No. 684,623. Patented Oct. 15, 1901.

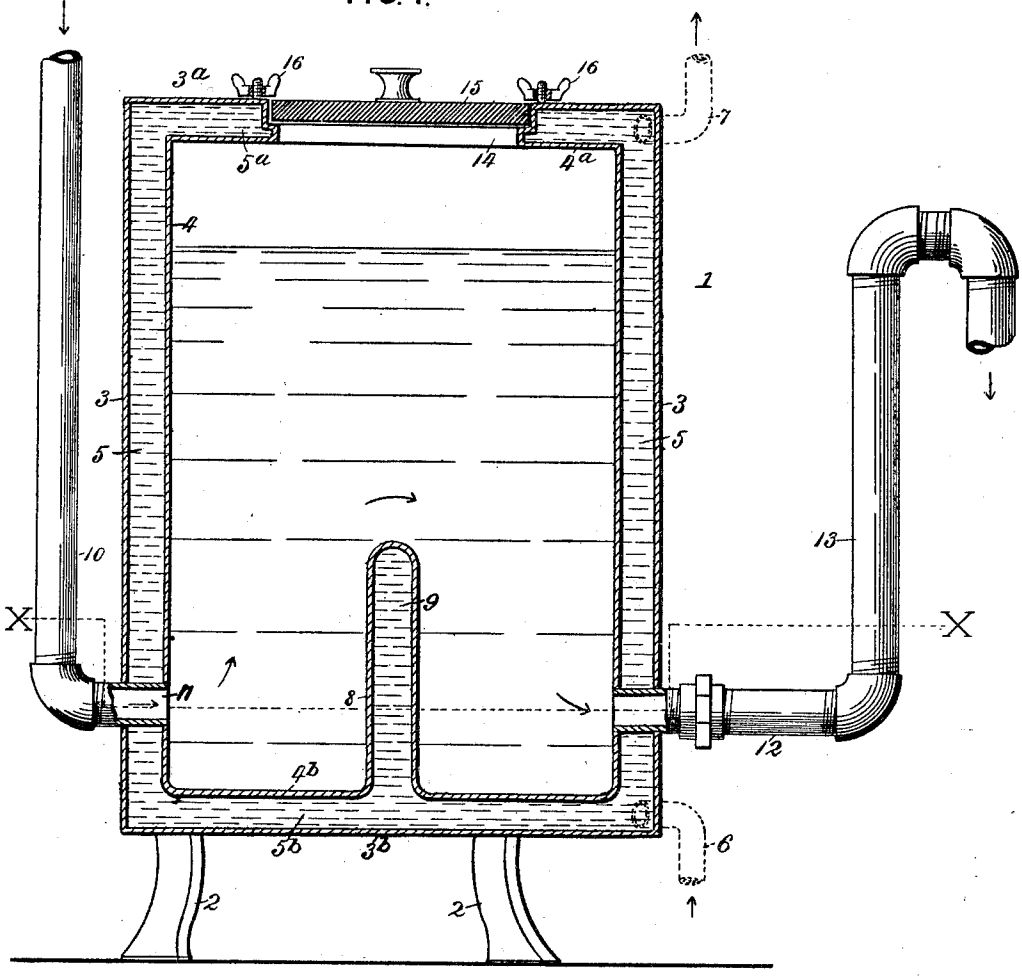
J. TUCKER.

GREASE TRAP.

(Application filed June 30, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.



WITNESSES.

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by Jacob Felbel

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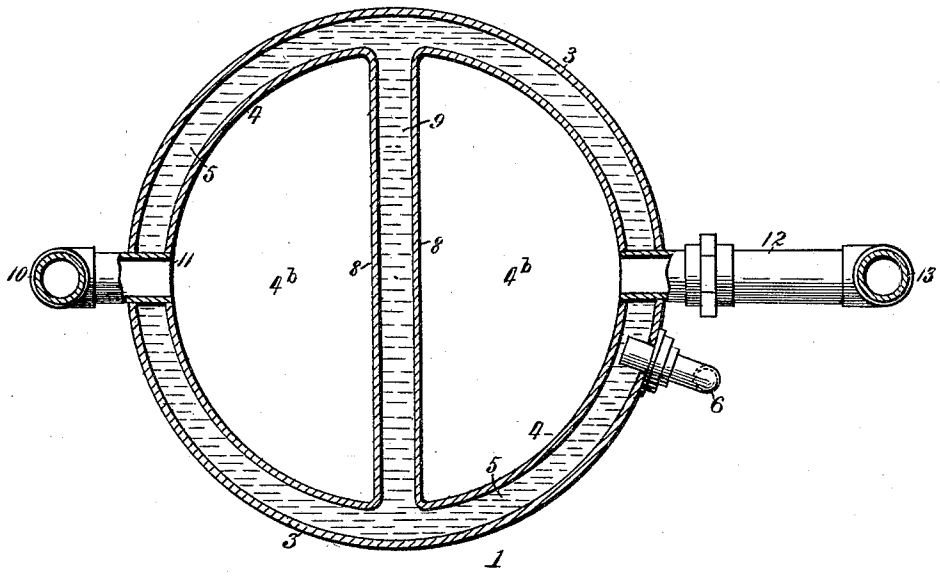
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Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN TUCKER, OF NEW YORK, N. Y.

GREASE-TRAP.

SPECIFICATION forming part of Letters Patent No. 684,623, dated October 15, 1901.

Application filed June 30, 1900. Serial No. 22,169. (No model.)

To all whom it may concern:

Be it known that I, JOHN TUCKER, a citizen of the United States, and a resident of the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Grease-Traps, of which the following is a specification.

My invention relates to traps which are applied to sinks or to the waste-pipes of sinks or the like and into which greasy water or liquid grease may be emptied for the purpose of arresting, congealing, and accumulating the grease, and thus preventing it from gathering upon the interior surface of the waste-pipe and clogging the latter, all as fully set forth in Letters Patent granted to me September 25, 1883, No. 285,770, and October 16, 1883, No. 286,975. In such traps it is usual to admit the waste water to the lower portion of a receiver and to cause the water to pass upwardly and then downwardly and out of the receiver, the greasy particles being thus given an opportunity to rise and gather upon the surface of the water, and the receiver is usually surrounded by a cold-water jacket, whereby the greasy particles are congealed and form a gradually-thickening crust or layer at the top of the receptacle.

The object of the present invention is to simplify the apparatus and also to increase the effectiveness of the trap in congealing and retaining the grease.

The invention consists in certain features of construction, arrangements of parts, and combinations of devices, all as will be fully hereinafter set forth, and particularly pointed out in the concluding claims.

In the accompanying drawings, Figure 1 is a central sectional elevation of a grease-trap constructed in accordance with my invention, and Fig. 2 is a sectional plan taken at the line X X of Fig. 1.

In the views similar parts are designated by similar numerals of reference.

1 indicates as an entirety a cylindrical receptacle resting upon legs 2 and composed of two concentric shells 3 and 4 of such diameters as to provide an intermediate space 5. The outer shell 3 has a top 3^a and bottom 3^b, and the inner and shorter shell 4 has a top 4^a and bottom 4^b, and between said tops there is a space 5^a and between said bottoms a space 5^b. The spaces $5\ 5^a\ 5^b$ communicate with one another and are filled with cold water from a supply-pipe 6, connected to the lower end of the receptacle, which at its upper end is provided with an outlet-pipe 7, so that a circulation of cold water through the spaces or jacket may be obtained.

The lower part of the inner shell or receptacle is divided into two pockets by a transverse vertical hollow partition 8, the cavity or space 9 between the walls of the partition communicating with the space 5^b between the outer and inner shells of the receptacle, so that the cold water may freely circulate within said partition.

The sink is connected to the receptacle by a vertical pipe 10, which enters the lower portion of the inner shell 4 horizontally at a point 11 opposite to or facing the partition 8. An outlet or discharge pipe 12 is connected to the shell 4 at the lower portion of the right-hand pocket at Fig. 1 upon the opposite side of the partition from the ingress 11 and extends upwardly at 13 to a point a little lower than the top of the receptacle, and thence downwardly and to a connection with the main waste or sewer pipe.

The top of the receptacle is provided with a circular opening 14, through which the accumulations of grease may be removed, and said opening is provided with a seat for a lid 15, which may be locked by wing-nuts 16.

Normally the inner shell of the receptacle is nearly filled with waste water, the level of the latter being determined by the height of the upper bend in the discharge-pipe 13. The partition 8 obstructs or breaks the flow of the greasy water from the inlet 11 toward the discharge 12 and deflects it upwardly, the grease remaining at the top by reason of its buoyancy, while the water descends and is discharged at the other side of the partition. The grease is congealed by the cool walls of the receptacle and forms a floating crust or layer. Additions are constantly made to the bottom of this layer, which gradually extend downwardly and if permitted to accumulate will eventually constrict the water-passage over the top of the partition, retard the flow, and then close the passage altogether, thus causing the water to back up

into the sink, whereby the servant or attendant is notified that the receptacle needs cleaning.

The hollow partition 8 prevents the greasy water from driving straight across the trap and into the outlet 12, and by reason of its being cooled by the water circulating therein is extremely useful in congealing the grease, since the area of the cooling-surfaces is materially increased by the provision of said hollow partition. The entering mixture of grease and water is directed toward or against the vertical face of the partition and is quickly chilled thereby, thus not only preventing the partial dissolution of the floating grease cake by the inflow of heated water, but also effectually aiding to congeal the grease contained in the water, so that it may pack upon the under surface of the previously-formed cake. Moreover, as the accumulation of grease continues it encroaches upon the inner surface of the shell 4, so that the effective cooling area of the latter is gradually diminished, but the partition 8 continues to be effective to congeal the grease as long as the waste water can pass into the trap, and it is of especial advantage when the pack of grease extends down nearly to the top of the partition, where the grease would be more exposed to the melting action of the incoming hot water and would be liable to be constantly washed away thereby if the water were not cooled by contact with the hollow partition before striking the cake.

Various changes in details of construction and arrangement may be made within the scope of the invention, the gist of which resides in the arrangement of a cold-water obstruction-chamber or hollow partition within the body of the receptacle.

What I claim as new, and desire to secure by Letters Patent, is—

1. A grease-trap comprising, in combination, a grease-receptacle having an inlet and a discharge, and a cold-water chamber arranged within the body of said grease-receptacle opposite said inlet and extending above the same.

2. A grease-trap comprising, in combination, a receptacle having an inlet and a discharge, and also provided with an external water-jacket, and an internal cold-water chamber communicating with said water-jacket.

3. A grease-trap comprising, in combination, a receptacle having an inlet and a discharge, a hollow obstructing-wall arranged within said receptacle, and means for filling said wall with cold water.

4. A grease-trap comprising, in combination, a receptacle having an inlet, a discharge and a water-jacket, and a hollow obstruction arranged within said receptacle and communicating with said water-jacket.

5. A grease-trap comprising, in combination, a receptacle having an inlet and a discharge, a hollow partition fixed in the lower portion of said receptacle, and means for filling said partition with water.

6. A grease-trap comprising, in combination, a receptacle having an inlet and a discharge, a hollow partition fixed in the lower portion of said receptacle between said inlet and discharge, and means for filling said partition with water.

7. A grease-trap comprising, in combination, a receptacle having an inlet, a vertical hollow cold-water partition arranged in said receptacle opposite said inlet, and an outlet arranged at the other side of said partition.

8. A grease-trap comprising, in combination, a receptacle provided with an internally-arranged hollow cooling device, an inlet constructed and arranged to direct the inflow of greasy water against said cooling device, and an outlet arranged at the lower portion of the receptacle.

9. A grease-trap comprising, in combination, a receptacle provided with a water-jacket, a hollow partition having a water communication with said water-jacket and dividing the lower portion of said receptacle into two pockets, an inlet arranged at the lower portion of one of said pockets, and an outlet arranged at the lower portion of the other of said pockets.

10. A grease-trap comprising, in combination, an inner shell and an outer shell, an inlet and a discharge, an upright cold-water chamber arranged within the body of the inner shell and dividing its lower portion into two pockets, and means for supplying the space between the two shells with cold water and for also supplying the said upright internal water-chamber with cold water.

Signed at the borough of Manhattan, in the city of New York, in the county of New York and State of New York, this 28th day of June, A. D. 1900.

JOHN TUCKER.

Witnesses:
WM. B. BROWN,
WILLIAM T. INNES.