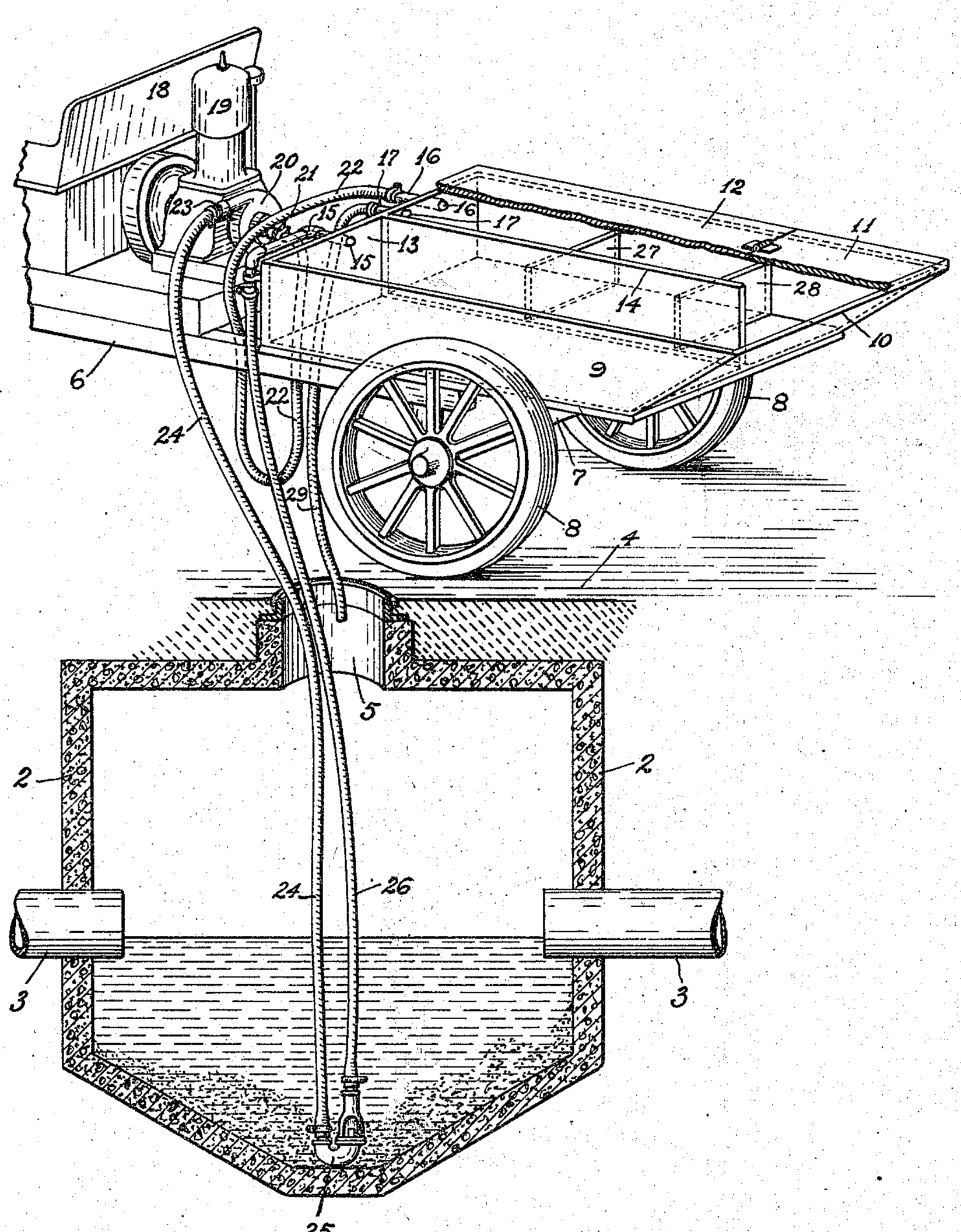
G. W. OTTERSON.

SETTLING TANK.

APPLICATION FILED MAY 17, 1915.

1,166,713.

Patented Jan. 4, 1916.



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SETTLING-TANK.

1,166,713. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed May 17, 1915. Serial No. 28,788.

To all whom it may concern:

Be it known that I, GEORGE W. OTTERSON, citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a certain new and useful Improvement in Settling-Tanks, of which the following is a specification.

My invention relates to settling tanks used in connection with apparatus for removing sediment or sand from catch-basins or sewers, and the object of my invention is to provide a vehicle that is provided with a tank full of water and with a force-pump, together with a hydraulic elevator and suitable connecting hose which may be moved from one catch-basin to another and its several devices be operated to clean and remove the sediment from successive ones of such catch-basins.

In the accompanying drawings I have represented an embodiment of the invention, and referring to such drawing, 2 indicates a vertical mid-section of the inclosing walls of a catch-basin of a sewer, and 3, 3 indicates sections of a sewer-pipe disposed to lead into and out from said catch-basin at corresponding points through opposite side walls thereof. Extending from the interior of said catch-basin through its top wall to the surface 4 of a street is a man-hole 5 which is adapted to be covered by an iron plate (not shown) of well known form. Upon the rear end portion of a vehicle 6, and over its rear axle 7 and wheels 8, is mounted a tank 9 of rectangular form except that its rear end wall 10 extends obliquely upward and rearwardly from its bottom wall to facilitate the operation of dumping its contents. The rear end portion of the top of said tank 9 is covered by a hinged cover 11, only a fragment of which is shown, which hinged cover 11 is hinged to a fixed cover 12 of which, also, only a fragment is shown, said cover 12 tightly covering the larger portion of the top of said tank 9; thus in the operation of dumping the contents of the tank 9 the cover 11 may be forced to swing upwardly by the outflowing contents and be closed by its own gravity when said tank 9 is replaced in its normal horizontal position.

Extending rearwardly from the middle of the front end wall 13 to the middle of the bottom edge of the rear end wall 10 of the tank 9 is a vertical deflecting partition 14 whereby water may flow from one side of said partition 14 to the other side thereof only through the space between the rear end of said partition 14 and the obliquely disposed end wall 10. Disposed to extend through the front wall 13, near the top edge thereof, into the space on one side of the partition 14, is an inlet pipe 15 while an outlet pipe 16 extends through said front end wall 13 at a corresponding position on the other side of said partition 14, as shown, and near the pipe 16, on the same side of the partition 14, is an over flow outlet pipe 17.

On the floor of the vehicle 6 forward from the end of the tank 9 and back of a driver's seat 18 is secured an engine 19 with which is operatively associated a force pump 20. Connected with the suction inlet nipple 21 of said pump 20 is a hose 22 which extends to and connects with the outlet pipe 16 of the tank 9, while the delivery outlet nipple 23 of said pump 20 is connected with a hose 24 which extends downwardly to the bottom of the catch-basin where it is connected with the intake end of a hydraulic elevator 25 to whose outlet end is connected a hose 26 which extends upwardly through and out of the man-hole 5 to connect with the inlet pipe 15 of the tank 9.

With the hose 22, 24 and 26 thus connected and with the tank 9 full of water, then if the force pump 20 be operated by the engine 19 water will be sucked from the tank through pipe 16 on one side of the partition 14, and such water passing through the pump 20 will be forced through the downwardly extended hose 24 through the hydraulic elevator 25, thence upwardly through the hose 26 to and through the inlet pipe 15 into the other side of said partition 14 and such water ascending through the pipe 26 will, in a well known manner, carry with it sediment drawn into the elevator 25, by which sediment said elevator 25 is surrounded as it lies on the bottom wall of the catch-basin; and such water with its required sediment passing through said pipe 15 into the space on one side of the partition 14 will then flow rearwardly in such space and around the end of the partition 14, into and forwardly through the space on the other side of said partition 14 to be again sucked out of the tank 9 through the outlet pipe 16 by the pump 20 again to make a circuit through the hose 24, elevator 25 and hose 26, such flow continuing during the operation of the pump 20.

As the water charged with sediment flows

slowly from the inlet pipe 15 rearwardly to pass around the rear end of the partition 14 to the other side thereof much of such sediment will fall to the bottom of the tank 9 there to remain until dumped and in the passage of such water from the rear end of the tank 9 to the outlet pipe 16 nearly all of the remainder of such sediment will find its way to the bottom of the tank 9 there likewise to remain until dumped so that although water entering the tank 9 through the pipe 16 may be highly charged with sediment and that same water as it is sucked out of the tank 9 on the other side of the partition 14 through the pipe 16 will be nearly clear water having parted with its sediment in its passage rearwardly and forwardly around the rear end of the partition 14. Thus, beginning with a tank full of clear water for use in operating the hydraulic elevator 25 such water may be actuated by the pump 20 continuously to circulate through the hydraulic elevator 25 and the tank 9 to carry sediment from the bottom of the catch-basin into the tank 9 there to settle to the bottom of the tank 9 in the manner described.

In the drawing I have shown two baffle-plates 27 and 28 that are spaced from each other and disposed to extend across the outflowing side of the partition 14.

I have shown a piece of hose 29 connected with the over flow pipe 17 to extend into the man-hole 5, of the catch-basin, such over flow outlet serving to permit the escape of any excess of water from the tank 9, which excess of water may be due to the picking up by the elevator 25 of additional sewer water contained in the catch-basin.

Obviously, after the tank 9 has received its load of sediment which has accumulated by operating on a number of different catch-basins, there the pieces of hose 24, 26 and 29 may be raised and disposed on the vehicle 6 and then such vehicle 6 may move to a desired point to dump its contents in an obvious manner.

Having described and illustrated one form of apparatus for removing sediment from the catch-basin of a sewer, in accordance with my process, what I claim is:

In apparatus of the class described, a portable settling tank consisting of a body of rectangular form having a slanting rear wall, a rectangular partition extending from the front wall of the body to the junction of the bottom and rear walls to leave a triangular space, baffles vertically disposed between the partition and one side wall and being of less height than the partition, an inlet tube on the front wall on the baffle provided side of the partition and an outlet tube on the opposite side of the front wall.

In witness whereof, I, hereunto subscribe my name this sixth day of May A. D., 1915.

GEORGE W. OTTERSON.

Witnesses:
O. JOHNSON,
GEO. BLAIR.