

No. 622,720.

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H. SIEBEN.

VENT AND BACKWATER COUPLING.

(Application filed Feb. 28, 1898.)

(No Model.)

Fig. 1.

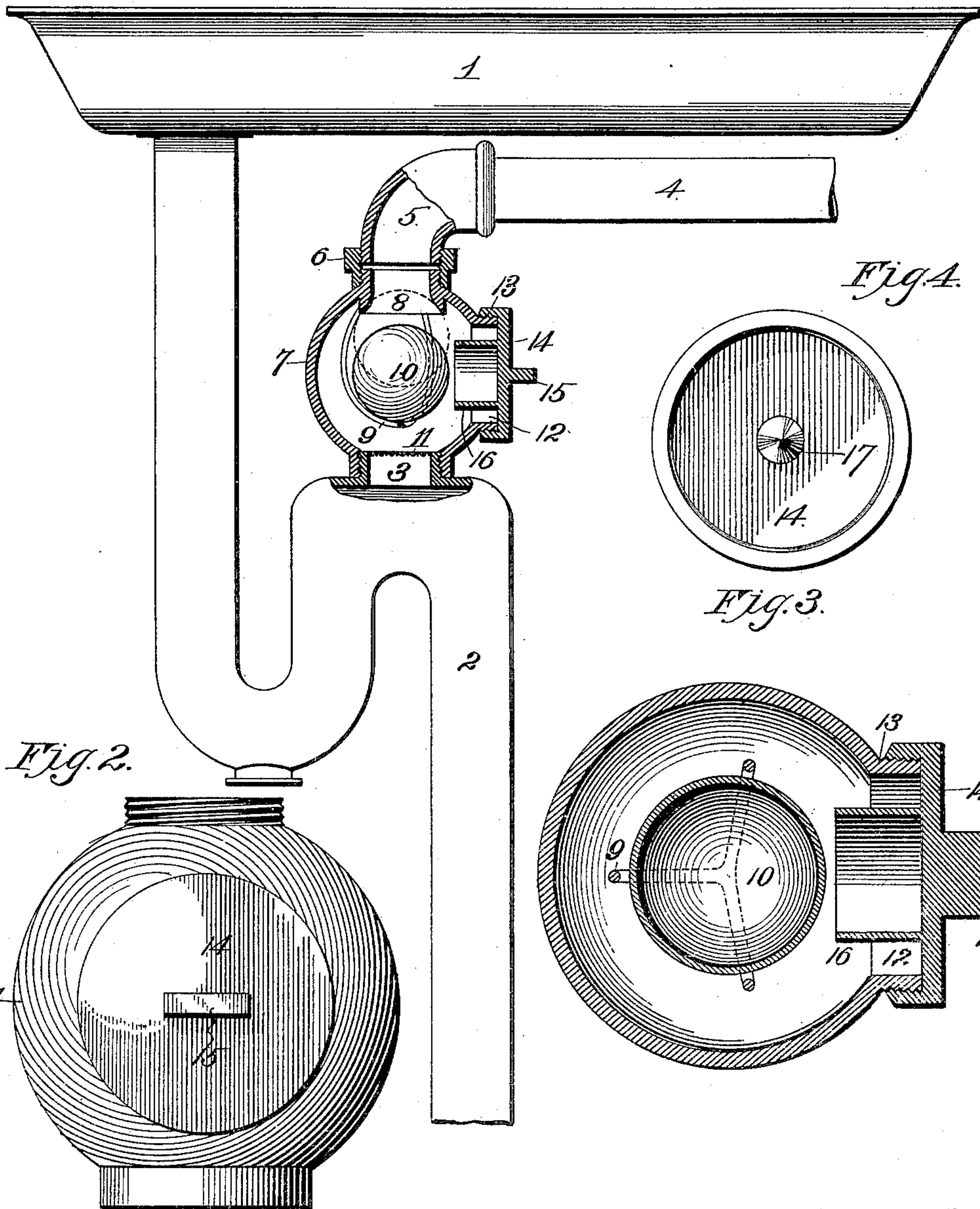


Fig. 2.

Fig. 4.

Fig. 3.

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HENRY SIEBEN, OF KANSAS CITY, MISSOURI.

VENT AND BACKWATER COUPLING.

SPECIFICATION forming part of Letters Patent No. 622,720, dated April 11, 1899.

Application filed February 28, 1898. Serial No. 672,041. (No model.)

To all whom it may concern:

Be it known that I, HENRY SIEBEN, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Vent and Backwater Couplings, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to vent and backwater couplings—that is to say, to couplings which reliably prevent backwater or foreign substances from entering and choking up the vent-pipe, and consequently rendering the building containing the same unsanitary; and my object is to produce a coupling of this character which insures that no backwater shall enter the vent-pipe and also insures a free circulation and escape of foul air or sewer-gas from the drain-pipe as long as said pipes are not choked up by a foreign substance and which is simple, durable, and inexpensive of manufacture and can easily and quickly be placed in or removed from operative position.

With this object in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as will be hereinafter described and claimed and in order that the invention may be fully understood I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 represents a side elevation of a sink provided with a drain and vent pipe connected by a coupling embodying my invention, the latter being shown in vertical section. Fig. 2 is a front view of the coupling. Fig. 3 is a horizontal section of the coupling. Fig. 4 is an inner face view of a modified type of cap.

Before proceeding with the detail description of my invention it may be well to state that this coupling is designed for use on vent-pipes for all fixtures—that is to say, sinks, bath-tubs, &c.

In the drawings, 1 designates a sink, and 2 the usual trapped drain-pipe, provided at the upper bend of the trap with an opening surrounded by a threaded flange 3.

4 designates the customary vent-pipe, provided with the elbow 5 and coupling-nut 6, the latter usually being coupled directly to the

flange 3, but in this instance serving as a means of connection between the elbow 5 of the vent-pipe and the shell 7 of my improved coupling. Said shell is preferably of spherical form and has its lower end screwed down upon the flange 3 of the drain-pipe. Vertically above the opening or point of communication between the drain-pipe and the shell 7 the latter is formed with a depending annular flange having a flared mouth or opening 8 in order to provide a ball-seat, and suspended from said flange or adjacent part of the shell is a skeleton basket 9, which forms a support and a guide for the ball 10 therein, said ball being formed of aluminium preferably, because it is non-corrosive and floats, if anything, higher in the water than a rubber float. The basket tapers upwardly, so as to insure at the proper time that the ball or float is seated in the mouth of the flange 8, and thereby prevents backwater from entering the vent-pipe. This basket is preferably of such open construction at one side only that the ball may be easily deposited therein or removed therefrom at such side.

When the drain-pipe is free and open—that is, when it is not choked up—the ball or float is supported by the basket about in the center of the shell, to the end that foul air or sewer-gas from the drain-pipe may pass up through the coupling and the vent-pipe.

To prevent any possibility of a foreign substance being carried up by backwater into the coupling, and thereby possibly interfering with the proper operation of the ball or float by becoming wedged between the shell and the ball, the passage or communication is partitioned by a foraminous diaphragm or strainer 11, which may be secured to the flange 3, as shown, or to the shell of the coupling, and preferably is formed of brass, because such substance is non-corrosive and in such position practically indestructible.

Opposite the front or more open side of the basket—viz., that side through which the ball is introduced or removed—the shell is provided with an opening 12 of slightly-greater diameter than the ball and surrounded by an externally-threaded flange 13. This opening is closed by the threaded cap 14, provided with a head 15, susceptible of engagement with a wrench to screw it into or out

of position, and projecting inwardly from said cap, nearly to the adjacent side of the ball 10, is a circular flange 16, which forms practically a stop—that is, a means for preventing the ball or float from falling forwardly out of the basket and possibly assuming such position that it could not reënter the basket under the lifting action of water and thereby rise to its seat and cut off communication with the vent-pipe and prevent the water entering said pipe. This flange is circular in order that it will be properly disposed with relation to the ball to prevent the latter rising out of the basket at an angle under the lifting action of water, irrespective of the fact that the cap may not be screwed upon the flange 13 the same distance each time.

In lieu of the annular flange the caps may be provided with a centrally-located and inwardly-projecting arm 17, which will prevent the ball falling forwardly out of the basket. A cap provided with a stop or arm of this style is illustrated in Fig. 4.

My design is to construct this coupling either of brass or glass and the ball and strainer of aluminium and brass, respectively, as hereinbefore stated; but it is to be understood, of course, that I do not restrict myself to the use of the particular materials specified.

In operation the ball or float 10 maintains the position shown in full lines as long as the drain-pipe is in proper working condition, and thereby insures, by way of the vent-pipe, the escape of foul air or sewer-gas, and consequently the sanitary condition of the building. In case the drain-pipe should be choked up in some way the water will back up into the coupling and by so doing float the ball 10 to its seat, holding it there with a pressure proportionate to the volume of water in the drain-pipe above the trap. Consequently the access of said water to the vent-pipe is prevented, and as soon as the drain-pipe is cleared the ball drops to its normal position, the sewer-gas escapes through the vent-pipe, and the sanitary condition of the building is assured. Thus it will be seen that I have produced an automatic and reliable vent-coupling which will absolutely prevent backwater entering the vent-pipe and by choking up the same prevent foul air from escaping from the drain-pipe after the obstruction of the latter is forced out. This choking of the vent-pipe usually occurs by the grease-laden water back-

ing up into the same, due to an obstruction in the drain-pipe, which prevents the water, grease, and other substances foreign to the water passing off through said pipe, or may occur when the plumber, attempting to force an obstruction out of the drain-pipe, forces the water laden with grease or other substances up into the vent-pipe, this grease choking up said pipe and by preventing the sewer-gas escaping therethrough after the drain-pipe is cleared causing it to enter the building via the sink or other fixture and render the building unsanitary.

From the above description it will be apparent that I have produced a vent and backwater coupling which accomplishes the object enumerated in the statement of invention; and it is to be understood, of course, that changes in the form, proportion, and detail construction or arrangement of parts may be made without departing from the spirit and scope or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

In a vent and backwater coupling, the combination of a drain-pipe having a gooseneck-bend and a strainer-closed opening at the top of said gooseneck, a vent-pipe, a spherical shell connecting the gooseneck and the vent-pipe in order that the gases from the drain-pipe may pass up through the strainer, shell and vent-pipe, and provided with an opening in its side, a skeleton basket depending from the upper end of the shell and comprising arms relatively disposed so that the space between two of them opposite the opening of the shell is larger than the other spaces between the arms of the basket, a ball seated within said basket and of such diameter that it can pass through the first-named opening of the basket but not through the other openings, and a removable cap closing the opening of the shell and provided with an inward projection which prevents the ball from falling out of said first-named opening of the basket, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

HENRY SIEBEN.

Witnesses:

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