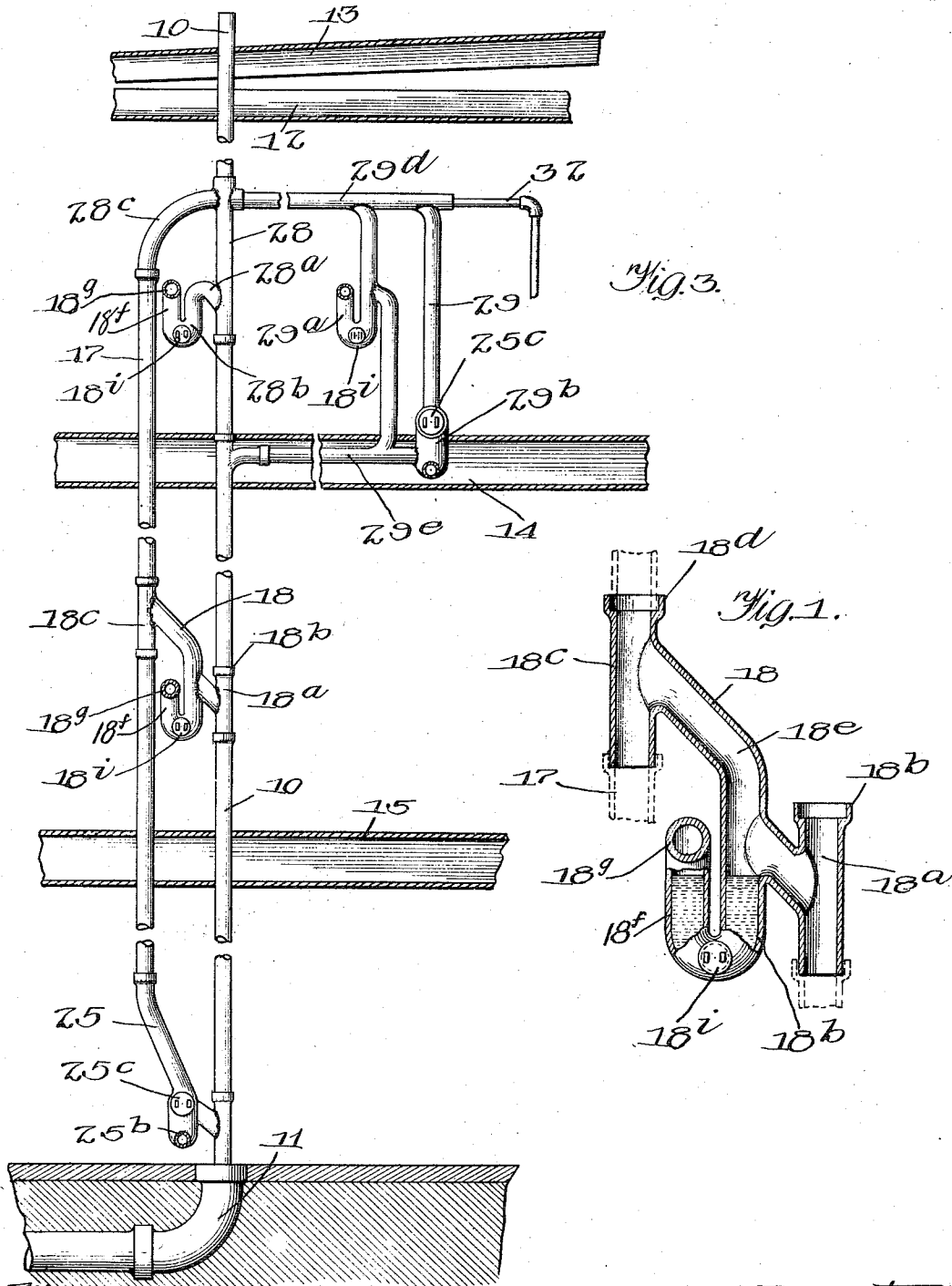


G. BECKWAY.
PLUMBING SYSTEM AND FITTINGS THEREFOR.
APPLICATION FILED OCT. 21, 1907.

985,969.

Patented Mar. 7, 1911.

2 SHEETS—SHEET 1.



Witnesses:
L. V. Damarus Jr.
A. L. Sprinkle

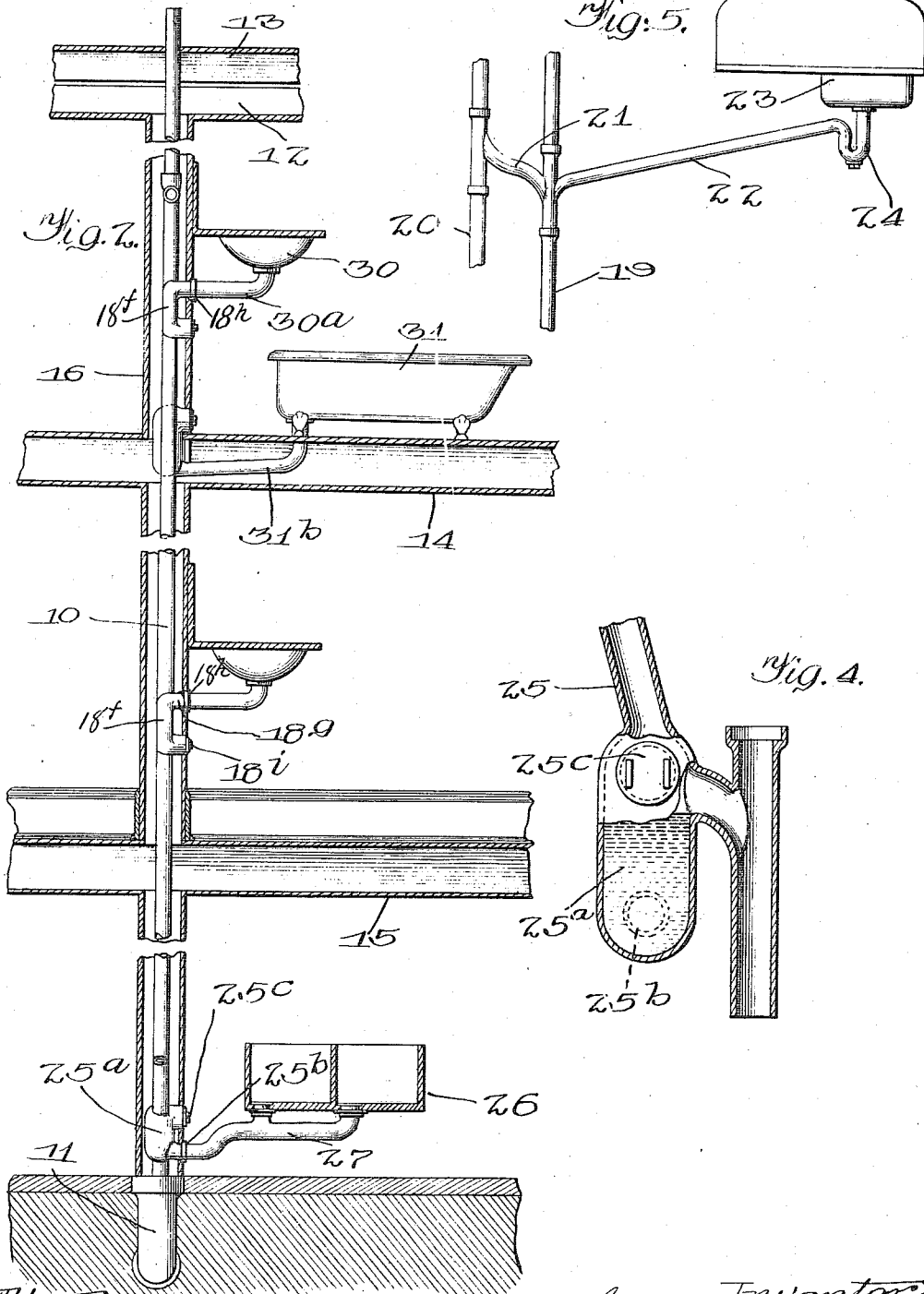
Inventor:
George Beckway
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Inventor:
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UNITED STATES PATENT OFFICE.

GEORGE BECKWAY, OF CHICAGO, ILLINOIS.

PLUMBING SYSTEM AND FITTINGS THEREFOR.

985,969.

specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed October 21, 1907. Serial No. 398,532.

To all whom it may concern:

Be it known that I, GEORGE BECKWAY, 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 and Fittings Therefor, of which the following is a full, clear, and exact specification.

The invention relates to plumbing systems and fittings for the same adapted to be used in those portions of plumbing systems which are vertically arranged and being particularly adapted to establish a connection between fixtures, such as bowls, sinks, bath tubs and the like, and the soil or waste and main vent pipes of such systems.

The invention has for its primary object to provide a system and fittings which are simple and compact and by means of which traps for fixtures may be arranged entirely within the wall space whereby only the clean-out openings of the traps are visible instead of having the entire trap exposed as in the ordinary construction.

A further object of the invention is to provide an improved construction and arrangement of parts including the position of the traps for the individual fixtures whereby siphoning of the traps may be avoided.

A further object of the invention is to provide an improved fitting for use in vertical plumbing systems for connecting the soil and main vent pipes in which the trap may be formed integral with the fitting, thus making it possible to cast the parts from one pattern, securing not only simplicity and compactness but at the same time economy in the first cost of installation.

A further object of the invention is to provide an improved fitting capable of use in a plumbing system of the described character for forming lateral extensions on floors adjacent the upper part of the system.

To the attainment of these ends and the accomplishment of other new and useful objects, as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts, all as more fully hereinafter described and shown in the accompanying drawings.

In the said drawings, Figure 1 is an elevation of the improved fitting, the same being shown partly in section in order to more fully disclose the details of construction. Fig. 2 is a view taken in vertical section

through a building illustrating the system in position in the wall and floors. In this view three forms of the fitting are shown—one form like that illustrated in Fig. 1, a fitting embodying a form of drum trap adjacent the bottom of the system, and a lateral extension fitting at the top embodying both a form of drum trap and the ordinary P-trap. Fig. 3 is a side view of the construction shown in Fig. 2 with the fixture connections removed. Fig. 4 is a view partly in section of a modified form of the fitting adapted for use at the bottom of the vertical system for forming a connection between the soil and main vent pipes and a fixture. This fixture is shown provided with the improved form of drum trap. Fig. 5 is an illustrative view of a plumbing system provided with soil and main vent pipes, the trap being shown adjacent the fixture according to the common practice, and the view illustrates the manner in which siphoning may take place even though the main vent pipe and its connection with the soil pipe is provided.

In the illustrations the common form of soil or waste pipe 10 is shown, being connected at the bottom with the sewer pipe 11 and passing out through the top of the building through the ceiling 12 of the uppermost room and the roof 13 of the building. Horizontal divisions in the building forming floors and ceilings are indicated at 14 and 15, while the vertical portions of the system itself are shown entirely inclosed within vertical wall or partition 16.

17 is the usual form of main vent pipe standing approximately parallel with the soil pipe 10, both the soil pipe and the main vent pipe being entirely contained within the walls of the vertical partition 16.

The improved fitting 18, forming a part of the present invention, is provided with a pipe section 18^a adapted to form a portion of the soil pipe 10 with which it is connected by suitable joints 18^b adapted to be either screw-threaded or lead-calked. The fitting which primarily is designed to form a connection between the soil and main vent pipes by extending upwardly from the point of its connection with the soil pipe and entering the main vent pipe at a point preferably above the water level of the fixture, may be connected to the main vent pipe in any desired manner, as by a suitable T-joint inserted in the main vent pipe in a well-known

manner. However, the preferred form of forming this connection is to construct the fitting as shown in Fig. 1 and elsewhere, providing the upper extremity with an integral section of pipe 18^c adapted to form a section of the main vent pipe, the same being provided with suitable means, as at 18^b, for forming a screw-threaded or lead-calked joint in connection with main vent pipe 17.

Heretofore it has been the practice to install vertical plumbing systems similar to the view shown in Fig. 5 in which 19 indicates a soil pipe, 20 the main vent pipe, and 21 the fitting forming a connection therebetween. The pipe leading from the fixture is then tapped into the connection 21 near the joining of the same with the soil pipe or it may be tapped into the soil pipe itself adjacent to the lower end of the fitting connection, as shown in Fig. 5, the fixture pipe being indicated by the reference character 22, 23 being the bowl of the fixture. The usual form of P-trap 24 is shown in the fixture connection 22, the same being at the upper end thereof adjacent the fixture. In this mode of constructing the trap it is found that there is constant danger of siphoning, particularly when it is found necessary to extend the pipe leading from the fixture some distance, as illustrated in Fig. 5. The main vent pipe 20 and the connection 21 afford a preventive against siphoning from the action of the contents of the pipe after it enters the soil pipe but does not prevent the siphoning of the trap due to the action of the liquid in passing through connecting pipe 22 between the trap and the soil pipe. In order to entirely obviate this objection in the invention the trap is formed integral with the fitting 18 and may be of any common form of construction, as a P-trap or a drum trap. In the fitting 18, illustrated in Fig. 1, the pipe or branch vent connecting the soil and main vent pipes is indicated by 18^c and is provided with a branch 18^f extending downwardly and then upwardly as in the common construction of P-traps. It will be seen by this construction that the entire fitting 18, including the trap, lies in the plane of the soil and main vent pipes, thus enabling the trap to be hidden away within the walls of the partition together with the other portions of the vertical plumbing system, presenting a more slightly appearance than with the trap completely exposed to view.

At the extremity of the upwardly extending branch of trap 18^f provision is made for connecting the pipe from the fixture, which preferably consists in the angular portion 18^e extending approximately at a right angle to the plane of the soil and main vent pipes and terminating at a point adapted to reach just through the partition wall, there being suitable means provided, as at 18^a,

for a screw-threaded or lead-calked joint. A suitable clean-out, as at 18ⁱ, is provided at the bottom of the trap and preferably consists of a protuberance extending from the plane of the fitting outwardly in order also to reach just flush with the outer surface of the partition wall in order that it may be accessible without disturbing the wall.

A modification of the fitting just described is shown at 25, forming a connection or branch vent for the base of the main vent pipe with the soil pipe. Integral with this fitting a suitable trap may be cast in order to accommodate a fixture near the bottom of the system as is usual in basements of buildings, such a fitting being indicated at 26 provided with connecting pipe 27 and entering the trap 25^a at 25^b, which, as in the construction of the trap described in fitting 18 extends flush with the outer surface of the partition wall. It will be noted that the construction of this trap, which is shown in detail in Fig. 4, is of the common drum type, the clean-out therefor being near the top of it as at 25^c likewise extending laterally to protrude through the partition wall.

Another modification of the invention is illustrated by the fitting 28. This fitting is suitable for use on an upper floor of the system where there are no fixtures to be tapped into the soil or waste pipe above this one, thus allowing the fitting of this character to be used, in which it is not necessary that the fitting shall communicate with the main vent pipe, the waste or soil pipe serving that purpose as there is no discharge into the system above. In the fitting 28 it will be noted that it is provided with a portion adapted to form a section of the soil or waste pipe and has the branch 28^a, preferably cast integrally therewith, extending, as in the case of the other fittings, within the plane of the soil and main vent pipes and being provided with the same form of P-trap 28^b as illustrated in fitting 18, being also provided with the usual clean-out 18ⁱ and the joint 18^b for connection with the fixture. At the upper part of this fitting 28 provision may be made, if desired, for tapping the main vent pipe into the soil pipe, the curved downwardly-extending branch 28^c being provided for this purpose.

Another fitting embodying a modification of the invention is shown on the upper floor in the drawings and for convenience in constructing and installing may be made to embody, as illustrated, a fitting adapted for lateral extension on a top floor in which both a P-trap and drum trap are combined. The fitting is designated by the reference character 29 and is adapted to receive the waste from basin 30, through pipe 30^a, and bath 31, the P-trap 29^a taking the pipe from 30 and the drum trap 29^b receiving the pipe

31^b from the bath, the same entering the trap beneath the floor 14. It will be seen that the traps comprising this fitting are of the forms illustrated in fittings 18 and 25, the usual clean-outs 18ⁱ and 25^e being provided. The fitting is provided with the laterally extending vent pipe 29^a, which may be tapped into the fitting 28 of the soil pipe, as shown, and the waste from the fitting is carried to the soil pipe 10 by the laterally extending branch 29^e beneath the floor 14. Additional venting means, as the pipe or extension 32, may be tapped into the fitting preferably into the vent pipe 29^a, as illustrated in Fig. 3.

In order that the invention might be fully understood, the details of the foregoing embodiment thereof have been thus specifically, but

What I claim is—

1. In a plumbing system comprising vertical waste and main vent pipes, a plumber's fitting comprising a section of pipe straight throughout adapted to form a portion of the waste pipe, a section of pipe straight throughout adapted to form a portion of the main vent pipe, an upwardly and outwardly inclined branch communicating at its lower extremity with the said section of waste pipe and at its upper extremity with the section of main vent pipe, and a trap secured to the said branch connecting the said pipe sections, both said branch and said trap lying within the plane of the waste and main vent pipes.

2. In a plumbing system comprising vertical waste and main vent pipes, a plumber's fitting embodying a section of pipe adapted to form a portion of the waste pipe, an upwardly and outwardly extending branch therefrom communicating at its upper end with the main vent pipe, a trap communicating with the said branch, both said branch and said trap lying within the plane of the soil and main vent pipes, and an integral branch on the side of the trap extending outside the plane of the said pipes, the last said branch forming a clean-out for the trap.

3. In a plumbing system comprising vertical waste and main vent pipes, a plumber's fitting consisting of two spaced laterally-extending pipes lying in approximately the same vertical plane, the lower one of said pipes being tapped into the waste pipe, the upper pipe communicating with the upper portion of the system and having a venting function, a branch connecting the said laterally-extending pipes, all of said pipes and the said branch lying in the plane of the waste and main vent pipes, and a trap secured to the branch and lying in the common plane of the pipes and the branch.

4. In a plumber's fitting, the combination with a pipe section straight throughout adapted to form a portion of a vertical waste

pipe, of an upwardly and outwardly extending branch formed integrally therewith, a pipe section straight throughout adapted to form a portion of a vertical main vent pipe formed integrally with the said branch at the upper end thereof, the said branch lying within the plane of the said pipe sections and forming a means of communication between them, and a trap formed integrally with the branch and communicating therewith and lying within the plane of the branch and pipe sections.

5. In a plumbing system in combination a main vent pipe, a waste pipe, a branch vent pipe extending downwardly from its union with the main vent pipe, and being adapted at its lower end to receive the discharge from a sink or like fixture, and connection between the branch vent pipe and the waste pipe intermediate the ends of the branch vent pipe.

6. In a plumbing system in combination a main vent pipe, a waste pipe, a branch vent pipe having walls separated from the walls of the said main vent pipe and waste pipe and extending downwardly from its union with the main vent pipe and being adapted at its lower end to receive the discharge from a sink or like fixture, and connection between the branch vent pipe and the waste pipe intermediate the ends of the branch vent pipe.

7. In a plumbing system in combination a main vent pipe, a waste pipe, a branch vent pipe extending downwardly from its union with the main vent pipe, connection between the branch vent pipe and the waste pipe intermediate the ends of the branch vent pipe, a sink or like fixture, and a drain leading from said fixture to the foot of the branch vent pipe, that portion of the branch vent pipe lying below said connection forming a portion of a trap.

8. In a plumbing system in combination a sectional main vent pipe and a sectional waste pipe, a branch vent pipe extending downwardly from its union with the main vent pipe and adapted at its lower end to receive the discharge from a sink or like fixture, and connection between the branch vent pipe and the waste pipe intermediate the ends of the branch vent pipe, the branch vent pipe and the said connection between the branch vent pipe and the waste pipe being formed integral with a section of the main vent pipe and a section of the waste pipe, the walls of the branch vent pipe being separated from the walls of the waste pipe and main vent pipe sections.

9. A plumber's fitting for use in a plumbing system comprising vertical sectional vent and waste pipes, said fitting comprising in combination a section of main vent pipe, a section of main waste pipe spaced therefrom and parallel thereto, a branch vent pipe ex-

tending downwardly from its union with the
main vent pipe section and adapted at its
lower end to receive the discharge from a
sink or like fixture, and a connection be-
5 tween the branch vent pipe and the waste
pipe section intermediate the ends of the
branch vent pipe, the branch vent pipe and
the connection between the branch vent pipe
and the waste pipe section being formed in-
10 tegral with said section of main vent pipe
and said section of waste pipe, the walls of
the branch vent pipe being separated from

the walls of the waste pipe and main vent
pipe sections, the said vent pipe section,
branch vent pipe, connection, and waste pipe 15
section being all in one plane.

In testimony whereof I have signed my
name to this specification, in the presence
of two subscribing witnesses, on this 25th
day of September A. D. 1907.

GEORGE BECKWAY.

Witnesses:

M. W. CANTWELL,
A. L. SPRINKLE.