April 28, 1942. V. A. HOFFMANN 2,280,952

PIPE FITTING

Filed Nov. 4, 1940 2 Sheets-Sheet 1

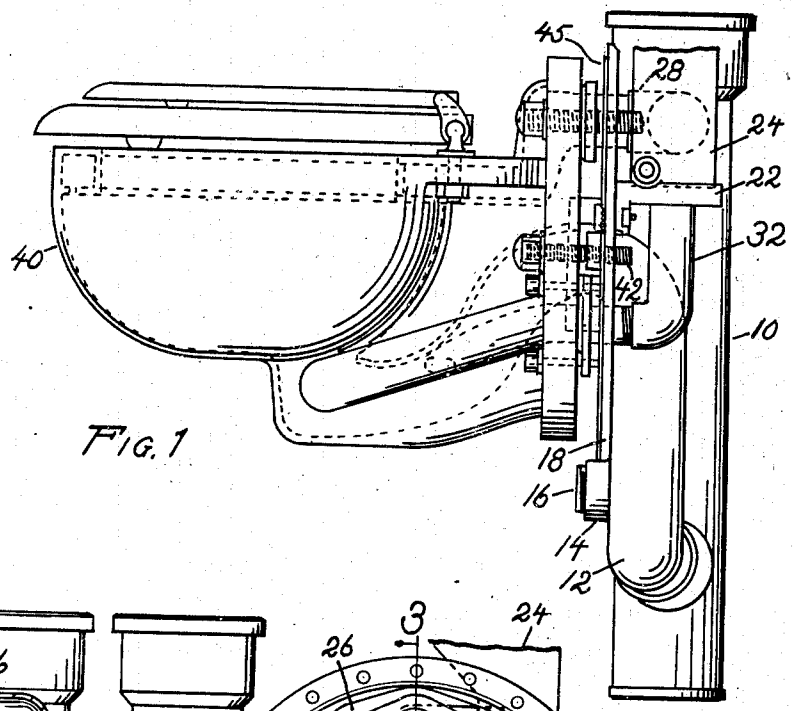


FIG. 1

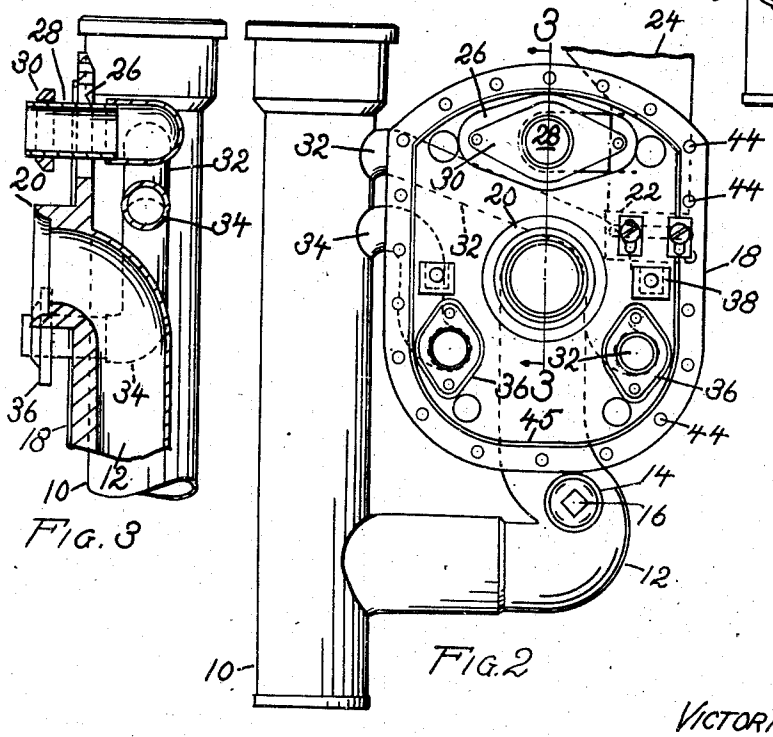


FIG. 3

FIG. 2

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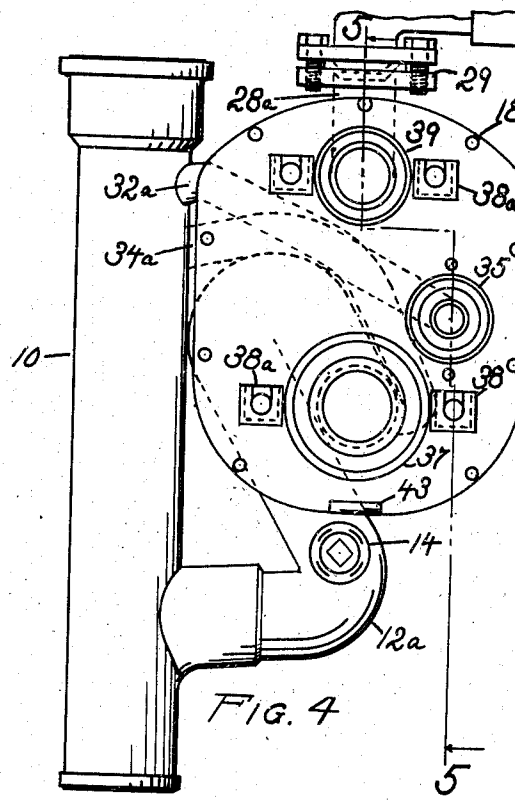


FIG. 4

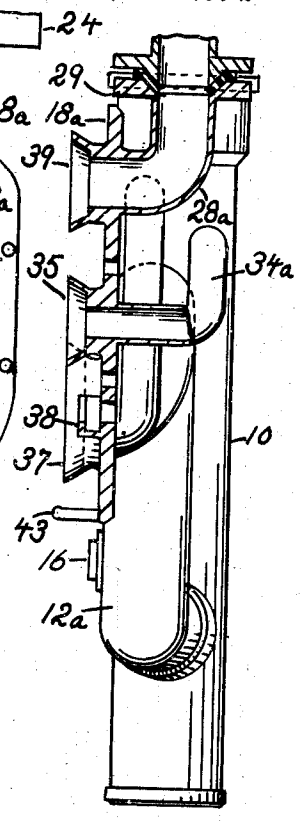


FIG. 5

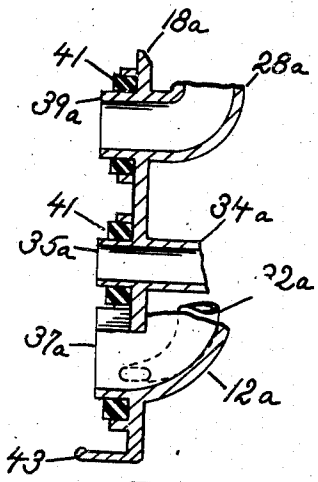


FIG. 6

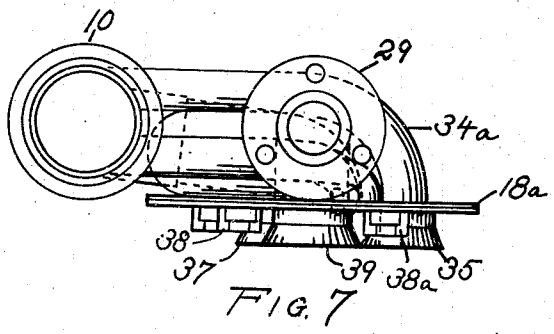


FIG. 7

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PIPE FITTING

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Application November 4, 1940, Serial No. 364,175

7 Claims. (Cl. 4—252)

This invention relates to an improved pipe fitting which is adapted to provide a support, inlet, and outlet for a stack hung toilet bowl.

One of the principal objects of advantage and importance of the improved device of this invention resides in the provision of means for providing an auxiliary outlet, to function as an overflow, which is joined to the stack at a point above the regular discharge outlet.

Another and still further object of importance and advantage resides in the provision of means for extending a siphon breaking vent passageway from the stack to the face plate of the fitting.

Still another object of advantage and importance is the provision of means for preventing the backward flow of water from the stack through any of the outlets emptying into the stack.

A further object of importance and advantage resides in the provision of means for securing lath, plaster, or other wall material to the edge of the face of the bowl supporting portion of the fitting.

An additional object of importance and advantage of the improved device of this invention resides in the provision of means for adjustably securing a flush tank supporting member to the rear of the toilet bowl supporting portion of the fitting.

Additional objects of advantage and importance, some of which will hereinafter be more fully disclosed, will become apparent as the following detailed description progresses, reference being had to the accompanying drawings wherein

Fig. 1 is a side elevational view of a pipe fitting which embodies the invention, associated with a toilet bowl.

Fig. 2 is a front elevational view of the pipe fitting.

Fig. 3 is a vertical section of a fragmental portion of the fitting taken on line 3—3 of Fig. 2, looking in the direction indicated by the arrows.

Fig. 4 is a front elevational view of a slightly modified pipe fitting.

Fig. 5 is a vertical section taken on line 5—5 of Fig. 4, looking in the direction indicated by the arrows.

Fig. 6 is a vertical section of the plate portion of the fitting showing a still further modification.

Fig. 7 is a top plan view of the fitting shown in Fig. 4.

As shown in the drawings:

The reference numeral 10 indicates generally a soil pipe which may form a portion of a stack in a toilet installation. The soil pipe 10, as shown in the drawings, is of a conventional size and formation. However, it will be apparent that the form and length of the pipe 10 may be altered or varied without departing from the spirit or scope of this invention.

Extending from a point near the lower end of the soil pipe 10 and at right angles thereto is an outlet pipe 12. The outlet pipe 12 is turned upwardly and thence forwardly, as is best shown in Figs. 1 and 2, to form the discharge leg of a siphon.

Formed in the outlet pipe 12, slightly above the horizontal position thereof, is a clean-out aperture 14. A screw-threaded plug 16 is removably positioned in the aperture 14.

Secured to the forwardly extending upper position of the discharge pipe 12 is a securing plate 18. The securing plate 18 is preferably an integral part of the discharge pipe 12.

Formed of the forwardly projecting upper end of the discharge pipe 12 is a substantially cup-shaped member 20. The cup-shaped member 20 is adapted to receive the end of a toilet discharge pipe, as is best shown in Fig. 1. Provision is made whereby a gasket may be inserted between the cup-shaped member 20 and the end of the toilet discharge pipe. However, it will be apparent that any suitable packing or sealing medium or grinding may be employed to provide a water-tight joint at this point.

Adjustably secured to the rear surface of the securing plate 18 is a tank supporting bracket 22. The bracket 22 is movable both horizontally and vertically. A tank 24 may be operably positioned on the bracket 22.

Formed the upper portion of the securing plate 18 is an intake pipe receiving aperture 26. The aperture 26 is adapted to receive an intake pipe 28 which extends from the flush tank 24 through the plate 18. The aperture 26 is of sufficient size to allow a connecting flange 30 positioned on the pipe 28 to pass therethrough, as is best shown in Fig. 3.

Operably secured to the soil pipe 10 closely adjacent the top thereof and extending to a point below the bracket 22 and thence forwardly through the securing plate 18 is a siphon breaking vent pipe 32. The vent pipe 32 functions to provide air from the stack to break the siphon action of the operating toilet and thus prevent gurgling and other sounds which invariably are present in the conventional toilet bowls which allow siphon breaking air from the room to enter the bowl and then be drawn into the discharge

passageway through the bowl outlet. In applicant's device the siphon breaking air is admitted into the discharge pipe at a point to the rear of the opening of the bowl outlet, as is best shown in Figs. 1 and 6.

Operably secured to the soil pipe **10**, at a point slightly below the vent pipe **32** is an overflow pipe **34**. The overflow pipe **34** extends downwardly and thence forwardly through the plate **18**. The overflow pipe **34** is adapted to be extended to a point within the discharge passageway of a toilet bowl connected to the fitting.

Operably positioned on the forwardly extending end of both the overflow and the vent pipe, **34** and **32** respectively, is a securing flange **36**. Each securing flange **36**, with the complementary portion of the bowl it engages provides a means for making a water-tight joint. The engaging surfaces of the flanges **36, 36** and the complementary portions of the bowl may be ground to fit or a gasket or other sealing member may be positioned between the opposed surfaces.

Projecting outwardly from the face of the securing member **18** are suitable securing nut receiving members **38, 38**. The members **38, 38** are adapted to receive and hold a securing nut, as is best shown in Fig. 1 when a toilet bowl **40** is secured to the plate **18**. It is to be noted that the plate directly in the rear of the members **38, 38** is apertured to allow the end of a threaded securing rod **42** to pass therethrough.

Formed in the plate **18** closely adjacent or at the edges thereof, as is best shown in Fig. 2 is a plurality of openings **44, 44**. The openings **44** are for the convenience of tradesmen in fastening lath, plaster, and other wall material to the plate **18**. A rim or rib **45** may also be provided as a terminal for wall material.

In the modified form of the invention, as shown in Figs. 4, 5, 6 and 7, the soil pipe **10** is substantially the same as in the preferred embodiment. However, the securing plate **18***a*, the vent **32***a*, the overflow **34***a*, the intake pipe **28***a*, and the discharge pipe **12***a* differ from the corresponding parts shown in the preferred embodiment. The method for joining the form of the improved fitting to a toilet bowl also differs slightly from the method employed for the preferred construction.

Extending from the soil pipe **10** through the securing plate **18***a* is an overflow pipe **34***a*. The portion of the pipe **34***a* which extends through the plate **18***a* is shaped to form a part of a water-tight connection between the improved fitting of this invention and a toilet bowl associated therewith. The forwardly projecting portion of the overflow pipe **34***a* may be cup-shaped, as is indicated by the reference numeral **35**, or may be tubular shaped, as indicated by the reference numeral **35***a*, to be telescoped within a complementary part on a toilet bowl.

Extending from the soil pipe **10** to a point in the discharge pipe **12***a* is a vent pipe **32***a*. The vent pipe **32***a* is joined to the discharge pipe **12***a* closely adjacent the plate **18***a*, as is best shown in Figs. 4, 5, and 6. Where it is so desired the vent and the overflow may be through a single pipe.

Secured to the plate **18***a* and forming an integral part of said plate is a discharge pipe **12***a*. The discharge pipe **12***a* extends upwardly from its opening in the plate and is then turned upon itself and extends downwardly to form a siphon, as is best shown in Figs. 4 and 5. The portion of the discharge pipe **12***a* extending forwardly from the front surface of the securing plate **18***a* may be cup-shaped, as is indicated by the reference numeral **37** or tubular as indicated by the reference numeral **37***a*.

Extending through the plate **18***a* and thence upwardly is an intake pipe **28***a*. The intake pipe **28***a* is preferably constructed as an integral part of the plate **18***a*, as is best shown in Fig. 5. The forwardly projecting portion of the intake pipe **28***a* may be cup-shaped, as is indicated by the reference numeral **39** or may be tubular as is indicated by the reference numeral **39***a*. The upwardly projecting portion of the intake pipe **28***a* is provided with a flange **29**. The flange **29** provides a means for connecting a continuation of the intake pipe thereto and also functions as a supporting means for a flush tank **24**.

Suitable gaskets **41, 41** are employed for maintaining water-tight connections between the intake pipe, discharge pipe, the vent pipe, and associated parts of a toilet bowl connected therewith. It will be apparent where it is so desired a single gasket may be utilized for the modification shown in Fig. 6.

Extending forwardly from the lower portion of the plate **18***a* is a supporting bracket **43**. The bracket **43** prevents displacement, by sinking, of a bowl associated with the improved fitting and also provides a means facilitating the assembly of a bowl with the fitting.

Positioned on the surface of the plate **18***a* spaced in relation one to another is a plurality of securing nut receiving members **38***a*. The members **38***a* provide a means for securing a bowl in operable position against the surface of the plate.

It is to be noted that the portions of the overflow, discharge, and vent pipes closely adjacent the soil pipe **10** are inclined downwardly and are joined to the soil pipe **10** at a definite angle as shown in Figs. 2 and 4. This construction prevents any backup of water through the pipes mentioned. This construction has been found to be highly efficient and desirable especially for the overflow and vent pipes.

It will be apparent from the foregoing that herein is provided a compact and highly efficient pipe fitting which may be rigidly secured to and form a part of a section of soil pipe. And also that the improved device of this invention may, with the exception of the surface of the securing plate, be entirely concealed within a conventional wall.

It will also be apparent from the foregoing that herein is provided a siphonic discharge pipe for use as a connecting member between a toilet bowl and a soil pipe in which the length of the discharge leg of the siphon is permanently fixed.

It will be further apparent that the improved device of this invention readily lends itself to installations either in single units for residential use or in batteries or groups for use in public places. Moreover, access may be had to the interior of the discharge leg of the siphon without first removing the bowl.

Additionally, it will be apparent to those skilled in the art to which the improved device of this invention 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 illustrative embodiments here disclosed or in any other manner except as is necessitated by the terminology

of the appended claims when given the range of equivalences to which they may be entitled.

I claim as my invention:

1. In pipe fitting, a soil pipe having an extension projecting at right angles thereto, said extension being turned upwardly and then forwardly to provide a siphon action discharge pipe, a supporting plate secured to the upwardly turned portion of said discharge pipe, means positioned at the rear of said plate for supporting a flush tank, a siphon breaking passageway operably connected to said soil pipe closely adjacent the upper end thereof, said siphon breaking pipe being adapted to be extended and be connected to said discharge pipe below the normal water level of said device, a plurality of securing nut receiving recesses formed in the face of said plate, and means whereby wall members may be secured to said plate.

2. In pipe fitting to be used in conjunction with a toilet bowl having a discharge pipe, a soil pipe having an extension projecting at right angles thereto, said extension being turned upwardly and then forwardly to provide a siphon discharge pipe, a supporting plate secured to the upwardly turned portion of said discharge pipe, adjustable means in association with said plate for supporting a flush tank rearwardly of and above said plate, a siphon breaker passageway operably connected to said soil pipe closely adjacent the upper end thereof, said vent pipe being adapted to extend and be connected to the discharge pipe of a toilet bowl with which the fitting may be associated, the connection between the siphon breaker passageway and the discharge pipe of the bowl being below the normal water level of said bowl, an overflow passageway extending from said plate to said soil pipe, a plurality of securing nut receiving recesses formed in the face of said plate, and aligned openings near the perimeter of the plate providing means whereby wall members may be secured to said plate.

3. In a pipe fitting for a stack hung bowl, a soil pipe, a discharge pipe in operable association with said soil pipe, a bowl securing plate secured to said discharge pipe, an end of said discharge pipe extending through said securing plate, a flush tank supporting member secured to said plate and projecting rearwardly thereof, a passageway comprising siphon breaker extending from the face of said plate to said soil pipe, a bowl overflow passageway operably connected to said soil pipe, and means whereby a toilet bowl may be secured to said fitting.

4. In pipe fitting adapted to be used in conjunction with a toilet bowl having a discharge passageway, a soil pipe having an extension projecting at right angles thereto, said extension comprising a discharge pipe and being turned upwardly and then forwardly, a supporting plate secured to the upwardly turned portion of said discharge pipe, said discharge pipe projecting through said plate and the end of said discharge pipe being expanded and recessed to receive the end of a pipe adapted to be associated therewith, adjustable means for supporting a flush tank rearwardly of and above said plate, a passageway operably connected to said soil pipe closely adjacent the upper end thereof, said passageway being adapted to be extended and be connected to the discharge passageway of a bowl with which the fitting may be associated, an overflow passageway extending from said plate to said soil pipe, a plurality of securing nut receiving recesses formed in the face of said plate, and means whereby wall members may be secured to said plate.

5. In a pipe fitting for a stack hung bowl, a soil pipe, a discharge pipe in operable association with said soil pipe, a bowl securing plate secured to said discharge pipe, an end of said discharge pipe extending through said securing plate, the end of said discharge pipe being expanded to be telescoped over an associated pipe end, the opposite end of said discharge pipe extending horizontally and thence downwardly to form the discharge leg of a siphon, a siphon breaking passageway extending from the face of said plate to said soil pipe, the plate secured end of said siphon breaking passageway being below the sealing level of the discharge pipe, and means whereby a toilet bowl may be secured to said fitting.

6. In the pipe fitting, a securing plate, a soil pipe, a discharge pipe providing the discharge leg of a siphon extending from said plate to said soil pipe, an intake pipe secured to said plate, said intake pipe and said discharge pipe projecting through said plate and providing means whereby continuations of the passageways formed by said pipes may be secured thereto, and a siphon breaking passageway extending from a point on the plate below the sealing level of the discharge pipe to a point in said soil pipe above said sealing level.

7. In a pipe fitting for a stack hung bowl, a soil pipe, a discharge pipe forming a portion of a siphon in operable association with said soil pipe, a bowl securing plate secured to said discharge pipe, an end of said discharge pipe extending through said securing plate, a passageway extending from the face of said plate to said soil pipe, said passageway being connected to said soil pipe above the sealing level of the device and being adapted to extend to a point on a toilet bowl below the sealing level thereof, said passageway and said discharge pipe extending through said plate and therebeyond, the ends of said members being formed to be associated with continuations thereof, and means whereby a toilet bowl may be secured to said fitting.

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