storing the washing solution supplied from the circulation pump, and the washing solution supplied from the circulation pump collides with a liquid surface of the washing solution stored inside the bubble generation chamber, so that the bubbles are generated in a solution layer of the washing solution stored inside the bubble generation.

[0009] In this washing machine, water containing a detergent is supplied to the bubble generator by the circulation pump, and collides with the liquid surface of the washing solution stored inside the bubble generation chamber. As a result, air bubbles are generated in a solution layer of the washing solution. The washing solution whose volume is increased by the air bubbles is drained from the bubble generator to spread over the clothes in the housing tub. When the washing solution makes contact with and permeates through the clothes, the air bubbles become a foam film to cover the clothes. Since the foam film contains a high concentration surfactant, dirt of the clothes can be efficiently removed. The washing solution sprayed on the housing tub flows down to the water tub and is again supplied to the bubble generator by the circulation pump. Since the washing solution supplied from the circulation pump is stably supplied to a casing at a predetermined flow amount, the detergent is dissolved and bubbles can be generated with high reliability.

[0010] As mentioned above, in the washing machine according to the aspect of the present invention, there is no need to provide air introduction means using the air pump in PTL 1 or air intake means requiring the air supply valve, such as a duckbill type valve, in PTL 2 to generate air bubbles. Therefore, the washing machine with a simple configuration can efficiently wash the clothes by dissolving the detergent and generating the bubbles.

[0011]

The washing machine according to at least one embodiment has a simple

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, so that the bubbles are generated in a solution layer of the washing solution stored inside the bubble generation.

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