Claims

1. An apparatus for water heating comprising

   a container (1);

   an inner partition (6) disposed inside the container; and

   a heating means;

   characterized in that the inner partition (6) includes a wider circular mouth tapering to a narrower tube forming a conical portion,

   wherein the heating means having a first coil (4) sitting inside the tube and a second coil (5) encircling the tube of the inner partition.

2. An apparatus for water heating according to claim 1 wherein the inner partition is in the form of funnel-like shape.

3. An apparatus for water heating according to claim 1 wherein the conical portion includes an annular slanting interior surface that converges toward the tube’s opening.

4. An apparatus for water heating according to claim 3 wherein the slanting surface comprises a plurality of openings to allow water to mix.

5. An apparatus for water heating according to claim 1 wherein the circular mouth comprises an edge that conforms to an interior contour of the container (1).

6. An apparatus for water heating according to claim 5 wherein the edge includes a wall that protrudes upwardly with an appropriate height from the edge.

7. An apparatus for water heating according to claim 3 wherein the slanting surface is slanted at an angle greater than 90 degree measured from a vertical axis of the wall in anti-clockwise direction.

8. An apparatus for water heating according to claim 1 wherein the container (1) further comprises an inlet pipe (2) entering at the top of the container and located under the circular mouth of the inner partition to allow water to flow downwardly across the second coil (5) and then upwardly across the first coil (4).

9. An apparatus for water heating according to claims 1 and 8 wherein the container (1) further comprises an outlet pipe (3) exiting from the top of the container and located above the inlet pipe (2) and the circular mouth of the inner partition wherein the outlet pipe (3) include a bended pipe portion raised upwardly to allow water with high temperature to flow out of the tank by entering the bended pipe portion.

10. An apparatus for water heating according to claim 1 wherein the first coil (4) includes a pipe entering at the top of the container as an inlet (41) and exiting from the bottom of the container as an outlet (42).

11. An apparatus for water heating according to claim 1 wherein the second coil (2) encircle the exterior of the tube of the inner partition.

12. An apparatus for water heating according to claim 1 wherein the second coil (5) includes a pipe (51) entering the top of the container and an outlet (52) exiting from the bottom of the container (1) as an outlet (2).

13. An apparatus for water heating according to claim 1 wherein the first coil (4) is connected to the second coil forming a heat exchanger unit.

14. An apparatus for water heating according to claim 1 wherein the first coil (4) is connected to a heating system and the second coil (5) is connected to another heating system to act as independent heat exchangers.

15. An apparatus for water heating according to claim 1 wherein either one of the coils is connected to a condenser heat reclaim circuit of an air-conditioner.

16. An apparatus for water heating according to claim 1 wherein the coils are separately connected to different condenser heat reclaim circuits of air-conditioners.

17. An apparatus for water heating according to claim 1 wherein either one of the coils is connected to a heat pump water heating circuit.

18. An apparatus for water heating according to claim 1 wherein either one of the coils is connected to a solar heating system.

19. An apparatus for water heating according to claim 1 wherein the container (1) further comprises a drainage port (7) disposed at the bottom center of the container (1) and a release valve port (8) disposed at the top of the container (1).

20. An inner partition for a hot water tank comprising

a wider circular mouth tapering to a narrower tube

wherein the tube is for a first coil (4) of a heat exchanger to be inside the tube and a second coil (5) of the heat exchanger to encircle the tube.

21. An inner partition according to claim 20 wherein the tapering of the mouth to the tube forms a conical portion of the mouth having an annular slanting interior surface that converges toward the tube's opening.

22. An inner partition according to claim 20 wherein the circular mouth comprises an edge that conforms to an interior contour of the container (1).

23. An inner partition according to claim 22 wherein the edge includes a wall that protrudes upwardly from the edge.

24. An inner partition according to claim 21 wherein the slanting surface is slanted at an angle greater than 90 degree measured from a vertical axis of the wall in anti-clockwise direction.

25. An inner partition according to claim 20 wherein the slanting surface comprises a plurality of openings.