

L. W. CROSTA.
DOUBLE TRAP SURFACE WATER GULLY.

No. 520,036.

Patented May 22, 1894.

Fig. 1.

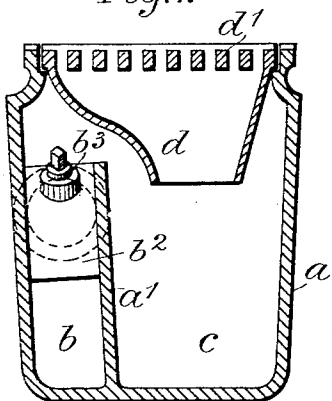


Fig. 3.

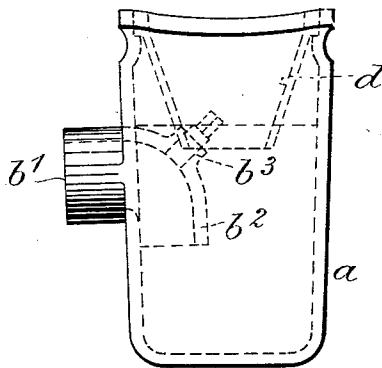


Fig. 2.

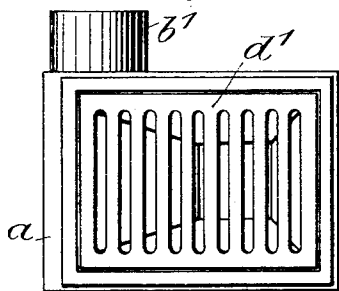


Fig. 4.

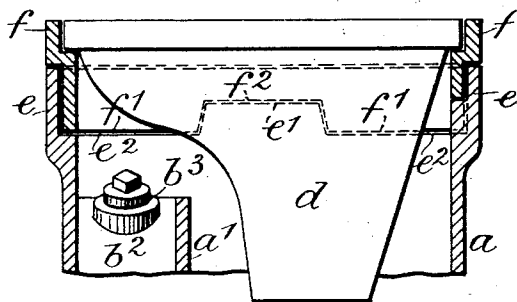


Fig. 6.

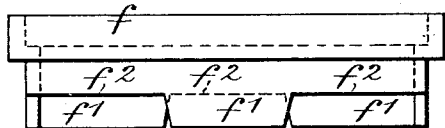


Fig. 7.

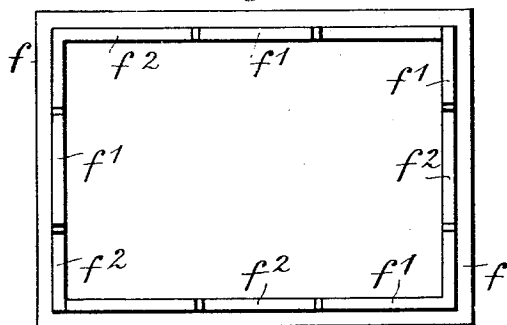
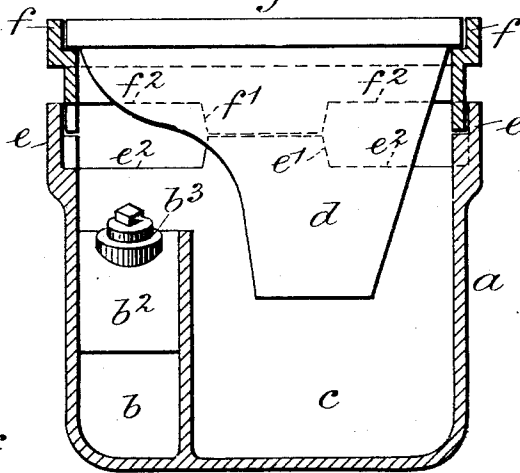


Fig. 5.



Witnesses

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J. Stair

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per Lemuel W. Serrell
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Fig. 8.

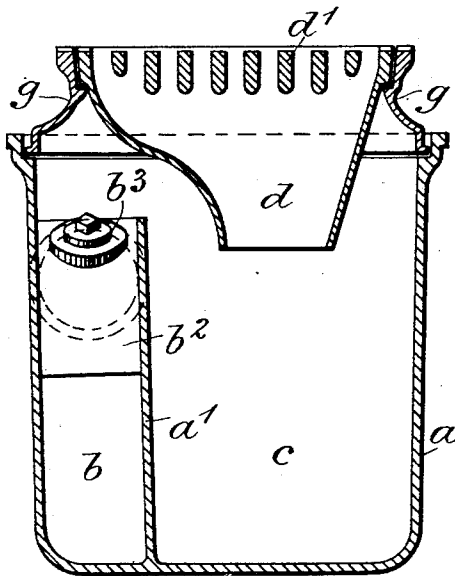
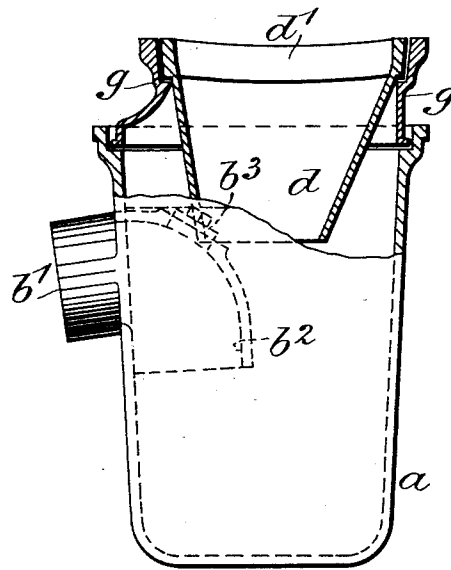


Fig. 9.



Witnesses

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UNITED STATES PATENT OFFICE.

LORENZO WILLIAM CROSTA, OF WEST BRIDGFORD, ASSIGNOR TO THE
PATENT GULLY COMPANY, LIMITED, OF NOTTINGHAM, ENGLAND.

DOUBLE-TRAP SURFACE-WATER GULLY.

SPECIFICATION forming part of Letters Patent No. 520,036, dated May 22, 1894.

Application filed May 15, 1893. Serial No. 474,224. (No model.)

To all whom it may concern:

Be it known that I, LORENZO WILLIAM CROSTA, a subject of the Queen of Great Britain and Ireland, residing at West Bridgford, Nottingham, England, have invented a new and useful Improved Double-Trap Surface-Water Gully, of which the following is a specification.

This invention relates to improvements in the construction of surface gullies for streets, yards, urinals, and the like, whereby noxious gases may be effectually trapped and prevented from escaping through the gullies.

In carrying out my invention the gully proper or body (which may be of any desired shape, and is self-contained) is provided with a vertical partition extending to any convenient height and dividing the gully into two compartments of unequal capacity, the smaller of which communicates with the outlet beneath a bent plate of sufficient length to form a trap. A bell or bonnet is formed on the under side of the grate (or may be made separate therefrom) which is reduced at the bottom of the bell or bonnet to any desired area larger than the outlet of the gully, and projecting far enough into the larger compartment of the gully to come below the partition, or the outlet, and so form a second trap or seal. Provision is also made for enabling the grate of the gully to be raised or lowered to different levels after the gully is fixed in place. And provision is also made for permitting the trap, drains, and connections to be cleared of obstructions without the necessity of taking up the street, or removing the gully. And in order that my invention may be readily understood I will describe the same fully with reference to the accompanying drawings, in which—

Figure 1 is a longitudinal section, Fig. 2 a plan, and Fig. 3 a side elevation showing a self-contained gully constructed in accordance with my invention. Figs. 4 and 5 are sectional views showing a gully in which the grate can be set in either a raised or a lowered position, Fig. 4 showing it in its lowered position, and Fig. 5 in its raised position. Fig. 6 is an elevation, and Fig. 7 an under side view, of a loose frame used with the gully shown in Figs. 4 and 5, and herein-

after more fully referred to. Fig. 8 is a longitudinal section, and Fig. 9 a part sectional side elevation, of a gully with renewable grate-frame.

a is the gully proper or body, which may be made in cast-iron, earthenware, or any other suitable material, and of any desired dimensions to suit circumstances, having within it a vertical partition *a'* extending from the bottom and so arranged as to divide the gully into two compartments or chambers *b* and *c*, communicating with each other at the top. The compartment *b* is provided with an outlet *b'* and on the inside there is a downwardly carried plate *b²* with its lower edge a sufficient distance below the level of the bottom of the outlet to form a trap so that when water, or other liquid, is in the gully, an effectual trap will be formed.

d is the bell or bonnet which, in the constructions shown by the drawings, is made in one piece with the grate *d'*, but in some cases it may be found more convenient to form it separately from the grate, and when so formed it may be provided with flanges capable of resting upon other flanges formed for their reception upon the inside of the gully; or the bell may be riveted, or attached in any other way, to the grate or gully. This bell or bonnet is reduced in area at its lower or inner part and is so shaped that when the grate is in place upon the gully, any dirt or grit, or other solid matter will be directed into the larger compartment *c* wherein it will settle, while the water, or other liquid, will flow over the partition *a'* and enter the other compartment *b*; sedimentary matter will thus be prevented from entering and choking the smaller compartment. Moreover, by reason of the shape of the bell or bonnet, the surface of the water, or other liquid, exposed to the atmosphere, is greatly reduced. The extent to which this bell or bonnet projects into the larger compartment is such that it comes below the level of the top of the partition *a'* and dips into the water, or other liquid, in the compartment *c*, thereby constituting a second water trap. It will thus be seen that when the gully is in use, the escape of sewer or other noxious gases is doubly checked, a trap being produced between the two compartments *b*, *c*, as

well as between the smaller compartment and its outlet. Furthermore this last mentioned trap will also act to prevent the escape of noxious gas while, and after the gullies are cleaned out, for although the liquid and sediment may be removed from the compartment *c*, there will still remain sufficient liquid in the compartment *b* to form a trap and, in this way, the necessity for a water cart to supply water for retrapping is avoided. The upper part of the bend *b*² is provided with an orifice, closed by a screw plug *b*³, or the like, which can be readily removed so as to permit of the insertion of a cane, or other suitable instrument, through said orifice when it is required to clear the trap, drain, or connections from obstructions, thereby avoiding the necessity of taking up the street, road, or yard.

In order that the grate of the gully may be raised, or lowered, to suit different heights, so that it can easily be brought on a level with the roadway after the gully has been fixed in place, and without having to raise the whole gully as is now usual, I employ the arrangement shown by Figs. 4 to 7, wherein the upper part of the gully is enlarged so as to form a socket or seating *e* for the reception of a movable frame *f* having hit-and-miss pieces or projections *f*¹ and recesses *f*² around the lower side of its margin. The socket or seating is also provided with staggered projections *e*¹ and recesses *e*², similar to those on the movable frame *f*, so that when said frame is placed upon its seating in the gully in one direction, the said projections will coincide and will consequently keep the grate in its raised position, but will break joint and interlocking when the frame is turned round, end for end, and thus allow the grate to occupy its lowered position.

The gully, as will be seen on reference to Figs. 1 and 2, is made to slightly taper from top to bottom, the side thereof which comes near the curb being made straight so as to avoid having to cut out the stone-work when the curbs are very thick. It is also found advantageous to round the corners at the bottom of the gully for the purpose of obtaining, when made in cast iron, a stronger casting and a gully more readily cleaned out.

In main streets, or where the surface of the grate and frame of the gully are subject to much wear, I preferably construct my improved gully, as shown in Figs. 8 and 9, that is to say with the upper part or grate-frame *g* made separate from the body of the gully, and fixed in position in the body of the gully by cement, or otherwise. By this arrangement the upper part may be renewed when worn, without disturbing the lower part of the gully.

I would here remark that, it will be found advantageous that the height of the partition should be such as to come on a level with the top, or nearly so, of the outlet or dip-tube, so that sediment may be retained in the larger

compartment up to the height of the partition, and thus the gully will not require to be cleaned out so often as do ordinary gullies.

What I claim, and desire to secure by Letters Patent, is—

1. The combination, in a water gully, of a receiving vessel, an integral partition *a*¹, dividing said vessel into two chambers, an opening at top of said vessel, of approximately the same area as the vessel, giving access to both sides of said partition, a detachable tapering bell or bonnet *d*, provided with a grate *d*¹, extending over both chambers, and with its discharge mouth situated toward one side, an outlet from the smaller of said chambers below the level of the partition, and an internal bend *b*², extending down from the top of the partition, at right angles thereto and between the latter and the outer wall of the vessel, substantially as described.

2. The combination, in a water gully, of a receiving vessel, an integral partition *a*¹, dividing said vessel into two chambers, an opening at top of said vessel of approximately the same area as the vessel, giving access to both sides of said partition, a detachable tapering bell or bonnet *d*, provided with a grate *d*¹, extending over both chambers, and with its discharge mouth situated toward one side, an outlet from the smaller of said chambers below the level of the partition, and an internal bend *b*², extending down from the top of the partition at right angles thereto between the latter and the outer wall of the vessel, and a screw-threaded opening (closed by a plug when not in use), in said bend, into which may be screwed the end of a hydrant hose for flushing the drain, or into which a cane or other appliance may be inserted for removing obstruction, substantially as described.

3. In a surface water gully trap, a receiving vessel with an open flanged upper edge having staggered projections and having a partition separating the lower part of the vessel into two chambers, an outlet from one side and connected bend passing downwardly between the partition and one side of the vessel, and a tapering bell or bonnet and integral grating and surrounding flange at the top, and a frame having staggered projections adapted to set into the flanged upper edge of the body and with the staggered projections coinciding or interlocking to provide for different heights, said frame receiving the flanged edge of the tapering bell or bonnet, substantially as set forth.

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

LORENZO WILLIAM CROSTA.

Witnesses:

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