

PIPE CONNECTION FOR A COMBINATION SHOWER-WC

The invention relates to a pipe connection for connecting a combination bidet-toilet bowl to a supply line of a flushing water supply.

Combination bidet-toilet bowls are attached via a pipe connection to a supply line of a flushing water supply. Via this supply line, flushing water flows from the pipe system via an inlet collar into the combination bidet-toilet, which usually is a ceramic bowl.

Technical progress has improved the development of combination bidet-toilets in the past. The result of this is that combination bidet-toilets can carry out many technical functions. Thus, as a rule the toilet seat can be pre-heated to body temperature. Additionally, from U.S. 6,327,718 a combination bidet-toilet is known in which the water temperature and water pressure can be selected. For this, by means of a bidet spray arm, warm water is sprayed. Prior to spraying, the warm water can be mixed with air.

It is further known that the toilet seat is equipped with an odor-filtering ventilator and/or the bowl itself is provided with an air removal device. JP 07268928 A describes for this a combination bidet-toilet with a device for odor removal. By means of a suction fan, gas-forming media are brought out by suction from the interior of the toilet bowl and passed to a preparation device. This preparation device comprises a catalytic converter containing ozone, which decomposes the odoriferous gases. The air processed in this way is released into the environment.

Additionally known from JP 1062530 A is a combination bidet-toilet, which brings out air by suction from the interior of the toilet bowl. In the event the suction channel becomes blocked, a measuring device determines that air passage has been reversed and issues a signal to a microcomputer, which generates a display from this.

The task of the invention is to provide a pipe connection or an inlet collar for connecting a combination bidet-toilet bowl with a supply line of a flushing water supply, which improves the design configuration free space of combination bidet-toilets.

The problem is solved by the pipe connection according to the features of claim 1.

By this means a pipe connection is provided, which by means of branch arms creates interfaces that can combine multiple functions. By shifting the inlet, which normally is centered, to the side, space is provided for an improvement of the installation of the bidet equipment. Additionally advantageous is that the flushing water is divided into at least two channels, and thus flows into the combination bidet-toilet bowl. This, the cleaning of the combination bidet-toilet bowl is improved.

In a special embodiment form, in the same interface not only is flushing water supplied, but in addition an overflow channel and an odor-removal channel are integrated. Consequently, water is supplied, odor is removed, and a water heater overflow is supplied, with only two branch arms.

It is preferred that the flow channels that direct the flushing water be situated below. Insertion of the flow channels guiding the flushing water into the combination bidet-toilet bowl can be so chosen that the flowing of the flushing water permits an optimal cleaning of the combination bidet-toilet bowl. For this, to the flow channel guiding the flushing water, an overflow channel of a branch arm can also be integrated into a pipe sleeve of the outlet piece. Then each of the channels forms a partial cross section. It is preferred that each of the channels covers an essentially halved partial cross section. The overflow channel is fed from the water heater.

It is further preferred that the cross section of the branch arm, thus a pipe sleeve, exhibits a round cross section that is horizontally divided.

Provision can be made that the invention-specific pipe connection is accommodated in an equipment unit, which exhibits a front interface for mounting on a toilet body and a rear interface for mounting on an installation surface on the building wall side.

Figure 1 is a schematic view of the outlet piece of the pipe connection.

Figure 2 is a schematic view of the inlet piece of the pipe connection.

Figures 1 and 2 show a pipe connection for joining a combination bidet-toilet bowl (not depicted) and a supply line (not depicted) of a flushing water supply. The invention deals with a so-called pipe system, which can combine the distribution of flushing water, odor removal and outflow of overflow water from a water heater.

For this, the pipe connection comprises an inlet piece 1 and an outlet piece 2. The outlet piece 2 exhibits at least one first and one second branch arm 3, 4 terminating in the combination bidet-toilet bowl, which each exhibit a first and second flow channel 5 and 6 directing the flushing water.

In addition, the first branch arm 3 exhibits a flow return line 7 for removal of odor from the combination bidet-toilet bowl. The flow return channel 7 can be connected to a removal device 9 for suctioning out odor.

The second branch arm 4 can additionally comprise a flow channel 8 for draining of overflow water of a water heater. The flow channel 8 can be attached to an inlet device 10 for water-heater overflow water.

Thus the flushing water flows through the inlet piece 1 into the pipe connection or the pipe system. In the interior, the flushing water is divided into the first and the second branch arm 3, 4, and in particular there to the first and second flow channel 5, 6, directing the flushing water. The flow channels 5, 6 directing the flushing water terminate in the combination bidet-toilet bowl, and in fact preferably with uniform openings. By means of the entering flushing water, the combination bidet-toilet bowl is flushed.

One can further see in figure 1 that the cross section of the two pipe sleeves 11, 12 of the two branch arms 3, 4 is subdivided. The flow channels 5, 6 directing the flushing water preferably flow via a part of the pipe cross section, especially in the lower half from the pipe connection into the combination bidet-toilet bowl.

One other part of the pipe cross section, especially preferably an upper half of the two pipe sleeves 11, 12 of the two branch arms 3, 4 is a drain. Preferably the flow return channel 7 for odor removal forms a vent for release and/or suction removal of gases.

Flow channel 8 for draining of overflow water of the water heater terminates into the combination bidet-toilet bowl.

An upper part, especially an upper half of the pipe sleeve 11 of first branch arm 3 can remove odor of the interior of the combination bidet-toilet bowl. The odor is drawn off with the removal device 9, with removal device 9 able to be configured, for example, as an elongated slot.

In addition, a filter can be provided after this elongated slot and/or be integrated.

If the pipe sleeves 11, 12 of the two branch arms 3, 4 are configured to be round, preferably this round cross section is horizontally divided into the two flow channels 5, 6 and the flow return channel 7 for odor removal, or the flow channel 8 for draining overflow water of a water heater.

As described above, the present invention makes possible better utilization of a combination bidet-toilet. By this means, multiple functions can be integrated such as flushing, overflow and odor removal. The design of the branches further makes it possible to install devices such as lines for a lower bidet as well as for further functions of the combination bidet-toilet, in compact fashion, centrally, in an intermediate space.

Patent Claims

1. Pipe connection for joining a combination bidet-toilet bowl with a supply line Z of a flushing water supply, comprising an inlet piece (1) and an outlet piece (2), characterized in that the outlet piece (2) exhibits at least a first and a second branch arm (3, 4) terminating in the combination bidet-toilet bowl.
2. Pipe connection according to claim 1, characterized in that the first branch arm (3) comprises a first flow channel (5) directing the flushing water and the second branch arm (4) a second flow channel (6) directing the flushing water.
3. Pipe connection according to claim 2, characterized in that the first branch arm (3) additionally exhibits a flow return channel (7) for odor removal from the combination bidet-toilet bowl.
4. Pipe connection according to one of claims 1 to 3, characterized in that it is able to be connected via an insertion device (10) with a water heater.
5. Pipe connection according to claim 4, characterized in that the second branch arm (4) additionally exhibits a flow channel (8) for draining overflow water from the water heater.
6. Pipe connection according to one of claims 1 to 5, characterized in that the flow return channel (7) for odor removal, terminating in the combination bidet-toilet bowl, is attached to a removal device (9) for suctioning out of odors.
7. Pipe connection according to one of claims 3 to 6, characterized in that the flow channels (5, 6) directing the flushing water are situated at bottom in a first and second branch arm (3, 4).
8. Pipe connection according to one of claims 2 to 7, characterized in that the first and second flow channel (5, 6) directing flushing water, is formed by a partial cross section of a pipe sleeve (11, 12) of the first and second branch arm (3, 4).

9. Pipe connection according to one of claims 6 to 8, characterized in that the removal device (9) for suctioning out of odor can be combined with a filter.
10. Pipe connection according to one of claims 3 to 9, characterized in that the flow return channel (7) for suctioning out of odor is formed from a partial cross section of the pipe sleeve (11) of the first branch arm (3).
11. Pipe connection according to one of claims 3 to 10, characterized in that the flow channel (8) for draining of overflow water from the water heater is formed from a partial cross section of the pipe sleeve (12) of the second branch arm (4).
12. Pipe connection according to claim 2 and 11, characterized in that the first flow channel (5) and the flow return channel (7) extend over a part of the pipe cross section of the first branch arm (3).
13. Pipe connection according to claim 2 and 12, characterized in that the second flow channel (5) and the flow channel (8) for drainage of overflow water of the water heater extend over a part of the pipe cross section of the second branch arm (4).
14. Pipe connection according to one of claims 1 to 13, characterized in that it is accommodated in an equipment unit, which exhibits a front interface for mounting on a toilet body and a rear interface for mounting on an installation surface on the building wall side.