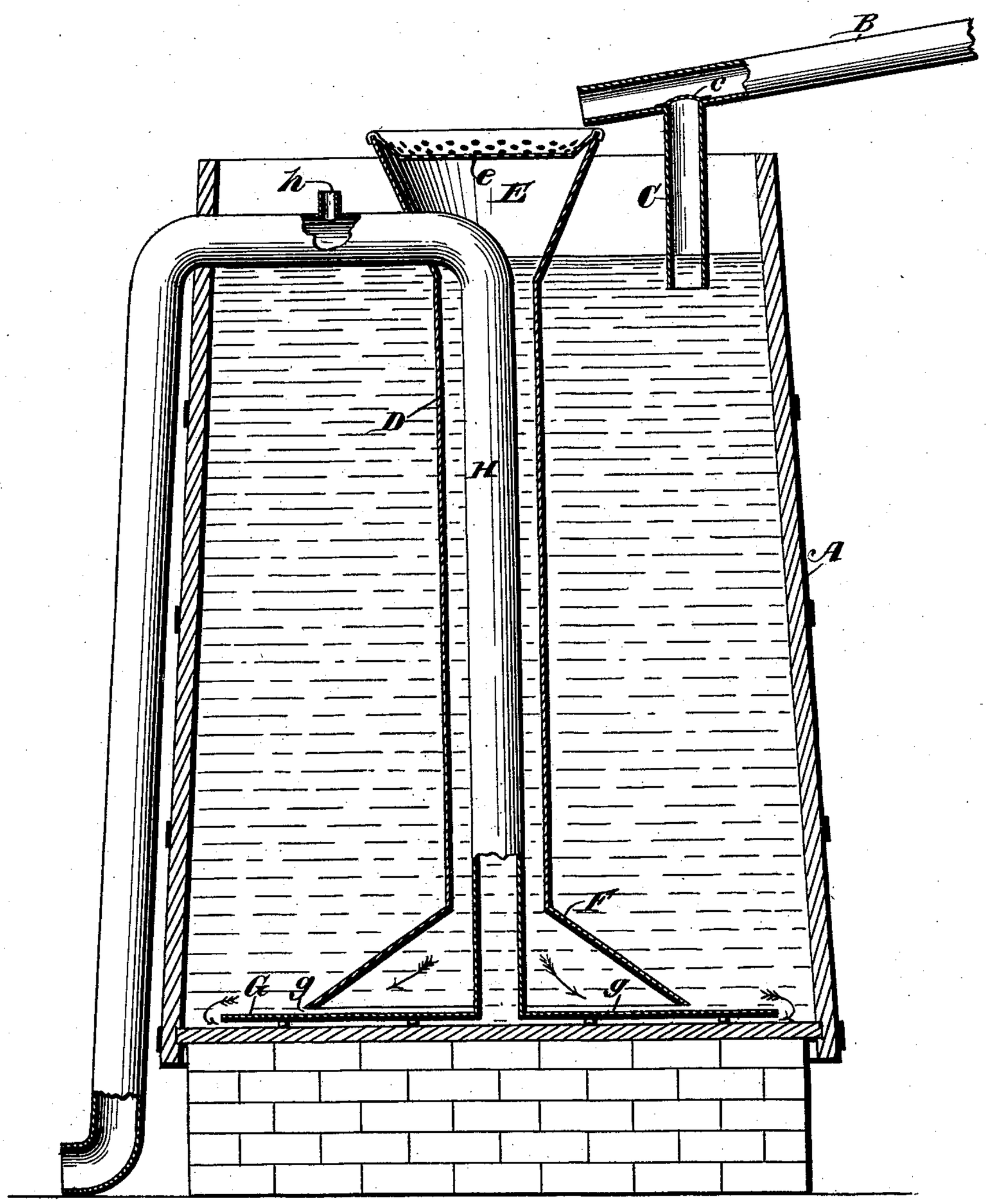
(No Model.)

D. J. DALY.

MEANS FOR CLEANING CISTERNS.

No. 534,203. Patented Feb. 12, 1895.



Witnesses.
Robert Everett.
G. W. Rea.

Inventor
David Joseph Daly.
By Walter A. Coors
Atty.

UNITED STATES PATENT OFFICE.

DAVID JOSEPH DALY, OF NEW ORLEANS, LOUISIANA.

MEANS FOR CLEANING CISTERNS.

SPECIFICATION forming part of Letters Patent No. 534,203, dated February 12, 1895.

Application filed April 25, 1894. Serial No. 509,008. (No model.)

To all whom it may concern:

Be it known that I, DAVID JOSEPH DALY, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Means for Cleaning Cisterns; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, and to the letters of reference marked thereon.

My invention relates to improved means for cleaning cisterns, and has for its object to provide means for causing the water from the overflowing of the cistern to remove all sediment from the cistern and also to provide means for storing the freshest water in the cistern and discharging therefrom the stale and less wholesome portion thereof.

To this end my invention consists in the novel construction, arrangement and combination of parts hereinafter fully described and definitely pointed out in the claims following the description, due reference being had to the accompanying drawing forming a part of this specification, wherein is represented a vertical section of a cistern provided with my improved apparatus.

Cisterns of the class described are usually so arranged as to obtain their supply from rain falling on the roofs of houses and other structures and conveyed to the cistern by gutters and spouts. Hence the dust, dirt, and other foreign substances that settle upon the roofs and accumulate in the gutters and spouts is deposited in the cistern, fouling and contaminating the water, and in order to remove the sediment thus deposited in the cistern and to preserve only clean and wholesome water I provide the apparatus which I will now proceed to describe.

Referring to the drawing the reference letter A indicates a cistern of any approved construction and disposed in any suitable or preferred location.

B indicates a spout for conveying the water from the roof which near its end is provided with a discharge pipe C that extends down into the cistern to a point preferably slightly below the normal water line thereof. A foraminous cap or cover *c* is fitted over the top of the pipe C to prevent the entrance therein of any foreign substance. The extreme end of the spout B is open, for the purpose hereinafter made apparent.

D indicates a tube centrally arranged within the cistern and provided at its upper and lower ends with funnel-shaped inlet and outlet mouths respectively lettered E and F. The top of the funnel E preferably extends up even with or slightly above the top of the cistern in a position to receive the water discharged from the open end of the spout B, and is provided with a foraminous or reticulated catch pan or cap *e* that prevents the entrance of any foreign substances into the funnel with the water. The funnel shaped outlet F extends down to within a few inches of the bottom of the cistern, and between the lower edge of said outlet F and the bottom of the cistern is arranged a horizontal plate G that may conveniently rest upon any suitable supports *g*, *g*. The plate G is centrally apertured and has fitted in said aperture one end of an overflow pipe H which projects up through the center of the tube D to a point near the top of the cistern and thence projects horizontally through the funnel inlet E and through the side of the cistern and downwardly to the ground or to a suitable drain.

The operation of my improved device is as follows: In light rains the water from the roof passes down the spout B and is discharged through the pipe C into the cistern A at a point slightly below the water level of the latter as shown, any foreign substances that may have been washed down the spout B being intercepted by the foraminous cap *c* and discharged into the catch pan *e*. By discharging the water into the top of the cistern and slightly below the water level of the latter, the water in the cistern and the sediment deposited on the bottom thereof is not agitated, and as the foul and contaminated water is always the heavier and hence lies at the bottom of the cistern, the unwholesome water, passes off through the pipe H and escapes from the cistern as soon as the water in the cistern rises above the top of the pipe H. If no means were provided for preventing it the overflow pipe H would, after the water once started to flow through it, siphon out the entire contents of the cistern, and in order to

prevent such action I provide the horizontal portion of the overflow pipe H with an air vent *h*, whereby as soon as the water falls below the level of the air vent air will be admitted to the pipe H and prevent any siphon action thereof, hence preventing the water from fallng below its normal level in the cistern. In a heavy rain the the pipe C is of insufficient capacity to carry off all the water flowing through the spout B and hence a portion of the water is discharged through the open end of said spout into the funnel E and down the tube D from which it is discharged and flows over the top of the plate G, washing off all sediment deposited thereon and thence under said plate and up and out through the overflow pipe H, carrying with it all sediment and impure or stale water. By making the outlet of the tube D funnel shaped the water is caused to flow over the entire surface of the plate G and wash all sediment therefrom, while at the same time, owing to the inclination of the walls composing the outlet no opportunity is afforded for the sediment to deposit thereon.

The device is entirely automatic in its action, requiring no care or attention other than removing the accumulated foreign substances from the catch pan *e* from time to time, as may prove necessary, for which purpose the catch pan is made removable.

By closing the air vent *h* with a plug the entire contents of the cistern may be siphoned off by introducing a sufficient quantity of water to cover the pipe H.

What I claim as my invention is—

1. The combination with a cistern, of a tube having its lower end arranged near the bottom of the cistern and its upper end extending up even with or above the top thereof, an inlet pipe having an open end discharging into said tube and provided with a branch pipe communicating with the inlet tube near its discharge end and extending down below the normal water level of the cistern, and an overflow pipe leading from the bottom of the cistern, substantially as described.

2. The combination with a cistern, of a tube having its lower end arranged near the bottom of the cistern and its upper end extending up even with or above the top thereof and provided with a reticulated or foraminous catch basin, an inlet pipe having an open end discharging into said tube and provided with a branch pipe communicating with the inlet tube near its discharge end and extending down below the normal water level of the cistern, a foraminous or reticulated cover for said branch pipe, and an overflow pipe leading from the bottom of the cistern, substantially as described.

3. The combination with a cistern, of a tube having its lower end arranged near the bottom of the cistern and its upper end terminating at or near the top thereof, a sediment plate supported between the bottom of said tube and the bottom of the cistern, an overflow pipe leading from the space between said plate and the bottom of the cistern, and an inlet pipe discharging into said tube, substantially as described.

4. The combination with a cistern, of a tube having a funnel-shaped lower end arranged near the bottom of the cistern and its upper end terminating at or near the top thereof, a sediment plate supported between the bottom of said tube and the bottom of the cistern, an overflow pipe leading from the space between said plate and the bottom of the cistern, an inlet pipe discharging into said tube, and an inlet pipe discharging into the cistern near the top of the latter, substantially as described.

5. The combination with a cistern, of a tube D provided at its opposite ends with funnel-shaped mouths E, F, the funnel E terminating at or near the top of the cistern and the funnel F arranged near the bottom thereof, the plate G supported between the funnel F and the bottom of the cistern, the overflow pipe H communicating at one end with the space between the plate G and the bottom of the cistern and extending up above the normal water level of the cistern and thence out of the latter, an air vent *h* communicating with the top of the pipe H, and an inlet pipe B having an open end discharging into the funnel E and provided with a branch pipe discharging into the cistern near its top, substantially as described.

In testimony whereof I have hereunto subscribed my name in the presence of two witnesses.

DAVID JOSEPH DALY.

Witnesses:
WALTER H. COOK,
WM. B. STOUT.