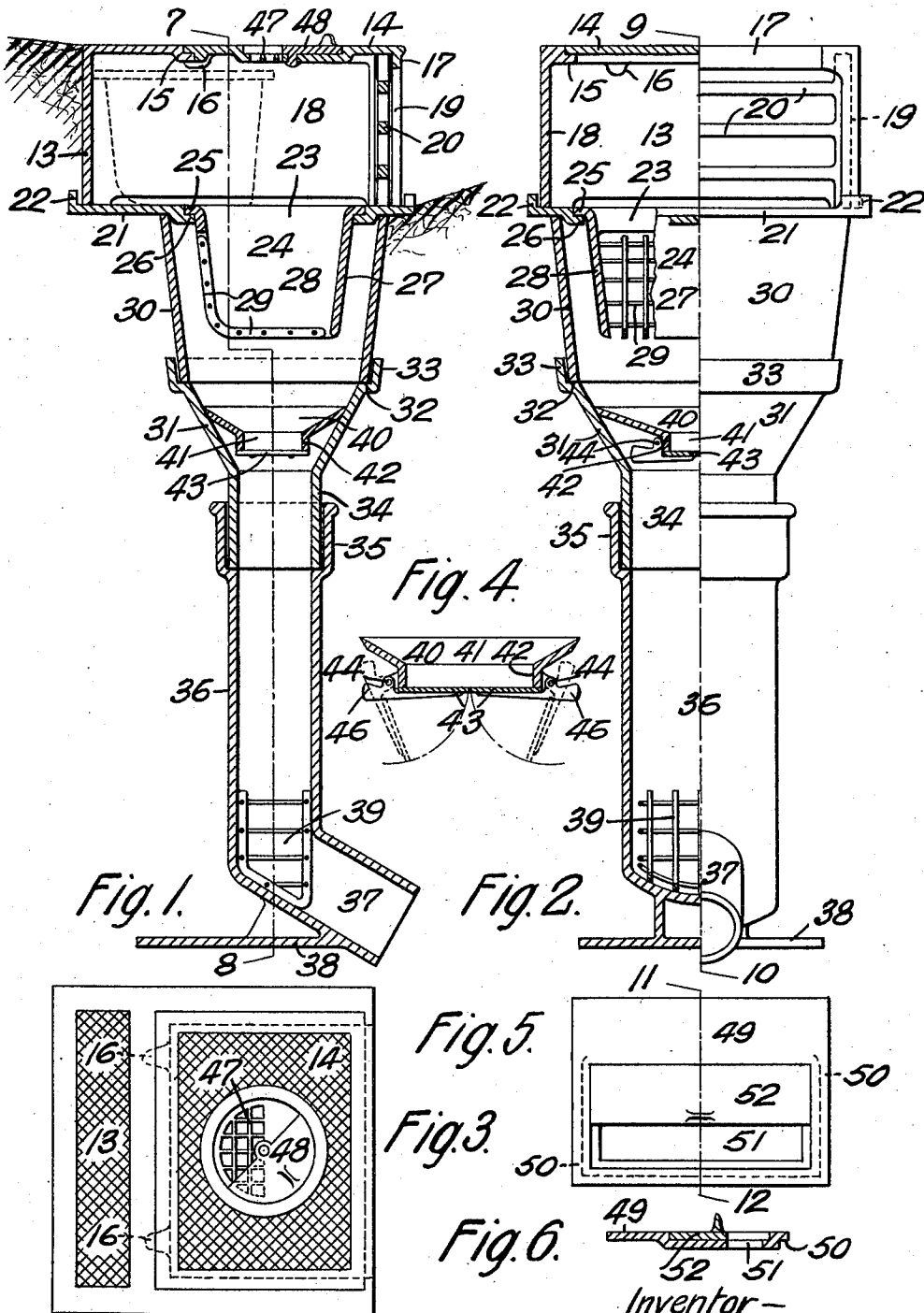


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GULLY,  
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# UNITED STATES PATENT OFFICE.

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## GULLY.

1,032,427.

Specification of Letters Patent.

Patented July 16, 1912.

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*To all whom it may concern:*

Be it known that I, LOUIS LAVERGNE DIT RENAUD, of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Gullies, of which the following is a full, clear, and exact description.

This invention relates to improvements in gullies for delivering street drainage into sewers, and the main object is to provide a simple and inexpensive gully which may be very easily cleaned and which will absolutely prevent the escape of foul odors from the sewer.

A further object is to provide a frost proof gully which will prevent the freezing of water in the lower part of same and will also not be heaved by frost in the ground.

A still further object is to provide means for quickly and easily adjusting a gully to its location when installing same.

Another object is to provide a gully which will absolutely prevent the introduction of large objects into the sewer which would tend to clog the same.

To accomplish these objects, I provide a top section having a removable cover extending to and forming the road edge of the top. The top section is mounted on a table superimposed on a cage section and carrying within the section a straining cage. The cage section is supported on a pipe connecting with the sewer by means of a tapering valve section containing a delicately balanced valve. In the bottom of the connecting pipe is a large mesh basket. A special cover is provided which is substituted for the grate in cold weather.

In the drawings which illustrate my invention:—Figure 1 is a vertical sectional view on the line 9—10 of Fig. 2. Fig. 2 is a front view showing on the right a half front elevation and on the left a section on the line 7—8 of Fig. 1. Fig. 3 is a plan view of the top of the gully. Fig. 4 is a detail sectional view of the valve. Fig. 5 is a plan view of the winter cover. Fig. 6 is a sectional view of same on the line 11—12 of Fig. 5.

In the above defined figures, 13 designates the top section of the gully which is substantially square, as shown in plan, Fig. 3, and is provided with a cover 14 resting on flanges 15 formed on the section. The cover is provided with a pair of lugs 16 to prevent the same being readily displaced, and with a

depending lip 17 on the outer or road edge. It will be noted that the material of the top section does not form the outer edge of the top and that, when the cover 14 is removed, there is no bar across the outer edge, so that the opening is much more convenient for cleaning the gully. The outer or road side of the top section is open, the ends 18 of the section being provided with vertical grooves 19 which receive the ends of the grille 20. The top section rests on a table 21, which is provided with a peripheral retaining flange 22, except at the front, as seen in Fig. 2, to allow drainage to readily enter the gully. The table 21 is provided with a rectangular aperture 23 through which depends a straining cage 24 supported by a flange 25 engaging the flange 26 of the table. This cage 24 is in the form of a substantially rectangular box having the front 27 and ends 28 solid, and the back and bottom formed of a grating 29 of suitably fine mesh. The cage is inclosed within a slightly tapering section 30, which supports the table 21, the table being aligned on the section 30 by means of the flanges 26, as seen in Figs. 1 and 2. The valve section 31, which supports the cage section 30, is in the form of an inverted frustum of a pyramid and is provided at the top with a shoulder 32 on which the cage section stands, and a retaining flange 33 for the said section. The opposite end of the valve section is provided with a long depending neck 34 adapted to occupy the long throat 35 of the gully pipe 36. The gully pipe 36 extends downwardly a suitable distance and is provided at the bottom with a discharge pipe 37, opening from the outer or street side of the gully which connects with the sewer. This pipe 37 is circular, while the gully pipe 36 is preferably square or rectangular. The bottom of the pipe 36 is provided with a base plate 38 of suitable dimensions, cast integral therewith, in order that the gully may stand firmly on its foundation when installed.

In the angle between the pipes 36 and 37, I provide a basket 39 of large mesh which will hold any large objects, such as tin cans, etc., which may be introduced into the gully by lifting the cage 24. By removing the cover plate 14, lifting out the cage 24 and opening the valve, the basket 39 may be readily drawn up by means of a hook, and any foreign matter therein removed. The valve comprises a plate 40

sloping downwardly from the periphery, where it rests on the sloping walls of the valve section 31, to a central rectangular aperture 41 surrounded by a depending flange 42. The two leaves 43 of the valve are hinged on pins 44 and open downwardly. These leaves are hinged at each side of the plate to the flange 42 and extend toward the center. The outer end of the leaf of the valve is formed into a counterbalance 45 which may be loaded if necessary to maintain the valve leaves normally closed, as shown in Fig. 4. These valve leaves are preferably made of aluminum, or other light metal, in order that they may move easily. The counterbalances 46 are arranged to just close the valve and no more, in order that a very small amount of water or current of air entering the gully will open the valve and pass to the sewer. In this way any rush of water through the sewer will draw in fresh air through the valve to ventilate the sewer but as soon as the suction stops, the valve closes to prevent the rise of foul odors from the sewer. It will be readily seen from the drawings that the hinges of the valve leaves and the counter balances are protected from the inrush of water into the gully and are, therefore, equally protected from becoming clogged with grit and refuse carried by the water.

In many cities the laws relating to expectorating on the sidewalk or street are very strict and are rigidly enforced, some cities going so far as to provide special receptacles at intervals along the streets. To overcome this expense and also to do away with the necessity of tending these cuspidors, I provide a cuspidor in the cover plate of the gully which will be both convenient and sanitary. This cuspidor consists of a small semicircular grating 47, provided with a pivoted semicircular cover 48 sunk into the plate 14 so as to be flush with the surface thereof. The bars forming this grating are triangular in cross section and are located with the apex uppermost, as shown in Fig. 1, in order that there may be no top surface for anything to adhere to and be distributed over the sidewalk by the feet of passing pedestrians. It will be clearly seen in Fig. 1, that all droppings from the grating fall directly on to the valve from which they will be washed into the sewer by the first inflow of water.

It has been amply demonstrated that dry ground is much less penetrated by frost than wet ground, and also that dry ground does not exert the same "heaving" effect on buried or partially buried objects when frozen, as wet ground. It will be noted in the drawings that the joints between the sections of the gully at the flanges 33 and 35 are very open. No cement or other filling is used in these joints when erecting the

gully in order that the open joints may provide a means for draining the ground immediately surrounding the gully. This draining insures dry ground, not greatly effected by frost, with the result that the gully is not "heaved" up in cold weather.

To protect the gully in cold weather and prevent the case becoming filled with ice or snow so as to be useless in case of a sudden thaw, I provide a special winter cover plate 49 adapted to completely fill the aperture 23 in the table 21. This plate 49 is provided with a flange 50 which lies on the flange 26 of the table and holds the plate in place. An aperture 51 is formed in the plate along the outer edge thereof and provided with a sliding cover 52. When cold weather sets in, the cage 24 is pulled up and stored in the top section, as shown in dotted lines in Fig. 1, and the winter cover plate 49 placed over the opening 23. The cover 48 of the cuspidor is also closed. This prevents the entrance of cold air into the gully and sewer and prevents the possibility of freezing same. In case of a sudden thaw, the cover 48 is opened to drain the side walk and the cover 52 of the plate 49 shoved back to open the aperture 51 for street drainage.

Instead of the winter cover plate being designed to cover the aperture 23 in the table 21, I may provide a cover plate adapted to fit in front of the grate 20 to prevent snow and cold air from entering the gully, or in some cases a cover plate may be provided both in front of the grating and to cover the aperture 23, as described.

The reduction of the diameter of the gully sections produces lighter castings than heretofore, and consequently decreases cost. All the parts are readily and quickly removable for cleaning. The valve is placed above the normal water level and is more delicately balanced than usual to allow the ventilation of the sewer. The valve is also more readily accessible. As it is almost impossible to have the sewer a uniform distance below the street level, each gully requires considerable fitting when installed. To overcome this, I provide the long neck of the valve section fitting into the long throat of the pipe, so that the gully may be easily adjusted to the street and sewer levels.

Various other advantages will be apparent to those skilled in the science of drainage. For instance, it is well known that currents of air within the sewer do not flow in the same direction at all times but are controlled more or less by the flow of sewage. When the flow of the air current is away from the gully, the draft will be quite sufficient to open the delicately balanced valves of my device to thereby permit currents of fresh air to enter the gully and ventilate the sewer. On the other hand, a sudden back pressure of air toward the

gully, due to any cause whatever, will be tightly sealed within the lower section of the gully below the valve and prevented from escaping to contaminate the air of the street. This method of ventilation is one of the important results attained in the present invention and cannot be attained by any other gully construction of which I am aware.

10 Having thus described my invention, what I claim is:—

1. A gully comprising a top section having a removable top and open front, a grating for said open front, an intermediate section, a table supporting the top section above the intermediate section, a straining cage supported by said table within the intermediate section, a valve section below said intermediate section, a one-way valve in said valve section, a pipe connecting said valve section to the sewer, and a basket adjacent the bottom of said pipe.

2. A gully comprising a top section having a continuously open front and top, a grating for the front, a removable cover for the top, an intermediate section below said top section, an apertured table supporting

the top section on the intermediate section, a cage suspended through the table aperture and occupying the intermediate section, 30 an inverted frusto-pyramidal valve section supporting the intermediate section, a downwardly opening valve removably mounted in said section, means for maintaining said valve normally closed, a pipe connecting 35 said valve section to the sewer, a large meshed basket adjacent the bottom of said pipe, and an integral foundation plate at the bottom of the pipe.

3. In a gully a top section, an intermediate section and a valve section, an apertured table supporting the top section, a straining cage suspended through the table aperture within the intermediate section, an apertured plate adapted to close the table aperture 45 on the removal of the cage, a sliding cover for said plate aperture, and a pipe connecting the valve section and the sewer.

In witness whereof I have hereunto set my hand in the presence of two witnesses. 50

LOUIS LAVERGNE DIT RENAUD.

Witnesses:

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STUART R. W. ALLEN.