stored in the storage tank and sealing the storage tank in a liquid-tight manner; and a primary heat insulating wall placed under the primary sealing wall and thermally insulating the storage tank, wherein the primary heat insulating wall has a plurality of first slits formed at an upper portion thereof and a plurality of second slits formed at a lower portion thereof, wherein the primary heat insulating wall is prevented from being bent upward and contract in the transverse and longitudinal directions by forming the first and the second slits in the upper and lower portions of the primary heat insulating wall, and the first and the second slits reduce stress of the primary heat insulating wall upon thermal contraction of the primary heat insulating wall.

[21] Particularly, the plurality of first slits may be formed at points where the primary heat insulating wall meets corrugated portions of the primary sealing wall.

[22] The primary heat insulating wall may include: an upper plate adjoining the primary sealing wall; a lower plate; and an insulator interposed between the upper plate and the lower plate, wherein the plurality of first slits may be formed in the upper plate of the primary heat insulating wall at constant intervals, and the plurality of second slits may be formed in the lower plate of the primary heat insulating wall at constant intervals.

[23] Each of the plural first slits may extend from the uppermost portion of the upper plate to a portion of the insulator.

[24] Each of the plural second slits may extend from the lowermost portion of the lower plate to a portion of the insulator.

[25] The plurality of first slits may be formed in a grid pattern.

[26] The liquefied natural gas storage tank may further include: 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 element 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.

[27] The heat insulating wall securing element may include a stud bolt secured to the secondary heat insulating wall and a nut fastened to the stud bolt; 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.

[28] The liquefied natural gas storage tank may further include a secondary sealing wall.

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

[30]

[31] In accordance with another aspect of the present invention, there is provided a heat insulating wall for a liquefied natural gas storage tank, including: an upper plate adjoining a sealing wall; a lower plate; and an insulator interposed between the upper plate and the lower plate, wherein the upper plate has a plurality of first slits formed at constant intervals and the lower plate has a plurality of second slits formed at constant intervals, wherein a primary heat insulating wall is prevented from being bent upward and contract in the transverse and longitudinal directions by forming the first and the second slits in the upper and lower portions of the primary heat insulating wall, and the first and the second slits reduce stress of the primary heat insulating wall upon thermal contraction of the primary heat insulating wall.

[32] The plurality of first slits may be formed at points where the primary heat insulating wall meets corrugated portions of the primary sealing wall.

[33] Each of the plurality of first slits may be formed from the uppermost portion of the upper plate to a portion of the insulator.

[34] Each of the plurality of second slits may be formed from the lowermost portion of the lower plate to a portion of the insulator.

[35] The plurality of first slits may be formed in a grid pattern.

[36] In accordance with a further aspect of the present invention, there is provided a liquefied natural gas storage tank including: 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 secondary sealing wall interposed between the primary heat insulating wall and the secondary heat insulating wall to seal the storage tank in a liquid-tight manner when the primary sealing wall leaks, wherein the

【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; and

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

wherein the primary heat insulating wall has a plurality of first slits formed at an upper portion thereof and a plurality of second slits formed at a lower portion thereof,

wherein the primary heat insulating wall is prevented from being bent upward and contract in the transverse and longitudinal directions by forming the first and the second slits in the upper and lower portions of the primary heat insulating wall, and

the first and the second slits reduce stress of the primary heat insulating wall upon thermal contraction of the primary heat insulating wall.

【Claim 2】

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

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 element 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.

【Claim 3】

The liquefied natural gas storage tank according to claim 2, wherein the heat insulating wall securing element comprises a stud bolt secured to the secondary heat insulating wall and a nut fastened to the stud bolt, and

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

the stud bolt being 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 4】

A heat insulating wall for a liquefied natural gas storage tank, comprising:

an upper plate adjoining a sealing wall;

a lower plate; and

an insulator interposed between the upper plate and the lower plate,

wherein the upper plate has a plurality of first slits formed at constant intervals and the lower plate has a plurality of second slits formed at constant intervals,

wherein a primary heat insulating wall is prevented from being bent upward and contract in the transverse and longitudinal directions by forming the first and the second slits in the upper and lower portions of the primary heat insulating wall, and

the first and the second slits reduce stress of the primary heat insulating wall upon thermal contraction of the primary heat insulating wall.

【Claim 5】

The heat insulating wall according to claim 4, wherein the plurality of first slits is formed at points where the primary heat insulating wall meets corrugated portions of a primary sealing wall.

【Claim 6】

The heat insulating wall according to claim 4, wherein each of the plural first slits extends from an uppermost portion of the upper plate to a portion of the insulator.

【Claim 7】

The heat insulating wall according to claim 4, wherein each of the plural second slits extends from a lowermost portion of the lower plate to a portion of the insulator.

【Claim 8】

The heat insulating wall according to claim 4, wherein the plurality of first slits is formed in a grid pattern.