No. 788,803. PATENTED MAY 2, 1905.

F. WALKER.

SANITARY DRAINAGE AND VENT FITTING.

APPLICATION FILED JAN. 9, 1905.

Fig. 1.

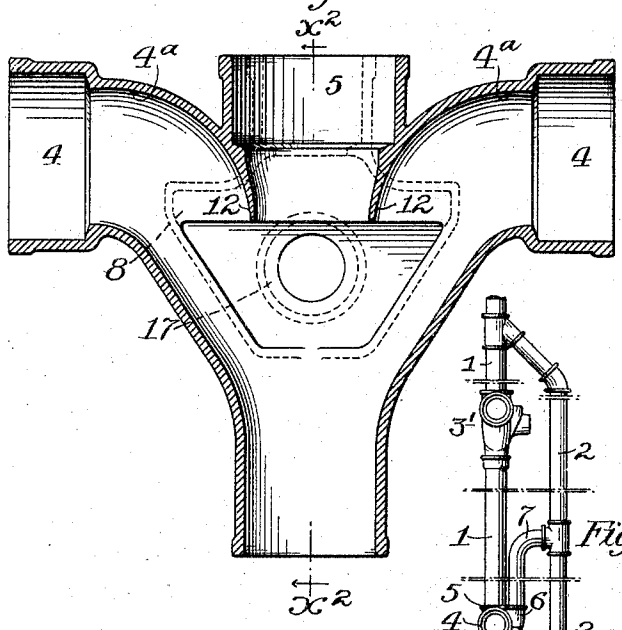


Fig. 2.

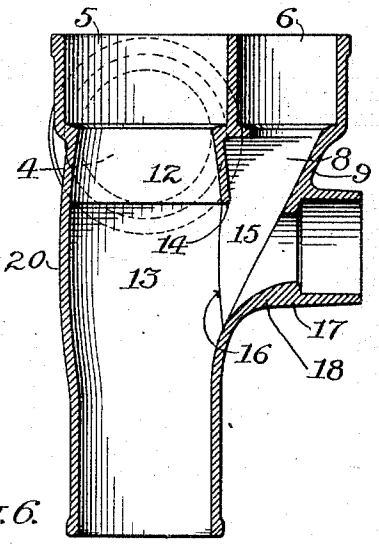


Fig. 6.

Fig. 3.

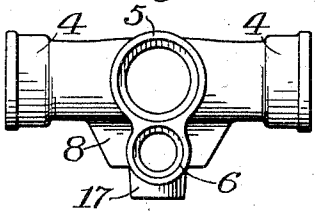


Fig. 4.

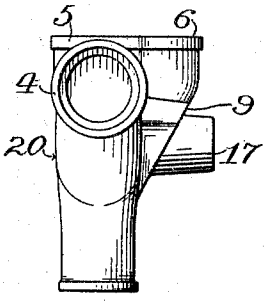
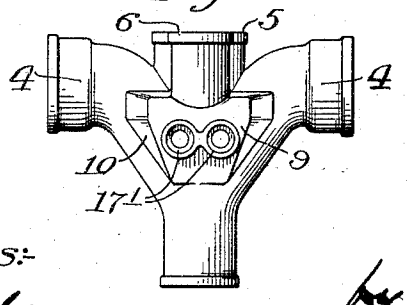


Fig. 5.



Witnesses:-

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Inventor;

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attys.

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No. 788,803. Patented May 2, 1905.

UNITED STATES PATENT OFFICE.

FRANK WALKER, OF LOS ANGELES, CALIFORNIA.

SANITARY DRAINAGE AND VENT-FITTING.

SPECIFICATION forming part of Letters Patent No. 788,803, dated May 2, 1905.

Application filed January 9, 1905. Serial No. 240,178.

To all whom it may concern:

Be it known that I, FRANK WALKER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a certain new and useful Sanitary Drainage and Vent-Fitting, of which the following is a specification.

This invention relates to a fitting adapted particularly for use in connection with soil-pipes, drainage-stacks, or stand-pipes and vents therefor.

The main object of the present invention is to provide a fitting for this purpose of extreme compactness, strength, and cheapness.

A special object of the invention in this connection is to provide a fitting that is sufficiently compact to be wholly inclosed within the wall or floor structure and will not project into the room.

A further object of the invention is to provide a fitting of this character with means for preventing a condition of suction therein. When drainage connections are applied to several superimposed floors, it sometimes happens that a simultaneous flush or run-off from several floors will cause a congestion within the fittings in one or more of the lower floors and consequent suction effect therein, with the result that one or more of the closets on the lower floors will be siphoned off. The present invention prevents such objectionable action by providing in each fitting means for access of air to the interior thereof in such manner as to break any vacuum that tends to form.

The accompanying drawings illustrate the invention.

Figure 1 is a vertical section of a double fitting embodying this invention. Fig. 2 is a section thereof on the line x^2 x^2 in Fig. 1. Fig. 3 is a plan. Fig. 4 is an end elevation. Fig. 5 is a side elevation showing a slight modification. Fig. 6 is an elevation of the piping for several floors.

In Fig. 6, 1 designates the soil-pipe, and 2 the vent-pipe.

3 designates soil-pipe sections or fittings, each of which consists of a tubular body connected to the soil-pipe and vent-pipe and provided with lateral branches 4 for conducting the drainage into the soil-pipe.

5 designates a hub at the top of the fitting 3 to receive the superjacent section of soil-pipe, and 6 designates a hub alongside of the hub 5 for receiving the connection 7, leading to the vent-pipe. The hubs 5 and 6 are close together or in one continuous head, thus reducing the weight and cost of the fitting to a minimum.

The branches 4 are curved inward and downward into the main body of the fitting, their upper walls 4^a being concave, so as to bring the lateral hubs as close as possible to the body of the fitting and as low as possible. The contraction in the size of the fitting thus secured is of importance, as it enables the fitting to be placed wholly within or below the wall or floor structure and to be thus concealed and also reducing the weight and cost of the fitting.

The hub 6 communicates with the main body of the fitting 3 through a hollow extension chamber or box 8 on the side of said fitting, said chamber having its outer wall 9 extending obliquely upward and outward from the fitting and having its side walls 10 diverging upwardly in substantial correspondence with the divergence of the lateral arms 4 of the fitting.

The concave upper walls 4^a of laterals 4 terminate in deflectors 12, extending downwardly from the hub 5 within the main chamber 13 of the fitting, said deflectors projecting inwardly at the proper inclination to deflect the material going through the laterals directly down into the outlet of the fitting, and a wall 14 is provided, joining the two deflectors 12 and extending across the vent-chamber 15 above the outlet-opening 16 thereof, to prevent material which is falling into the soil-pipe from depositing on the outer wall of the vent-chamber. The deflectors 12 and wall 14, with the adjacent portion of the side wall of the fitting, form a discharge-inlet into the main chamber of the fitting, which inlet should be of a capacity not less than that of the ends of the fitting. In order to secure such full capacity, it is nec-

essary to compensate for the contracting effect of the downward convergence of the deflectors 12 by expanding this inlet in the other direction—for example, by downwardly flaring the other walls of said inlet—the wall 14 being directed obliquely downward and outward and the opposite wall of the fitting being bulged or swelled out, as indicated at 20.

The opening 16, through which the vent-chamber 8 communicates into the main chamber 13, is desirably of upwardly-flaring trapezoidal form, with its sides substantially parallel to the direction of the lateral arms and coextensive with the walls of the vent-chamber in a lateral direction, so as to completely expose and open the lower part of the vent-chamber. The bottom of wall 14, which forms the upper limit of said opening 16, may be on a level with the bottom of the deflectors 12, which are below the centers of the inlets of the drainage branches.

17 designates a supplementary connecting-hub extending outwardly from the vent-chamber to receive the connection from a sink, bath-tub, washtub, or other fixture, the drainage from which is discharged over an obliquely-downward-extending lip 18, leading from said hub to the main chamber of the fitting, or two hubs 17′ may be placed side by side (see Fig. 5) for the purpose of connecting two fixtures to the fitting.

The lower fittings are vented into the vent-pipe 2, the top of the main stack being used to vent the upper fitting 3′, (see Fig. 6,) no supplemental vent being necessary. This pipe 1 forms a vent-pipe opening into the main chamber between said deflectors.

By constructing the throat of the fittings between the deflectors of an area not less than the area of a section of the pipe I am able to let the drainage from the upper floors pass through the fitting, and by reason of having the supplemental vent for all fittings below the upper one no siphonage can take place.

What I claim is—

1. A double drainage-fitting consisting of a soil-pipe section having a central chamber with lateral downwardly-curved inlet branches, the upper side of said branches terminating inside the chamber in deflectors at a point which is lower than the center of the inlets of the drainage branches.

2. A drainage and ventilating fitting comprising a tubular body with a main chamber provided with lateral drainage branches extending thereinto, deflectors extending downwardly from the respective lateral branches into the main chamber, and a vent-chamber communicating with the main chamber below the deflectors.

3. A drainage and ventilating fitting comprising a main chamber with inlet and outlet branches at top and bottom, lateral drainage branches extending obliquely downward thereinto at each side, a vent-chamber extending obliquely upward from the main chamber, and opening into each of the drainage branches.

4. A drainage and ventilating fitting comprising a main chamber with inlet and outlet branches at top and bottom, lateral drainage branches extending obliquely downward thereinto at each side, a vent-chamber extending obliquely upward from the main chamber and opening into each of the drainage branches, said vent-chamber flaring upward and communicating with the main chamber through an upwardly-flaring opening.

5. A drainage and ventilating fitting comprising a main chamber having inlet and outlet portions at top and bottom, curved drainage branches leading obliquely downward into said drainage-chamber, the upper walls of the branches terminating in deflectors extending obliquely inward and downward from the drainage branches into the main chamber, and a vent-chamber opening into the main chamber below said deflectors and extending obliquely upward.

6. A double drainage-fitting consisting of a soil-pipe section having a main chamber having inlet and outlet portions at top and bottom, curved drainage branches leading obliquely downward into said drainage-chamber, the upper walls of the branches terminating in deflectors extending obliquely inward and downward from the drainage branches into the main chamber, and a vent-pipe opening into the main chamber between said deflectors.

7. A double drainage-fitting consisting of a soil-pipe section having a central chamber with lateral downwardly-curved inlet branches, the upper side of said branches terminating inside the chamber in deflectors at a point which is lower than the center of the inlets of the drainage branches and a hub extending outwardly from the fitting for the purpose stated.

8. A drainage and ventilating fitting comprising a main chamber with inlet and outlet branches at top and bottom, lateral drainage branches extending obliquely downward thereinto at each side, a vent-chamber extending obliquely upward from the main chamber, and opening into each of the drainage branches, and a hub extending outwardly from the fitting for the purpose stated.

In testimony whereof I have hereunto set my hand, at Los Angeles, California, this 28th day of December, 1904.

FRANK WALKER.

In presence of—
A. P. KNIGHT.
JULIA TOWNSEND.