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[11] **3,711,128**

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[54] **PLUMBING FITTINGS**

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[52] **U.S. Cl.**.....**285/153,** 4/211

[51] **Int. Cl.**.....**F16l 41/00**

[58] **Field of Search**.....285/153, 152, 154, 155, 150; 4/211, 252 R, DIG. 7

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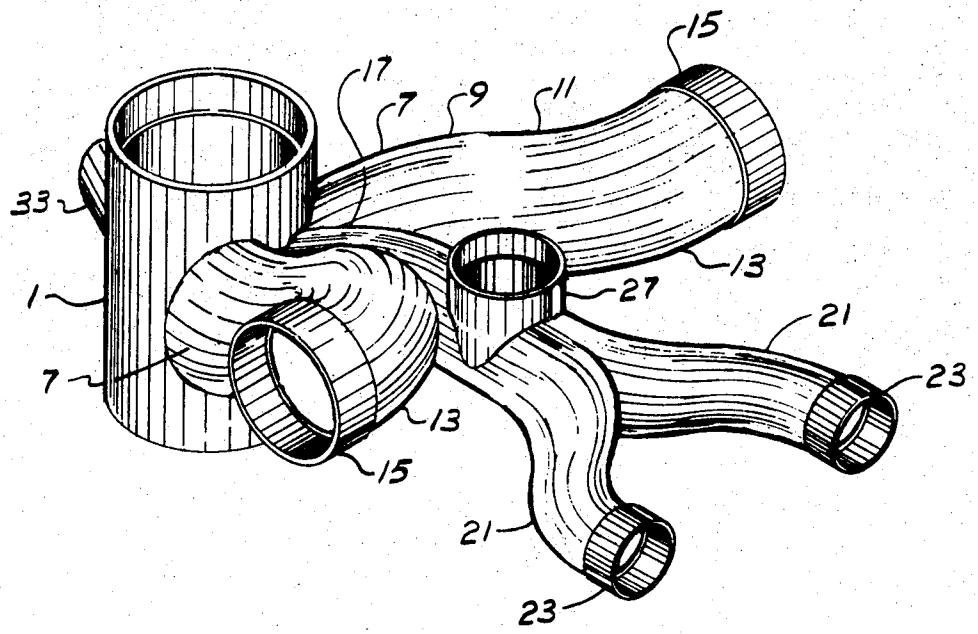
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[57] **ABSTRACT**

A unitary plumbing fitting for connecting a pair of bathrooms disposed symmetrically on opposite sides of a partition to soil and vent stacks comprises a body having a vertical passage connectable at its lower end with the soil stack and at its upper end with the soil or vent stack, a pair of horizontally diverging branches projecting radially outwardly and inclined upwardly from the body with their terminals extending horizontally away from each other for connecting to a pair of water closets on opposite sides of the partition, a horizontally diverging Y-connection between and merging with the diverging branches and body at their intersection and being initially similarly upwardly inclined from said body with the outer end of its stem and its arms substantially horizontal at a lower level than the terminals of the diverging branches for connection to a pair of bathtub drains on opposite sides of the partition, a vertical branch on the outer horizontal portion of the Y-connection stem connectable to a vent stack passing between the arms of the Y-connection, and an additional branch projecting from the body in a diametrically opposite direction from the Y-connection, at the same level and similarly upwardly inclined for connection to a pair of wash basin drains on opposite sides of the partition and to the vent stack.

12 Claims, 6 Drawing Figures



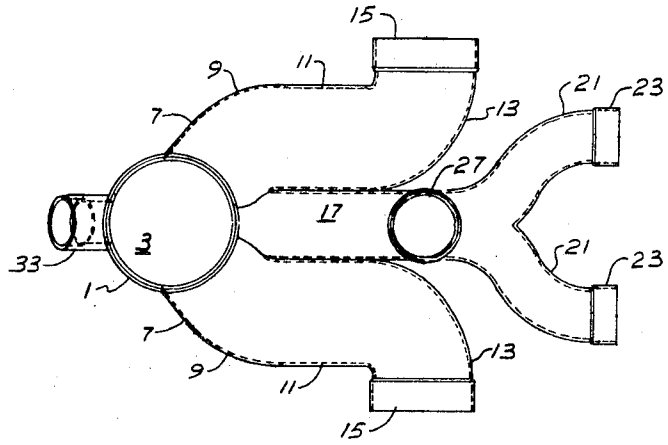


FIG. 1

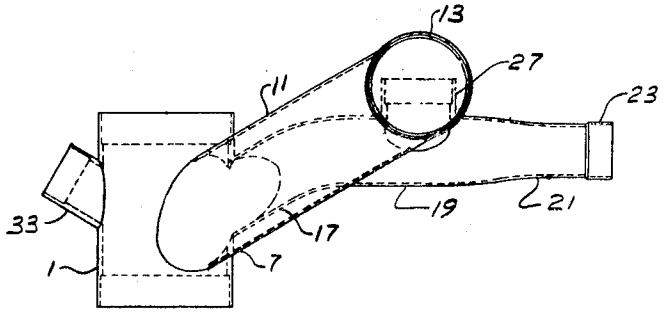


FIG. 2

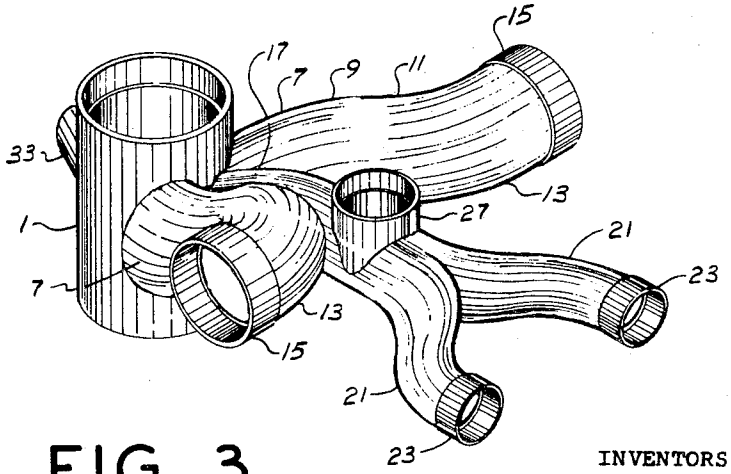


FIG. 3

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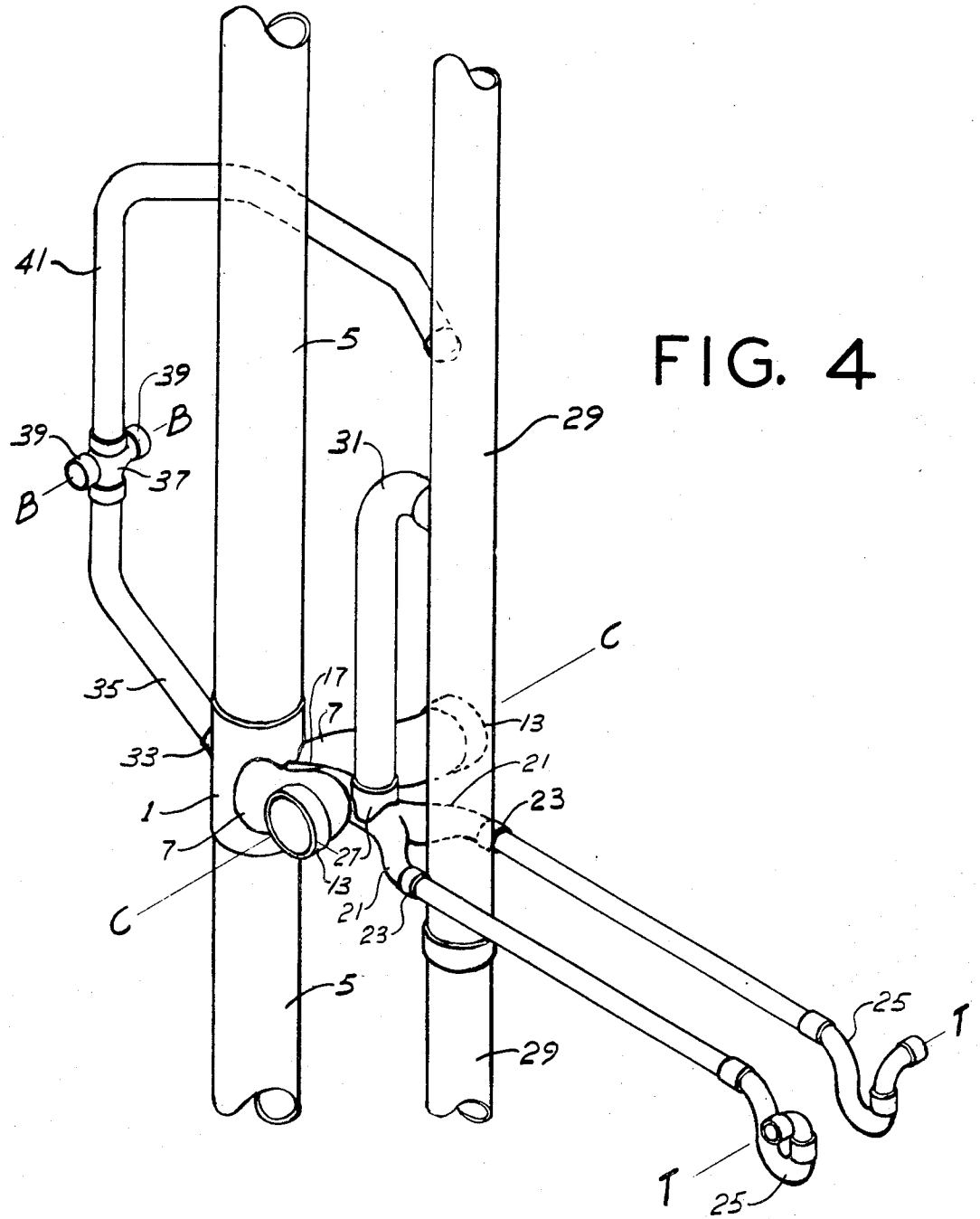
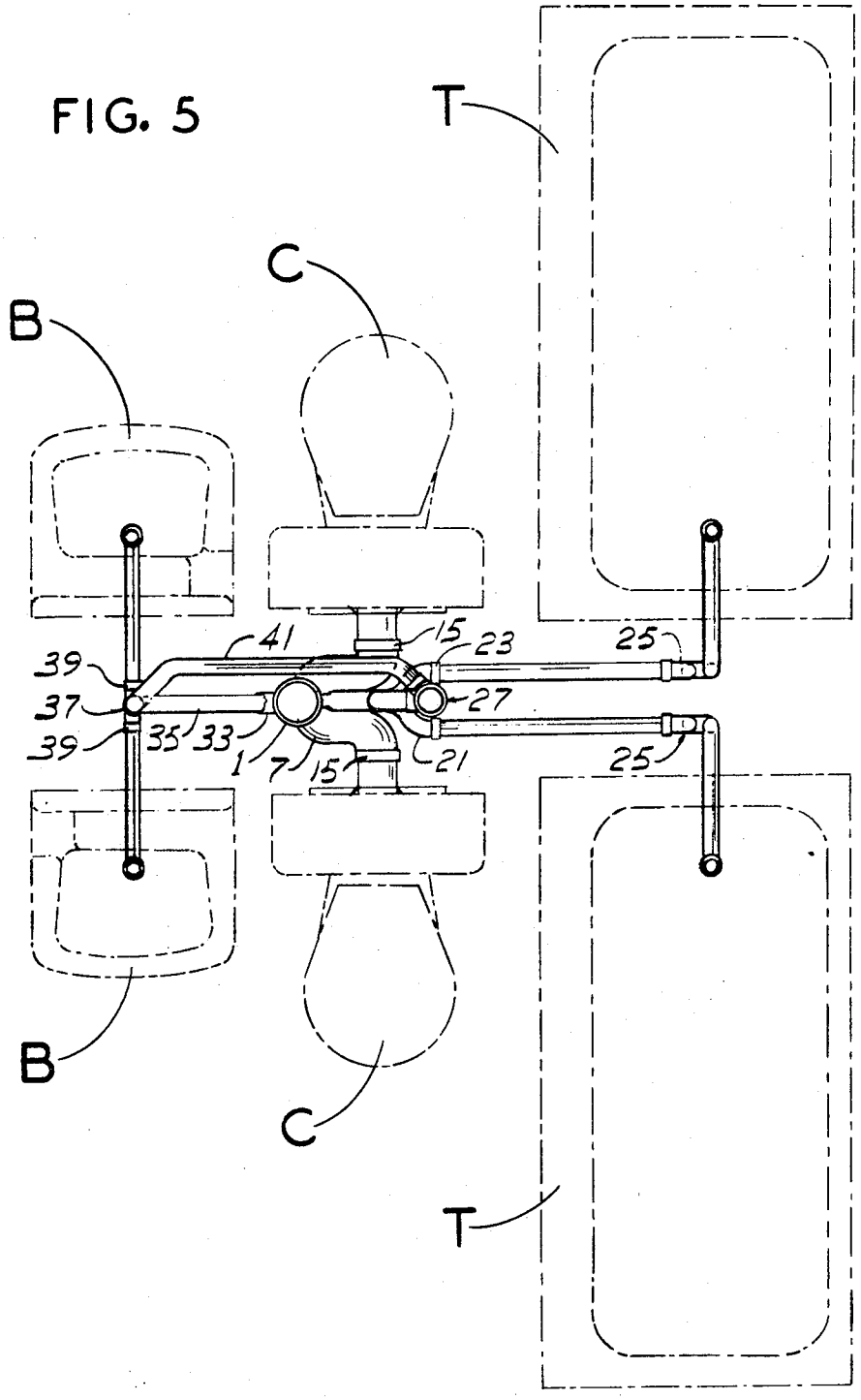


FIG. 4

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FIG. 5



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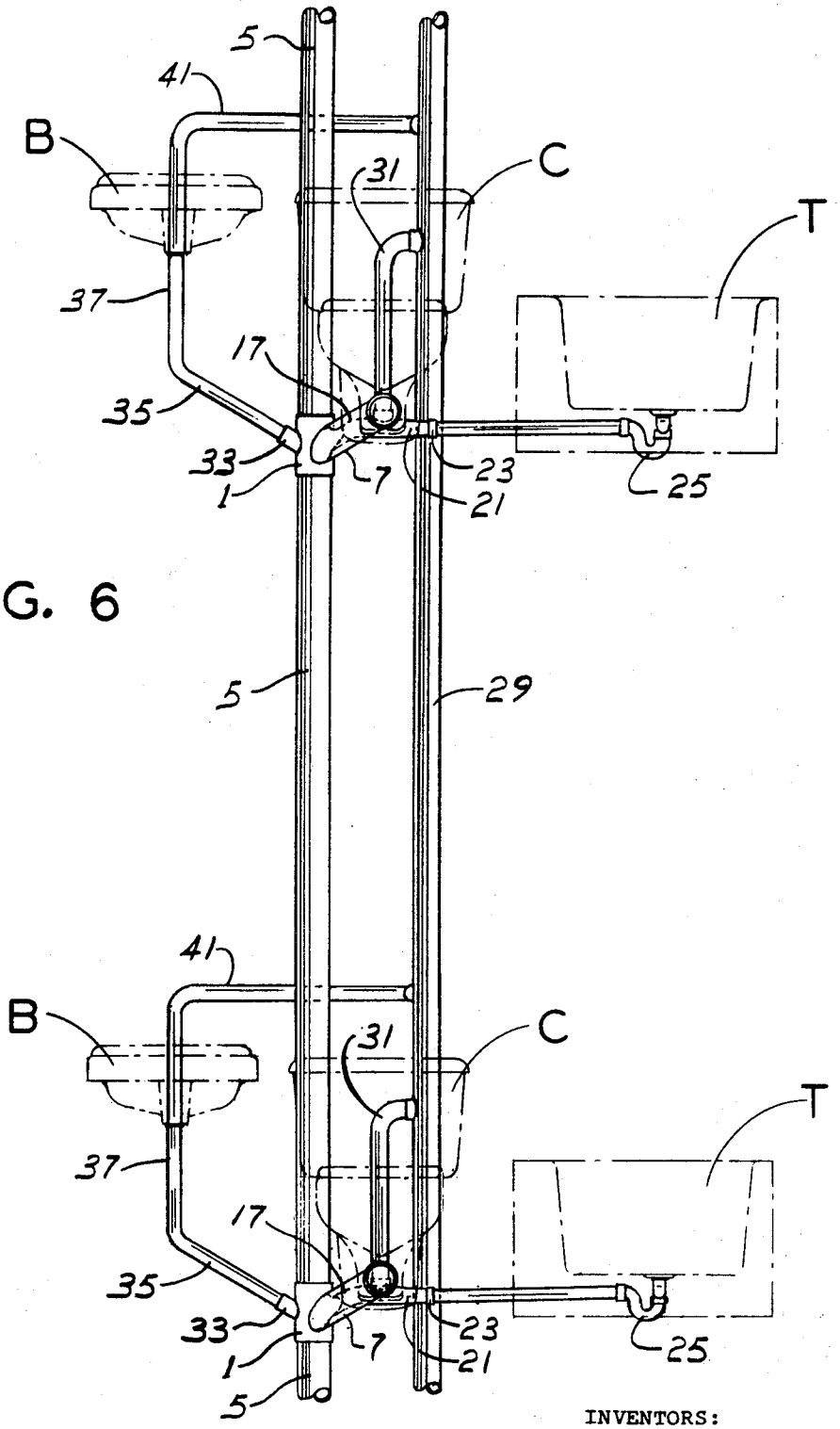


FIG. 6

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PLUMBING FITTINGS

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to plumbing fittings and particularly to fittings used in connection with pairs of water closets, bathtubs and wash basins.

2. The Prior Art

The closest prior art to the present invention is a fitting in which the water closet connections to the vertical cylindrical body of the fitting are in an upwardly inclined Y-connection with an upwardly extending vent branch at the intersection of its stem and arms which are connectable to the water closets and, at a lower level, with their axes in the same vertical plane as the axis of the body passage and the stem of the Y-connection are a pair of diametrically oppositely extending branches for connection to bathtub and wash basin drains, and to vent stack branches.

SUMMARY OF THE INVENTION

The invention provides a unitary plumbing fitting for two water closets and two bathtubs in which a single vent suffices for all four fixtures, and in which the waste pipes from all four fixtures and from the wash basins enter the soil stack at the same elevation on the same center line.

Objects and advantages of the invention include the provision of a common vent for two water closets and two bathtubs, the elimination of one or more fixture vents required with conventional fittings, minimizing projection of a fitting below the finished floor level to facilitate shipping and installation, accommodation of vent stack in closest possible relation to soil stack, and simplification of plumbing systems by incorporation of the fitting.

The invention achieves a substantial saving in material over any fittings of the prior art for the same general purpose.

It achieves a substantial saving of labor and in space occupied by incorporating in a single unitary fitting the functions of a number of fittings.

The discharge from either water closet does not affect the trap seal in the other water closet by blowing through or by a siphoning action of the discharging closet.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a fitting made in accordance with the invention.

FIG. 2 is a side elevation view of the fitting illustrated in FIG. 1.

FIG. 3 is a perspective view of the fitting illustrated in FIGS. 1 and 2.

FIG. 4 is a perspective view of a plumbing system, except for the fixtures, incorporating the fitting.

FIG. 5 is an environmental plan view showing the plumbing fitting, connections and fixtures.

FIG. 6 is an elevation view corresponding to FIG. 5.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The plumbing fitting comprises an integral casting having a cylindrical body 1 defining a vertical passage 3 arranged for connection at its opposite ends to sections 5 of a soil-vent stack.

A pair of horizontally diverging radial branches 7 of cylindrical shape are connected to body 1, with their axes intersecting each other on the body axis. Radially outward of their intersection with the body branches 7 are curved as at 9 to provide straight parallel intermediate sections 11 symmetrically located with respect to body 1. At the ends of sections 11, branches 7 are curved at 13 away from each other through 90° and are formed with oppositely facing connections 15 on a common horizontal axis for a pair of back-to-back water closets C on opposite sides of a partition. Throughout their lengths, the axes of branches 7 lie in a common plane normal to the vertical diametral plane of body 1 bisecting the divergence of branches 7, and inclined preferably in the order of 30° upwardly from the horizontal.

At the intersection of branches 7 with body 1, the stem 17 of a Y-connection with its axis in the above-mentioned vertical plane, intersects body 1 and diverging branches 7 and is similarly upwardly inclined therefrom, with its axis lying in the same inclined plane as the axes of branches 7.

At a lower level than terminals 15 of branches 7, stem 17 curves to a horizontal position as at 19 and, outwardly from the common axis of branch 7 terminals 15, diverges horizontally, to form horizontally arcuate arms 21, the axes of whose terminals 23 are parallel to the axis of stem 17 and are arranged for connection to the drain traps of a pair of bathtubs T.

Y-connection stem horizontal portion 19 is formed with an upstanding branch 27 with its axis at the intersection of the vertical axial plane of stem 17 to provide, at a level higher than the intersection of the bathtub drain Y-connection stem 17 with water closet branches 7 and fitting body 1.

The divergence of Y-connection arms 21 provides space for vertical passage therethrough of a vertical vent stack 29, to which vent branch 27 is connected by a vertical pipe 31 bent at its upper end for connection to stack 29.

To provide a connection for a pair of wash basins B, an additional branch 33 is formed on body 1 diametrically opposite Y-connection stem 17, with its axis inclined from the horizontal and intersecting the body 1 axis at a common point with the axes of branches 7 and Y-connection stem 17.

For connecting branch 33 to a pair of wash basins, a connecting pipe 35 preferably extends axially from branch 33 and is then bent upwardly, where it mounts a cross fitting 37, the branches 39 of which are connected to the traps of wash basin B. A vent pipe 41 extends vertically upward, and generally horizontally past soil stack 5 to a junction with vent stack 29, thus venting wash basins B.

It will be evident from the drawings that with our fitting all branches from the fitting body to the fixtures are generally parallel to the general plane of a partition, permitting their containment within the partition, that the axes of all branches are similarly inclined and intersect the axis of the body at the same elevation, and that the vent connections for the wash basins and bathtubs are at a higher level than the intersection of their respective branches from the fitting body with the water closet branches.

The details of the fitting disclosed herein may be modified substantially without departing from the spirit

of the invention and the exclusive use of any modifications as come within the scope of the appended claims is contemplated.

I claim:

1. A plumbing fitting comprising a body defining a vertical passage, a pair of horizontally diverging branches connected in side-by-side relation to each other and to said body and inclined upwardly therefrom, and a horizontally diverging Y-connection having its stem intersecting said branches and said body at the intersection of said branches with each other, said Y-connection being inclined upwardly from its intersection with said diverging branches and said body, and a vertical branch intersecting the stem of the Y-connection remote from the intersection of the same with said diverging branches, said vertical branch forming a single vent connection for both said Y-connections and said branches.

2. A plumbing fitting according to claim 1 wherein the axes of the stem of said Y-connection and of said diverging branches lie in a common inclined plane adjacent their intersection with each other and with said body.

3. A plumbing fitting according to claim 1 wherein said diverging branches extend generally radially from said body for equal distances and thereafter are parallel to each other a substantial distance.

4. A plumbing fitting according to claim 3 wherein the extremities of said main branches are bent away from each other at 90° to the parallel portions of said main branches.

5. A plumbing fitting according to claim 4 wherein the axes of said main branches lie in a common inclined plane throughout their lengths.

6. A plumbing fitting according to claim 5 wherein the axes of said stem of said Y-connection and of said main branches lie in parallel vertical planes except at the inner and outer end portions of said main branches.

7. A plumbing fitting according to claim 6 wherein the axes of the radially outer portion of said Y-connection stem and the arms of said Y-connection lie in a common horizontal plane, said vertical branch communicating with said outer portion of said Y-connection stem.

8. A plumbing fitting according to claim 7 including an additional branch intersecting said body at substantially the same level as said diverging branches and angularly displaced from said main branches.

9. A plumbing fitting according to claim 8 wherein the axes of said additional branch and of said Y-connection stem lie in a common vertical plane and intersect said body on opposite sides thereof.

10. A plumbing fitting according to claim 9 wherein the axes of said main branches and said additional branch are of similar inclination.

11. A plumbing fitting according to claim 10 wherein the axes of said main branches, said Y-connection stem and said additional branch intersect at a common point on the vertical axis of said body.

12. A plumbing fitting according to claim 6 wherein said body is arranged for connection to a soil stack, the terminals of said main branches are arranged for connection to a pair of water closets, said Y-connection arms are arranged for connection to a pair of bathtubs, and said additional branch is arranged for connection to a pair of wash basins and to a vertical vent stack embraced by the arms of the Y-connection, said vertical branch of said Y-connection stem being arranged for connection to the same vent stack.

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