

UNITED STATES PATENT OFFICE.

JOHN HARTFORD, OF CHICAGO, ILLINOIS.

PLUMBER'S TRAP.

SPECIFICATION forming part of Letters Patent No. 496,975, dated May 9, 1893.

Application filed May 12, 1892. Serial No. 432,738. (No model.)

To all whom it may concern:

Be it known that I, JOHN HARTFORD, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented new and useful Improvements in Plumbers' Traps, of which the following is a specification, reference being had to the accompanying drawings, illustrating the invention, in which—

Figure 1 is a vertical central section of an ordinary S-shaped trap, the connecting water chamber, a sectional elevation of a portion of the discharge pipe, and a sectional elevation of the ventilating pipe and its downward extension taken on line Z Fig. 4. Fig. 2 is a longitudinal elevation of Fig. 1. Fig. 3 is a horizontal section of Fig. 1, on line X. Fig. 4 is a top, or plan view of Fig. 2. Fig. 5 is a plan of the top portion of the inside gas escape pipe.

The purpose of this invention is to make a perfect connection between the soft metal of the trap and a hard metal jacket to which the ventilating pipe is attached.

A, represents the water chamber, or enlarged portion of the trap, which, as is the custom, is generally made integral with the ordinary S-shaped portion B, B. The soft metal is integral with the enlarged portion A, and continues upward to form a pipe M, Fig. 1, whose cross-section is eccentric with a cross section of the enlarged portion, that is the pipe J lies outward from the center of the enlarged portion that there may be sufficient water space between the pipe J and the right hand pipe B of the trap. The inside of pipe M is cylindrical, but its exterior is in the form of an inverted truncated cone from the lower edge D of the peculiarly formed jacket, up to an annular flange which supports an outwardly projecting flange K on the upper end of pipe J; and the soft metal extends up onto the periphery of the flange K to the flange of pipe C where the flanged collar F is set tightly in place. To provide means for supporting the collars F, a jacket C is formed to fit closely the enlarged soft metal portion M and its lower edge is formed quite thin to fit the soft metal portion A closely without being sunk therein; and the portion D, by the nature of the construction is brought

down considerably lower than the other portion as shown at Figs. 1 and 2; that it may have a leverage on the portion A, as against being turned round, when collar F is turned 55 on the screw thread formed on the cylindrical portion of the jacket C. At E, rivets are shown projecting through the hard metal jacket C; that this may be done the jacket is first formed of hard metal and the soft 60 metal is cast inside of it, with the casting of the trap; and the holes formed in the jacket are filled with soft metal and the jacket is securely held in place, as against any force exerted by the collar. To set the soft metal 65 yet more firmly against the inner top portion of the jacket C, the annular seat of the flange K is not at first formed quite as deep as the flange is high; whereby the collar F sinks said seat K in the soft metal M, and thrusts 70 it outward and brings the flange of pipe G gas tight, onto flange K; and the connection is practically perfect. The pipe J is shown in Letters Patent granted to me on January 13, 1891, No. 444,751, and designated by I, except the pipe I, has a small opening through 75 it, near its upper end and within the enlarged chamber.

In my present trap, I dispense with the hole and increase the capacity of the pipe J. By 80 this means the pressure of air coming in at pipe G is such as to follow the siphonage of the water flowing out of the enlarged portion, and as a result the pipe J is free internally from such water, except so much of its lower 85 end as is required to form a seal between the outgoing water and incoming air. The pipe J has no communication with the portion A except the opening at the lower end. In this respect there is a distinction from the suspended pipe, in the patent mentioned; for in 90 the latter, there is an opening through it near the dome of the enlarged portion, such opening permits the water to fill the pipe J to the same height of the water in the portion A. 95 The connection of pipe J with portion A is gas tight, whereby any gas which may lie above the lower end of pipe J can produce no harm, but permits a free action of the gases from the sewer upward and pure downward 100 according to the direction of the pressure.

H, represents the means for draining the

trap B, B; and L shows the bottom of the bowl.

I claim—

5 An improvement in plumbers' traps which consists of a U-shaped portion B, B, integral with an enlarged portion A, of a pipe M which is a continuation of the portion A, has less area in cross sections is situated outside from the center of portion A, is cylindrical on its
10 inside and has the form of an inverted truncated cone at its exterior, and is provided with an annular flange-seat at the inner part

of its top portion, in combination with a hard metal jacket C which surrounds the pipe M, by casting the soft metal within the jacket to
15 project through holes therein, the ventilating pipe J, provided with a flange, which has a seat in the soft metal, a gas escape pipe above the pipe J and the parts united by a suitable screw-cap F; as and for the purpose specified. 20

JOHN HARTFORD.

Witnesses:

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