[CLAIMS]

[Claim 1]

An multi-effect solar distiller with multiple heat sources, comprising:

a solar thermal energy still part (10) configured to evaporate sea water using solar thermal energy as a heat source to collect condensed fresh water;

a plurality of absorption reflectors (20) configured to be installed within the solar thermal energy still part (10) to absorb and reflect solar thermal energy; and

a multi-effect distillation part (30) configured to condense steam generated from the solar thermal energy still part (10) to collect fresh water and evaporate the sea water using condensation latent heat of the steam as a heat source to collect the fresh water,

wherein the absorption reflector (20) is installed within a sea water storage tank (11) which is installed within the solar thermal energy still part (10) and stores the sea water, and has one end protruding above a sea water surface, and

the one end of the absorption reflector which is bent toward the sea water surface, and a bend angle (β) formed by the one end is controlled.

[Claim 2]

The multi-effect solar distiller of claim 1, wherein

the solar thermal energy still part (10)

includes a tube configured to be installed within a sea water storage

tank (11) storing the sea water to use waste heat so as to evaporate the sea water and have exhaust gas flowing therein.

~~**[Claim 3]**~~

~~The multi-effect solar distiller of claim 2, wherein~~

~~the absorption reflector is coupled with one side of the tube.~~

~~**[Claim 4]**~~

~~The multi-effect solar distiller of claim 3, wherein~~

~~the absorption reflector has a plate shape.~~

[Claim 35]

The multi-effect solar distiller of claim 1, wherein

the absorption reflector (20)

is installed within thea sea water storage tank (11) which is installed within the solar thermal energy still part (10) and stores the sea water, and has the one end protruding above~~toward~~ thea sea water surface to absorb heat of sunlight reflected from the sea water surface.

~~**[Claim 6]**~~

~~The multi-effect solar distiller of claim 5, wherein~~

~~the one end of the absorption reflector is bent to form a predetermined angle with respect to the sea water surface, and a bend angle formed by the one~~

~~end is controlled.~~

【Claim 47】

The multi-effect solar distiller of claim ~~5~~1, wherein

the absorption reflector (20) is installed in plural, and

ends of the plurality of absorption reflectors (20) have different lengths.

【Claim 58】

The multi-effect solar distiller of claim 1~~6~~, wherein

the absorption reflector (20)

has one surface corresponding to the sea water level absorbing heat of sunlight and the other surface reflecting sunlight toward the multi-effect distillation part (30).

【Claim 69】

The multi-effect solar distiller of claim 1, wherein

the multi-effect distillation part (30) has a plurality of effect stages (31) which are disposed to be spaced apart from each other, and

each of the plurality of effect stages (31) includes:

a plate (32) configured to be provided with a sea water pocket (33) of which one surface of an upper side is filled with the sea water and a condensation water pocket (34) of which one surface of a lower side collects condensation water; and

a wick (35) configured to be attached to a rear surface of the plate (32) to draw the sea water from the sea water pocket (33) and cause the drawn sea water to flow.

【Claim 7~~10~~】

The multi-effect solar distiller of claim 6~~-9~~, wherein:

in a first effect stage (31a) nearest to the solar thermal energy still part (10) among the plurality of effect stages (31), the steam evaporated by the solar thermal energy still part (10) is condensed at a front surface of the plate (32) of the first effect stage and is stored in the condensation water pocket (34) of the first effect stage;~~ and~~

the sea water flowing in the wick (35) of the first effect stage (31a) is heated by the condensation latent heat of the steam and solar radiation energy incident on the one side of the plate (32) of the first effect stage;

in the remaining effect stages (31) continuously installed corresponding to the first effect stage (31a) among the plurality of effect stages, the condensation water formed at the front surfaces of each plate (32) of the remaining effect stages is stored in each condensation water pocket (34) of the remaining effect stages; and

the sea water flowing in each wick (35) of the remaining effect stages is evaporated by the condensation latent heat of the condensation water and the evaporated steam is condensed at a front surface of a plate (32) of a next adjacent effect stage by diffusion.

~~[Claim 11]~~

~~The multi-effect solar distiller of claim 10, wherein:~~

~~in the remaining effect stages continuously installed corresponding to the first effect stage among the plurality of effect stages, the condensation water formed at the front surfaces of each plate of the remaining effect stages is stored in each condensation water pocket of the remaining effect stages; and~~

~~the sea water flowing in each wick of the remaining effect stages is evaporated by the condensation latent heat of the condensation water and the evaporated steam is condensed at a front surface of a plate of a next adjacent effect stage by diffusion.~~

[CLAIMS]

[Claim 1]

An multi-effect solar distiller with multiple heat sources, comprising:

a solar thermal energy still part (10) configured to evaporate sea water using solar thermal energy as a heat source to collect condensed fresh water;

a plurality of absorption reflectors (20) configured to be installed within the solar thermal energy still part (10) to absorb and reflect solar thermal energy; and

a multi-effect distillation part (30) configured to condense steam generated from the solar thermal energy still part (10) to collect fresh water and evaporate the sea water using condensation latent heat of the steam as a heat source to collect the fresh water,

wherein the absorption reflector (20) is installed within a sea water storage tank (11) which is installed within the solar thermal energy still part (10) and stores the sea water, and has one end protruding above a sea water surface, and

the one end of the absorption reflector which is bent toward the sea water surface, and a bend angle (β) formed by the one end is controlled.

[Claim 2]

The multi-effect solar distiller of claim 1, wherein

the solar thermal energy still part (10)

includes a tube configured to be installed within a sea water storage

tank (11) storing the sea water to use waste heat so as to evaporate the sea water and have exhaust gas flowing therein.

【Claim 3】

The multi-effect solar distiller of claim 1, wherein

the absorption reflector (20)

is installed within the sea water storage tank (11) which is installed within the solar thermal energy still part (10) and stores the sea water, and has the one end protruding above the sea water surface to absorb heat of sunlight reflected from the sea water surface.

【Claim 4】

The multi-effect solar distiller of claim 1, wherein

the absorption reflector (20) is installed in plural, and

ends of the plurality of absorption reflectors (20) have different lengths.

【Claim 5】

The multi-effect solar distiller of claim 1, wherein

the absorption reflector (20)

has one surface corresponding to the sea water level absorbing heat of sunlight and the other surface reflecting sunlight toward the multi-effect distillation part (30).

【Claim 6】

The multi-effect solar distiller of claim 1, wherein

the multi-effect distillation part (30) has a plurality of effect stages (31) which are disposed to be spaced apart from each other, and

each of the plurality of effect stages (31) includes:

a plate (32) configured to be provided with a sea water pocket (33) of which one surface of an upper side is filled with the sea water and a condensation water pocket (34) of which one surface of a lower side collects condensation water; and

a wick (35) configured to be attached to a rear surface of the plate (32) to draw the sea water from the sea water pocket (33) and cause the drawn sea water to flow.

【Claim 7】

The multi-effect solar distiller of claim 6, wherein:

in a first effect stage (31a) nearest to the solar thermal energy still part (10) among the plurality of effect stages (31), the steam evaporated by the solar thermal energy still part (10) is condensed at a front surface of the plate (32) of the first effect stage and is stored in the condensation water pocket (34) of the first effect stage;

the sea water flowing in the wick (35) of the first effect stage (31a) is heated by the condensation latent heat of the steam and solar radiation energy incident on the one side of the plate (32) of the first effect stage;

in the remaining effect stages (31) continuously installed corresponding to the first effect stage (31a) among the plurality of effect stages, the condensation water formed at the front surfaces of each plate (32) of the remaining effect stages is stored in each condensation water pocket (34) of the remaining effect stages; and

the sea water flowing in each wick (35) of the remaining effect stages is evaporated by the condensation latent heat of the condensation water and the evaporated steam is condensed at a front surface of a plate (32) of a next adjacent effect stage by diffusion.