I. A. SINGER.

Waste-Pipe for Basins, &c.

No. 202,762. Patented April 23, 1878.

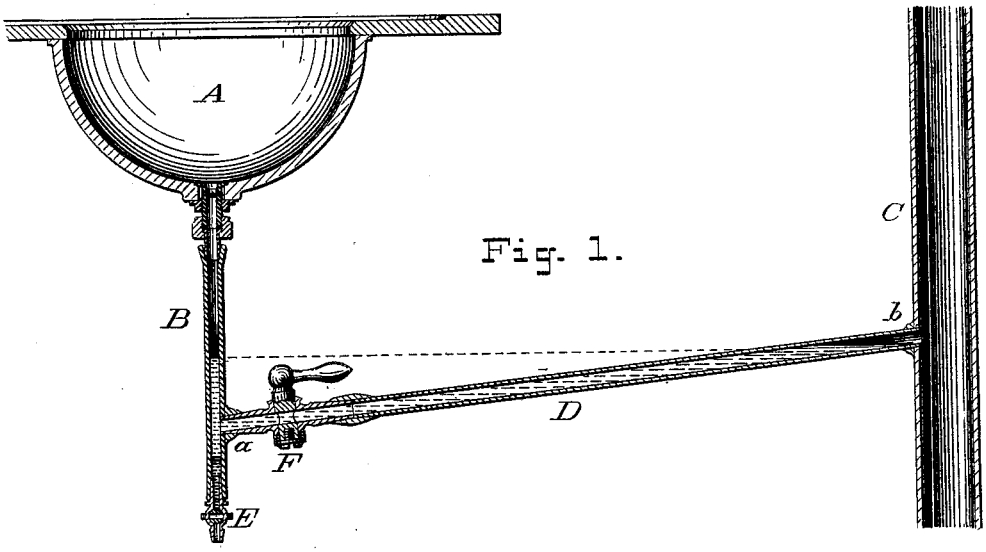

Fig. 1.

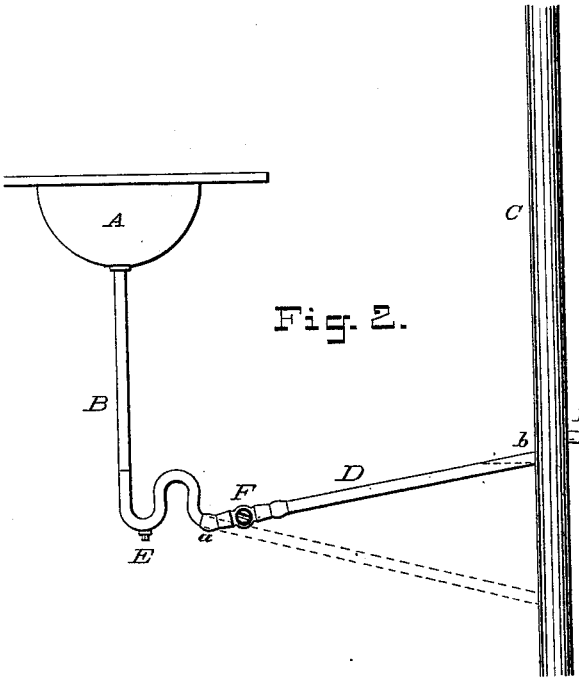

Fig. 2.

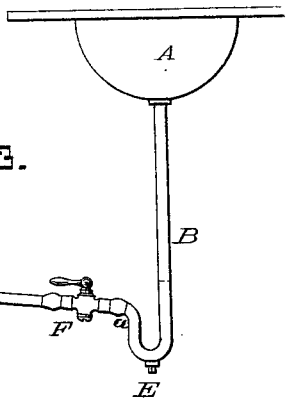

Fig. 3.

ATTEST:

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ISAAC A. SINGER, OF NEW YORK, N. Y.

IMPROVEMENT IN WASTE-PIPES FOR BASINS, &c.

Specification forming part of Letters Patent No. **202,762,** dated April 23, 1878; application filed March 29, 1878.

To all whom it may concern:

Be it known that I, ISAAC A. SINGER, of the city, county, and State of New York, have invented certain Improvements in the Construction and Arrangement of Waste-Pipes for Basins, &c., of which the following is a specification:

This invention relates, in part, to the arrangement of a branch waste-pipe leading from a basin-trap to a main waste-pipe leading to the sewer, in such a manner that the said pipe shall stand full of water ordinarily, and serve as a seal against the entrance of sewer-gas. Another important feature consists in arranging the branch waste-pipe to enter the main pipe at an upward angle, so as to relieve it from any tendency to collect and hold the rising gases.

Another important feature of the invention consists in providing the branch waste-pipe with a stop-cock between the trap and the main waste-pipe, all as will be more fully hereinafter set forth.

In the drawings, Figure 1 is a sectional elevation of an arrangement of a basin and pipes illustrating my invention. Figs. 2 and 3 are modifications of the same.

Let A represent an ordinary basin or other vessel, and B a waste-pipe, connected with the same in the usual way. C is the main waste-pipe, leading to the sewer or drain. This should be open above the roof at the upper end, so as to serve as a ventilator, and to prevent the formation of vacuum, which is liable to cause "siphoning" of the traps.

D is the branch waste-pipe, which forms a junction with the pipe B at *a* and the pipe C at *b*, the latter point being at a higher level than the point *a*, as shown, so that the pipe D may stand full of water at all times, and thus serve to prevent the entrance of the gas from the sewer.

In the ordinary arrangement of the branch waste-pipe, it enters the pipe C at a downward angle, as indicated by dotted lines in Fig. 2, and is empty, so that gas rising from the sewer passes naturally into it, and, by a constant upward pressure, augmented by any sudden increase of pressure in the sewer, gradually forces its way through the water in the trap, and eventually enters the house.

In my arrangement, the pipe D being full of water, and entering the waste-pipe C at an upward angle, no gas can collect in it, and the upward current in the pipe C tends rather to exhaust than to fill it. Moreover, the large quantity of water interposed between the pipe C and the basin precludes the possibility of its being siphoned out or evaporated under any ordinary circumstances.

Another advantage arises from the extraordinary distance from the surface-level of the trap-water in the pipe B, and at *b* in the pipe D. Gas under pressure will pass through the water of a trap; but the obstacle presented increases in magnitude directly with the distance it must travel, and this is greatest when the pipe D is full of water, as in my arrangement.

E is a sediment-trap, in which will collect such heavy articles or matter as will not pass over into the sewer. These may be removed from time to time by means of the cock or tap at the bottom.

F is a stop-cock in the branch waste-pipe D, between the pipe C and the trap E, which enables the trap to be emptied at any time without danger of admitting sewer-gases into the building. Also, during prolonged absence from home, or at any time when the basin is not in use, communication between the sewer and the basin may be cut off by this cock, and the possibility of danger from the entrance of gas avoided, even if the water in the trap should be evaporated or drawn out.

The pipe B may connect with the pipe D through the medium of an **S**-trap, as in Fig. 2, or a **U**-trap, as in Fig. 3, or, indeed, in any similar way; or the two may be formed from one pipe, bent to form the sediment-trap E.

In case an **S**-trap is used, I prefer to make the connection *b* at a higher level than the highest bend of the trap, so that the latter shall be full of water. In all cases the point *b* must be higher than the point *a* and lower than the bottom of the vessel A.

One advantage of my invention is that ordinary lead pipe and ordinary stop-cocks only are required. Costly traps may be dispensed with.

I claim—

1. The improved waste-pipe, constructed as herein shown—viz., the branch waste-pipe D,

having its point of junction with the main waste-pipe C higher than its point of junction with the trap or the pipe B, so that it may remain full, or substantially full, of water from the trap E to the pipe C, substantially as set forth.

2. The branch waste-pipe D, arranged to enter the pipe C at an upward angle, and at a point above all other parts of said pipe, substantially as and for the purposes herein set forth.

3. The combination of the pipe B, the sediment-trap E, pipe D, stop-cock F, and main waste-pipe C, all arranged substantially as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ISAAC A. SINGER.

Witnesses:
SAM. TRO. SMITH,
HENRY CONNETT.