C. H. SMITH.

CATCH BASIN.

APPLICATION FILED APR. 19, 1915.

1,278,240. Patented Sept. 10, 1918.

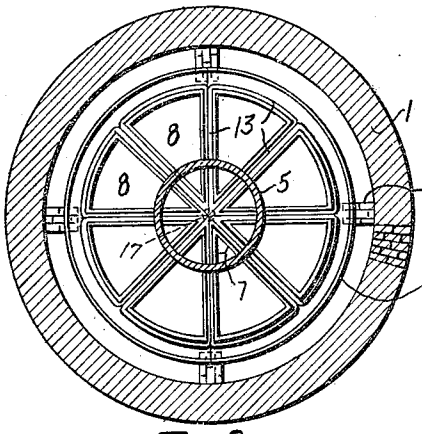


FIG. 2.

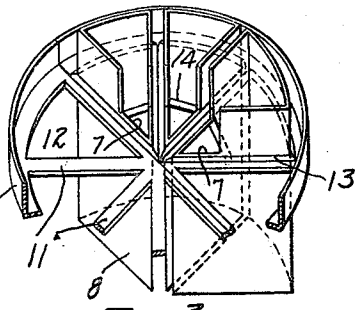


FIG. 3.

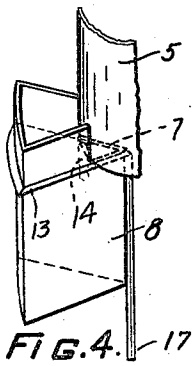


FIG. 4.

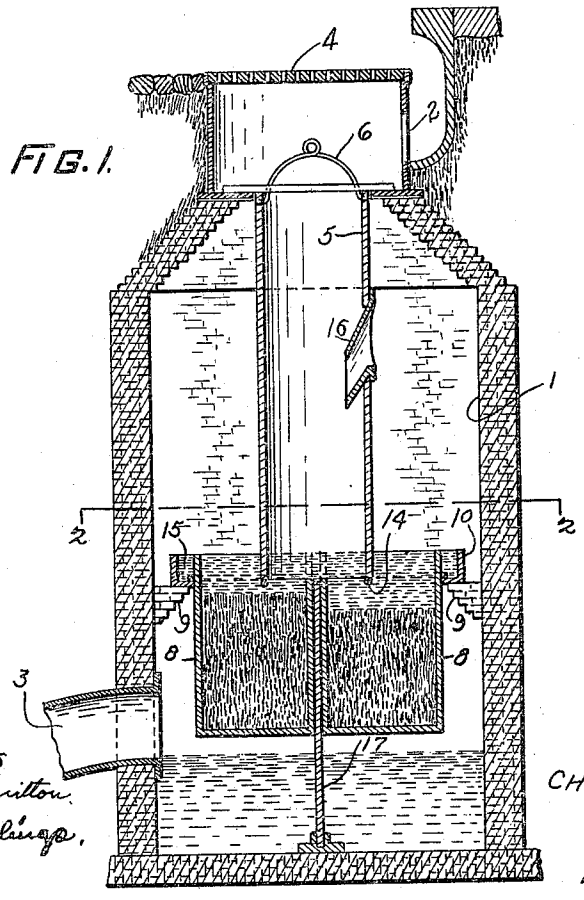


FIG. 1.

WITNESSES

Jas. C. Hamilton.

Geo. B. Rawlings.

INVENTOR

CHARLES H. SMITH.

BY Ellis Spear Jr.

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES H. SMITH, OF BOSTON, MASSACHUSETTS.

CATCH-BASIN.

1,278,240. Specification of Letters Patent. Patented Sept. 10, 1918.

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To all whom it may concern:

Be it known that I, CHARLES H. SMITH, a citizen of the United States, residing at Boston, county of Suffolk, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Catch-Basins, of which the following is a specification.

This invention relates to apparatus for the disposal of sewage and particularly to means for facilitating the cleaning of catch basins and the like.

My present invention contemplates a catch basin construction wherein a separation of the liquid and solid substances is positively effected so that the liquid part of the sewage is divided and flows out of the catch basin leaving only the solids in the basin.

This is effected by an arrangement of tubular conveyer leading from the inlet opening to an annular chamber in which is arranged a plurality of symmetrically disposed removable receptacles. The sewage delivered by the conveyer divides among the receptacles, the liquid part flowing out over their tops and being carried away through a suitable outlet opening, and the solids depositing in the receptacles. These receptacles may then be successively removed and emptied by simply removing the conveyer and then engaging the receptacles and lifting them out of the catch basin.

The construction and operation of my device will be more fully disclosed in the specification which follows.

In the drawings forming part of this specification I have shown a construction which not only clearly illustrates the principles of my invention but is in itself a form found satisfactory in use.

Throughout specification and drawings like reference numerals are correspondingly applied to indicate corresponding parts, and in these drawings:

Figure 1 is a vertical section through a catch basin in accordance with my invention.

Fig. 2 is a transverse section thereof on the line 2—2 of Fig. 1.

Fig. 3 is a detail view of the support for the receptacle series, and

Fig. 4 is a detail view of one of the removable receptacles.

I have indicated at 1 a suitable catch basin provided with the usual inlet and outlet passages 2—3 and manhole 4.

Removably mounted in the catch basin 1 below the inlet opening 2 and the manhole 4 is a suitably covered tubular conveyer 5. The upper end of the conveyer 5 is provided with a bail or other device 6 whereby the conveyer may be engaged and wholly removed from the catch basin.

The lower end of the conveyer rests upon the cleared or cut away portions 7 of a plurality of symmetrically disposed sediment receptacles 8 removably mounted in a suitable receiving structure resting on suitable devices 9 projecting laterally from the side wall of the catch basin. If desired, underneath support for the receptacle receiving structure may be provided, as by the vertical post 17 which rests on the bottom wall of the catch basin and engages said structure from below.

The supporting structure for the receptacles 8 may conveniently be formed as a spider having an inclosing rim 10 and a plurality of radial arms 11. The rim 10 and arms 11 define a symmetrical series of sector-shaped chambers 12 in which the receptacles 8 are removably received, in radial assembly. If desired, the supporting member 10 may be made in sections to facilitate its assembly within the catch basin.

Each receptacle 8 below its cleared portion 7 has an external flange or bead 13 adapted to rest on the arms 11 and horizontal portion of the rim 10. Below the flange 13 each receptacle has a bar 14 connecting its converging side walls below the cleared portions 7 and providing a device which may be engaged by a suitable hooked tackle whereby the receptacle may be lifted out of the catch basin and emptied.

The rim 10 in addition to providing a support for the receptacles forms with the curved under sides of the receptacles 8 an annular inclosing chamber or pocket 15 into which the liquid part of the sewage deposited by the conveyer 5 into the receptacles 8 and displaced therefrom by the heavier solids may flow, when the chamber 15 overflows, the liquid passes between the supporting devices 9 and out through the outlet opening 3 to the sewer. The solid matter delivered by the conveyer 5 falls to the bottoms of the receptacles 8 and is not discharged until the receptacles are removed and emptied.

Exit for any excess sewage which can-

not be taken care of by the members 8—10, is provided through a lateral delivery device 16 in the conveyer 5. If there has been an unusual flow of sewage, as in the case of a freshet, or the like, this overflow backs up in the conveyer 5 until it flows out of the lateral exit opening 16 and then down around the rim 10 and out through the outlet opening 3, to the sewer connection. The discharge member 16 is set within the conveyer 5 in upwardly inclined relation to the side wall thereof so as not to deflect or otherwise interfere with the normal fall of sewage down said conveyer.

In cleaning the catch basin of the present invention, the manhole 4 is removed and the conveyer 5 engaged and lifted wholly out of the catch basin. The receptacles 8 are then separately engaged and removed and emptied of the solids deposited therein.

It will be observed that the cleared portions 7 of the receptacles 8 are symmetrically disposed about the center of the spider and that the bottom edge of the conveyer 5 is uniformly supported by the cleared portion of each receptacle so that the sewage is positively directed into the receptacles. As the receptacles fill, the heavier solids displace the liquid part of the sewage so that the liquid is forced out over the top edges of the receptacles into the inclosing chamber 15 and thence to the outlet opening 3.

Various modifications in the form and construction of my device may obviously be resorted to if within the limits of the appended claims.

What I therefore claim and desire to secure by Letters Patent is:

1. A catch basin having an inlet and an outlet, a series of receptacles removably supported therein above said outlet, and a conveyer extending from the inlet into and below the top level of said receptacles and having its discharge end disposed in communicating relation to all of said receptacles.

2. A catch basin having an inlet and an outlet, a series of receptacles removably supported in said catch basin, and a conveyer extending from said inlet and having a discharge end overlapping all of said receptacles.

3. A catch basin having an inlet and an outlet, a series of receptacles removably supported in said catch basin, a supporting member for said receptacles inclosing the open ends of said receptacles and adapted to receive the overflow therefrom, and a conveyer extending from said inlet to said receptacles and having a discharge end disposed in communicating relation thereto.

4. A sewage separator comprising a plurality of receptacles, means for externally supporting said receptacles in radial assembly, said receptacles each having the upper edges of their walls cleared adjacent to the common center, and a conveyer disposed with its end overlapping all of said receptacles within said cleared spaces.

5. A sewage separator comprising a plurality of receptacles, means for externally supporting said receptacles in radial assembly, said supporting means defining with said receptacles an annular liquid trap, and a conveyer extending within and below the top level of all of said receptacles.

6. A sewage separator comprising a plurality of removable receptacles, means for externally supporting said receptacles in radial assembly, said supporting means defining with said receptacles an annular liquid trap and said receptacles each having the upper edges of their walls cleared adjacent to the common center, and a conveyer disposed with its end overlapping all of said receptacles within said cleared spaces.

7. A catch basin having an inlet and an outlet, a wall supported within said catch basin above said outlet and having a plurality of symmetrically disposed receiving openings, and a plurality of removable receptacles in said receiving opening.

8. A catch basin having an inlet and an outlet, an annular wall supported within said catch basin between said inlet and outlet and having a plurality of radially arranged receiving openings, a plurality of removable receptacles in said receiving openings, and a tubular conveyer leading from said inlet opening to said receptacles and supported at one end on said receptacles.

9. A catch basin having an inlet and an outlet opening, an annular wall supported within said catch basin between said openings, and having a plurality of adjacent radially disposed receiving openings, a plurality of removable receptacles in said receiving openings, said wall defining with said receptacles an annular chamber, and a conveyer leading from said inlet opening to said receptacles and disposed centrally of said annular chamber.

10. A catch basin having an inlet and an outlet, a member supported within said catch basin between said inlet and outlet and having an annular rim and a plurality of intersecting arms defining with said rim a symmetrical series of adjacent receiving openings, and a plurality of removable receptacles in said receiving openings supported by said rim and arms.

11. A catch basin having an inlet and an outlet, a member supported within said catch basin above said outlet, and having an annular rim and a plurality of radial arms defining with said rim a symmetrical series of sector-shaped receiving openings, and a plurality of removable receptacles in said receiving openings having external bearing on said rim and arms.

12. A catch basin having an inlet and an

outlet, a member supported within said catch basin between said inlet and outlet and having an annular rim and a symmetrical series of radially arranged receiving openings, a plurality of removable receptacles in said receiving openings having external support on said rim and having portions thereof cut away toward the center of said supporting member, and a tubular conveyor leading from said inlet to said receiving openings and removably supported in overlapping relation to all of said receptacles within the cleared portions thereof.

13. A catch basin having an inlet and an outlet, a member supported within said catch basin between said inlet and outlet and having an annular rim and a symmetrical series of radially arranged receiving openings, a plurality of removable receptacles in said receiving openings having external support on said rim and having portions thereof cut away toward the center of said supporting member, and a tubular conveyer leading from said inlet to said receiving openings and removably supported in overlapping relation to all of said receptacles within the cleared portions thereof, said rim and receptacles defining an annular inclosing chamber open to said outlet and said conveyer having its delivery end extending below the top of said chamber.

14. A catch basin having an inlet and an outlet, a member supported in said basin above said outlet, said member having an annular rim and a plurality of receptacles removably supported by said member and defining with said rim an annular inclosing chamber open to said outlet.

15. A removable receptacle series for a device of the class described, comprising an open ended frame having spaced supporting arms, and a plurality of removable receptacles supported in circular assembly by said arms.

16. A removable receptacle series for a device of the class described, an annular supporting element having radial arms defining receiving openings, and a plurality of symmetrically disposed receptacles supported on said arms in said receiving openings and wholly inclosed by said annular element, each receptacle having an engageable device for permitting removal thereof.

17. A receptacle for a device of the class described, comprising a bottom wall, a rear wall, and converging lateral walls, said lateral walls cut away across their top faces at their point of juncture.

18. A receptacle group for a device of the class described, a support, a plurality of receptacles mounted in radial assembly thereon, each receptacle having a closed bottom, a rear wall, and converging lateral walls and said lateral walls cut away across their top faces toward the center of the receptacle group.

19. In combination with a receiving chamber having an inlet and an outlet, a tank supported within said chamber above said outlet, and a conveyer leading from said inlet and having a normal discharge to said tank, said conveyer having an auxiliary discharge to said outlet disposed in opposition to said normal discharge to said tank.

20. In combination with a receiving chamber having an inlet and an outlet, a tank supported within said chamber above said outlet, and a conveyer leading from said inlet and having a normal downwardly directed discharge to said tank below the top level thereof, said conveyer having an upwardly directed auxiliary discharge to said outlet above said tank.

21. In combination with a receiving chamber having an inlet and an outlet, means for removably supporting a plurality of receptacles therein between said inlet and outlet, and a removable conveyer leading from the inlet and extending into and below the top level of all of said receptacles.

22. In combination with a receiving chamber having an inlet and an outlet, means for removably supporting a plurality of receptacles therein between said inlet and outlet, and a removable conveyer leading from the inlet and having its discharge end disposed in overlapping relation to all of said receptacles.

23. In combination with a receiving chamber having an inlet and an outlet, means for removably supporting a plurality of receptacles therein between said inlet and outlet, said supporting means defining with the outer walls of said receptacles a liquid trap disposed in communicating relation to said receptacles, and a removable conveyer leading from the inlet and extending into and below the top level of all of said receptacles.

24. In a catch basin, a plurality of removable receptacles, a supporting frame mounted within said basin and inclosing all of said receptacles and a conveyer leading to said receptacles.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. SMITH.

Witnesses:
VICTORIA LOWDEN,
MARION C. HOBBS.

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