CLAIMS

1. A check valve of straight pipe joint type and oblique lift type, the check valve comprising:

a valve seat;

a moving body capable of linearly reciprocating between a closed state in which the moving body is in close contact with the valve seat and an open state in which the moving body is separated from the valve seat;

a primary flow path located on an upstream side of the moving body; and

a secondary flow path located on a downstream side of the moving body,

wherein:

the moving body includes

a valve body supported by the valve seat in the closed state, and

a valve shaft extending from the valve body;

the valve seat is formed to straddle the center line of the connection flow path that linearly extends including the primary flow path and the secondary flow path in a cross section including the center line thereon;

an upstream-side protruding part that protrudes toward the center line (CL) side is provided on an upper portion of the inner wall surface that forms the primary flow path on the upstream side of the valve seat, and

an amount of protrusion of the upstream-side protruding part gradually increases toward the downstream side; and

the valve body comprises a valve body lower part and a valve body upper part,

characterized in that

the valve body and the valve shaft have screw parts;

the valve body and the valve shaft are directly screwed together by the screw parts in the center;

the valve body has a hollow part radially outward from the screwed portion with the valve shaft, and

the valve body lower part has an outer surface formed in a partial spherical surface, and has two flat surface parts at positions apart by 180 degrees from each other with the axis in the center, wherein the two flat surface parts rise in parallel to the reciprocating direction of the moving body, and extend parallel to each other.

2. The check valve according to claim 1, wherein

the moving body further comprises a water stop part that is in contact with the valve seat in the closed state, and

a part of the water stop part is located below the center line in the closed state, and the entire water stop part moves to a position above the center line at a certain position in the open state.

3. The check valve according to claim 1 or 2, wherein

the valve body upper part has a collar that is larger in a radial direction than the valve body lower part, with the valve shaft in the center, and

the lower end of the collar is located below the center line in the closed state and moves to a position above the center line at a certain position in the open state.

4. The check valve according to claim 2 or 3, wherein the certain position in the open state is a position of 70% of the maximum opening degree of the check valve.

5. The check valve according to claim 3, wherein

the moving body further comprises a packing as a water stop part that is in contact with the valve seat in the closed state, and

the valve body lower part is formed in a partial spherical shape having the hollow part, on an upstream side of the packing.

6. The check valve according to any one of claims 1 to 5, wherein

a downstream-side protruding part that protrudes toward the center line side is provided in a lower portion of the inner wall surface that forms the secondary flow path on the downstream side of the valve seat, and

an amount of protrusion of the downstream-side protruding part gradually decreases toward the downstream side.

7. The check valve according to any one of claims 1 to 6, wherein

the check valve further comprises a valve casing for accommodating at least a part of the moving body on the opposite side to the valve body,

the valve shaft and the valve casing extend obliquely toward a side of the secondary flow path in a direction intersecting with a flow path direction of the primary flow path and the secondary flow path,

the valve seat and the valve body upper part extend in a direction intersecting with the flow path direction of the primary flow path and the secondary flow path, and the extending direction of the valve shaft and the valve casing, and

an end of a side of the primary flow path in the valve body upper part is arranged to be capable of sliding contact with the inner wall of the valve casing when the valve body is opened.