insulating wall placed under the primary sealing wall and thermally insulating the storage tank; a secondary heat insulating wall disposed on an inner wall of the storage tank and thermally insulating the storage tank; and a heat insulating wall securing device securing the primary heat insulating wall to the secondary heat insulating wall such that the primary heat insulating wall can slide in a horizontal direction, wherein the heat insulating wall securing device comprises a stud bolt secured to the secondary heat insulating wall; and a nut fastened to the stud bolt, wherein the primary heat insulating wall is formed with a through-hole, and the stud bolt is inserted into the through-hole and fastened to the nut such that the primary heat insulating wall is secured to the secondary heat insulating wall, and wherein the heat insulating wall securing device further comprises a special washer inserted between a lower plate of the primary heat insulating wall and the nut to prevent the lower plate of the primary heat insulating wall from being separated from the heat insulating wall securing device when the lower plate contracts, and a spring washer inserted between the special washer and the nut to prevent the nut from loosening when the lower plate of the primary heat insulating wall vertically contracts, and wherein the special washer has a larger diameter than the nut to secure a large area on which the lower plate of the primary heat insulating wall slide.

[19] Particularly, the heat insulating wall securing device may include: a stud bolt secured to the secondary heat insulating wall; and a nut fastened to the stud bolt, and the primary heat insulating wall may be formed with a through-hole, wherein the stud bolt may be inserted into the through-hole and fastened to the nut, such that the primary heat insulating wall is secured to the secondary heat insulating wall.

[20] The heat insulating wall securing device may further include a special washer inserted between a lower plate of the primary heat insulating wall and the nut to prevent the lower plate of the primary heat insulating wall from being separated from the heat insulating wall securing device when the lower plate contracts.

[21] The heat insulating wall securing device may further include a spring washer inserted between the special washer and the nut to prevent the nut from loosening when the lower plate of the primary heat insulating wall is vertically contracted.

[22] An upper plate of the secondary heat insulating wall may be provided with a metal strip, and the stud bolt may be secured to the strip.

[23] The strip may be formed with a first thread, and the stud bolt may be formed with a second thread, such that the first thread is engaged with the second thread to secure the stud bolt to the strip.

[24] The heat insulating wall securing device may further include a spacer surrounding a side surface of the nut to protect the bolt and the nut.

[25] The liquefied natural gas storage tank may further include a secondary sealing wall interposed between the primary heat insulating wall and the secondary heat insulating wall and sealing the storage tank in a liquid-tight manner when the primary sealing wall leaks.

[26] The primary sealing wall and the secondary sealing wall may be formed of stainless steel.

[27] The liquefied natural gas storage tank may further include a plug plugging a hole for installing the heat insulating wall securing device.

[28] As disclosed, there is provided a heat insulating wall securing device for a liquefied natural gas storage tank, which is used to

tank and thermally insulating the storage tank; and a plurality of first heat insulating wall securing devices securing the primary heat insulating wall to the secondary heat insulating wall, wherein the plural first heat insulating wall securing devices are provided to corners of the primary heat insulating wall, wherein the plural first heat insulating wall securing devices comprises a special washer and a nut, and wherein the special washer has a larger diameter than the nut to secure a large area on which a lower plate of the plural first heat insulating wall slide.

[38] Particularly, the liquefied natural gas storage tank may further include a plurality of second heat insulating wall securing devices securing the primary heat insulating wall to the secondary heat insulating wall, wherein the plural second heat insulating wall securing devices may be arranged at constant intervals along an edge of the primary heat insulating wall.

[39] The primary heat insulating wall may be secured to the secondary heat insulating wall so as to slide in a horizontal direction.

[40] The heat insulating wall securing device may include: a stud bolt secured to the secondary heat insulating wall; and a nut fastened to the stud bolt, and the primary heat insulating wall may be formed with a through-hole, wherein the stud bolt may be inserted into the through-hole and fastened to the nut, such that the primary heat insulating wall is secured to the secondary heat insulating wall.

[41] The heat insulating wall securing device may further include a special washer inserted between a lower plate of the primary heat insulating wall and the nut to prevent the lower plate of the primary heat insulating wall from being separated from the heat insulating wall securing device when the lower plate contracts.

[42] The heat insulating wall securing device may further include a spring washer inserted between the special washer and the nut to prevent the nut from loosening when the lower plate of the primary heat insulating wall vertically contracts.

[43] An upper plate of the secondary heat insulating wall may be provided with a metal strip, and the stud bolt may be secured to the strip.

[44] The strip may be formed with a first thread, and the stud bolt may be formed with a second thread, such that the first thread is engaged with the second thread to secure the stud bolt to the strip.

[45] The liquefied natural gas storage tank may further include a secondary sealing wall interposed between the primary heat insulating wall and the secondary heat insulating wall

and sealing the storage tank in a liquid-tight manner when the primary sealing wall leaks.

[46] The primary sealing wall and the secondary sealing wall may be formed of stainless steel.

【CLAIMS】

【Claim 1】

A liquefied natural gas storage tank, comprising:

a primary sealing wall contacting liquefied natural gas stored in the storage tank and sealing the storage tank in a liquid-tight manner;

a primary heat insulating wall placed under the primary sealing wall and thermally insulating the storage tank;

a secondary heat insulating wall disposed on an inner wall of the storage tank and thermally insulating the storage tank; and

a heat insulating wall securing device securing the primary heat insulating wall to the secondary heat insulating wall such that the primary heat insulating wall can slide in a horizontal direction,

wherein the heat insulating wall securing device comprises a stud bolt secured to the secondary heat insulating wall; and a nut fastened to the stud bolt,

wherein the primary heat insulating wall is formed with a through-hole, and the stud bolt is inserted into the through-hole and fastened to the nut such that the primary heat insulating wall is secured to the secondary heat insulating wall, and

wherein the heat insulating wall securing device further comprises a special washer inserted between a lower plate of the primary heat insulating wall and the nut to prevent the lower plate of the primary heat insulating wall from being separated from the heat insulating wall securing device when the lower plate contracts, and a spring washer inserted between the special washer and the nut to prevent the nut from loosening when the lower plate of the primary heat insulating wall vertically contracts, and

wherein the special washer has a larger diameter than the nut to secure a large area on which the lower plate of the primary heat insulating wall slide.

【Claim 2】

The liquefied natural gas storage tank according to claim 1, wherein the heat insulating wall securing device further comprises a spacer surrounding a side surface of the nut to protect the bolt and the nut.

【Claim 3】

The liquefied natural gas storage tank according to claim 1, further comprising:

a secondary sealing wall interposed between the primary heat insulating wall and the secondary heat insulating wall and sealing the storage tank in a liquid-tight manner when the primary sealing wall leaks.

【Claim 4】

A liquefied natural gas storage tank, comprising:

a primary sealing wall contacting liquefied natural gas stored in the storage tank and sealing the storage tank in a liquid-tight manner;

a primary heat insulating wall disposed under the primary sealing wall and thermally insulating the storage tank;

a secondary heat insulating wall disposed on an inner wall of the storage tank and thermally insulating the storage tank; and

a plurality of first heat insulating wall securing devices securing the primary heat insulating wall to the secondary heat insulating wall,

wherein the plural first heat insulating wall securing devices are provided to corners of the primary heat insulating wall,

wherein the plural first heat insulating wall securing devices comprises a special washer and a nut, and

wherein the special washer has a larger diameter than the nut to secure a large area on which a lower plate of the plural first heat insulating wall slide.

【Claim 5】

The liquefied natural gas storage tank according to claim 4, further comprising:

a plurality of second heat insulating wall securing devices securing the primary heat

insulating wall to the secondary heat insulating wall, the plurality of second heat insulating wall securing devices being arranged at constant intervals along an edge of the primary heat insulating wall.

【Claim 6】

The liquefied natural gas storage tank according to claim 4, wherein the primary heat insulating wall is secured to the secondary heat insulating wall so as to slide in a horizontal direction.

【Claim 7】

The liquefied natural gas storage tank according to claim 5, wherein each of the heat insulating wall securing devices comprises: a stud bolt secured to the secondary heat insulating wall; and the nut fastened to the stud bolt, and

wherein the primary heat insulating wall is formed with a through-hole, and

the stud bolt is inserted into the through-hole and fastened to the nut such that the primary heat insulating wall is secured to the secondary heat insulating wall.

【Claim 8】

The liquefied natural gas storage tank according to claim 7, wherein each of the heat insulating wall securing devices further comprises the special washer inserted between a lower plate of the primary heat insulating wall and the nut to prevent the lower plate of the primary heat insulating wall from being separated from the heat insulating wall securing device when the lower plate contracts.

【Claim 9】

The liquefied natural gas storage tank according to claim 8, wherein each of the heat insulating wall securing devices further comprises a spring washer inserted between the special washer and the nut to prevent the nut from loosening when the lower plate of the primary heat insulating wall vertically contracts.

【Claim 10】

The liquefied natural gas storage tank according to claim 4, further comprising: a secondary sealing wall interposed between the primary heat insulating wall and the secondary heat insulating wall and sealing the storage tank in a liquid-tight manner when the primary sealing wall leaks.

【Claim 11】

The liquefied natural gas storage tank according to claim 10, wherein each of the primary sealing wall and the secondary sealing wall is formed of stainless steel.

【Claim 12】

The liquefied natural gas storage tank according to claim 11, wherein each of the primary sealing wall and the secondary sealing wall is formed with a corrugated portion.