C. LEWIS.

2 Sheets--Sheet 1.

Sewer-Trap.

No. 166,116.

Patented July 27, 1875.

Fig. 1.

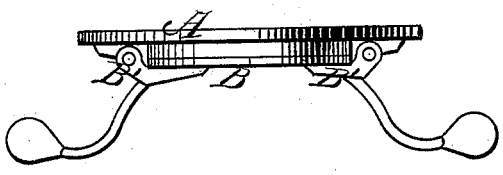


Fig. 3.

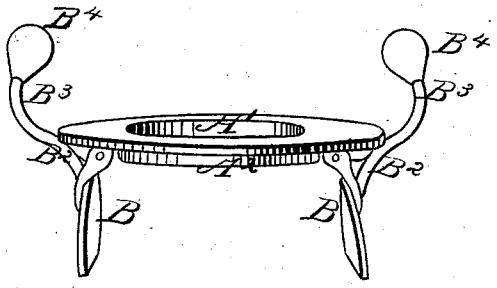
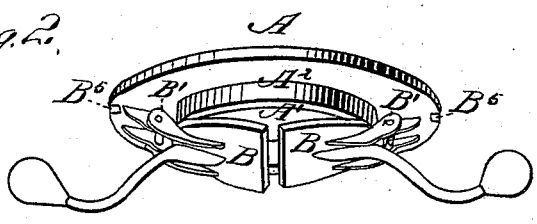


Fig. 2.



WITNESSES

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2 Sheets--Sheet 2.

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Sewer-Trap.

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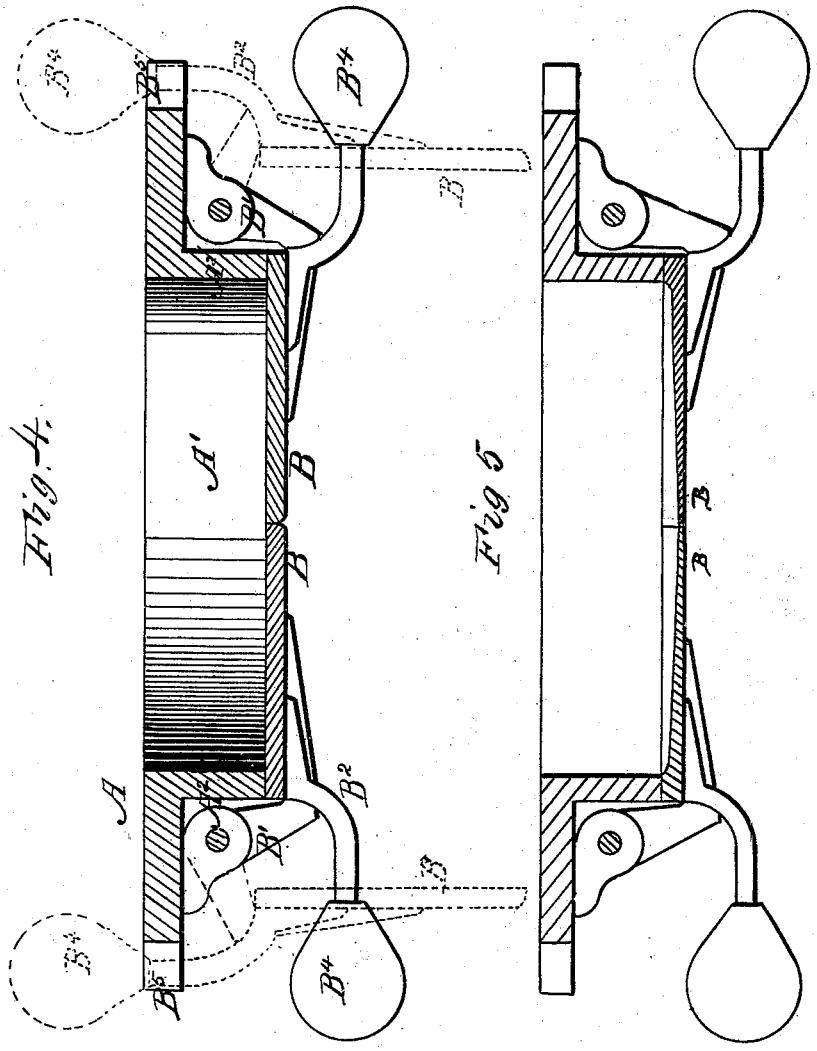

WITNESSES

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UNITED STATES PATENT OFFICE.

CHRISTOPHER LEWIS, OF COLUMBUS, OHIO.

IMPROVEMENT IN SEWER-TRAPS.

Specification forming part of Letters Patent No. **166,116**, dated July 27, 1875; application filed June 17, 1875.

To all whom it may concern:

Be it known that I, CHRISTOPHER LEWIS, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Sewer-Traps; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in traps for sewers, drains, and other similar places, whereby the doors or flaps of the same may be automatically opened by the liquid or liquid and substances requiring to pass through the trap, and, when such liquid or liquid and substances has so passed, the said flaps or doors may be automatically closed.

According to my invention, I form a framing, by preference of iron, adapted to be set in the brick-work or masonry of the well or passage leading to the sewer, in the center of which I form an aperture, by preference corresponding to the internal diameter of the well or passage. Around the aperture in the framing a flange or rim is formed, against which the flaps or doors sit when closed. The doors are mounted and supported on hinges pivoted to the framing, and are so formed as to clear the flange. On the under side of the flaps or doors bent arms are formed, extending right and left from the center of the trap, (one to each door,) on the extremity of each of which is affixed a weight or ball, which moves by its gravity and the leverage of its bent arm to close its door after the passage of any liquid or liquid and substances through the opening in the trap.

But, that my invention may be fully understood, I will describe the same in detail, by reference to the drawings.

Figure 1 represents a side view of a trap constructed according to my invention, showing the flaps or doors closed. Fig. 2 represents a perspective view of the same with the doors partly open; and Fig. 3 is a side view, showing the doors or flaps wide open; and Figs. 4 and 5 are sectional views of the trap with the doors closed.

In each of the views similar letters of reference are employed to indicate corresponding parts wherever they occur.

A represents the framing, which is shown constructed of iron, and in the form of a circular plate; other forms, however, may be adopted. This framing A is adapted to be inserted between the courses, and held in position by the brick-work or masonry of the walled passage leading to the sewer. In the center of the framing A an aperture, A^1, is formed, around which, on the under side of the framing A, is a flange or rim, A^2, against which the flaps or doors B B sit when closed, as shown by Fig. 1. The doors B B are mounted and supported on hinges B^1 B^1, pivoted to the framing A, and so curved or formed as to clear the flange or rim A^2, and allow of the doors B B sitting true and against such flange or rim A^2. To the under side of each of the doors B B one end of a bent arm, B^2, is affixed, extending outward from the center of the trap. On the extremity B^3 of each of the arms B^2 a weight or ball, B^4, is affixed, which moves, by its gravity and the leverage of its bent arm B^2, to its door B, closed and firmly set against the flange or rim A^2, except when the doors are pressed open by the weight of liquid or liquid and substances passing through the aperture A^1, overcoming the weight and leverage of the arms B^2 and balls B^4. The arms B^2 are, by preference, so bent or formed that their extremities B^3 and balls or weights B^4 shall be in a line parallel with the plane of the doors B. B^5 are notched recesses formed in the edge of the framing A, to allow of the arms B^2 being pressed fully back, as shown by reference to Fig. 2. The weight of the doors B and of the balls B^4 are so adjusted, in relation to each other, as to allow of the free passage of liquid or liquid and substances through the aperture A^1.

The face of the doors or flaps B may be made concave, if desired, as shown in Fig. 5, to allow of the liquid or substances placed upon the same to pass off easily, and thus prevent them from being obstructed.

The operation of the apparatus is as follows: Any liquid or liquid and substances requiring to enter or pass through the trap will, by its weight and pressure on the front surface of

the door B, overcome the weight and leverage of the balls B^4 and levers B^2, and cause the doors B to open; but so soon as such liquid or liquid and substances have passed the aperture A^1, the doors B, by reason of the pressure on their outer surfaces being removed, will be instantaneously closed by the weight of leverage of the balls B^4 and arms B^2, thus keeping said trap always closed when the substances have passed through, thus avoiding the escape of bad odors.

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

In a sewer-trap, the frame A, provided with a suitable opening, A^1, and downwardly-projecting flange A^2 of the hinged flaps or doors B, having attached thereto weighted balls B^4, all constructed and operating as shown and described.

In testimony that I claim the foregoing as my own I herewith affix my signature in presence of two witnesses.

CHRISTOPHER LEWIS.

Witnesses:
JOHN H. GROVE,
C. SMITH