Nov. 22, 1927. 1,650,220

H. J. LUFF

PLUMBING FITTING

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Fig. 1.

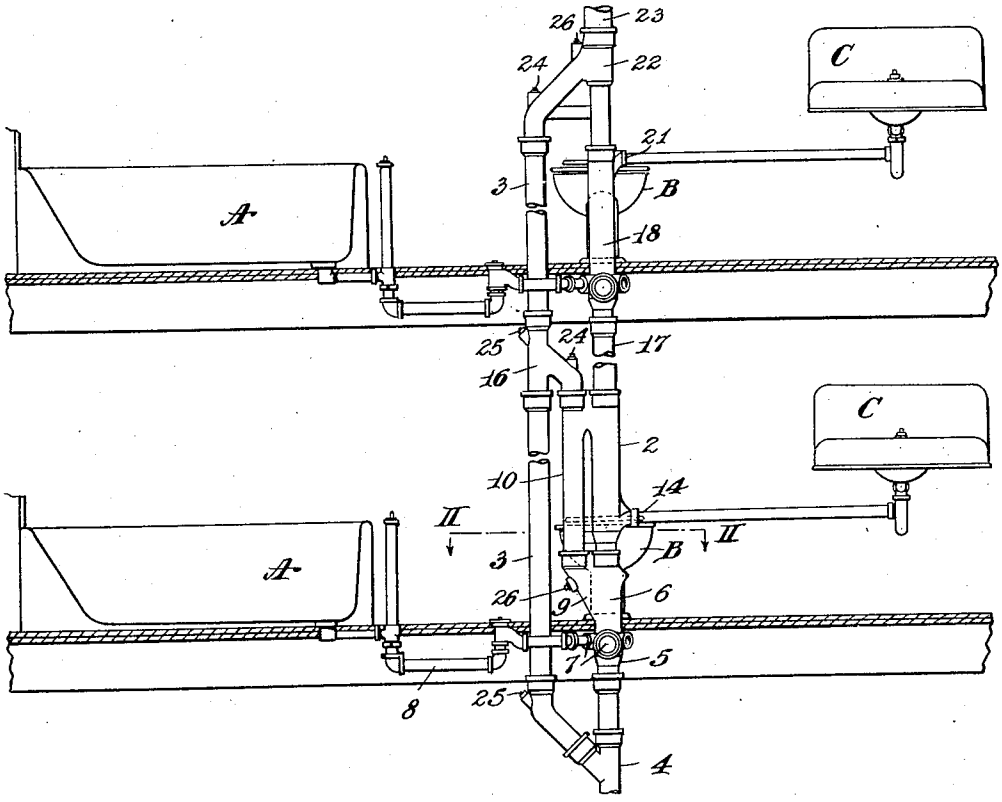
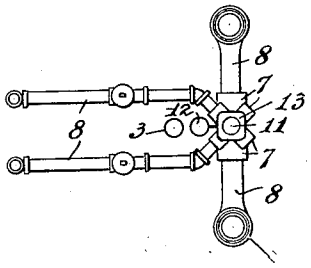


Fig. 2.



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Fig. 3.

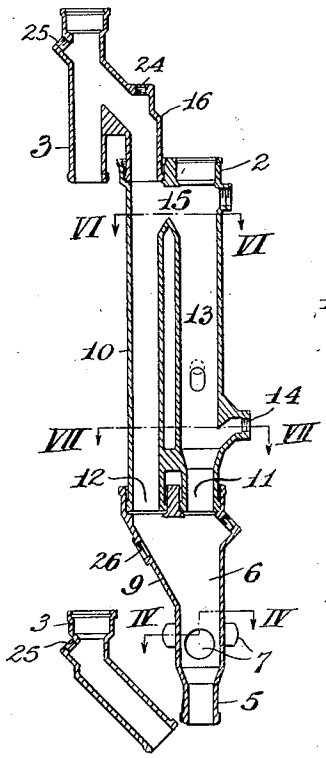


Fig. 6.

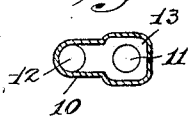


Fig. 7.

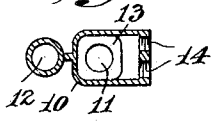


Fig. 8.

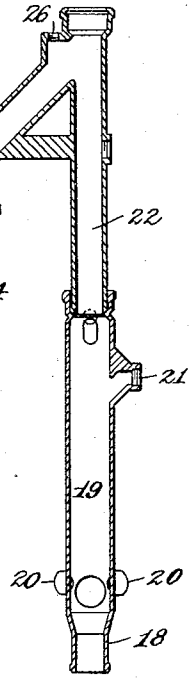


Fig. 4.

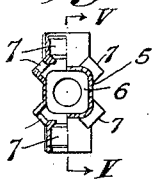


Fig. 5.

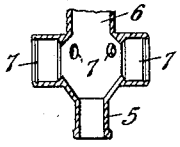
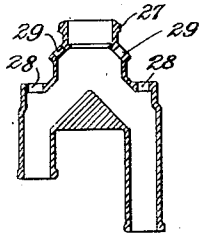


Fig. 9.



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UNITED STATES PATENT OFFICE.

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PLUMBING FITTING.

Application filed December 4, 1924. Serial No. 753,807.

Fig. 1 is an elevation of a system embodying my invention; Fig. 2 is a section on line II—II of Fig. 1; Fig. 3 is a partial vertical section showing parts of both the soil and vent stacks intended for use on any except a top floor of a building; Fig. 4 is a section on line IV—IV of Fig. 3; Fig. 5 is a section on line V—V of Fig. 4; Fig. 6 is a section on line VI—VI of Fig. 3; Fig. 7 is a section on line VII—VII of Fig. 3; Fig. 8 is a section showing fittings normally used on the top floor or where the building is a one-story building; and Fig. 9 shows in section a modified form of fitting intended for connecting the upper ends of the soil and vent stacks.

My invention relates to new and useful improvements in building drainage and vent fittings. The object of this invention is to provide fittings to be used to connect a vertical waste and vent stack system to a series of lateral waste branches leading to closets, bath tubs, wash basins, or similar fixtures, in such a way that it will effectually prevent the siphonage of the seals of the fixture traps in such lateral branches and back pressure from disturbing the seals of such traps, and also maintain an efficient air circulation through the entire system. My invention is designed to reduce to a minimum the length of the lateral branches and the number of vent pipes now found necessary to prevent the siphonage of the seals of the fixture traps and to prevent back air pressure from disturbing the seals of such traps.

To this end my invention particularly comprises the construction of fittings providing extended enlargements of the waste stack from below the point at which waste openings are located to a point of connection with the vent stack, such enlargements preferably being in cross sectional area substantially as great as the total cross sectional area of the normal cross section of both the waste and vent stacks. My improved fittings are also designed to prevent the waste from overflowing into the vent stack. My invention also makes provision for looking through both the waste and vent stacks to ascertain whether there are obstructions therein of any kind, and also, in the event of obstruction, to permit the ready forcing of such obstruction through to a point where it can be removed without difficulty. My invention therefor comprises the various features which I shall hereinafter describe and claim.

Referring to the drawings, 2 indicates a vertical waste stack and 3 a vertical vent stack, which at their lower ends are connected in the fitting 4. In the waste stack is a fitting 5, which has an enlarged portion 6 extending for the greater portion of the length of the fitting, and in the lower end of such enlargement 6 are a plurality of waste openings 7 for lateral branches 8 connected to various fixtures. For instance, in Figs. 1 and 2 I have shown connections to a bath tub A and closet B. The fitting 5 at its upper end has an inclined lateral enlargement 9 so as to provide space for two hubs at its upper end for reception of the lower ends of the composite fitting 10, which has waste and vent portions 11 and 12. The waste portion 11 has an enlargement 13 extending from slightly above its lower end, and in such enlargement has openings 14 with which one or more fittings such as wash basins C may be connected. Near the upper end of the fitting 10 the waste and vent portions have a crossover or air connection 15 at a height sufficient to prevent the overflow of waste from the waste portion 11 into the vent portion 12, so that normally a stoppage will cause a fixture or fixtures immediately above the stoppage to overflow and thereby give warning of trouble in the stack.

The vent portion 12 of the fitting 10 connects into the vent stack through the fitting 16, while the waste portion 11 of the fitting is connected through an ordinary pipe section 17 with the fitting 18, which has an enlarged portion 19 beginning a short distance above its base and extending upwardly to a point at which it connects with the vent. Entering into the fitting 18 near the lower end of the enlargement 19 are the openings 20 for the waste branches, and near the top of the enlargement 19 is an opening 21 for a wash basin waste. The waste and vent stacks 2 and 3 are connected at their upper ends into a combination fitting 22 which connects with the roof vent pipe 23.

The enlargements 6, 13 and 19, respectively, of the fittings 5, 10 and 18 preferably have parallel walls which extend upwardly substantially without interruption to a constriction in the region of the hub, and because of the enlarged area I have found it

is not necessary to protect the entrance of the waste openings into the stack with any mechanical deflecting means.

I have provided at various points along the axes of the stacks and fittings peep hole openings 24, 25 and 26, which are closed with plugs, through which an observer can look through the length of the stack or through the branch vents and so locate an obstruction and be able to force it out.

In Fig. 9 I have shown a modified form of the connecting fitting between the top of the waste and vent stacks with the hub 27 for the roof extension in the axis of the fitting. It is to be noted that this fitting is supplied with peep hole openings 28 in the axis of each stack and also with such openings 29 in the axes of the angled connecting passages.

It will therefore be seen that all of the lateral branches enter the fittings at points where the waste portions of the fittings are enlarged, thereby minimizing the possibility of self-siphonage of the fixtures connected with such branches, and also that in the event of stoppage at or below the point of entry of the fixtures into such waste portions the crossovers are so located that the stoppage will cause the waste to overflow from such fixtures and by showing therein will indicate that there is a stoppage. It will also be seen that the crossover connections provide adequate venting for the soil and waste branches of the fittings and thereby normally eliminate the necessity of separate vent connections with the fixtures.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any mechanical equivalents of the features shown and described, or portions thereof, but recognize that various structural modifications are possible within the scope of the invention claimed.

What I claim is:

1. In a plumbing system, waste and vent stacks, a fitting in the waste stack having an enlarged portion with waste openings thereinto, said enlargement being substantially of uniform cross-section and extending from below the lowest of said waste openings upwardly undiminished in cross sectional area to a connection with a vent located an appreciable distance above the highest of said waste openings.

2. In a plumbing system, waste and vent stacks, a fitting in the waste stack having an enlarged portion with waste openings thereinto, said enlargement being substantially of uniform cross-section and extending from below the lowest of said waste openings upwardly undiminished in cross sectional area to a connection with a vent located an appreciable distance above the highest of said waste openings, said enlargement being substantially equal in cross sectional area to the combined normal cross sectional area of the waste stack and vent connection.

3. In a plumbing system, waste and vent stacks, a fitting in the waste stack having an enlarged portion with waste openings thereinto, also having a vent portion, said enlargement being substantially of uniform cross-section and extending from below the lowest of said waste openings upwardly undiminished in cross sectional area to a connection between the waste and vent portions at a height above the highest of said waste openings and above the level of the overflow of the highest fixture connected through one of said waste openings.

4. A plumbing fitting terminating at its lower end in a spigot and at its upper end in a hub and having an enlarged portion substantially of uniform cross-section and extending upwardly to the region of the hub, said enlarged portion having one or more waste openings entering thereinto, and extending undiminished in cross sectional area from below the lowest of said openings to a point located an appreciable distance above the top of the highest of said openings where it connects with a vent pipe in the hub, the enlarged portion being arranged with substantial symmetry about the long axis of the fitting.

HENRY J. LUFF.