Sept. 3, 1940. V. A. HOFFMANN 2,213,394

PIPE FITTING AND BOWL ASSEMBLY

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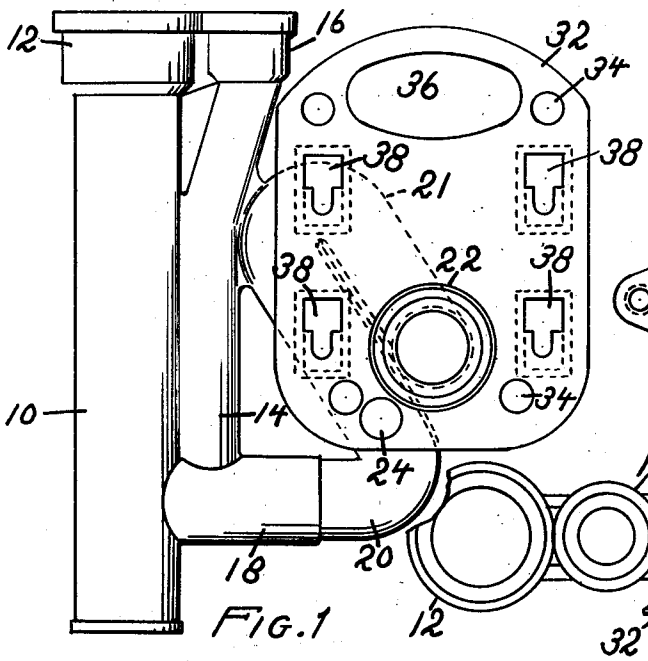


FIG. 1

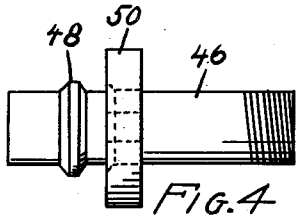


FIG. 4

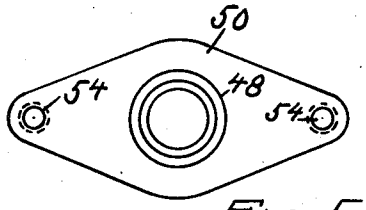


FIG. 5

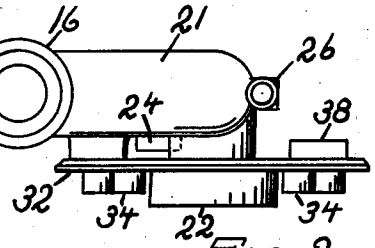


FIG. 2

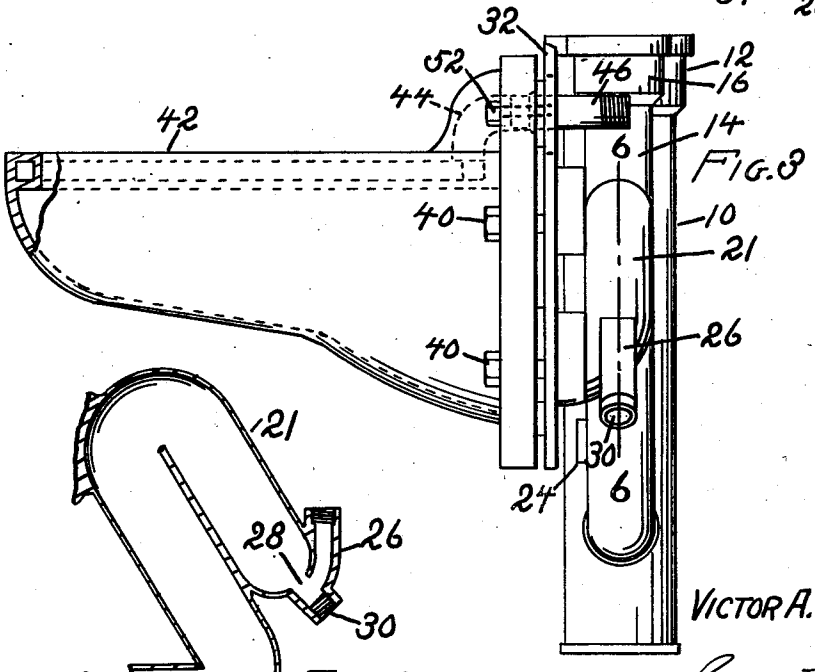


FIG. 3

FIG. 6

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PIPE FITTING AND BOWL ASSEMBLY

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8 Claims. (Cl. 4—252)

This invention relates to an improved pipe fitting and bowl assembly. The fitting is especially adapted to support and provide an outlet for a stack hung bowl.

One of the principal objects of advantage and importance of the device of this invention resides in the provision of means for entirely concealing the trap of the device.

Another important object of advantage resides in the provision of means for providing a maximum clearance between the bottom of the bowl and the floor.

A still further object of importance and advantage resides in the provision of means whereby all connections between the improved fitting and bowl may be made from the front.

Still another object of advantage and importance resides in the provision of means for directing a jet of water upwardly into the trap to assist in the flushing operation.

Additional objects of importance and advantage, some of which are hereinafter more fully set forth, will become apparent as the following detailed description progresses, reference being had to the accompanying drawing wherein

Fig. 1 is a front elevational view of a pipe fitting which embodies the invention.

Fig. 2 is a top plan view of the fitting shown in Fig. 1.

Fig. 3 is a side elevational view of the fitting in assembly with a bowl.

Fig. 4 is a slightly enlarged vertical section of the flush pipe connection, parts thereof being broken away.

Fig. 5 is a front elevational view of the connection gland.

Fig. 6 is a fragmental section of the trap taken on line 6—6 of Fig. 3.

As shown in the drawing:

The reference numeral 10 indicates generally a soil pipe portion of the improved device of this invention. The upper end of the soil pipe portion 10 is slightly expanded, as is indicated by the reference numeral 12 to receive the end of a conventional soil pipe.

Joined to the soil pipe portion of the device and substantially parallel thereto is a vent pipe 14. The vent pipe 14 is provided with a slightly expanded upper end 16 for receiving a conventional pipe.

Extending at right angles to the soil pipe portion of the device is a horizontal pipe 18. The horizontal pipe 18 is operably connected to the soil pipe 10 and the lower end of the vent pipe 14, as is best shown in Fig. 1.

Positioned at the outermost end of the horizontal pipe 18 and extending upwardly therefrom is a pipe 20. The upper portion of the pipe is turned upon itself to form an inverted U or siphon 21 and thence forwardly as is clearly shown in the drawing. The upper portion of the pipe 20 at the bend is preferably joined to the vent pipe 14, as is best shown in Fig. 1. The forwardly extending portion of the pipe 20 is expanded 22 to receive a discharge pipe. The inverted U together with the bowl forms a trap.

Formed in the pipe 20 closely adjacent the lower elbow thereof is a clean-out opening 24. The interior of the clean-out opening 24 is preferably threaded to receive a plug.

Positioned at the lowermost point of the downwardly turned portion of the pipe 20 is a jet 26. The jet 26 has an upper end internally threaded to receive a water pipe. The discharge opening 28 of the jet is directed upwardly into the pipe 20, as is best shown in Fig. 6. A clean-out opening 30 is provided at the lower end of the jet 26.

Secured to the inverted U portion of the device is a securing plate 32. The face of the securing plate 32 is provided with a plurality of outwardly projecting bosses 34.

Formed in the upper central portion of the plate 32 is a substantially elliptical opening 36. The opening 36 provides a means for extending a flush pipe from the rear to the front of the securing plate.

Formed in the securing plate 32 is a plurality of bolt receiving recesses 38. The recesses 38 are preferably positioned above and below the center of the plate 32 and closely adjacent the outer edges thereof.

Removably secured to the plate 32 by means of the anchor bolts 40 is a bowl 42. The bowl 42 is provided with an outlet which is adapted to be telescoped within the expanded portion 22 of the forwardly extending portion of the siphon 21. This connection between the bowl and siphon is made water tight by drawing down the anchor bolts 40, 40.

Formed in the upper portion of the bowl is an intake opening 44 which is adapted to receive the end of a flush pipe 46.

Formed on the flush pipe 46 closely adjacent one end thereof is an annular shoulder 48. The shoulder 48 and the end of the flush pipe 46 are adapted to be positioned within the intake opening 44. A tight joint is secured by inserting packing between the annular shoulder 48 and the interior of the intake opening 44.

The flush pipe **46** passes through the opening **36** in the securing plate **32** and is held in water tight engagement with the opening **44** by drawing the gland **50** against the annular shoulder **48** by means of the bolts **52** which engage the threaded apertures **54** in the gland **50**.

It will be apparent that the flush pipe connection as well as the discharge connection between the bowl and siphon are made from the front of the device. The necessity of providing a working space in the rear of the fitting for assembling the parts is entirely eliminated.

In the operation of the improved pipe fitting and bowl assembly of this invention, a stream of water is directed through the jet **26** and upwardly into the siphon **21** slightly in advance of admitting water into the bowl **42**. A siphon action is thus created and the water level in the bowl raises but slightly, if at all, as the water enters the bowl.

It will be apparent from the foregoing that herein is provided a stack hung bowl and pipe fitting assembly which is sturdy, rugged and may be economically produced. It is to be noted that the improved device of this invention leaves the floor space directly beneath the bowl entirely unobstructed. The clearance between the bottom of bowl and floor is exceptionally great.

It will also be apparent from the foregoing that herein is provided a device of the kind referred to, the siphon and soil pipe of which may be completely concealed within a conventional wall. Additionally, the improved device does not require working space in the rear of the structure for assembly.

Moreover, because the discharge connection is below the water line, leakage of gas through this joint into the partition or wall of a building in which the device is used is positively prevented. Additionally, the improved bowl of this invention requires from 4 to 6 inches less space from the wall than a conventional bowl. Also the bowl may be flushed with either an automatic valve or a tank.

It will be apparent to those skilled in the art to which the device appertains that numerous changes and alterations in construction and design may be made all without departing from the spirit or scope of this invention. Accordingly, it is understood that the patent granted hereon is not to be limited to the preferred embodiment here disclosed nor in any other manner except as necessitated by the terminology of the appended claims when given the range of equivalents to which they may be entitled.

I claim as my invention:

1. A pipe fitting including a siphon and vent pipe adapted to be positioned within a vertical wall, a vertical stack pipe, the discharge end of said siphon being permanently secured to said stack pipe, and means for attaching a bowl to said fitting, said means including a securing plate having a plurality of anchor bolt receiving recesses therein.

2. A pipe fitting including a siphon and vent pipe adapted to be positioned within a vertical wall, a section of stack pipe, said siphon and said vent being permanently fixed to said stack pipe, a jet positioned near the intake end of said siphon, and means for attaching a bowl to said fitting, said means including a securing plate having a plurality of anchor bolt receiving recesses therein.

3. A pipe fitting including an inverted U-shaped portion forming a siphon and vent pipe adapted to be used with a stack hung bowl, a stack, said inverted U-shaped portion being permanently secured in operable association to said stack, the length of the discharge leg of said siphon being constant, siphon actuating means in operable association with said U-shaped portion, and means for attaching a bowl to said fitting, said means including a securing plate having a plurality of anchor bolt receiving recesses therein.

4. In combination with a stack hung bowl having a substantially horizontal discharge passageway, a pipe fitting having a portion adapted to be attached to said bowl, said portion being provided with a plurality of bolt receiving recesses, said recesses being adapted to prevent rotation of bolts positioned therein, said pipe fitting including a vertical stack and a discharge pipe, a siphon intermediate the ends of said discharge pipe, one end of said discharge pipe being permanently secured to said stack, and a siphon jet directed upwardly into the interior of said siphon.

5. The combination with a stack hung bowl having a substantially horizontal discharge passageway of a soil pipe fitting, said fitting including a section of stack pipe, means operable from the front of said fitting for removably securing said bowl and said fitting together, said means including a plurality of bolt receiving recesses in the fitting, said means being adapted to secure bolts against removal or rotation, the joint in the discharge passageway between said bowl and said fitting being below the water level of said bowl, a siphon in the fitting intermediate the ends thereof, means preventing the alteration of the length of the discharge leg of said siphon, and means for admitting a flushing liquid into said bowl.

6. In combination with a stack hung bowl having a substantially horizontal discharge passageway, a pipe fitting including a plate having a portion adapted to be attached to the discharge passageway of said bowl, the opposite end of said fitting comprising a normally vertical stack, means preventing the leakage of sewer gas through the joint in the discharge passageway, said pipe fitting including a siphon of constant length intermediate the ends thereof, means operable through said plate for cleaning said siphon, means for admitting a flushing liquid into said bowl, and means for directing an auxiliary stream upwardly into said siphon.

7. A pipe fitting including a trap, a stack and vent pipe, a securing plate forming an integral part of and being a terminal of said fitting, said stack comprising the opposite terminal of said fitting, said trap and said vent pipe being permanently secured to said stack, and a jet opening into said trap in an upwardly disposed direction.

8. A pipe fitting including a trap and vent pipe, said trap and vent pipe being adapted to be concealed within a conventional partition, the length of the pipe forming said trap being fixed, a securing plate forming an integral part of said fitting, a plurality of anchor bolt receiving recesses in said securing plate, and a jet opening into said trap in an upwardly disposed direction.

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