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SPECIFICATION

TITLE OF THE INVENTION

FLUSH TOILET

BACKGROUND OF THE INVENTION

The present invention relates to an improvement of a water flush toilet.

Fig. 3 is a plan view showing a conventional water flush toilet. As shown in Fig. 3, a number of rim holes 53a, 53a, 53a are formed in a bottom surface of a rim water passage 53 formed in an upper edge portion of a basin surface 54 for forming eddy flows within the basin surface 54 of a toilet body 51 and effectively discharging contamination. Some of the rim holes are formed into large diameter rim holes 53b, 53b, 53b. A large amount of flushing water is caused to flow through the large diameter rim holes 53b, 53b, 53b so that the eddy flows may be formed in a good condition on the basin surface 54. However, in such a structure, the number of rims 53a and 53b have to be formed on the bottom side of the rim water passage 53. Thus, the conventional structure suffers from the defects that it is difficult to machine the toilets and the cost therefor is increased.

For this reason, in order to form good eddy flows without the formation of the rim holes 53a and 53b, as shown in a plan view of Fig. 4, a toilet 61 is provided in which a distributor 62 is mounted on a rear side of the toilet, and the width of openings of left and right pipes 62a and 62b branching from the distributor 62 is changed so that a large amount of flushing water is caused to flow

from, for example, the end of the right pipe 62b to form the eddy flows on the basin surface 63 in a good condition. In such a toilet 61 using the distributor 62, since the balance on the right and left sides of the flushing water to be discharged on the basin surface 63 side by the distributor 62 is changed to form eddy flows, it is necessary to provide the separate distributor 62.

SUMMARY OF THE INVENTION

In order to overcome the above-noted defects inherent in the prior art, an object of the present invention is to provide a water flush toilet in which good eddy flows may be formed on a basin surface to flush the basin with water in a good condition without using a distributor.

In the water flush toilet according to the present invention, a central water passage is provided for causing flushing water from a flushing water port, formed in an upper surface of a rear portion of a toilet, to a position of a basin surface rear portion and said central water passage is formed into such a shape that a width of said flushing water port is decreased and opened into a sector-shape toward the basin surface. The flushing water that passes through the central water passage from the flushing water port is caused to be narrowed on the inlet side and to be gradually widened in the sector-shape laterally to flow downwardly at the position of the basin surface rear portion over a wide range. It is therefore possible to wash the basin surface rear portion over the wide range. Since the flow is in the lateral direction, the flow rate is

suppressed and the splashing of water is reduced, advantageously.

Also, in the water flush toilet according to the present invention, a rim water passage whose bottom is opened at an upper edge portion of the basin surface of the toilet, whereby the flushing water is fed in a one-sided rotation through either one of the right and left side of said central water passage from said flushing water port to said rim water passage.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention will now be described with reference to the accompanying drawings.

Fig. 1 is a plan view showing a structure of a toilet body and Fig. 2 is a central longitudinal sectional view showing the structure.

In Figs. 1 and 2, a flushing water port 2 is formed in a rear top surface of a toilet body 1. A flushing water is fed to the flushing water port 2 from a water reservoir or the like provided above. A central water passage 3 is formed forwardly toward the toilet body 1 at a lower portion of the flushing water port 2 and an outer water passage 4 is formed on its right side. Also, a basin surface in which a rim 5a is formed in an upper edge portion is formed in a front portion of the toilet body 1. A rim water passage 5 in which a bottom opening 5b is formed over a full circumference on the bottom side is formed within the rim 5a. In other words, the bottom circumferential portion of the rim water passage 5 is opened along the full circumference of the bottom toward

the basin surfaces 6a and 6b through the bottom opening 5b so that the flushing water may flow downwardly from the rim water passage 5 toward the basin surfaces 6a, 6b through the bottom opening 5b. Also, the flushing water that flows through the above-described central water passage 3 may flow downwardly to the basin surface rear portion 6b.

Incidentally, a sealing water W is stagnant between the basin surface front portion 6a and the basin surface rear portion 6b and a trap inlet 7a is formed on the bottom side below the sealing water W. A trap portion 7 is formed obliquely rearwardly.

As shown in Fig. 1, in this embodiment, the above-described central water passage 3 and the outer water passage 4 are partitioned and formed by a wall of ceramic formed integrally with the toilet body 1. The above-described central water passage 3 is formed in the back-and-forth direction between a water passage inner wall 10a and a water passage inner wall 10b. Each of the water passage inner walls 10a and 10b is formed into a slant surface having a substantially sector-shape opened from a rear side to a front side. An inlet 3a is formed with a narrow width at a rear end portion between the water passage inner walls 10a and 10b and with a wide opening on the side of the above-described basin surface rear portion 6b.

On one hand, the above-described outer water passage 4 is formed between a right end outer circumferential wall 1b of the toilet body 1 and a water passage outer wall 11b that is continuous with the water passage inner wall 10b

and is formed into a large passage so that a large amount of flushing water is caused to flow from the flushing water port 2 to the rim water passage 5 side.

On the other hand, an interval between a left end outer circumferential wall 1a of the toilet body 1 and a water passage outer wall 11a that is continuous with the above-described water passage inner wall 10a is formed with such a very small width that almost no flushing water passes therethrough.

Accordingly, the flushing water fed from the water reservoir (not shown) or the like to the flushing water port 2 is caused to flow from the flushing water port 2 and to flow downwardly strongly through the outer water passage 4 on the right and rim water passage 5 while forming the counterclockwise eddy flows on the basin front portion 6a so that the basin surface front portion 6a may be well washed by the eddy flows. Also, part of the flushing water from the flushing water port 2 is caused to flow through the central water passage 3 to the basin surface rear portion 6b. However, since the width of the central water passage 3 on the inlet 3a side is narrowed, and after that, the width is increased into a sector-shape, the flushing water in the central water passage 3 is caused to be widen laterally on the right and left direction and to flow over a wide range to the basin surface rear portion 6b. As a result, the flushing water reaches the entire region of the basin surface rear portion 6b to well flush the basin surface rear portion 6b. In addition, since the central water passage 3 is opened in a sector-shape toward the

basin surface rear portion 6b, the flushing water is forcibly widened in the lateral direction so that its flow rate is suppressed and caused to flow along the basin surface rear portion 6b. As a result, there is almost no fear that the flushing water would splash and drop down onto the sealing water W. Accordingly, the amount of splash of water is decreased in comparison with the conventional toilet system and the basin surface rear portion 6b may be washed over a wide range.

Thus, in this embodiment, the conventional distributor 6 may be dispensed with and the one-side rotation water passage 4 is formed of ceramic. A large amount of flushing water is caused to flow to the basin surface front portion 6a in a one-sided flow manner to thereby form strong eddy flows. The flushing water may be introduced over a wide range to the basin surface rear portion 6b through the central water passage 3 and the entire range of the basin surfaces 6a and 6b may be well flushed with water. Incidentally, the eddy flows are well pushed and discharged into the trap 7 from trap inlet 7a.

Incidentally, an example in which the outer water passage 4 is formed on the right end side of the toilet body 1 has been described. However, it is possible to reversely form the outer water passage on the left end side so that the clockwise eddy flows are formed on the basin surface front portion 6a to thereby ensure the same advantages.

In the water flush toilet according to the present invention, a central water passage is provided for causing

flushing water from a flushing water port, formed in an upper surface of a rear portion of a toilet, to a position of a basin surface rear portion and said central water passage is formed into such a shape that a width of said flushing water port is decreased and opened into a sector-shape toward the basin surface. The flushing water that passes through the central water passage from the flushing water port is caused to be narrowed on the inlet side and to be gradually widened in the sector-shape laterally to flow downwardly at the position of the basin surface rear portion over a wide range. It is therefore possible to flush with water the basin surface rear portion over the wide range. Since the flow is in the lateral direction, the flow rate is suppressed and the splashing of water is decreased, advantageously.

Also, in the water flush toilet according to the present invention, a rim water passage whose bottom is opened at an upper edge portion of the basin surface of the toilet, whereby the flushing water is fed in a one-sided rotation through either one of the right and left of said central water passage from said flushing water port to said rim water passage. Since the flushing water is caused to form strong eddy flows on the basin surface of the toilet and flow downwardly in a one-sided rotation from the flushing water port, it is possible to strongly flush the basin surface with water.

Various details of the invention may be changed without departing from its spirit nor its scope. Furthermore, the foregoing description of the embodiments

according to the present invention is provided for the purpose of illustration only, and not for the purpose of limiting the invention as defined by the appended claims of their equivalents.

WHAT IS CLAIMED IS:

1. A flush toilet characterized in that a central water passage is provided for causing flushing water from a flushing water port, formed in an upper surface of a rear portion of a toilet, to a position of a basin surface rear portion of the toilet and said central water passage is formed into such a shape that a width of said flushing water port is decreased and opened into a sector-shape toward the basin surface.
2. The flush toilet according to claim 1, further characterized in that a rim water passage whose bottom is opened at an upper edge portion of the basin surface of the toilet, whereby the flushing water is fed in a one-sided rotation through either one of right and left of said central water passage from said flushing water port to said rim water passage.

