DESCRIPTION

TITLE OF INVENTION: WASHING MACHINE

BACKGROUND

1. Technical Field

[0001] The present disclosure relates to a washing machine.

2. Description of the Related Art

[0002] Patent Literature 1 discloses a washing machine including a liquid agent automatic feeding device.

[0003] The washing machine in Patent Literature 1 includes: a liquid agent tank configured to store a liquid agent; a liquid agent automatic feeding device configured to automatically supply the liquid agent stored in the liquid agent tank to a washing tub; and a water supply valve configured to communicate with the liquid agent automatic feeding device via a water path. The washing machine drives the liquid agent automatic feeding device to supply the liquid agent to the washing tub, and then opens the water supply valve to supply water to the liquid agent automatic feeding device.

Citation List

[0004] Patent Literature 1: WO 2019/039140

SUMMARY

[0005] The present disclosure provides a washing machine including a liquid agent automatic feeding device, the washing machine being capable of efficiently performing a water supply operation involved in washing operation.

[0006] In one aspect, the washing machine in the present disclosure includes a casing, a washing tub, a water conveyance path, a liquid agent tank, the liquid agent automatic feeding device, and a control unit. The washing tub is disposed inside the casing and configured to accommodate the laundry. The water conveyance path supplies water to the washing tub via a water supply valve. The liquid agent tank is configured to store a liquid agent. The liquid agent automatic feeding device is configured to feed the liquid agent stored in the liquid agent tank into the washing tub. The water conveyance path includes a first water path through which the water is supplied to the washing tub without passing through the liquid agent automatic feeding device. The water supply valve includes a first valve configured to allow the water to flow through the first water path. The control unit is

configured to drive the liquid agent automatic feeding device to open the first valve.

[0006a] In another aspect, the present disclosure refers to a washing machine, comprising a casing, a washing tub disposed inside the casing and configured to accommodate laundry, a water conveyance path through which water is supplied to the washing tub via a water supply valve, a liquid agent tank configured to store a liquid agent, a liquid agent automatic feeding device configured to feed the liquid agent into the washing tub, the liquid agent being stored in the liquid agent tank, and a control unit, wherein the water conveyance path includes, a third water path through which the water is supplied to the washing tub without passing through the liquid agent automatic feeding device, and a fourth water path through which the water is supplied to the washing tub with passing through the liquid agent automatic feeding device, wherein the water supply valve includes, a third valve configured to allow the water to flow through the first water path, and a fourth valve configured to allow the water to flow through the second water path, and wherein, after a predetermined time elapses from opening of the third valve, the control unit opens the fourth valve.

[0006b] In yet another aspect, the present disclosure refers to a washing machine, comprising a casing, a washing tub disposed inside the casing and configured to accommodate laundry, a water conveyance path through which water is supplied to the washing tub via a water supply valve, a liquid agent tank configured to store a liquid agent, a liquid agent automatic feeding device configured to feed the liquid agent into the washing tub, the liquid agent being stored in the liquid agent tank, and a control unit, wherein the water conveyance path includes a fifth water path through which is the water is supplied to the washing tub without passing through the liquid agent automatic feeding device, a sixth water path through which is the water is supplied to the washing tub with passing through the liquid agent automatic feeding device, and a junction water path into which the fifth water path and the sixth water path join, and wherein the control unit drives the water supply valve to allow the water to flow through the fifth water path, and drives the liquid agent automatic feeding device to feed the liquid agent.

[0007] The washing machine in the present disclosure is capable of performing an automatic feeding operation with the liquid agent automatic feeding device and also efficiently performing the water supply operation involved in the washing operation.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is an external perspective view of the configuration of a washing machine

in Embodiment 1 in a state in which a lid of the washing machine is closed.

FIG. 2 is an external perspective view of the configuration of the washing machine in Embodiment 1 in a state in which the lid of the washing machine is opened.

FIG. 3 is an external perspective view of the configuration of a water supply unit of the washing machine and its surroundings in Embodiment 1 in a state in which a detergent case, a detergent tank, and a softening agent tank are drawn out.

FIG. 4 is a back view of the configuration of the water supply unit of the washing machine and its surroundings in Embodiment 1.

FIG. 5 is an exploded perspective view of the configuration of the water supply unit of the washing machine and its surroundings in Embodiment 1.

FIG. 6 is a top view of the configuration of the water supply unit of the washing machine and its surroundings in Embodiment 1, except a flow-path lid unit.

FIG. 7 is a cross-sectional top view of the water supply unit of the washing machine and its surroundings in Embodiment 1, except the flow-path lid unit, in a state in which the detergent case, the detergent tank, and the softening agent tank are removed.

FIG. 8 is a cross-sectional view of the water supply unit and its surroundings, taken along line F-F in FIG. 7.

FIG. 9 is a top view of the water supply unit of the washing machine and its surroundings in Embodiment 1, except the flow-path lid unit, in a state in which the detergent case, the detergent tank, and the softening agent tank are drawn out.

FIG. 10 is a cross-sectional view of the water supply unit and its surroundings, taken along line B-B in FIG. 7.

FIG. 11 is a cross-sectional view of the water supply unit and its surroundings, taken along line E-E in FIG. 7.

FIG. 12 is a cross-sectional view of the water supply unit and its surroundings, taken along line C-C in FIG. 7.

FIG. 13 is a cross-sectional view of the water supply unit and its surroundings,