

No. 616,252.

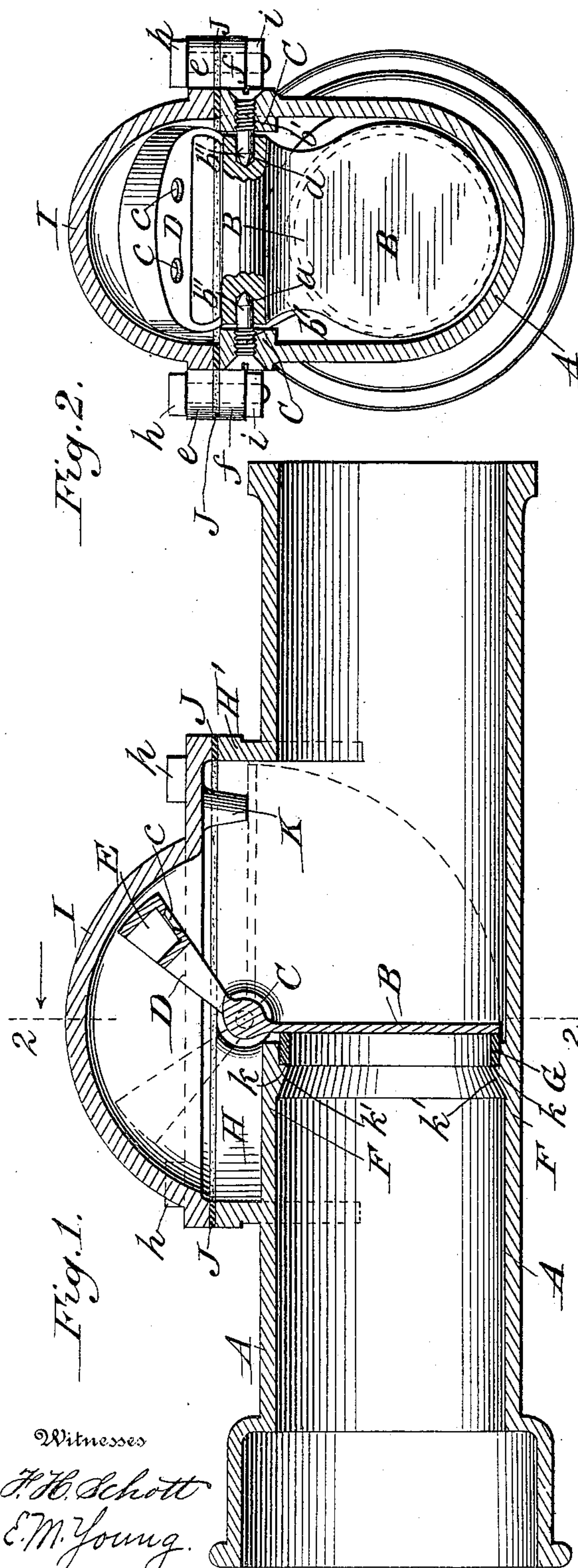
Patented Dec. 20, 1898.

H. PENNIE.
SEWER TRAP.

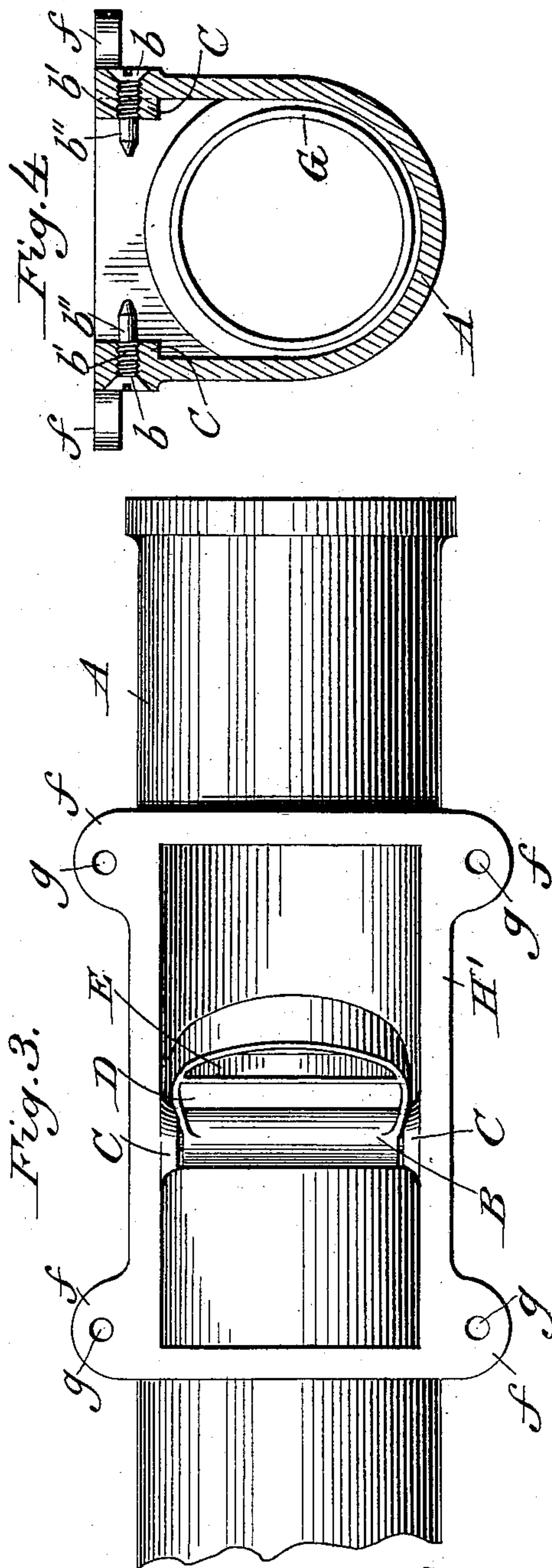
(Application filed July 14, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
H. H. Schott
E. M. Young.



Inventor
Harry Pennie,
by Pennie & Goldborough
Attorneys

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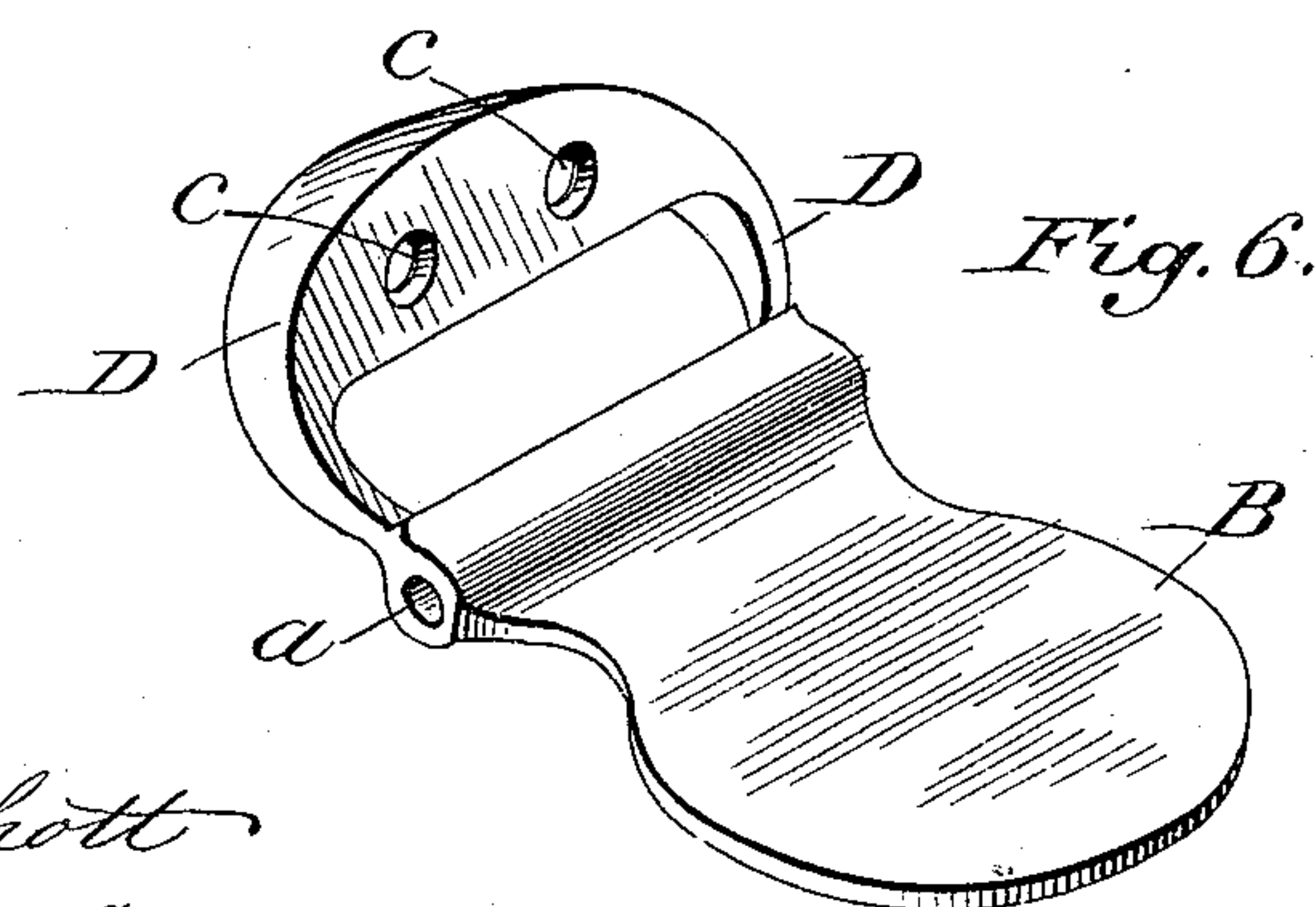
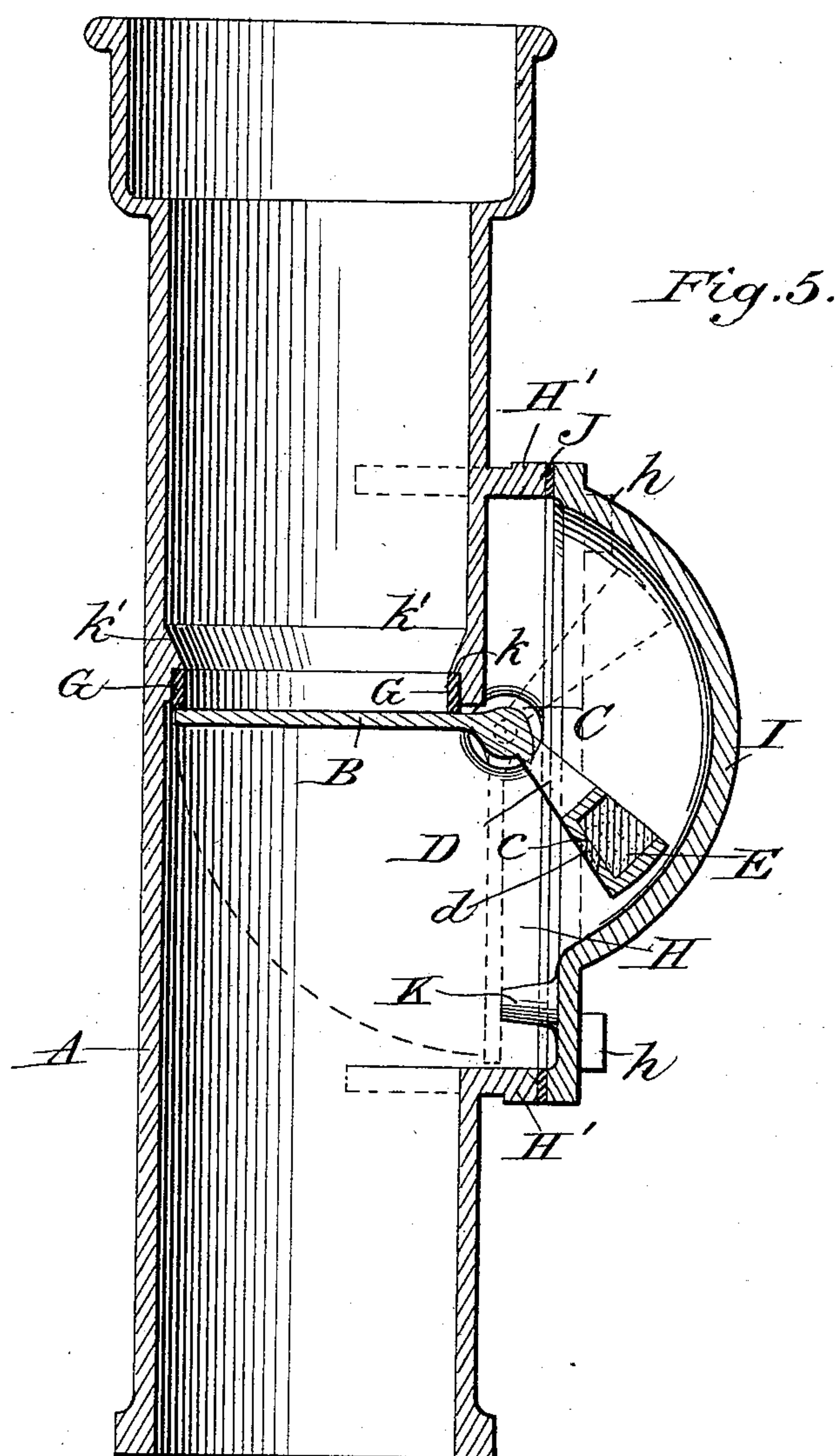
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2 Sheets—Sheet 2.



Witnesses.

H. H. Schott
C. M. Young.

Inventor

by Harry Pennie
Pennie & Galt
Attorneys

UNITED STATES PATENT OFFICE.

HENRY PENNIE, OF NEW YORK, N. Y.

SEWER-TRAP.

SPECIFICATION forming part of Letters Patent No. 616,252, dated December 20, 1898.

Application filed July 14, 1898. Serial No. 685,921. (No model.)

To all whom it may concern:

Be it known that I, HENRY PENNIE, a citizen of the United States, residing in New York, (Brooklyn,) in the county of Kings and State
5 of New York, have invented certain new and useful Improvements in Sewer-Traps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to
10 which it appertains to make and use the same.

My invention relates to improvements in sewer-traps designed to cut off the entrance of foul gases into the pipes and connections between house-fixtures and the sewer, and
15 constructed also to prevent the tide-water or overflow from backing up into the house-pipes from the sewer.

The present invention has for its object mainly to make the valve in the trap automatic in opening and closing, whereby it will remain shut and will hold back the waste water in the pipes and connections between the house and the trap until the pressure of such body of water is sufficiently great to lift
25 the valve from its seat, by which operation the waste water will pass through the trap and after having passed the valve will be automatically closed to prevent water or sewer-gas from returning into the house-pipes.

30 Another important object is to provide a trap which can be used in a horizontal, vertical, or inclined position, the valve being adapted to be so weighted as to allow the same to always remain closed.

35 The invention consists of several details of construction, substantially as shown in the drawings and hereinafter described and claimed.

In the accompanying drawings, Figure 1 is
40 a vertical sectional view of my trap, showing the same in its horizontal position. Fig. 2 is a cross-section of the same. Fig. 3 is a plan view of the trap, the cover being removed. Fig. 4 is a cross-section of the same, the cover being removed and the valve taken out.
45 Fig. 5 is a sectional view of the trap, showing the same in its vertical position; and Fig. 6 is a perspective view of the valve.

Referring to the drawings, A represents a
50 trap-casing preferably provided at each end with the ordinary connections for securing the same to sections of pipe in order that the

casing may form part of the waste-pipe from the building to the sewer.

Within the casing is fitted a valve B, the
55 side edges of which are formed with sockets or recesses *a* for the reception of the pivot-pins, which pins are formed with screw-threaded portions *b'* for half their length and for the rest of their length with smooth portions *b''*, the said smooth portions forming
60 the bearings for the valve B. Formed upon the inner side of the casing are the bosses C, one on each side, just where the screw-pivots pass through the sides of the casing, so as to
65 give the said pivot-pins a longer bearing, and thereby obviate the liability of the pins becoming loose at this point.

I provide for the valve a counterbalance or weight D, which keeps the valve always upon
70 its seat, except when the pressure of the waste water is great enough to overcome the weight of the said counterbalance. This counterbalance D is provided at its extreme end with a hollowed-out portion E, forming a cup for the
75 reception of lead or other metal, so that the valve may be provided with additional weight when necessary. In the bottom of this cup are formed the holes *c*, beveled, as shown in
80 Fig. 5 of the drawings, so that when the metal is poured into the cup a portion of the same will pass through the holes, forming heads *d* upon said body of metal, and thereby providing means for securely holding the same within the cup E.
85

The casing is provided with an opening H, and surrounding this opening and a portion F of the casing adjacent to the opening is the flange H'. This flange forms a seat for the dome-shaped cap I, which latter, when secured
90 to the flange, forms a housing in which the counterbalance moves.

G is a brass or other ring inserted within the end of the portion F of the casing and forming a seat for the valve B. This ring abuts
95 against an annular shoulder *k*, which is provided with an inclined outer surface *k'* for the purpose of allowing the waste material to pass through the casing in an uninterrupted manner. By employing a separate ring to form
100 the valve-seat it is found that a much more accurate fit is obtained between the valve and said seat.

In order that free access to the valve and

the casing in general may be had for purposes of cleaning and repairing, I removably secure the dome or cap to the flange H'. This cap or dome is provided with lugs *e* upon each side 5 of the same corresponding with the lugs *f* upon the flange H' of the casing, each of said lugs being provided with a hole *g* for the insertion of bolts *h*, which, together with the nuts *i*, form the means for securing the cap 10 to the casing. A suitable elastic packing *J* is provided between the cap and the casing for the purpose of making the trap water and gas tight.

Upon the under side of the cap *I* is provided 15 a projection or lug *K* for the purpose of limiting the movement of the valve and preventing the same from passing the center.

In manufacturing these trap-casings I so weight the valve within the same that it will 20 just hold the valve upon its seat without undue force until moved by the pressure of the water when the said casing is in a horizontal position; but should the user desire to place the trap in a vertical position or at an inclina- 25 tion it would be necessary to employ sufficient additional metal in the cup to bring the same to its seat, it being of course apparent that a weight which would close the valve when the trap is in a horizontal position would not in 30 all cases be sufficient to close it if used in an inclined or vertical position.

Having thus described my invention, what I claim is—

1. In a trap, the combination of a section of pipe provided with an opening, said opening 35 and a portion of the casing adjacent to the opening being surrounded by a flange, a cap for said opening, a ring inserted within the end of said portion forming the seat for the valve, a pivoted valve, and a counterbalance 40 for the valve, provided at its end with a hollowed-out portion adapted to receive weighting material, substantially as described.

2. In a trap, the combination of a section of pipe provided with an opening, said opening 45 and a portion of the casing adjacent to the opening being surrounded by a flange, a cap for said opening, a ring inserted within the end of said portion forming the seat of the valve, a valve, and pivot-pins for said valve, 50 substantially as described.

3. In a trap, the combination of a section of pipe provided with an opening, said opening 55 and a portion of the casing adjacent to the opening being surrounded by a flange, a cap for said opening, a ring inserted within the end of said portion, forming the seat for the valve, a valve, pivot-pins for said valve, and a lug for limiting the movement of said valve, 60 substantially as described.

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

HENRY PENNIE.

Witnesses:

JAMES A. TREACY,
JOHN SMITH.