wall of washing and spin-drying tub 71, and circulation channel 73 is formed between washing and spin-drying tub 71 and circulation channel cover 72. Circulation channel 73 is configured by side channel 79 and upper channel 80. Central discharge port 74, left discharge port 75, and right discharge port 76 are formed in upper channel 80. When pulsator 77 at a bottom of washing and spin-drying tub 71 rotates, washing liquid circulates in circulation channel 73, and a washing liquid rises through side channel 79, flows to upper channel 80, and is sprinkled to the laundry in washing and spin-drying tub 71 from central discharge port 74, left discharge port 75, and right discharge port 76.

When a washing step starts, the washing liquid in which detergent is dissolved is pushed out of pump chamber 78 by centrifugal force due to rotation of blade below pulsator 77, and flows to circulation channel 73. The washing liquid rises through side channel 79, flows to upper channel 80, and is sprinkled to the laundry in washing and spin-drying tub 71 from central discharge port 74, left discharge port 75, and right discharge port 76.

Multiple through holes 81 are provided on a side surface of washing and spin-drying tub 71, and fluid balancer 82 is provided on an upper peripheral edge of washing and spin-drying tub 71.

Citation List

Patent Literature

PTL 1: Unexamined Japanese Patent Publication No. H07-31785

PTL 2: Unexamined Japanese Patent Publication No. 2016-097233

SUMMARY

However, in the configuration of PTL 2, although the washing liquid is applied to the entire laundry, when the laundry located above the water surface stays on the water surface, there is a possibility that washing

unevenness may occur. In addition, circulation channel 73 needs to be disposed below fluid balancer 82, which increases a volume of parts, increases costs, and is not suitable for increasing a diameter of washing and spin-drying tub 71.

The present disclosure provides a washing machine that prevents washing unevenness at a low cost and has improved washing performance.

The washing machine according to the present disclosure includes a washing and spin-drying tub, a pulsator rotatably disposed at a bottom of the washing and spin-drying tub, a blade provided on a lower surface of the pulsator, a pump chamber on an outer periphery of the blade of the pulsator, a circulation channel that is formed by the washing and spin-drying tub and a circulation channel cover, circulates a washing liquid from the pump chamber with a rotation of the pulsator, and has a discharge port discharging the washing liquid to the washing and spin-drying tub, and a plurality of holes formed in the pulsator and guiding washing liquid to the lower surface of the pulsator, in which a total area of the holes of the pulsator is set to be larger than a minimum cross-sectional area of a channel of the circulation channel.

With this configuration, the efficiency of agitating the laundry can be improved, the washing unevenness can be improved, and the washing performance can be improved.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a longitudinal sectional view of a washing machine according to a first exemplary embodiment of the present invention.

FIG. 2 is a perspective view of a pulsator of the washing machine according to the first exemplary embodiment of the present invention.

FIG. 3 is a plan view showing a surface of a circulation channel cover of