

F. DARST.  
Drain Tile Gate.

No. 231,544.

Patented Aug. 24, 1880.

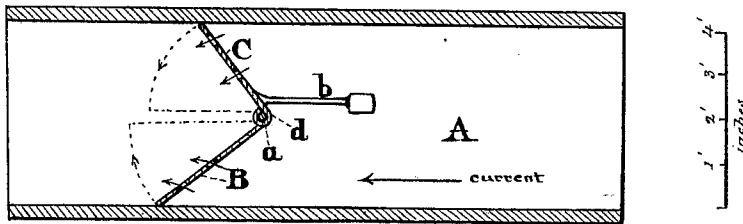


Fig. 1.

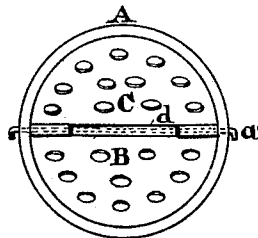


Fig. 2.

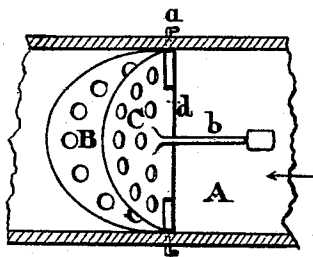


Fig. 3.

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*by E. Thurston.*  
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# UNITED STATES PATENT OFFICE.

FRANK DARST, OF EUREKA, ILLINOIS.

## DRAIN-TILE GATE.

SPECIFICATION forming part of Letters Patent No. 231,544, dated August 24, 1880.

Application filed February 17, 1880.

To all whom it may concern :

Be it known that I, FRANK DARST, of Eureka, in the county of Woodford, in the State of Illinois, have invented a Drain-Tile Gate for the Exclusion of Vermin, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a longitudinal vertical section through the center of the drain-tile; Fig. 2, a cross-section of the tile with elevation of the included gate; and Fig. 3, a horizontal section of the tile, showing the gates.

The object of this invention is at once to prevent vermin from entering the drain and to allow water to pass freely by or through said gate; and my invention consists in hanging two flaps, preferably of metal, upon a horizontal wire or hinge suspended across the center of drain, each projecting in a diagonal direction, so as, respectively, to abut the one against the roof of the drain, the other against the floor of the same, inclining toward the mouth of the drain, as seen in Fig. 1. The two flaps, when extended base to base in the same plane, have the outline of an ellipse whose minor axis is of the same diameter as that of the bore of the drain-tile. The lower gate rests normally upon the floor of the drain in a sloping position toward the mouth of the latter, while the upper gate is kept closed in a reverse position against the roof of the drain by means of a weight projecting from said upper gate beyond the hinge. The gates open down the drain in the direction of the current, but fall back to their normal position and close the drain when the same is not occupied by water.

In the drawings, A is the cylindrical drain-tile; B, lower gate of thin perforated metal for the passage of air, hinged at *d* to the cross-wire *a*, and presenting an inclination downward in the direction of the course of the water and filling the lower half of the tile.

C is the upper half of the gate, and is of the same material and shape as the lower one, hinged to the same wire *a*, but projecting in an exactly reversed position, so as to close the

upper or remaining half of the drain when in its normal position, in which it is sustained by means of a weighted arm, *b*, projecting from it beyond the hinge *d*, or up the drain. Both gates are perforated or punched to admit circulation of air, gas, or water.

The operation of this gate needs little description. When water in the drain rises sufficiently high the lower gate gives way to it. So does the upper one when the water rises far enough above the hinge *a*. At these times no vermin can pass up the drain, as it is full of water, and when water is absent the gates are closed, the lower one by its gravity, the upper one by means of its extended weighted arm *b*. This gate, or modification of it, will be equally operative for any sized drain-tile, or, indeed, for all ordinary-sized drains.

What I claim as my invention is—

1. A tile-gate or drain-trap composed of two inclined flaps hinged each across the center of the drain horizontally, and each being wider from the hinge to their respective free ends than at other parts, to prevent them from opening up the drain, the lower flap closing that part of the drain by its own gravity, the upper flap closing that half of the drain by means of an attached weighted arm, *b*, substantially as and for the purposes described.

2. The combination of the gates B C, with a common horizontal hinge, across the center of a drain, A, the upper gate weighted in such a manner as to be ordinarily in contact with the crown of said drain, while the lower gate, B, is closed by means of its own gravity.

3. The combination, with a drain-tile, of the wire *a*, as a pivot for the gates B C, the gate B, and the weighted gate C, substantially as and for the purpose described.

4. In a drain-tile, the construction and arrangement of the gates B C, hinged to cross-wire *a*, common to both, the gate C provided with a weight, *b*, as described.

In testimony that I claim the foregoing drain-tile gate I have hereunto set my hand this 6th day of February, 1880.

FRANK DARST.

Witnesses:

J. P. DARST,

J. J. PAYNE.