CLAIMS

[Claim 1]

A heat exchanger, comprising:

a flat tube; and

a plurality of fins each comprising a plate having a plate surface extending in a longitudinal direction and in a width direction orthogonal to the longitudinal direction, the plate surface intersecting a pipe axis of the flat tube, the plurality of fins being arranged at an interval from one another,

the plurality of fins each having a first spacer formed in the plate and maintaining the interval,

the flat tube having a longitudinal axis of a section perpendicular to the pipe axis, the longitudinal axis being inclined to the width direction by an inclination angle θ,

the first spacer having a standing surface extending in a direction intersecting the plate surface,

the standing surface being inclined in a direction same as that of the inclination angle θ.

[Claim 2]

The heat exchanger of claim 1, wherein

the plurality of fins each have

a first end edge that is one end edge in the width direction, and

a second end edge that is an other end edge in the width direction,

a cut-out portion is formed at the second end edge,

the flat tube is inserted into the cut-out portion,

a first end portion of the flat tube is positioned lower than is a second end portion of the flat tube and,

the first end portion of the flat tube is positioned closer to the first end edge in the width direction than is the second end portion of the flat tube positioned closer to the second end edge in the width direction than is the first end portion of the flat tube.

[Claim 3]

The heat exchanger of claim 2, wherein

the flat tube is either one of a first flat tube and a second flat tube disposed next to each other in the longitudinal direction of each of the plurality of fins,

the plurality of fins each have an intermediate region formed between the cut-out portion into which the first flat tube is inserted and the cut-out portion into which the second flat tube is inserted, and

the first spacer is disposed closer to the first end edge than the intermediate region.

[Claim 4]

The heat exchanger of claim 3, wherein

the plurality of fins each have a first opening port formed in the plate surface by causing the first spacer to be erected, and

the first opening port is positioned below the first spacer.

[Claim 5]

The heat exchanger of claim 4, wherein at least one of the first spacer and the first opening port is disposed in a region obtained by projecting the flat tube in a direction along the longitudinal axis.

[Claim 6]

The heat exchanger of claim 2, wherein

the flat tube is either one of a first flat tube and a second flat tube disposed next to each other in the longitudinal direction of each of the plurality of fins,

the plurality of fins each have an intermediate region formed between the cut-out portion into which the first flat tube is inserted and the cut-out portion into which the second flat tube is inserted, and

the first spacer is disposed in the intermediate region.

[Claim 7]

The heat exchanger of claim 6, wherein the first spacer is disposed on a first imaginary line connecting a first end portion of the first flat tube and a first end portion of the second flat tube that are positioned close to the first end edge.

[Claim 8]

The heat exchanger of claim 7, wherein the first spacer is disposed closer to the flat tube than a second imaginary line extending in the width direction from the first end portion out of end portions of the flat tube, the first end portion being positioned close to the first end edge.

[Claim 9]

The heat exchanger of claim 6, wherein

the plurality of fins each have a first opening port formed in the plate surface by causing the first spacer to be erected, and

the first opening port is positioned below the first spacer.

[Claim 10]

The heat exchanger of claim 1, wherein an inclination angle α of the standing surface of the first spacer is less than or equal to the inclination angle θ of the flat tube.

[Claim 11]

The heat exchanger of claim 9, wherein an inclination angle α of the standing surface of the first spacer is greater than the inclination angle θ of the flat tube.

[Claim 12]

The heat exchanger of claim 3, wherein

the plurality of fins each further include a second spacer positioned closer to the second end edge than is the first spacer and maintaining the interval,

the second spacer has a second standing surface extending and intersecting the plate surface, and

the second standing surface is inclined in the direction same as that of the inclination angle θ of the flat tube.

[Claim 13]

The heat exchanger of claim 12, wherein the second spacer is disposed in the intermediate region.

[Claim 14]

The heat exchanger of claim 12, wherein the second spacer is disposed closer to the flat tube than a second imaginary line extending in the width direction of each

of the plurality of fins from each of the first end portion of the first flat tube and the first end portion of the second flat tube that are positioned close to the first end edge.

[Claim 15]

The heat exchanger of claim 12, wherein

a second opening port is formed in the plate surface by causing the second spacer to be erected, and

the second opening port is positioned below the second spacer.

[Claim 16]

A heat exchanger unit comprising:

the heat exchanger of claim 1; and

a fan configured to send air to the heat exchanger.

[Claim 17]

A refrigeration cycle apparatus comprising the heat exchanger unit of claim 16.