



# UNITED STATES PATENT OFFICE.

FREDERICK HENKEL, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO  
WILLIAM A. HAUSBURG, OF SAME PLACE.

## SEWER-GAS TRAP FOR SINKS.

SPECIFICATION forming part of Letters Patent No. 424,784, dated April 1, 1890.

Application filed December 16, 1889. Serial No. 333,875. (No model.)

### *To all whom it may concern:*

Be it known that I, FREDERICK HENKEL, 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 Sewer-Gas Traps for Sinks, of which the following is a specification.

The purpose of my invention is to obtain a sewer-gas trap adapted to be secured to an ordinary house-sink at the junction thereof with the waste-water pipe which shall be an effectual bar to the admission of sewer-gas from the waste-water pipe and sewer to the sink, and from thence to the house within which the sink is located, and a sewer-gas trap which, though not automatic in its action, shall be easily manipulated in the opening and closing thereof for the passage, respectively, of water from the sink and the preventing of sewer-gas entering such sink when the water has passed therefrom and the sewer-gas trap is closed.

I have illustrated my invention by the drawings accompanying and forming a part of this specification, in which—

Figure 1 is a plan view of the perforated cap or plate ordinarily used in covering the hole in the sink where the waste-water pipe is connected thereto with my sewer-gas trap attached to such perforated cap or plate, viewed from line 1 1 in Fig. 2, with dotted lines indicating the handle by which the plug forming a part of the device is actuated, such handle being in a position to maintain the trap open, so that water may escape from the sink. At the same time sewer-gas may, except as it is intercepted by the outflowing water from the sink, pass upward in the waste-water pipe and into the sink. Fig. 2 is a sectional view of the perforated cap or plate, the sewer-gas trap attached thereto, and the waste-water pipe of the sink, on line 2 2 of Fig. 1; and Fig. 3 is a perspective view of the parts or pieces constituting the plug, which plug forms, in combination with the rubber or leather apron and the spring abutting against the under side of the perforated cap or plate and the upper surface of the head of the plug, the additional features necessary in

the construction of an ordinary house-sink to obtain my improved sewer-gas trap.

Like letters refer to like parts throughout the several views.

A is the bottom of the sink.

B is the perforated cap or plate ordinarily used as a sink-hole cover, with such slight changes made therein as adapt it to the additional functions required thereof in my device. These changes consist in the placing in substantially the center of the perforated cap a hole *b*, having shoulder *b'* on the under side of the plate.

*b*<sup>2</sup> are the ordinary perforations in the sink-hole cover through which water escapes from the sink.

*b*<sup>3</sup> are the holes through which the bolts securing the perforated cap in position in the sink pass.

C is the ring or reducer, attached at the upper part thereof to the sink, and having secured therein at the lower part thereof the waste-water pipe C', extending from the sink to the sewer.

D are the bolts securing perforated plate B to the sink-bottom A.

E is a plug constructed of two parts or pieces. The upper part of the plug E consists of stem *e'*, ring or handle *e*<sup>2</sup>, and hole E<sup>2</sup>, adapted to receive pin E' on the lower part or piece. The lower part or piece of the plug E consists of stem *e*, head *e*<sup>3</sup>, secondary head *e*<sup>4</sup>, with intervening stem *e*<sup>5</sup>, and pin E'. It will be evident that the pin E' may be rigidly attached to either stem *e* or *e'*, in which case hole E<sup>2</sup>, loosely fitting over the pin E', must be placed in the other of the stems *e* or *e'*.

*e*<sup>6</sup> is an extension of stem *e'* below the hole E<sup>2</sup> a distance greater than the radius of the stem *e'*. The purpose of extending this stem *e'*, as shown at *e*<sup>6</sup>, is that such extension *e*<sup>6</sup> may extend beyond the periphery of the stem *e* when the handle *e*<sup>2</sup> is brought forward into substantially the position indicated by the dotted lines in Fig. 1. This extension *e*<sup>6</sup> will then extend beyond the circumference of the hole *b*, and thereby the downward tendency exerted by the spring E upon the stem *e* will not effect a downward movement in the plug

E. This spiral spring F is placed around the stems  $e$   $e'$ , the lower end thereof abutting against the upper surface of the head  $e^3$  and the upper end of the spring abutting against the shoulder  $b'$  of the perforated cap or plate B.

G is a flexible sheet forming a washer secured to the under side of the head  $e^3$  of the plug E. I prefer to use rubber in the construction of this washer G, the purpose of such washer being to avoid the necessity of turning or otherwise smoothing the under side of the head  $e^3$  or the upper end of the pipe C', with which it comes in contact when closed.

In Fig. 2 of the drawings the spring G is illustrated as compressed by the drawing up of the plug E into a position that water can escape from the sink into the waste-water pipe, and if no water be flowing from the sink into the waste-water pipe sewer-gas can escape from the waste-water pipe into the sink. To maintain this plug E in this raised position, the hand must retain its hold thereon or the handle  $e^2$  must be brought forward, turning on the pivoted hinge  $E'E^2$  into about the position indicated by the dotted lines in Figs. 1 and 2. If while the plug E is in the position illustrated in Fig. 2 by the full lines the hand be taken from the handle  $e^2$ , such plug will be forced down by spring F and by the gravity of the plug E upon and over the upper end of the waste-water pipe C', thereby effectually closing such waste-water pipe against the passage of sewer or other gas into the sink.

The operation of my device is so extremely simple that it is merely necessary to say thereof that to open the trap for the making of a way or passage for water to flow from the sink the plug E is raised against the spring F and part  $e'$  of the stem of the plug is brought forward into about the position of the same as indicated by the dotted lines in Figs. 1 and 2, when such part  $e'$  will lie over the hole  $b$ , forming a bar, locking the plug E in the raised position. To close the trap the handle is raised to a vertical or nearly-vertical position and then released, when the plug will close over the pipe C' and form an effective trap.

Having thus described my invention and its method of operation, what I claim, and desire to secure by Letters Patent, is—

1. In a sewer-gas trap for sinks, the combi-

nation of a perforated cap, a spindle consisting of two rods jointed together and sliding freely in such perforated cap, and a head attached to the lower end of the lower of the rods forming the spindle, such head adapted to cover the hole of the waste-water pipe, the joint in the two rods forming the spindle extending below the upper surface of the perforated cap when the waste-water pipe is closed by the head therefor and above when such head is raised therefrom, with the upper of such rods adapted to be turned from a perpendicular to a horizontal position when such head is so raised, whereby such head may be maintained in a raised position by turning the upper rod of the spindle into such horizontal position, substantially as described.

2. In a sewer-gas trap, the combination of a perforated cap, a spindle consisting of two rods jointed together and sliding freely in such perforated cap, a head attached to the lower end of the lower of the two rods forming the spindle, adapted to cover the hole of the waste-water pipe of the sink to which the trap is secured, and a spring abutting at one end against the perforated cap and at the other end against the head, the joint in the two rods forming the spindle extending below the upper surface of the perforated cap when the waste-water pipe is closed by the head therefor and above when such head is raised therefrom, with the upper of such rods adapted to be turned from a perpendicular to a horizontal position when the head is so raised, and with an extended end at the joint thereof beyond the diameter of the lower rod when in such horizontal position, substantially as described.

3. In a sewer-gas trap for sinks, the combination of perforated cap B, waste-water pipe C', plug E, composed of pieces  $e$  and  $e'$ , jointed together, head  $e^3$ , and washer G, and spring F, the piece  $e'$  of the plug E having an extended end  $e^6$  beyond the joint uniting the two pieces  $e$   $e'$ , whereby when the plug is raised and the part  $e$  thereof is brought into a horizontal position a lock is formed of such part  $e'$ , retaining the plug in a raised position, substantially as described.

FREDERICK HENKEL.

Witnesses:

FLORA L. BROWN,  
ALFRED B. WESTRUP.