surface of the second stepped portion **534** and the optical film assembly **320**. The auxiliary synthetic rubber spacer **550***d* includes a first auxiliary synthetic rubber piece **550***d*', a second auxiliary synthetic rubber piece **550***d*", a third auxiliary synthetic rubber piece (not shown), and a fourth auxiliary synthetic rubber piece (not shown). The first, second, third and fourth auxiliary synthetic rubber pieces **550***d*' and **550***d*" correspond to the sidewalls of the mold frame **530**, respectively. The synthetic rubber is coated on the lower surface of the second stepped portion **534** such that the first, second, third, and fourth auxiliary synthetic rubber pieces **550***d*' and **550***d*" are connected with each other, thereby preventing or reducing the probability that an impurity will flow into the backlight assembly **300**.

[0098] The synthetic rubber spacer **550***c* and the auxiliary synthetic rubber spacer **550***d* both include polyurethane resin. A polyurethane coating unit (not shown) coats the polyurethane resin on the first stepped portion **532** such that there is no overlapping of end portions of the polyurethane resin coated on the first stepped portion **532**. Additionally, the polyurethane coating unit (not shown) coats the polyurethane resin on the second stepped portion **534** such that there is no overlapping of end portions of the coated polyurethane resin on the second stepped portion **534**.

[0099] According to the above-described embodiment of the invention, the mold frame assembly supports and secures the LCD panel **200** and the optical film assembly **320**, and includes the mold frame **530**, the synthetic rubber spacer **550***c* and the auxiliary synthetic rubber spacer **550***d*. In addition, the synthetic rubber spacer **550***c* and the auxiliary synthetic rubber spacer **550***d* absorb impact, thereby protecting the LCD panel **200** and the optical film assembly **320** from an external impact.

[0100] **FIG. 15** is a perspective view showing an LCD device according to an embodiment of the invention. **FIG. 16** is a cross-sectional view of an LCD device shown in **FIG. 15**. The LCD device of **FIG. 15** and **FIG. 16** is the same or substantially similar to the LCD devices shown in **FIG. 1** and **FIG. 2**, except that the LCD devices of **FIG. 1** and **FIG. 2** do not include a mold frame assembly. Thus, the same reference numerals will be used to refer to the same and/or similar parts as those described in **FIG. 1** and **FIG. 2** and any further explanation concerning the elements described above is omitted.

[0101] Referring to **FIG. 15** and **FIG. 16**, the LCD device includes an LCD panel **200**, a backlight assembly **300**, a mold frame assembly, and a chassis assembly. The LCD panel **200** includes a first substrate **170**, a second substrate **180**, a liquid crystal layer (not shown), a data TCP **212**, a data PCB **214**, a gate TCP **222**, and a gate PCB **224**. The backlight assembly **300** is provided on or directly on a rear surface of the LCD panel **200** and includes a lamp **310**, a lamp socket **316**, and an optical film assembly **320**.

[0102] The lamp **310** includes a lamp body **312** and a lamp electrode **314**. The lamp body **312** includes a discharge space (not shown), a fluorescent layer (not shown), and a discharge gas (not shown) provided in the discharge space (not shown). The lamp socket **316** is provided or secured with a first piece mold **540***a* and a second piece mold **540***b*. The first and second mold pieces **540***a* and **540***b* are not limited to the structure shown in **FIG. 15**, and may include grooved supports, notched supports, supports having tracks and the like.

[0103] The optical film assembly **320** is provided on or directly on the lamp **310** and converts a light generated from the lamp **310** into a planar light. The optical film assembly **320** includes a diffusion plate **322**, a diffusion sheet **324**, a lower prism sheet **326**, an upper prism sheet **328**, and a protecting sheet **330**.

[0104] The chassis assembly includes a bottom chassis **410**, a top chassis **420**, and a reflecting plate **430**. The bottom chassis **410** receives, secures, or holds the mold frame assembly, the backlight assembly **300**, and the LCD panel **200**. The reflecting plate **430** is provided between the bottom chassis **410** and the first and second piece molds **540***a* and **540***b*. The top chassis **420** fixes, holds, secures, etc., the LCD panel **200** and is provided on or directly on the LCD panel **200**.

[0105] **FIG. 17** is a perspective view of a first piece mold and a first synthetic rubber spacer shown in **FIG. 15**. Referring to **FIGS. 15, 16** and **17**, the mold frame assembly includes the first piece mold **540***a*, the second piece mold **540***b*, a first synthetic rubber spacer **550***e*, and a second synthetic rubber spacer **550***f*.

[0106] The first and second piece molds **540***a* and **540***b* support the backlight assembly **300** and the LCD panel **200** and are provided between the bottom chassis **410** and the backlight assembly **300**. The second piece mold **540***b* corresponds with the first piece mold **540***a* and each of the first and second piece molds **540***a* and **540***b* is rod shaped. As shown in **FIG. 16**, for example, the first piece mold **540***a* includes a first stepped portion **542***a* and a second stepped portion **544***a*, and the second piece mold **540***b* includes a third stepped portion **542***b* and a fourth stepped portion **544***b*. The optical film assembly **320** is provided on or directly on lower surfaces of the second and fourth stepped portions **544***a* and **544***b*.

[0107] The first synthetic rubber spacer **550***e* is provided between a lower surface of the first stepped portion **542***a* and the LCD panel **200**, and the second synthetic rubber spacer **550***f* is provided between a lower surface of the third stepped portion **542***b* and the LCD panel **200**. The frictional forces of the first and second synthetic rubber spacers **550***e* and **550***f* is sufficient to fix, secure, hold, etc., the LCD panel **200**.

[0108] The first and second synthetic rubber spacers **550***e* and **550***f* each have a polyurethane resin.

[0109] According to the above-described embodiment of the invention, the mold frame assembly supports and secures the LCD panel **200** and includes the first and second piece molds **540***a* and **540***b* and the first and second synthetic rubber spacers **550***e* and **550***f*. The first and second synthetic rubber spacers **550***e* and **550***f* also protect the LCD panel **200** from shifting or moving due to an external impact.

[0110] **FIG. 18** is a perspective view of a mold frame assembly of an LCD device showing a first piece mold, a first synthetic rubber spacer, and a first auxiliary synthetic rubber spacer according to an embodiment of the invention. The LCD device of **FIG. 18** is same as the LCD device shown in **FIGS. 15, 16** and **17**, except that the LCD device shown in **FIGS. 15, 16** and **17** do not include a first auxiliary spacer and a second auxiliary spacer. Thus, the same reference numerals will be used to refer to the same and/or similar parts as those described in **FIGS. 15, 16**, and **17** and any further explanation concerning the above-described elements is omitted.

[0111] Referring to **FIGS. 15, 16** and **18**, the mold frame assembly includes the first piece mold **540***a*, the second piece mold **540***b*, a first synthetic rubber spacer **550***e*, a second synthetic rubber spacer **550***f*, a first auxiliary synthetic rubber spacer **550***g*, and a second auxiliary synthetic rubber spacer (not shown).

[0112] The first and second piece molds **540***a* and **540***b* support and secure the backlight assembly **300** and the LCD panel **200** and are provided between the bottom chassis **410** and the backlight assembly **300**. The second piece mold **540***b* corresponds to the first piece mold **540***a*. Each of the first and second piece molds **540***a* and **540***b* is rod shaped. According to the embodiment shown in **FIG. 18**, for example, the first piece mold **540***a* includes a first stepped portion **542***a* and a second stepped portion **544***a*, and the second piece mold **540***b* includes a third stepped portion **542***b* and a fourth stepped portion **544***b*.

[0113] The first synthetic rubber spacer **550***e* is provided between a lower surface of the first stepped portion **542***a* and the LCD panel **200**, and the second synthetic rubber spacer **550***f* is provided between a lower surface of the third stepped portion **542***b* and the LCD panel **200**. Frictional force of the first and second synthetic rubber spacers **550***e* and **550***f* is sufficient to fix, secure, hold, etc., the LCD panel **200** with the mold frame assembly.

[0114] The first auxiliary synthetic rubber spacer **550***g* is provided between a lower surface of the second stepped portion **544***a* and the optical film assembly **320**. The second auxiliary synthetic rubber spacer (not shown) is interposed between a lower surface of the fourth stepped portion **544***b* and the optical film assembly **320**. The frictional forces of the first and second auxiliary synthetic rubber spacers **550***g* is sufficient enough to fix, secure, hold, etc., the optical film assembly **320** with the mold frame assembly.

[0115] The first and second synthetic rubber spacers **550***e* and **550***f* and the first and second auxiliary synthetic rubber spacers **550***g* each have a polyurethane resin.

[0116] According to the above-described embodiment of the invention, for example, the mold frame assembly supports and secures the LCD panel **210** and the optical film assembly **320** with the mold frame assembly of the LCD device and includes the first and second piece molds **540***a* and **540***b*, the first and second synthetic rubber spacers **550***e* and **550***f*, and the first and second auxiliary synthetic rubber spacers **550***g*. The first and second synthetic rubber spacers **550***e* and **550***f* protect the LCD panel **200** from an external impact. The first and second auxiliary synthetic rubber spacers **550***g* protect the optical film assembly **320** from such external impact.

[0117] According to an embodiment of the invention, the first and second synthetic rubber spacers **550***e* and **550***f*, and the first and second auxiliary synthetic rubber spacers **550***g* are formed with synthetic rubber, which solidifies more rapidly and has a greater coefficient of fraction than silicone resin, and supports and secures the LCD panel with the mold frame assembly of the LCD device. Further, the synthetic rubber spacer is sufficiently elastic to protect the LCD device from an external impact by absorbing such impact and recovering its original shape.

[0118] The spacer may be sequentially formed, using an automation system, so that manufacturing time manufacturing cost are reduced. In addition, coating synthetic rubber on the mold frame prevents or reduces the probability of an impurity flowing or entering between the LCD panel and the backlight assembly. Further, forming the synthetic rubber spacer with polyurethane resin strengthens the adhesion between the synthetic rubber spacer and the mold frame and increases the frictional force between the synthetic rubber spacer and the LCD panel.

[0119] The optical film assembly **320** may be supported and secured to the mold frame assembly of the LCD device by including an auxiliary synthetic rubber spacer **550***g* between a surface of a stepped portion and the optical film assembly **320**.

[0120] It will be apparent to those skilled in the art that various modifications and variation can be made in the present invention without departing from the spirit or scope of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents.

What is claimed is:

1. A receiving container for a display device comprising:

a frame; and

a synthetic rubber spacer provided on the frame,

wherein the synthetic rubber spacer comprises a plurality of synthetic rubber pieces that are connected together.

2. The receiving container of claim 1, wherein the frame further comprises:

a plurality of sidewalls defining an open area of the receiving container and having a stepped portion,

wherein the synthetic rubber spacer is provided on a lower level surface area of the stepped portion.

3. The receiving container of claim 2, wherein each of the sidewalls comprises an auxiliary stepped portion.

4. The receiving container of claim 3, further comprising:

an auxiliary synthetic rubber spacer provided on the auxiliary stepped portion,

wherein the auxiliary synthetic rubber spacer comprises a plurality of auxiliary synthetic rubber pieces that are connected together.

5. The receiving container of claim 1, wherein the synthetic rubber spacer comprises at least one selected from the group consisting of polyurethane resin, neoprene resin, butadiene resin, graft resin, and diene resin.

6. A liquid crystal display device comprising:

a backlight assembly generating a light;

a liquid crystal display panel provided on the backlight assembly that displays an image using the generated light;

a receiving container provided between the backlight assembly and the liquid crystal display panel to secure the backlight assembly, the receiving container including a plurality of sidewalls that define an open area of the receiving container; and

a synthetic rubber spacer provided between the sidewalls and the liquid crystal display panel to support the liquid crystal display panel,

wherein the synthetic rubber spacer comprises a plurality of synthetic rubber pieces connected together.

7. The liquid crystal display device of claim 6, wherein the synthetic rubber spacer comprises at least one selected from the group consisting of polyurethane resin, neoprene resin, butadiene resin, graft resin and diene resin.

8. The liquid crystal display device of claim 6, wherein each of the sidewalls comprises:

a stepped portion such that the synthetic rubber spacer is provided on a lower level surface area of the stepped portion of each of the sidewalls.

9. A liquid crystal display device comprising:

a backlight assembly generating a light;

a liquid crystal display panel provided on the backlight assembly that displays an image using the generated light;

a receiving container, which receives the liquid crystal display panel and the backlight assembly, and comprises a plurality of sidewalls that define an open area of the receiving container; and

a synthetic rubber spacer provided between the sidewalls and the liquid crystal display panel to support the liquid crystal display panel,

wherein the synthetic rubber spacer comprises a plurality of synthetic rubber pieces that are connected together.

10. The liquid crystal display device of claim 9, wherein the synthetic rubber spacer comprises at least one selected from the group consisting of polyurethane resin, neoprene resin, butadiene resin, graft resin, and diene resin.

11. The liquid crystal display device of claim 9, wherein each of the sidewalls comprises:

a first stepped portion and a second stepped portion such that each of the synthetic rubber pieces is provided on a lower level surface area of the first stepped portion.

12. The liquid crystal display device of claim 11, wherein the backlight assembly is provided on a lower level surface area of the second stepped portion.

13. The liquid crystal display device of claim 11, further comprising:

an auxiliary synthetic rubber spacer provided between the lower level surface area of the second stepped portion and the backlight assembly,

wherein the auxiliary synthetic rubber spacer comprises a plurality of auxiliary synthetic rubber pieces connected together.

14. A liquid crystal display device comprising:

a backlight assembly that generates a light;

a liquid crystal display panel provided on the backlight assembly to display an image using the generated light;

a receiving container, which receives the backlight assembly and the liquid crystal display panel, and includes a first rod shaped piece and a second rod shaped piece corresponding to the first rod shaped piece;

a synthetic rubber spacer provided between the first rod shaped piece and the liquid crystal display panel that supports the liquid crystal display panel; and

a second synthetic rubber spacer provided between the second rod shaped piece corresponding to the first rod shaped piece and the liquid crystal display panel that supports the liquid crystal display panel.

15. The liquid crystal display device of claim 14, wherein each of the synthetic rubber spacers comprises at least one of polyurethane resin, neoprene resin, butadiene resin, graft resin, and diene resin.

16. The liquid crystal display device of claim 14, wherein the first rod shaped piece and second rod shaped piece corresponding to the first rod shaped piece comprise a first and a second stepped portion, and a third and a fourth stepped portion, respectively,

wherein the first synthetic rubber spacer and second synthetic rubber spacer are provided on a lower level surface area of the first stepped portion and a lower level surface area of the third stepped portion, respectively.

17. The liquid crystal display device of claim 16, wherein the backlight assembly is provided on a lower level surface area of the second stepped portion and a lower level surface area of the fourth stepped portion.

18. The liquid crystal display device of claim 16, further comprising:

an auxiliary synthetic rubber spacer provided between a lower surface of the second stepped portion and the backlight assembly; and

a second auxiliary synthetic rubber spacer interposed between a lower surface of the fourth stepped portion and the backlight assembly.

19. The liquid crystal display device of claim 14, wherein the first rod shaped piece and second rod shaped piece corresponding to the first rod shaped piece are a first mold piece and a second mold piece, respectively.

20. A method of manufacturing a liquid crystal display device, the method comprising:

forming a mold frame on a backlight assembly, the mold frame having a plurality of sidewalls that define an open area of the mold frame, each of the sidewalls having a stepped portion;

coating synthetic rubber resin on a lower level surface area of the stepped portion;

solidifying the coated synthetic resin; and

forming a liquid crystal display device on the solidified synthetic resin.

21. The method of claim 20, wherein the synthetic rubber resin is continuously coated on the lower level surface area of the stepped portions of the sidewalls.

22. The method of claim 20, wherein end portions of the coated synthetic rubber are spaced apart from each other.

23. The method of claim 20, wherein end portions of the coated synthetic rubber are substantially parallel with each other.

24. The method of claim 20, wherein end portions of the coated synthetic rubber contact each other.

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专利名称(译)	用于显示装置的接收容器，具有该接收容器的液晶显示装置及其制造方法		
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摘要(译)

一种用于显示装置的接收容器，具有用于显示装置的接收容器的LCD装置，以及制造LCD装置的方法，其中用于显示装置的接收容器包括框架和合成橡胶垫片。合成橡胶垫片设置在框架上。合成橡胶垫片包括连接在一起的多个合成橡胶片，使得合成橡胶垫片吸收外部提供的冲击并保护LCD面板。