CLAIMS

1. A washing machine comprising:

a water tub for storing washing solution;

a rotary drum contained in the water tub and for housing clothes;

a housing tub provided with the water tub and the rotary drum;

a bubble generator for generating bubbles and supplying the generated bubbles to the housing tub; and

a circulation pump for supplying the washing solution in the water tub to the bubble generator,

wherein

the bubble generator includes a bubble generation chamber for storing the washing solution supplied from the circulation pump, and

the washing solution supplied from the circulation pump to the bubble generation chamber collides with a liquid surface of the washing solution stored in the bubble generation chamber.

2. The washing machine according to claim 1, wherein the bubble generator is disposed outside the water tub.

3. The washing machine according to claim 1, wherein

the bubble generator includes a discharge port for discharging the washing solution toward the washing solution stored in the bubble generation chamber, and an outflow port for supplying the bubbles generated in the bubble generator to the housing tub, and

the outflow port is formed to extend from a bottom surface of the bubble generation chamber to a position above the liquid surface of the washing solution stored in the bubble generation chamber.

4. The washing machine according to claim 3, wherein the bottom surface of the bubble generation chamber is inclined so as to be gradually lowered toward the outflow port.

5. The washing machine according to claim 3, further comprising a first flow

passage for guiding the washing solution from the outflow port into the housing tub,

wherein the first flow passage is inclined so as to be lowered from the outflow port toward the housing tub.

6. The washing machine according to claim 3, further comprising a tub discharger for supplying the washing solution from the bubble generation chamber into the housing tub,

wherein a bent part is provided on a second flow passage for guiding the washing solution from the outflow port into the housing tub.

7. The washing machine according to claim 6, wherein a throttle is provided inside the second flow passage extending from an inside of the bubble generation chamber to the tub discharger.

8. The washing machine according to claim 1, further comprising:

a first circulation path for circulating and supplying the washing solution from the circulation pump to the bubble generator; and

a second circulation path for circulating and supplying the washing solution from the circulation pump into the water tub, wherein

the bubble generator is disposed at a position above a water level of the washing solution in the water tub.

9. The washing machine according to claim 8, wherein the first circulation path and the second circulation path are disposed inside the water tub.

10. The washing machine according to claim 8, wherein the first circulation path and the second circulation path are disposed adjacent to each other.

11. The washing machine according to claim 8, wherein the first circulation path and the second circulation path are formed of identical parts.

12. The washing machine according to claim 8, wherein

the first circulation path includes a discharge port for discharging the washing solution toward the washing solution stored in the bubble generation chamber, and

a sectional area of the first circulation path is gradually reduced toward the discharge port.

13. The washing machine according to claim 8, wherein

the first circulation path includes a discharge port for discharging the washing solution toward the washing solution stored in the bubble generation chamber, and

a sectional area of the discharge port is gradually reduced toward a discharge side tip.

14. The washing machine according to claim 1, further comprising:

a first circulation path for circulating and supplying the washing solution from the circulation pump to the bubble generator; and

a second circulation path for circulating and supplying the washing solution from the circulation pump into the water tub,

wherein the circulation pump supplies the washing solution to at least one of the first circulation path and the second circulation path.

15. The washing machine according to claim 14, wherein the circulation pump supplies the washing solution to the first circulation path and the second circulation path simultaneously.

16. The washing machine according to claim 14, further comprising:

a tub discharger for supplying the washing solution from the bubble generator into the housing tub; and

a solution discharge port for supplying the washing solution from the second circulation path into the housing tub,

wherein the solution discharge port for discharging the washing solution to the housing tub is disposed below the tub discharger.

17. The washing machine according to claim 1, further comprising:

a first circulation path for circulating and supplying the washing solution from the circulation pump to the bubble generator; and

a second circulation path for circulating and supplying the washing solution from the circulation pump into the water tub,

wherein an amount of the washing solution supplied through the first circulation path and an amount of the washing solution supplied through the second circulation path are set by a rotation direction of the circulation pump.

18. The washing machine according to claim 1, wherein

the bubble generator includes a water supply passage serving as a passage for guiding the washing solution supplied from the circulation pump to the bubble generation chamber, and

the water supply passage and the bubble generation chamber are partitioned by a partition wall.

19. The washing machine according to claim 18, wherein the water supply passage includes a discharge port for discharging the washing solution toward the washing solution stored in the bubble generation chamber.

20. The washing machine according to claim 19, wherein an air intake port for taking in outside air to the bubble generator is provided near the discharge port.

21. The washing machine according to claim 20, further comprising a guide passage for guiding washing solution discharged from the discharge port to the bubble generation chamber,

wherein

the guide passage includes a first region provided with the air intake port and a second region communicating with the bubble generation chamber, and

an inner diameter of the second region is formed smaller than an inner diameter of the first region.

22. The washing machine according to claim 20, wherein the air intake port is formed on an upstream side of the guide passage.

23. The washing machine according to claim 22, wherein the air intake port communicates with the water tub.