March 24, 1942. D. RIDGE ET AL 2,277,254

GREASE TRAP

Filed Nov. 18, 1938

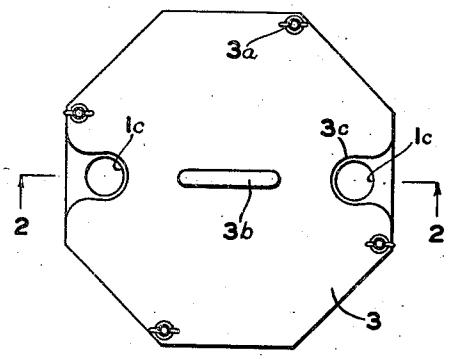


FIG. - 1

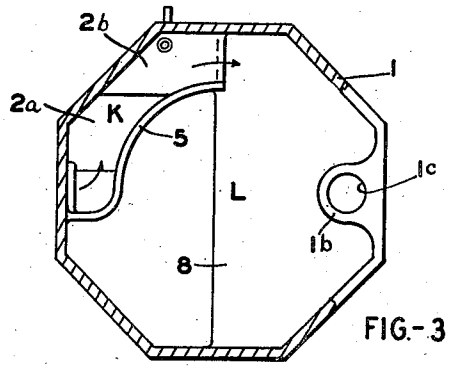


FIG. - 3

FIG. - 4

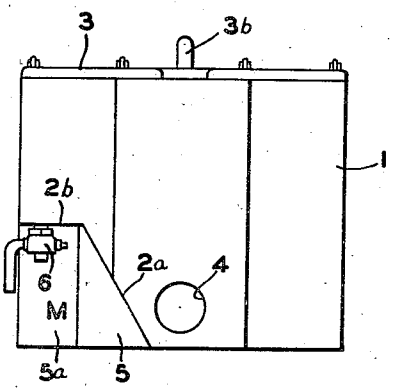
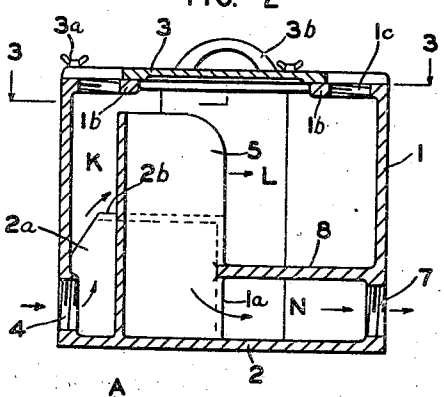


FIG. - 2



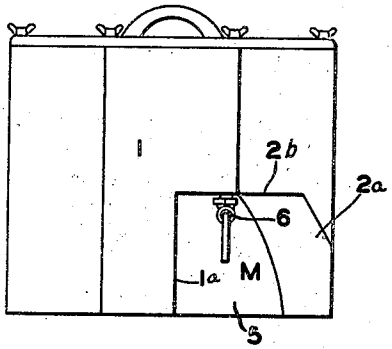
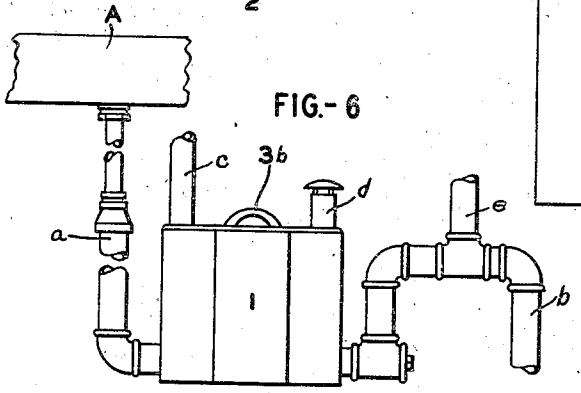


FIG. - 5

FIG. - 6



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Patented Mar. 24, 1942 2,277,254

UNITED STATES PATENT OFFICE

2,277,254

GREASE TRAP

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Application November 18, 1938, Serial No. 241,125

3 Claims. (Cl. 210—56)

This invention relates to grease traps adapted to be connected in waste plumbing lines, such as a line serving a sink or washing machine, to separate and collect entrained grease from the waste stream and thereby prevent clogging the line from grease accumulations, the trap providing for occasional removal of its collected grease and also being connected to provide a gas seal in the waste line.

The general objects of this invention are to provide such a grease trap or separator of improved structure and manner of functioning as will appear.

More particularly an object of the invention is to facilitate removal of the grease therefrom either in liquid or solid form.

The exact nature of this invention together with further objects and advantages thereof will be apparent from the following description taken in connection with the accompanying drawing in which Fig. 1 is a top view of a trap or separator embodying the invention; Fig. 2 is a sectional elevation of the same as in the plane of line 2—2, Fig. 1, and Fig. 3 is a horizontal section of the same as in the planes of line 3—3, Fig. 2, arrows in Figs. 2 and 3 indicating the path of flow; Fig. 4 is an inlet end elevation as viewed from the left, Figs. 1, 2 and 3; Fig. 5 is a side elevation as viewed from the far side, Figs. 1, 2 and 3; and Fig. 6 is a view in elevation indicating the manner in which the trap is connected in a typical installation.

With reference now to the drawing, the trap is preferably of cast iron or the like and has a main hollow container body generally cylindrical and here shown as octagonal, with side walls 1, bottom wall 2 and a generally open top.

The container is provided adjacent its bottom with opposed lateral inlet and outlet openings 4 and 7 respectively, threaded as indicated in Fig. 2 for pipe connections as indicated Fig. 6. An upright inlet baffle wall 5 is arranged as indicated in Figs. 2 and 3 to direct flow laterally from the inlet 4 through a passageway K to the main cavity L of the container and to bound and partially embrace this cavity. That portion of the bottom wall 2 of the container, lying beneath the passageway K is slopingly disposed as at 2a and horizontally elevated as at 2b so that flow through the passageway K will be upwardly as well as laterally to the cavity L.

The baffle 5 extends above the wall part 2b and downwardly therebelow to the lowermost part of the bottom wall 2 as indicated in Fig. 2, and a wall part 1a disposed generally radially of the container, interconnects between the main bottom wall 2, the bottom wall part 2b, the baffle 5 and the corresponding face of the side wall 1 so that an external cavity M is had, of which the bottom wall part 2b comprises the top, this cavity being open laterally of the container.

The bottom wall part 2b is provided with an opening controlled by a drain cock 6 located within the cavity M and obviously accessible from the outside of the trap.

An outlet baffle 8 is disposed generally horizontally just above the outlet opening 7 and extends therefrom and across the container, terminating generally diametrically thereof as indicated Figs. 2 and 3 and preferably joining the baffle 5 and the container wall part 1a; so that a low outlet passageway N is provided leading from the main cavity L.

A cover 3 is provided for the top removably secured thereon as by wing nuts 3a, and having a handle 3b.

The container is provided with an opposed pair of ears 1b overhanging the hollow of the container and provided with openings 1c threaded or otherwise arranged for cooling air connection. The cover 3 seats upon these ears as well as upon the upper extremities of the container side walls, but is peripherally notched as at 3c to clear the openings 1c and their connections.

In practice the trap is connected as indicated in Fig. 6 with a line a leading to its inlet 4, from the sink, washing machine or the like A which is to be served. A waste line b which may be vented as at e leads from the outlet 7 of the trap upwardly, thence downwardly to determine by its arch, a liquid level within the trap preferably slightly below the top of the baffle 5.

The top openings 1c are provided with vented cover d and riser c, for circulation of cooling air through the trap as by thermosiphonic action.

In operation the incoming stream will flow upwardly and laterally from the inlet 4 with slight whirling effect upon the main cavity of the trap. Oils and greases entrained in the water stream from the unit A will accumulate within the trap in the space L, which being of large volume compared to the passageways K and N, provides substantial quiescence of the stream. Water will settle toward the bottom of this space and will flow out through the passageway N substantially without turbulent effect upon the space L because of the large diametric mouth of the passageway N.

Grease will accumulate at the liquid surface and generally within the curvature of the baffle 5.

If the trap contents be sufficiently warm that its grease components remain liquid, these components may be drawn off through the cock valve 6 down to the level of the bottom wall part 2b which is preferably about midway between the main bottom of the trap and the liquid level determined by the waste connection b. Thus the grease is conveniently removed while liquid, just before an overnight shutdown or the like. The wall part 2b preferably has substantial area as indicated, so as to provide a sharp dividing plane between grease and water, that all of the grease may be drained with little if any drainage of water. Danger of breaking the liquid seal of the trap at its inlet and outlet connections is eliminated.

Should the collected grease have become hardened as by cooling, it may be removed through the top of the trap by removal of the cover 3 without disturbing any of the trap connections.

What we claim is:

1. A grease trap of the class described comprising a container providing a chamber having inlet and outlet openings for liquid flow, the walls of said container providing a space of sufficient capacity to provide relative quiescence of liquid flowing through it, said inlet opening being in the lower portion of said container, said container having a portion of its bottom wall elevated with horizontal disposition and provided with means independent of said outlet opening for draining said space, only to the level of said elevated portion of said bottom wall, to a point outside said chamber, and means for maintaining a liquid level in said container above said elevated portion of said bottom wall.

2. A grease trap of the class described comprising a container providing a chamber having a low lateral inlet and an outlet, upright baffle means arranged within said chamber to provide a passageway above the bottom wall of said container and leading laterally from said inlet and to bound a substantial space wherein relative quiescence will be had, said container having the part of its bottom wall beneath said passageway arranged with sloping and elevated portions to cause flow to be upwardly from said inlet to said space, and drain means carried by said elevated bottom portion and opening into that portion of the container chamber above said elevated bottom portion.

3. A grease trap of the class described comprising a container providing a chamber having a low lateral inlet and an outlet, upright baffle means arranged within said chamber to provide a passageway above the bottom wall of said container and leading laterally from said inlet and to bound a substantial space wherein relative quiescence will be had, said container having the part of its bottom wall beneath said passageway arranged with sloping and elevated portions to cause flow to be upwardly from said inlet to said space, and drain means carried by said elevated bottom portion and located therebeneath and communicating with said chamber just above said elevated bottom portion.

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