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J. L. FRUIN

PLUMBING SYSTEM

Filed Aug. 19, 1922

Fig. 1.

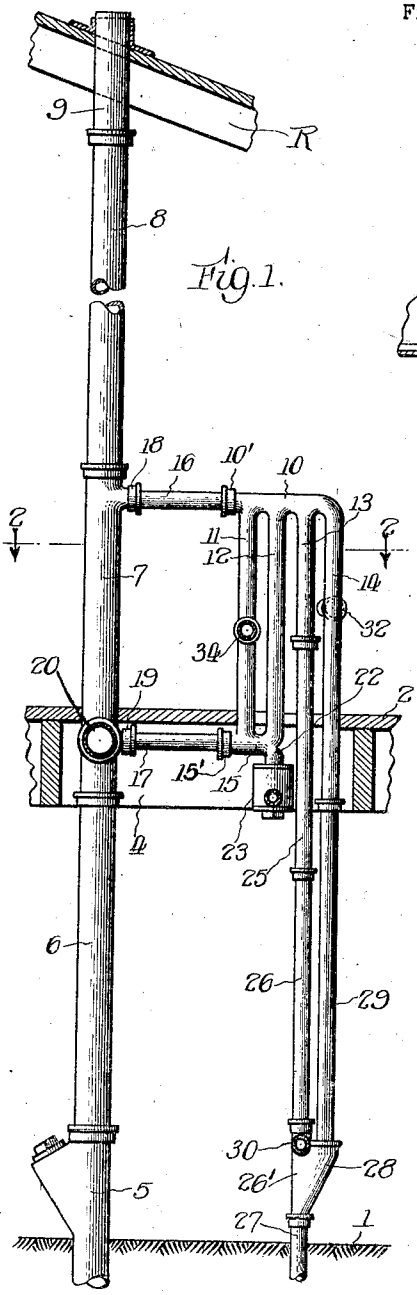
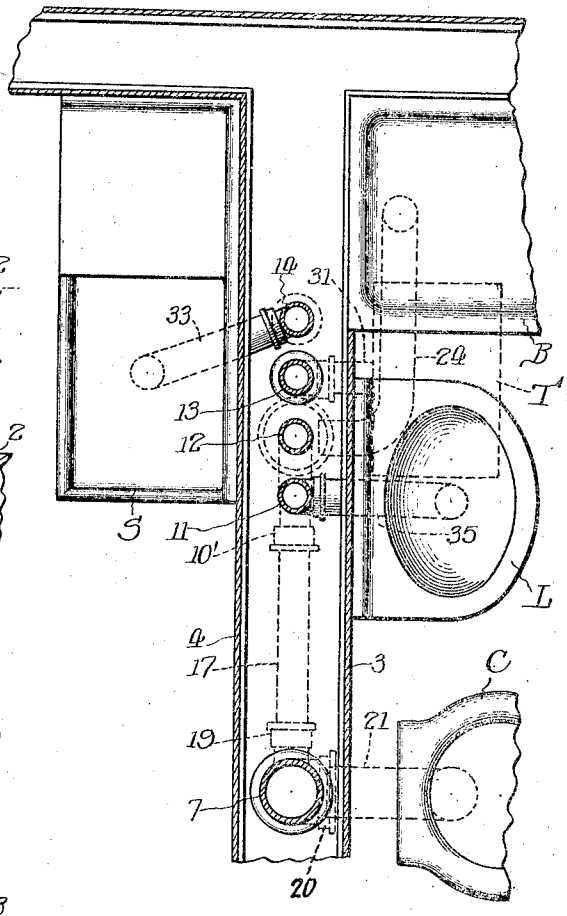


Fig. 2.



Witness:
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UNITED STATES PATENT OFFICE.

JOHN L. FRUIN, OF CHICAGO, ILLINOIS; ROBERT E. FRUIN EXECUTOR OF THE SAID JOHN L. FRUIN, DECEASED.

PLUMBING SYSTEM.

Application filed August 19, 1922. Serial No. 582,849.

To all whom it may concern:

Be it known that I, JOHN L. FRUIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Plumbing Systems, of which the following is a specification.

This invention relates to plumbing systems of a type designed for single story buildings, such as cottages, bungalows, and the like, and wherein the soil and vent stacks and the waste and vent branches connected thereto are all located within a vertical wall of the building, usually a partition wall, and are designed and adapted to serve a plurality of bathroom, kitchen and basement fixtures.

Plumbing systems of this general type are in extensive use, and have heretofore involve a quite complicated organization and arrangement of pipes and fittings for the sanitary draining and venting of the various fixtures served, thus involving considerable expense of material and labor in their installation.

The main object of the present invention is to provide a very simple and efficient plumbing system for buildings having but a single story and basement, which shall comprise relatively few parts, shall occupy but a minimum of space, and shall be thoroughly efficient and sanitary, particularly in the direction of always maintaining effective seals against the inflow of sewer gas and air through the impossibility of accidentally siphoning any of the fixture seals.

A plumbing system assembled and erected in accordance with my present invention is illustrated in the accompanying drawing, in which—

Fig. 1 is a vertical section through the roof, main floor and basement floor of a single story building, such as a bungalow, showing my improved plumbing system in elevation therein; and

Fig. 2 is an enlarged horizontal section, looking downwardly, on the line 2—2 of Fig. 1.

Referring to the drawing, 1 and 2 indicate the basement floor and the main floor, respectively, and R the roof of a single story building, and 3 and 4 designate the opposite sides of a hollow vertical partition wall which, in the instant shown, lies between the kitchen and the bathroom and may or may not extend downwardly through the basement. Within this hollow wall the main parts of my improved plumbing system are located and concealed. The system includes the usual waste and vent stack, comprising, in the instance shown, a basement fitting 5 connected into the house drain (not shown) leading to the sewer, and superposed endwise connected sections 6, 7, 8 and 9; the top section 9 extending through the roof R, and both sections 8 and 9 performing venting functions only.

At one side of the main soil stack is located an integral or one-piece fitting comprising in part a group of drain and vent pipes for all of the fixtures served by the system. This fitting comprises an upper horizontal member 10, four closely adjacent parallel depending members 11, 12, 13 and 14, respectively, all of which communicate with the top horizontal member 10, and a short horizontal member 15 connecting and communicating with the lower ends of the members 11 and 12. The horizontal members 10 and 15 are provided with hubs 10′, 15′ on the ends thereof adjacent to the soil stack, with which latter they are connected by pipe sections 16 and 17, respectively, fitted into lateral branches 18 and 19 on section 7 of the soil stack which extends through the main floor 2. This section of the soil stack also is cast with a short lateral branch 20 substantially in the horizontal plane of the branch 19, into which branch 20 the closet C is connected by the usual discharge pipe 21. By varying the lengths of the pipe sections 16 and 17, the waste and vent fitting for the other bathroom fixtures and kitchen and basement fixtures can manifestly be set at a greater or less distance from the soil stack as the building conditions may require.

Continuous with the right hand end of the lower horizontal member 15 is a depending branch 22, to which is connected the usual drum trap 23, into the lower portion of which is led the drain pipe 24 from the bathtub B.

From the lower end of the member 13 an extension, herein shown as comprising a pair of pipe sections 25 and 26, leads into the upper end of the main vertical member 26′ of a Y fitting in the basement, the lower end of which is connected into a drain pipe 27 leading directly, or through a catch

basin, to the sewer. The branch 28 of the Y fitting is connected by pipe section 29 with the lower end of the member 14, which latter is herein shown as extending through the main floor 2. The vertical member 26' of the Y fitting is provided, just below its hub, with a short lateral branch 30, into which may be connected the drain pipe 31 from a basement fixture, such as a laundry tub T indicated by dotted lines in Fig. 2.

On the member 14 is a short lateral branch 32 into which is led the drain pipe 33 from the kitchen sink S. On the member 11 is a short lateral branch 34, into which is led the drain pipe 35 from the lavatory L.

From the foregoing it will be seen that the member 11 serves as a combined waste and vent for the lavatory; the member 12 serves as a vent for the drum trap of the bathtub; the member 13, in connection with the extension members 25, 26, serves as a vent for the laundry tub T; and the member 14 serves as a combined vent and drain for the kitchen sink.

The described system is manifestly compact and well adapted to buildings having small rooms and wherein the space for installation is more or less limited. The described structure of the basement fitting enables it to serve as part of the discharge line for both the laundry tub, or other basement fixture, and one of the upper fixtures, such as the kitchen sink, as well as constituting in part the vent line of the former.

I claim—

1. In a plumbing system of the character described, the combination of a vertical soil and vent stack, a combined waste and vent pipe assembly for fixtures located at one side of said stack and comprising four vertical closely adjacent pipe sections, an upper horizontal section connecting and communicating with all of said vertical pipe sections, and a lower horizontal pipe section connecting and communicating with two of said vertical pipe sections; pipes connecting said upper and lower horizontal sections into said soil and vent stack, and a basement Y fitting connected into the lower ends of the other two of said vertical pipe sections.

2. In a plumbing system of the character described, the combination of a vertical soil and vent stack, a combined waste and vent pipe assembly for fixtures located at one side of said stack and comprising four vertical closely adjacent pipe sections, an upper horizontal section connecting and communicating with all of said vertical pipe sections, and a lower horizontal pipe section connecting and communicating with two of said vertical pipe sections; a trap for a bathtub discharge line communicating with said lower horizontal pipe section, pipes connecting said upper and lower horizontal sections into said soil and vent stack, and a basement Y fitting connected into the lower ends of the other two of said vertical pipe sections and having a lateral discharge branch for a basement fixture, two of said vertical branch sections constituting combined drain and vent lines for the lavatory and sink, respectively, and the other two constituting vent lines for the bathtub and a basement fixture, respectively.

JOHN L. FRUIN.