

SPECIFICATION

TITLE OF THE INVENTION

STRUCTURE OF ARRANGING PIPING UNIT

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates to a structure of arranging a piping unit.

DESCRIPTION OF THE PRIOR ART

Conventionally, it is structured such that a front plate 53 is mounted to a front surface of a piping unit 51 in which horizontally arranged pipes 52 are installed, and an urinal 54 and a stool are arranged on a front surface thereof, as shown in Fig. 33, however conventionally, there has been a problem that it is necessary to previously design a size of the piping unit 51 and the front plate 53 in correspondence to a frontage of a building to which the structure is arranged, and produce individually to suit different work sites.

SUMMARY OF THE INVENTION

The present invention is made by considering the conventional problems mentioned above, and an object of the present invention is to provide a structure of arranging a piping unit which can be placed in a built-in manner by adjusting a frontage in the work site after completing an interior finish work in the work site. In accordance with a first aspect of the present invention, there is provided a structure of arranging a piping unit placed in a crossing portion between a wall surface and a floor surface, wherein

the piping unit comprises a central ornamental plate arranged at a predetermined interval apart from the wall surface, a sanitary equipment provided on a front surface of the central ornamental plate, pipes provided between the central ornamental plate and the wall surface for supplying and discharging water to and from the sanitary equipment, and a side ornamental plate, the side ornamental plate has an inner end portion fixed to both side end portions of the central ornamental plate and an outer end portion opposing to the inner end portion, and a distance from the outer end portion of the side ornamental plate to the side end portion of the central ornamental plate can be adjusted.

Further, in accordance with a second aspect of the present invention, there is provided a structure of arranging a piping unit placed in a crossing portion between a wall surface and a floor surface, wherein the central ornamental plate is arranged at a predetermined interval apart from the wall surface by a central frame and is provided on a front surface of the central frame, pipes are provided between the central frame and the wall surface for supplying and discharging water to and from the sanitary equipment, and the outer end portion of the side ornamental plate is fixed to a side frame arranged at an interval on the right or the left of the central frame.

Still further, in accordance with a third aspect of the present invention, there is provided a structure of arranging a piping unit placed in a crossing portion between a wall surface and a floor surface, wherein the central

ornamental plate is arranged at a predetermined interval apart from the wall surface by the central frame and is provided on a front surface of the central frame, pipes are provided between the central frame and the wall surface for supplying and discharging water to and from the sanitary equipment, and the outer end portion of the side ornamental plate is fixed to the end portion of another central ornamental plate provided on a front surface of another central frame fixed at an interval on the right or left of the central frame.

Furthermore, in accordance with a fourth aspect of the present invention, there is provided a structure of arranging a piping unit, wherein the inner end portion of the side ornamental plate is received in a back side of the central ornamental plate.

Moreover, in accordance with a fifth aspect of the present invention, there is provided a structure of arranging a piping unit, wherein the central ornamental plate is mounted on the central frame through a space plate, a horizontal width of the space plate is smaller than a horizontal width of the central frame, the horizontal width of the space plate is smaller than a horizontal width of the central ornamental plate, and the inner end portion of the side ornamental plate is inserted to a gap between the central frame and the central ornamental plate formed on the right and the left of the space plate.

Further, in accordance with a sixth aspect of the present invention, there is provided a structure of

arranging a piping unit, wherein the central ornamental plate is mounted on the central frame through a space plate, a horizontal width of the space plate is smaller than a horizontal width of the central frame, the horizontal width of the space plate is smaller than a horizontal width of the central ornamental plate, and the inner end portion of the side ornamental plate is inserted to a gap between the central frame and the central ornamental plate formed on the right and the left of the space plate.

Still further, in accordance with a seventh aspect of the present invention, there is provided a structure of arranging a piping unit, wherein for a width of the side ornamental plate, a plurality of standard sizes are previously set and a difference between the set standard sizes is substantially equal to a width which can be adjusted by a receiving size.

Furthermore, in accordance with an eighth aspect of the present invention, there is provided a structure of arranging a piping unit placed in a crossing portion between a wall surface and a floor surface, wherein the piping unit comprises a central frame arranged at a predetermined interval apart from the wall surface, a central counter provided on an upper surface of the central frame, a sanitary equipment provided on a front surface of the central frame, pipes provided between the central frame and the wall surface for supplying and discharging water to and from the sanitary equipment, and a side counter, the side counter has an inner end portion fixed in a contact manner

to both side end portions of the central counter and an outer end portion opposing to the inner end portion, a distance from the outer end portion of the side counter to the side end portion of the central counter can be adjusted, and the outer end portion of the side counter is mounted on a side frame arranged at an interval on the right or the left of the central frame.

Moreover, in accordance with a ninth aspect of the present invention, there is provided a structure of arranging a piping unit placed in a crossing portion between a wall surface and a floor surface, wherein the outer end portion of the side counter is mounted in a contact manner on a side end portion of another central counter provided on an upper surface of another central frame arranged at an interval on the right or the left of the central frame.

Further, in accordance with a tenth aspect of the present invention, there is provided a structure of arranging a piping unit, wherein the central counter is mounted on the central frame, and the inner end portion of the side counter is received in a lower side of the central counter.

Furthermore, in accordance with a eleventh aspect of the present invention, there is provided a structure of arranging a piping unit placed in a crossing portion between a wall surface and a floor surface, wherein the piping unit comprises a central frame arranged at a predetermined interval apart from the wall surface, a sanitary equipment provided on a front surface of the central frame, pipes

provided between the central frame and the wall surface for supplying and discharging water to and from the sanitary equipment, and a core print, the core print has an inner end portion fixed to a lower end of the central frame and an outer end portion opposing to the inner end portion, a distance from the outer end portion of the core print to the side end portion of the central frame can be adjusted, and the outer end portion of the core print is fixed to a side frame arranged at an interval on the right or the left of the central frame.

Further, in accordance with a twelfth aspect of the present invention, there is provided a structure of arranging a piping unit, wherein the outer end portion of the core print is fixed to a lower end of another central frame arranged at an interval the right or the left of the central frame.

Still further, in accordance with a thirteenth aspect of the present invention, there is provided a structure of arranging a piping unit, wherein the inner end portions of the right and left core prints are fixed to the central frame with an overlapping portion.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded perspective view of components of a piping unit;

Fig. 2 a schematical perspective view of the main portion to which a side ornamental plate is received in a central ornamental plate of a central frame;

Fig. 3 is a schematical plan view which shows an

arranging state;

Fig. 4 is a perspective view showing a structure of which a side ornamental plate is separated into upper and lower portions;

Fig. 5 is a schematic view which shows a side cross section of the upper and lower side ornamental plates;

Fig. 6 is a schematical perspective view showing a structure in which a removing portion for operation is formed in a central frame;

Fig. 7 is a schematical perspective view showing a structure in which an opening for operation is formed in a lower portion on a front surface of the central frame;

Fig. 8 is an exploded schematic view showing a structure in which a core print separated into right and left portions is used and a step tile is provided on a front surface thereof;

Fig. 9 is a schematical perspective view showing an arranging state of the structure shown in Fig. 8;

Fig. 10 is an exploded schematic view of an upper member;

Fig. 11 is a schematical perspective view which shows the main portion of a bendable side counter formed on an upper end of a side ornamental plate and placing a central counter in a gap thereof;

Fig. 12 is a schematical perspective view which shows an arranging state of the main portion shown in Fig. 11;

Fig. 13 is a schematical perspective view which shows a plural rows of central frames;

Fig. 14 is a schematical perspective view after completing an arrangement of the central frames shown in Fig. 13;

Fig. 15 is a schematical perspective view of a work site in which an interior finish work is all completed;

Fig. 16 is a schematic view which shows an inking for bolt holes to fix the central frame;

Fig. 17 is a schematic view which shows the central frame fixed to the bolt hole by a bolt;

Fig. 18 is a schematic view which shows a side frame fixed after fixing the central frame;

Fig. 19 is a schematic view which shows a plural sheets of core prints mounted on a lower end portion after adjusting a frontage;

Fig. 20 is a schematic view which shows a side ornamental plate fitted between the central frame and the side frame;

Fig. 21 is a schematic view which shows the side ornamental fitted further between the central frame and the central frame;

Fig. 22 is a schematic view which shows a state of an urinal mounted on a central ornamental plate in the central frame;

Fig. 23 is a schematic view which shows a central counter placed on an upper surface;

Fig. 24 is an exploded view before arrangement which shows a modified embodiment of the counter;

Fig. 25 is a schematical perspective view of the main

portion which shows an embodiment of adjusting a frontage by using a bellows-plate;

Fig. 26 is a schematical perspective view of the main portion which shows an embodiment of adjusting a frontage by using an elastic rubber plate;

Fig. 27 is a schematical perspective view of the main portion which shows an embodiment of mounting an urinal to an ornamental steel plate without a frame;

Fig. 28 is a schematical plan view which shows an embodiment of a urinal;

Fig. 29 is an exploded perspective view of components of a piping unit for a stool;

Fig 30 is an exploded perspective view of components of a piping unit for a washbowl;

Fig. 31 is an exploded perspective view of components of a piping unit for a washbowl of another type;

Fig. 32 is an exploded perspective view of components of a piping unit for a sink for cleaning; and

Fig. 33 is an exploded perspective view of a conventional piping unit.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

An embodiment in accordance with the present invention will be described below with reference to the accompanying drawings.

Fig. 1 is an exploded perspective view of components of a structure of arranging a piping unit. The piping unit is mainly constituted by a central frame 1 and a pair of side frames 4 and 4 stood from both side portions of the

central frame 1 at an interval. The central frame 1 is formed in a box frame shape made by a metal plate in which front and rear surfaces and side surfaces are open, a plurality of horizontally elongate holes 1a, 1a and 1a are formed on a front surface of the central frame, a magic tape 1b is adhered to upper surfaces of two reinforcing portions disposed in an upper side thereof, and as shown in Fig. 2, a central ornamental plate 6 is fixed to a front side thereof with interposing a space plate 5.

Further, a pair of the side frames 4 are formed in the same shape commonly used in right and left portions, provided so as to stand opposed to each other and formed in a C-shaped cross section, and a plurality of vertically elongate holes 4a, 4a and 4a are formed on front and rear surfaces thereof. A double coated tape T is previously adhered to the side frame 4.

The central frame 1 structured in the above manner can be brought into contact with a wall surface W in a building and fixed thereto by a mounting bolt 2, as shown in a plan schematic view in Fig. 3, and a pair of side frames 4 and 4 can be brought into contact with interior wall surfaces Wa and Wa in both side portions of the central frame 1 after adjusting a frontage in correspondence to a frontage in the work site and completing an interior finish work and can be fixed thereto through a double coated tape T. Accordingly, the central frame 1 can be set to a size which can be used in every work site, mass-produced, carried to the work site and easily placed, so that the side frames 4 and 4 in both

sides can be just aligned to the interior wall surfaces W_a and W_b in correspondence to the frontage in the work site and can be easily placed by the double coated tape T .

In this case, since the side frame 4 in this embodiment is formed in a C-shaped cross section, it can be positioned (in directions of height and depth) only by bringing into contact with the wall surface W and the floor surface for placement.

Further, an urinal 9 is placed in a front surface of the central ornamental plate 6, and pipes and the other functional parts such as a water discharge trap, a flush valve, a deodorizer and the like can be previously assembled inside the central frame 1 and carried to the work site.

In this case, in the field, after placing the central frame 1 and the side frames 4 and 4 in correspondence to the size of the frontage of the work site, the front surface of a pair of the side frames 4 and 4 can be covered by using a pair of side ornamental plates 7 and 7, as shown in Figs. 1, 2 and 3, and a built-in nut 8 is previously placed on a back surface of each of the side ornamental plates 7, whereby each of the side ornamental plates 7 is positioned, a manual-rotating screw 3 is inserted into the vertically elongate holes 4a, 4a and 4a of the side frames 4 and 4 in correspondence to the built-in nut 8 in the side ornamental plate 7 and the manual-rotating screw 3 is fastened to the built-in nut 8 so as to fix the side ornamental plate 7. Further, the manual-rotating screw 3 is inserted to the horizontally elongate holes 1a, 1a and 1a by inserting a

hand to an opening portion 6a for inspecting and working in the central ornamental plate 6 and fastened the manual-rotating screw 3 to the built-in nut 8 in the central ornamental plate 6 so as to fix the central ornamental plate 6 to the central frame 1. In this case, as shown in Figs. 2 and 3, an inner end portion 7x in a side of the central frame 1 of the side ornamental plate 7 is received in a back side of a side end portion 6x of the central ornamental plate 6. That is, the inner end portion 7x in the side of the central frame 1 of the side ornamental plate 7 is fitted into a gap between the central ornamental plate 6 and the central frame 1 and to be substantially flush with the space plate 5. Accordingly, in a state that a pair of side ornamental plates 7 are fitted, an outer appearance is such that the side ornamental plates 7 and 7 are extended from the back side of the central ornamental plate 6 to both side portions in the front surface side, so that the outer appearance can be neat. Therefore, if a gap is to be formed between the space plate 5 and each of the side ornamental plates 7, the gap can be covered and hidden by the central ornamental plate 6, so that the side ornamental plates 7 and 7 can be easily mounted in a neat state in correspondence to the size of the frontage in the work site after properly positioning the side ornamental plates 7 in a horizontal direction. In this case, an outer end portion 7y of each of the side ornamental plates 7 and 7 is fixed to the side frame 4.

Further, when the side ornamental plates 7 and 7 are

formed so as to have a different color from color of the central ornamental plate 6, a design, when placed, can be further improved.

In this case, the structure shown in Fig. 4 is made such that each of the side ornamental plates 7 and 7 is vertically separated into two portions. That is, in Fig. 4, the side ornamental plate 7 is separated into an upper side ornamental plate 7a and a lower side ornamental plate 7b and provided on the front surface of the side frame 4 in a covering manner, and the inner end portion 7x is received in the back side of the side end portion 6x of the central ornamental plate 6, as mentioned above. Accordingly, the hand can easily reach the manual-rotating screw 3 in the lower portion of the side ornamental plate.

In this case, the upper side ornamental plate 7a and the lower side ornamental plate 7b are structured such that a round-shaped end surface R is formed as shown in Fig. 5, so that a line at a contact portion between the upper side ornamental plate 7a and the lower side ornamental plate 7b becomes fuzzy and an outer appearance becomes neat as viewed from the front surface side even when a little slip is generated when placed.

Next, Fig. 6 shows a modified embodiment of the central frame 1, and in Fig. 6, a detachable detaching portion 1B is provided at a lower portion on a side surface constituting the central frame 1. It is possible to insert a hand into the central frame 1 from the side surface after removing the detaching portion 1B, so that it is possible to

skillfully insert the hand when performing a connection construction of the water discharge pipe 11 and the water supply pipe so as to easily perform the connection. After the construction is completed, the detaching portion 1B can be fitted and placed thereto.

Further, in Fig. 7, in order to further improve workability, an opening K for operation is formed in the lower end side of the central ornamental plate 6, and it is structured such that a connecting operation between a water discharge trap 14 and a water supply pipe 15 previously placed within the central frame 1 can be easily performed by inserting the hand from the opening K for working to the water discharge pipe 11 and the water supply pipe 12 arranged on the floor surface. In this case, a flexible pipe is previously provided at a front end of the water discharge trap 14, the water supply pipe 15 and the like, and a connection can be easily performed by bending the flexible pipe portion.

After completing the connection, a maintenance panel 13 is mounted to the central frame 1 through a magnet M on the front surface of the operating opening K by one touch action, so that the opening K for working is covered. Further, a maintenance can be easily performed by removing the maintenance panel 13 at a time of maintenance.

Next, Fig. 8 shows a further modified embodiment, in Fig. 8, in the case that a deodorizer and the like are provided within the central frame 1, a punching plate 16 is provided at a lower end thereof, and core prints 17a and 17b

separated into right and left portions are placed below the punching plate 16. The right and left frontages can be well adjusted by the separated core prints 17a and 17b, the core prints 17a and 17b can be placed in correspondence to the size of the frontage in the work site, and a step tile 18 can be arranged on a front surface thereof. The step tile 18 is structured such that a stand-up portion 18b is provided at a rear end of a plate-shaped base portion 18a placed on the floor surface. As shown in Fig. 9 showing a placement, the stand-up portion 18b is brought into contact with a front surface of an overlapping portion in each of the inner end portions 7x of the core prints 17a and 17b, whereby a gap between the core prints 17a and 17b or the overlapping portion in each of the inner end portions 7x of the core prints 17a and 17b is well hidden so that a neat placement can be obtained. In this case, the step tile 18 can prevent the floor surface from being dirt so as to make more sanitary.

Further, in Fig. 9, a counter member 19 is placed on an upper surface, however, the counter member 19 is constituted in a detachable manner by a central cylindrical portion 20 formed in a U-shaped cross section and side ornamental members 21 capable of inserting from both sides thereof, as shown in Fig. 10 showing an exploded view, so that it is structured such that the counter member 19 can be constituted by adjusting the size of the frontage and mounting the side ornamental members 21 and 21 to the central cylindrical portion 20 from the both sides and the

width in the lateral direction can be adjusted in correspondence to the size of the frontage in work site. In this case, the central cylindrical portion 20 may be formed, for example, by a stainless steel, and the side ornamental member 21 may be formed by an artificial marble, a stone and the like.

Next, Fig. 11 shows a still further modified embodiment. In Fig. 11, upper end portions of a pair of side ornamental plates 7 and 7 are made bendable upper bending pieces, and the upper bending portions are made side counters 7c and 7c. It is structured such that each of the side counters 7c and 7c are bent in a horizontal shape so as to cover the upper surface of the side frames 4 and 4 after the inner end portions 7x of the side ornamental plates 7 and 7 are received and placed in the back side of the side end portion 6x in the central ornamental plate 6. In this case, a gap is formed in the central portion between the side counters 7c and 7c, however, in order to cover the gap, a central counter 22 formed by an artificial marble and the like is mounted in a center of the upper surface from the above and each of the inner end portions 7x of the side counters 7c and 7c is received in the lower side of a side end portion 22x in the central counter 22, so that as shown in Fig. 12, a neat placement can be obtained. Since it is sufficient that the central counter 22 is formed in a shape having a size capable of covering the central portion without regard to the size of the frontage and the frontage can be well adjusted in the lateral direction by the side

ornamental plates 7 and 7, a size of the central counter 22 may be set so as to well hide the gap between the side ornamental plates 7 and 7.

In this case, the central counter 22 can be firmly and detachably placed by one touch action by adhering a magic tape 22b to a back side of the central counter 22 and aligning the magic tape 22b with the magic tape 1b in the central frame 1. Further, a front suspending portion 22a of the central counter 22 covers the front surface at the upper end of the central ornamental plate 6, so that a neat placement can be obtained.

Next, in Fig. 13, the structure is made such that the central frames 1, 1 and 1 are provided in a row at an interval and a plurality of urinals and stools can be placed. In Fig. 13, three central frames 1, 1 and 1 are provided in a standing manner at an interval, a pair of side frames 4 and 4 are provided on both sides thereof in a standing manner, the side ornamental plate 7 is mounted between the side frame 4 and the central frame 1 as mentioned above, and the side ornamental plate 7 is mounted between the central frame 1 and the central frame 1.

As mentioned above, in a state that the end portions 7x and 7y of the respective side ornamental plates 7 are received in the back sides of the central ornamental plates 6, 6 and 6 in the respective central frames 1, a neat placement can be obtained in correspondence to the size of the frontage in the work site. Further, when the upper end of each of the side ornamental plates 7 is made the bendable

side counter 7c as shown in Figs. 11 and 12, the upper surface side can be covered by bending the side counter 7c and the central counter 22 is mounted on each of the portions between the gaps, so that a good placement as shown in Fig. 14 can be obtained. Here, in the case that no wall exists in the end side, an end panel 23 shown in Fig. 13 is adhered to the side frame 4 in the end side. Further, the core print 17 may be structured such that two or more core prints each having a predetermined size are prepared and end portions 17x and 17y of each thereof are overlapped with each other so as to form an overlapping portion C, thereby adjusting a size in correspondence to the size of the frontage in the work site. In this case, a design is not deteriorated by forming the overlapping portion C immediately below the urinal or the stool which is hard to be viewed.

As mentioned above, also in the case of placing a plurality of urinals and stools, the central frames 1, 1 and 1 can be provided in a standing manner after adjusting to a suitable interval in correspondence to the size of the frontage in the work site and a pair of side frames 4 and 4 are provided in a standing manner on both end sides thereof after adjusting the gap, so that the piping unit can be arranged in a built-in manner after completing the interior finish work in the work site.

Further, a working process in the case of placing a plurality of urinals in a row as shown in Figs. 13 and 14 will be described in detail here. As shown in Fig. 15, in a

state that the interior finish work in the wall surface and the ceiling is all completed and a corresponding number of water discharge pipes 11 and water supply pipes 12 to the number of urinals are provided at a predetermined position on the floor surface F at an interval, an inking is performed on the wall surface W, the positions at which the central frames are fixed on the wall surface W is positioned and bolt holes B, B and B for fixing are formed on the wall surface W by a drill D, as shown in Fig. 16. The central frame 1 is fixed and built on the wall surface W by inserting specific bolts to the bolt holes B and B for fixing formed in this manner from a room side.

As shown in Fig. 17, the central frame 1 is built and fixed in a predetermined position at an interval, and the water supply pipe and the water discharge pipe previously assembled within each of the central frames 1 are respectively connected to the water supply pipe 12 and the water discharge pipe 11 on the floor surface F by one touch joints. Thereafter, as shown in Fig. 18, the side frame 4 is adhered and fixed to an interior wall surface Wa.

As shown in Fig. 19, after fixing three central frames 1, 1 and 1 to the wall surface W at a predetermined interval and standing the side frames 4 and 4 on both sides thereof at an interval, core prints 17a, 17b, 17c and 17d are respectively fastened to the lower ends between the central frames 1 and 1 and between the central frame 1 and the side frame 4 by means of a double coated tape and the like. At this time, each of end portions 17x and 17y of each of the

core prints 17a, 17b, 17c and 17d is overlapped with each other, the overlapping portion C is formed so as to adjust the size of the frontage, and the core prints 17a, 17b, 17c and 17d are continuously adhered and fixed in correspondence to the size of the frontage in the work site.

In this case, the outer end portion 17y of the core print 17a is fixed to the side frame 4 and the inner end portion 17x is fixed to the central frame 1, however, the overlapping portion C can be formed and fixed in the lower end of the central frame 1, and also in the core print 17b fixed between the central frames 1 and 1, the both end portions 17x and 17y are overlapped at the lower end of the central frames 1 and 1 so as to adjust the frontage. In this case, when the overlapping portion C is formed at the lower end of the central frame 1, the overlapping portion C can be well hidden by the urinal at a time when the urinal is later mounted to the central frame 1, so that a neat outer appearance can be obtained.

As mentioned above, after fixing the core prints 17a, 17b, 17c and 17d to the lower end portion, the side ornamental plate 7 can be inserted between the side frame 4 and the central ornamental plate 6 in the central frame 1 from the above and the end portions 7x and 7y of the respective side ornamental plates 7 can be received in the back side of the central ornamental plates 6, 6 and 6 of the respective central frames 1, so that the frontage can be well adjusted.

In this case, Fig. 20 shows a state in which the side

ornamental plate is constituted by the lower side ornamental plate 7b and the upper side ornamental plate 7a vertically separated into upper and lower portions and they are respectively fitted between the side frame 4 and the central frame 1.

In this case, in the side ornamental plate 7 arranged between the side frame 4 and the central frame 1 in Fig. 20 in such a manner that the frontage can be adjusted, those having a plurality of standard sizes are set, for example, those having a width of normal sizes 375, 400, 450, 500, 550 and 600 are set. When the side ornamental plate is received in the back side of the central ornamental plate 6 of the central frame 1, for example, at a width of about 25 mm, in the case of the side ornamental plate 7 having the normal size 375, it can correspond to the case in which the interval between the side frame 4 and the central frame 1 is 350 to 375, and in the case of the side ornamental plate 7 having the normal size 500, it can correspond to the case in which the interval between the side frame 4 and the central frame 1 is 475 to 525. In the same manner, in the case that the normal size is 600, it can correspond to the case in which the interval between the side frame 4 and the central frame 1 is 575 to 625.

Next, as shown in Fig. 21, the lower side ornamental plate 7b and the upper side ornamental plate 7a are fitted between each of the central frames 1 and 1, and the both end portions 17x and 17y of the respective ornamental plates 7a and 7b are received in the back side of the central

ornamental plates 6 and 6 of the respective central frames 1 and 1, and the frontage can be adjusted in correspondence to the size between the central frames 1 and 1. The width of the side ornamental plates 7a and 7b fitted between the central frames 1 and 1 is previously set to be, for example, normal sizes 700, 800 and 900 as a standard, in the case of the normal size 700, it can correspond to the case in which the interval between the central frames 1 and 1 is 650 to 749, in the case of the normal size 800, it can correspond to the case in which the interval between the central frames 1 and 1 is 750 to 849, and in the case of the normal size 900, it can correspond to the case in which the interval between the central frames 1 and 1 is 850 to 949.

The side ornamental plates 7a and 7b having a plurality of standard widths in which differences between a plurality of standard sizes are set to be substantially equal to the width adjustable by the receiving size are prepared, selected and fitted in correspondence to the interval between the central frames 1 and 1 and the interval between the central frame 1 and the side frame 4, whereby the frontage gap can be adjusted. As shown in Fig. 21, the central ornamental plate 6 and the side ornamental plates 7a and 7b can be well placed so as to form a continuous shape as seen from the front surface side.

Next, as shown in Fig. 22, the urinal 9 can be mounted on the front surface of each of the central ornamental plates 6 of each of the central frames 1, 1 and 1, and as shown in Fig. 23, the central counters 22, 22 and 22 can be

mounted on the upper surface of the central frames 1, 1 and 1. The central counter 22 is connected and mounted on the side counters 7c and 7c bent in the side ornamental plate 7, and the size of the frontage thereof is adjusted by the side counter and the central counter 22, so that a continuous and neat appearance can be obtained.

Here, Fig. 24 shows a modified embodiment of a counter, in which the counter member 19 mounted on the upper surface is constituted by the central member 20 and the side ornamental members 21 and 21 in the both sides thereof so that the end portion of the side ornamental member 21 is received within the central member 20, and the structure can be made such that the size of the frontage can be well adjusted.

Further, the central member 20 may be formed to have a size by which the central member can be mounted on the upper surface of each of the central frames 1, and the structure can be made such that the side ornamental members 21 and 21 can be adjustably drawn to the side portions from the central member 20 on the upper surface of the central frame 1.

In this case, the counter member 19 can be constituted by a sheet of counter member set in accordance with the size of the frontage in the field.

Further, in place of the side ornamental plate 7 mentioned above, a bellows-shaped bellows plate 25 shown in Fig. 25 is employed, so that the structure may be made such that an end edge portion in a widthwise direction of the

bellows plate 25 is received in the back side of the central ornamental plate 6 so as to adjust the frontage, or still further, as shown in Fig. 26, by employing an elastic rubber plate 26 which can freely expand and contract in a widthwise direction, the structure may be made such that both end edges in a widthwise direction of the elastic rubber plate 26 is received in the back side of the central ornamental plate 6 so as to adjust the frontage.

In this case, in place of the central frame 1 mentioned above, an ornamental steel plate 34 bent in a C shape as shown in Fig. 27 is employed, so that the structure may be made such that the urinal 9 is mounted on the front surface of the ornamental steel plate 34 and the side ornamental plate 7 is received in the back side of the end edge portion in a widthwise direction of the ornamental steel plate 34 so as to adjust the frontage.

Here, as shown in Fig. 28 showing a schematically plan view of a toilet, the urinals 9 and 9 are arranged within the toilet in a row as mentioned above, a stool 24 is arranged within a booth partition 27, and a washbowl 29 is frequently arranged in an inlet side of the toilet through a partition 28. Also in the stool 24 provided within the toilet, as shown in Fig. 29, the structure may be made such that the central frame 1 with functional members previously built therein and the side frames 4 and 4 stood from the side portion thereof at an interval are provided and the frontage is well adjusted by using the side ornamental plate 7 so as to place in the work site.

Further, also in the washbowl 29 mentioned above, as shown in Fig. 30 showing an exploded view, the structure may be made such that the central frame 1 and the side frames 4 and 4 stood on the both sides thereof are provided, mounting holes 6d and 6d for mounting brackets supporting the washbowl 29 are formed in the central ornamental plate 6 fixed to the front surface of the central frame 1, a water supply hole 6e for supplying water and a water discharge hole 6f for discharging water are formed therein and the frontage between the central frame 1 and the side frame 4 can be well adjusted by the side ornamental plate 7.

Here, in the case of arranging a plural rows of washbowls 29, the central frame 1 is fixed to the wall surface at an interval at every washbowls 29 and the side ornamental plate 7 is fitted between the central frame 1 and the central frame 1, so that the frontage can be well adjusted.

In this case, a washbowl 30 in Fig. 31 is another type of arranging structure, in which an upper table 31 is fixed on the central frame 1 and the washbowl 30 is fitted and mounted within the upper table 31. Also in the washbowl 30 structured in this manner, the side frames 4 and 4 can be stood on the both sides of the central frame 1 at an interval.

Further, a sink 32 for cleaning is frequently provided within the toilet, and the sink 32 for cleaning can be structured, as shown in Fig. 32, such that the side ornamental plate 7 is provided between the central frame 1

and the side frames 4 and 4 so as to adjust the frontage, so that it can be neatly placed in correspondence to the frontage in the field.

In accordance with the structure of arranging the piping unit of the present invention, there is an effect that the piping unit can be well arranged in correspondence to the size of the frontage in the work site in an all built-in manner after completing the interior finish work in the work site.

Further, when the side ornamental plate is separated into the upper and lower portions, the side ornamental plate can be easily mounted.

Still further, when the upper portion of the side ornamental plate is made bendable so as to constitute the side counter, the upper surface of the side frame can be well covered by bending the side counter.

Furthermore, the structure can be made such that the side counter is bent to form a cover and the gap is well hidden by the central counter, so that a neat appearance can be obtained.

Moreover, the separated core prints can correspond to the size of the frontage in the field, and the gap between the core prints and the overlapping portions can be hidden by the stand-up portion of the step tile, so that a neat-looking arrangement can be obtained.

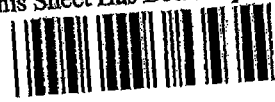
**WHAT IS CLAIMED IS:**

1. A structure of arranging a piping unit placed in a crossing portion between a wall surface and a floor surface, wherein the piping unit comprises a central ornamental plate arranged at a predetermined interval apart from the wall surface, a sanitary equipment provided on a front surface of the central ornamental plate, pipes provided between the central ornamental plate and the wall surface for supplying and discharging water to and from the sanitary equipment, and a side ornamental plate, the side ornamental plate has an inner end portion fixed to both side end portions of the central ornamental plate and an outer end portion opposing to the inner end portion, and a distance from the outer end portion of the side ornamental plate to the side end portion of the central ornamental plate can be adjusted.

2. A structure of arranging a piping unit as claimed in claim 1 wherein the central ornamental plate is arranged at a predetermined interval apart from the wall surface by a central frame and is provided on a front surface of the central frame, pipes are provided between the central frame and the wall surface for supplying and discharging water to and from the sanitary equipment, and the outer end portion of the side ornamental plate is fixed to a side frame arranged at an interval on the right or the left of the central frame.

3. A structure of arranging a piping unit as claimed in claim 1 wherein the central ornamental plate is arranged at a predetermined interval apart from the wall surface by the





central frame and is provided on a front surface of the central frame, pipes are provided between the central frame and the wall surface for supplying and discharging water to and from the sanitary equipment, and the outer end portion of the side ornamental plate is fixed to the end portion of another central ornamental plate provided on a front surface of another central frame fixed at an interval on the right or left of the central frame.

4. A structure of arranging a piping unit as claimed in claim 1, wherein the inner end portion of the side ornamental plate is received in a back side of the central ornamental plate.

5. A structure of arranging a piping unit as claimed in claim 2, wherein the central ornamental plate is mounted on the central frame through a space plate, a horizontal width of the space plate is smaller than a horizontal width of the central frame, the horizontal width of the space plate is smaller than a horizontal width of the central ornamental plate, and the inner end portion of the side ornamental plate is inserted to a gap between the central frame and the central ornamental plate formed on the right and the left of the space plate.

6. A structure of arranging a piping unit as claimed in claim 3, wherein the central ornamental plate is mounted on the central frame through a space plate, a horizontal width of the space plate is smaller than a horizontal width of the central frame, the horizontal width of the space plate is smaller than a horizontal width of the central ornamental





plate, and the inner end portion of the side ornamental plate is inserted to a gap between the central frame and the central ornamental plate formed on the right and the left of the space plate.

7. A structure of arranging a piping unit as claimed in claim 2, wherein for a width of the side ornamental plate, a plurality of standard sizes are previously set and a difference between the set standard sizes is substantially equal to a width which can be adjusted by a receiving size.

8. A structure of arranging a piping unit as claimed in claim 3, wherein for a width of the side ornamental plate, a plurality of standard sizes are previously set and a difference between the set standard sizes is substantially equal to a width which can be adjusted by a receiving size.

9. A structure of arranging a piping unit placed in a crossing portion between a wall surface and a floor surface, wherein the piping unit comprises a central frame arranged at a predetermined interval apart from the wall surface, a central counter provided on an upper surface of the central frame, a sanitary equipment provided on a front surface of the central frame, pipes provided between the central frame and the wall surface for supplying and discharging water to and from the sanitary equipment, and a side counter, the side counter has an inner end portion fixed in a contact manner to both side end portions of the central counter and an outer end portion opposing to the inner end portion, a distance from the outer end portion of the side counter to the side end portion of the central counter can be adjusted,





and the outer end portion of the side counter is mounted on a side frame arranged at an interval on the right or the left of the central frame.

10. A structure of arranging a piping unit claimed in claim 9, wherein the outer end portion of the side counter is mounted in a contact manner on a side end portion of another central counter provided on an upper surface of another central frame arranged at an interval on the right or the left of the central frame.

11. A structure of arranging a piping unit as claimed in claim 9, wherein the central counter is mounted on the central frame, and the inner end portion of the side counter is received in a lower side of the central counter.

12. A structure of arranging a piping unit as claimed in claim 10, wherein the central counter is mounted on the central frame, and the inner end portion of the side counter is received in a lower side of the central counter.

13. A structure of arranging a piping unit placed in a crossing portion between a wall surface and a floor surface, wherein the piping unit comprises a central frame arranged at a predetermined interval apart from the wall surface, a sanitary equipment provided on a front surface of the central frame, pipes provided between the central frame and the wall surface for supplying and discharging water to and from the sanitary equipment, and a core print, the core print has an inner end portion fixed to a lower end of the central frame and an outer end portion opposing to the inner end portion, a distance from the outer end portion of the



core print to the side end portion of the central frame can be adjusted, and the outer end portion of the core print is fixed to a side frame arranged at an interval on the right or the left of the central frame.

14. A structure of arranging a piping unit as claimed in claim 13 wherein the outer end portion of the core print is fixed to a lower end of another central frame arranged at an interval the right or the left of the central frame.

15. A structure of arranging a piping unit as claimed in claim 13, wherein the inner end portions of the right and left core prints are fixed to the central frame with an overlapping portion.

16. A structure of arranging a piping unit as claimed in claim 14, wherein the inner end portions of the right and left core prints are fixed to the central frame with an overlapping portion.



This Sheet Has Been Replaced

