A. J. RUDOLPH.

VENT BOX.

APPLICATION FILED MAR. 4, 1915.

1,238,199. Patented Aug. 28, 1917.

FIG. 1.

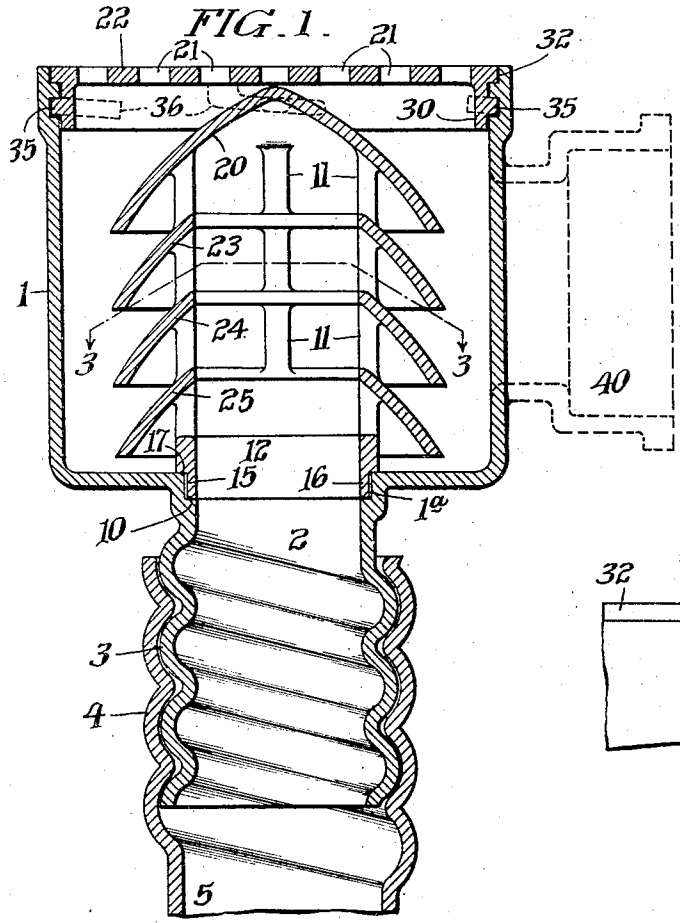


FIG. 3.

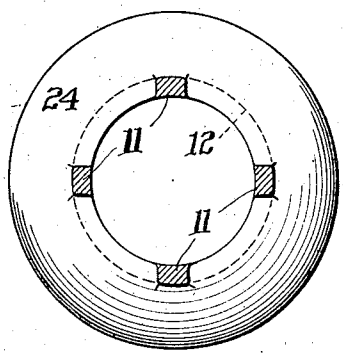


FIG. 4.

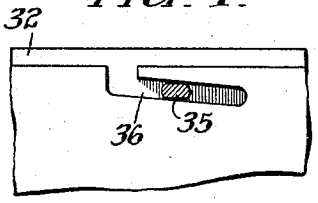
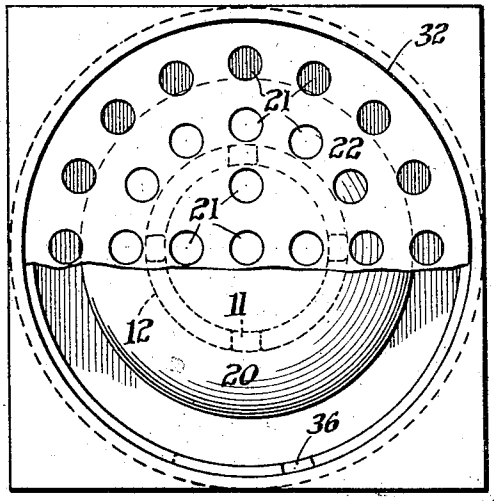


FIG. 2.



WITNESSES

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VENT-BOX.

1,238,199. Specification of Letters Patent. Patented Aug. 28, 1917.

Application filed March 4, 1915. Serial No. 12,009.

To all whom it may concern:

Be it known that I, ALFRED J. RUDOLPH, a citizen of the United States, residing in the city of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Vent-Boxes, of which the following is a specification.

Although I have designated my invention as an improvement in vent boxes, it will be understood that the principle of construction disclosed and embodied therein may be employed in the building and constructing of cess pool drains and ventilators of various kinds and descriptions.

One of the objects of my invention is to provide an improved construction of means whereby material which has been lodged in the box portion of the structure may be readily removed for the purpose of cleansing the same.

A further object of my invention is to provide an improved construction of means whereby sticks, stones, etc., which may enter the box are prevented from passing therefrom through the pipe connections into the sanitary system.

A still further object of my invention is to provide means whereby grease which may be mixed or intermingled with any liquid which flows into the vent box is deposited within the box and does not enter except in greatly reduced quantities the sanitary system. The entry of grease into the pipes of a sanitary system is very objectionable because its gradual deposit upon the interior surfaces thereof may close the pipes and render the same inoperative and ineffective as drainage mediums.

Another object of my invention is to provide an improved construction of means for closing the top of the vent box structure.

Other objects and advantages of my invention will be referred to and described in the detailed description thereof which follows or will be apparent from such description.

In the accompanying drawings to which reference should be had for a clearer and more comprehensive understanding of my invention I have illustrated a convenient form of embodiment thereof but it will be understood that changes in the details of construction may be made within the scope of the claims without departing from my invention.

In the drawings:—

Figure 1 is a vertical central sectional view of a structure embodying my invention;

Fig. 2 is a top plan view with a portion of the top or cover broken away so as to show the interior of the structure;

Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 1; and

Fig. 4 is a view of a part of the interior upper portion of the vent box said view also showing an ear or projection of the cover in transverse section and in place within a slot in the side of the box.

Referring to the drawings, 1 designates a box having an outlet opening 1^a and also having a depending tubular projection 2 which is screw-threaded as indicated at 3 and which is in alinement with the opening 1^a and constitutes an outlet therefor. The screw-threaded portion is adapted to engage with the screw-threaded upper end portion 4 of a pipe 5 communicating with the pipes of the sanitary system. Instead, however, of the tubular projection 2 making connection with the upper end of a pipe 5 as is shown in Fig. 1 of the drawings it will be understood, of course, that the said pipe may extend directly into a cesspool or some other similar depository for refuse matter.

As already indicated it will be understood also that the construction may be employed for other purposes, as, for instance, the top of a pipe projecting from a roof to protect the same. It would afford adequate means for ventilating purposes but would prevent foreign objects from getting into the ventilating pipe and closing same.

The opening 1^a through the bottom of the vent box 1 is somewhat larger than the internal diameter of the tube 2 so that a shoulder 10 is formed as shown in Fig. 1 of the drawing. Situated within the box 1 is a hood-like device comprising upright bars or posts 11 the lower ends of which are connected by a band-like member 12. This device serves as a protector to prevent the entry of sticks, stones, etc., into the drain or ventilating pipes even though they should find their way into the box 1. The said band-like member is provided with a cut-out or groove portion 15 producing a reduced lower end portion 16 which is adapted to fit within the opening in the bottom of the box 1. The end of the said reduced portion rests upon the shoulder 10. The shoulder 17

at the upper end of the groove 15 rests upon or against the surface of the bottom of the box 1 surrounding the opening therein. The band-like member 12 projects a distance above the bottom of the box 1 so that any foreign objects such as sticks, stones, etc., which may find their way into the box lodge therein and are prevented from passing on into the pipe or tube 2 and thence either into a cesspool or a sanitary system. The top ends of the upright posts or bars 11 are connected with and support a cone-shaped top or cover 20 the outer edges of which extend a considerable distance beyond the bars or posts 11 so that any foreign objects which may pass through the holes 21 in the top or cover 22 by means of which the box 1 is closed strike the said cover 20 and are thereby deflected laterally toward the outer side walls of the box. The tendency, therefore, of objects which enter the said box is to move away from the opening leading from the said box and not toward the same.

23, 24 and 25 designate annular truncated cone-shaped strips or members which are secured to the bars or posts 11 below the top 20 thereof. These strips project some distance outside of the bars or posts 11 terminating or ending in alinement with the outer edge of the cone-shaped top or covering member 20. The annular truncated cone-shaped strips or members 23, 24 and 25 are spaced a distance from each other as indicated and the first-named of said strips is spaced about the same distance from the cone-shaped cover or top 20. The lower edge of the lowermost annular strip or member 25 terminates a distance above the bottom of the box 1 as indicated.

The lower edge of the cone-shaped top or cover 20 extends below the upper edge of the adjacent annular truncated cone-shaped member 23 and the lower edge of each succeeding truncated cone-shaped member extends below the upper edge of the next adjacent succeeding truncated cone-shaped member. This arrangement is clearly indicated in Fig. 1 of the drawings. The purpose of this arrangement is to provide means whereby when the water fills the vent box or cesspool drain as it sometimes does when an unusual quantity is emptied thereinto the grease thereon is in large part deposited upon the outer surfaces of the members 20, 23, 24 and 25. By reason of the fact that the lower edge of each member overlaps or extends to a plane below the plane of the upper edge of the next succeeding member it will be apparent that the grease which lies upon the top of the water is prevented from flowing directly out through the pipe 2. As the water rises in the box 1 it contacts first with the lower edge of the annular truncated cone-shaped member 25. As it continues to rise it contacts with the lower edge of the member 24 before it begins to flow over the upper edge of the member 25. The result is that when it reaches the point coincident with the plane of the upper edge of the member 25 the only portion of the surface thereof from which the oil may enter within the member 25 is the annular surface occupying a position between the inner lower edge of the next higher member 24 and the upper portion of the member 25. Even the oil or grease which may find itself confined within the annular spaces between the upper edge of one member and the next succeeding higher member need not necessarily enter the tube 2 into the pipes of the sanitary system but may be deposited in part or in whole upon the inner surfaces of the respective members 25, 24, 23, 20. It will be understood that the number of these members 23, 24, etc., may be increased or diminished as desired.

The top or cover 22 of the vent box comprises a circular plate having holes 21 therein as heretofore described. The said plate 22 is provided with a downwardly extending annular flange 30 situated a short distance from the edge of the plate 22. The upper end of the box 1 is rabbeted or cut out to form an annular groove 32 in which the cover 22 rests. The said cover is flush with the adjacent top edge of the box as shown. The annular depending flange 30 is provided with ears or projections 35 at intervals therein as shown which projections are adapted to enter bayonet slots 36 one of which is shown in Fig. 4 of the drawings. The vertical portions of these slots open into the interior annular groove 32 and the laterally extending portions thereof are inclined gradually downward. In fitting the cover to the vent box 1 it is placed in such position that the ears or projections 35 will enter the upright portions of the slots 36 after which the lid may be turned and by reason of the inclination of the laterally extending portions of the slots the lid is drawn firmly down upon the lower edge of the annular groove 32. The vent box is thereby securely and effectively closed.

A structure embodying my invention is particularly well adapted for use in garages for conveying away any gasolene or similar oil or fuel which may be spilled upon the floor thereof. When employed for such purpose I provide the same with a pipe (not shown) which is coupled to the box by means of the coupling or joint indicated in dotted lines at 40 in Fig. 1 of the drawings. The pipe leading from this coupling extends up through the garage and through the roof thereof, its purpose being to convey away the vapors of the oils which may flow into the box. The air currents will be directed into the vent box 1 and thence through the opening in the side thereof up through the

pipe having connection with the coupling 40 so that any oil vapors which are formed either in the box itself or which rise upwardly through the pipe 2 and connected pipes are directed outwardly through the said coupling and the pipe (not shown) having connection therewith.

It is desirable, even if not necessary, that the top of the box 1 shall be flush with the surrounding surface of a floor, the sidewalk of a street, etc.

It will be understood that owing to the roughness of the lower edge of the annular band-like member 12 and also owing to the roughness of the shoulder at the upper edge of the groove 16 the connection between the said band-like member and the bottom of the box 1 will be such that the water entering the box may flow out of the same around the lower edges of the said fan-like portion without, however, permitting the passage of grit, stone, etc.

In order to prevent the lifting of the protector or hood within the box 1 I have located the top or apexial portion of the cone-shaped cover or top 20 in close proximity to the top or cover 22 of the box. By this means I prevent the displacement of the protector or hood member while the cover 22 is in place.

In order to remove foreign objects from the box 1 the cover 22 is first removed after which some, and possibly all, of such objects may be removed therefrom without lifting or removing the protector or hood member. The latter, however, may be removed after which it is apparent that the box may be readily cleansed by removing therefrom all foreign objects of whatever character or description.

I claim:—

1. Means for protecting the end of a pipe having connection with a sanitary system, said means comprising a box-like member, a closure for the top of said box-like member and a hood-like member situated in the box-like member said hood-like member having a cone shaped top and truncated cone shaped parts open at both ends situated below said top and the lower end of the said hood-like member resting upon the bottom of the said box-like member and the upper end thereof being situated in proximity to the said closure.

2. In a device of the character described, the combination of a box-like member having an opening therein, and a tubular projection depending from said box-like member in alinement with the said opening, a hood-like member situated in the said box-like member in alinement with said opening, said hood-like member including a plurality of members spaced from and overlying each other the top surfaces of which are inclined downwardly and outwardly toward the sides of said box-like member whereby objects which enter the said box-like member are deflected toward the sides of the latter.

3. In a device of the character described, the combination of a box-like member having a cover for the top thereof and also having an opening in the bottom thereof said opening communicating with a tubular projection from said box-like member, a protector for said opening said protector being supported in said box-like member in alinement with said opening and comprising a cone-shaped top or cover and one or more truncated cone-shaped hollow deflecting members situated below the said top or cover.

4. In a device of the character described, the combination of a box-like member having an opening in the bottom thereof, a pipe having connection with the said box-like member the upper end of said pipe surrounding the space below and in alinement with said opening, a hood situated in said box-like member for protecting said opening, the lower end of said hood extending into said opening and the said hood including one or more downwardly and outwardly inclined deflecting members which are adapted to deflect objects which enter the said box outwardly toward the sides of said box-like member.

5. In a device of the character described, the combination of a box-like member having an opening in the bottom thereof, and a hood member situated in the said box-like member and having its lower end projecting into the said opening and being supported upon the said box-like member, the said hood member including a top or cover at its upper end and one or more intermediate downwardly and outwardly inclined annular strips the outer edges of which are in alinement with the outer edges of the top or cover.

6. In a device of the character described, the combination of a box-like member having an opening in the bottom thereof and a hood member for protecting the said opening the said hood member comprising a band-like portion at its lower end the lower edge of which band-like portion projects into the said opening and the said hood member being supported upon the said box-like member, bars extending upwardly from the said band-like member, a cover supported upon the upper ends of the said bars and one or more annular downwardly and outwardly inclined members supported upon the said bars intermediate the said top and the lower ends of the said bars.

7. In a device of the character described, the combination of a box-like member having an opening in the bottom thereof and a

hood member situated in the said box-like member and having its lower end projecting into the said opening said hood member including a top which is inclined from its center outwardly and downwardly and one or more annular downwardly and outwardly inclined sheets of material intermediate the said top and the lower end of the said hood member, the outer edge of the said top extending beyond the plane of the upper edge of the next succeeding member and the outer lower edge of each of the latter members extending below the plane of the upper edge of the next succeeding member and the outer edges of the top and of said members being in alinement, substantially as described.

8. In a device of the character described, the combination of a box-like member having an opening in the bottom thereof and an opening in the side thereof and said box-like member also having a top or cover for closing its open end, a hood member situated in the said box-like member and supported upon the bottom thereof in alinement with the opening in said bottom, said hood member comprising means for protecting the opening in the bottom of said box-like member.

9. In a device of the character described, the combination of a box-like member having an opening in the bottom thereof and a removable top or cover and a hood member situated therein said hood member including a reduced lower end portion which projects into the said opening and a plurality of upright bars said bars at their ends supporting a cone-shaped top the apex of which is situated in proximity to the said removable cover and the said hood member also including a plurality of truncated cone-shaped annular members the upper edge of each of which is situated in a plane above the lower edge of the next succeeding higher member, substantially as described.

10. Means for protecting the end of a pipe having connection with a sanitary system, said means comprising a box-like member having connection with the end of said pipe, a closure for the top of said box-like member, and a hood-like member situated in the said box-like member and supported upon the end of said pipe, said hood comprising a cone shaped closed top and a plurality of truncated cone shaped members open at both ends spaced apart and situated underneath and in alinement with the said cone shaped top.

In testimony that I claim the foregoing as my invention I have hereunto signed my name this 23 day of February, A. D. 1915.

ALFRED J. RUDOLPH.

In the presence of—
CARRIE E. KLEINFELDER,
FLORENCE DEACON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."