Sept. 18, 1934. A. J. TURNBULL 1,974,350

ASPIRATOR OR LIQUID ATOMIZER

Filed Oct. 5, 1933

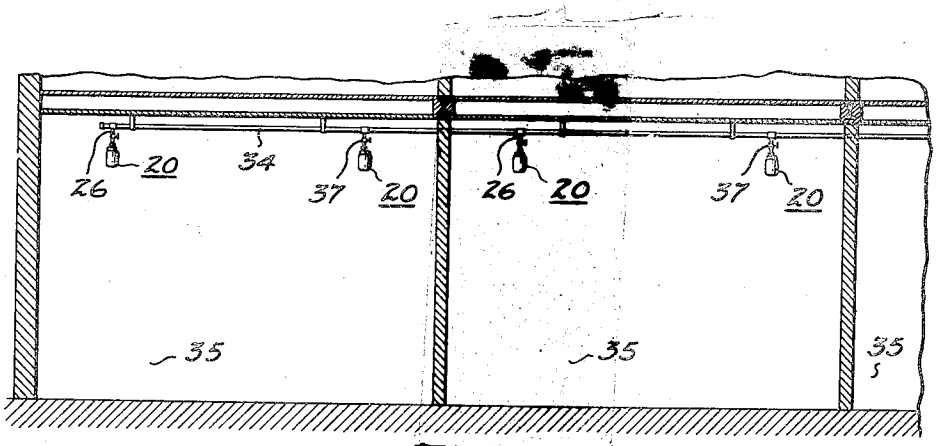


Fig. 1

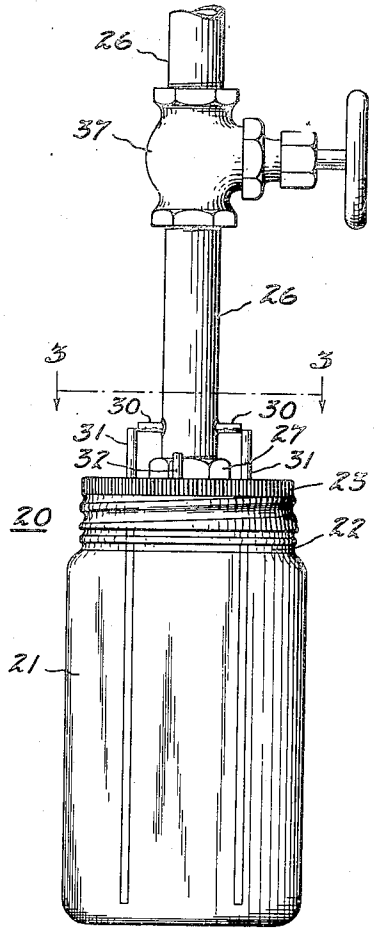


Fig. 2

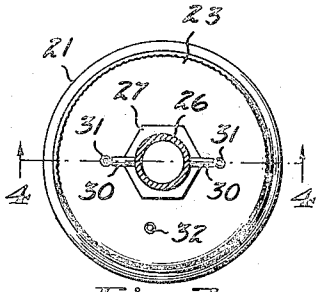


Fig. 3

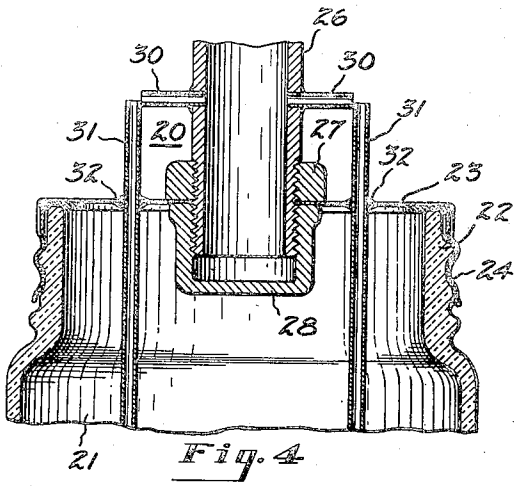


Fig. 4

INVENTOR
Alan J. Turnbull
BY
Warren H. F. Schmaedeke
ATTORNEY

Patented Sept. 18, 1934 1,974,350

UNITED STATES PATENT OFFICE

1,974,350

ASPIRATOR OR LIQUID ATOMIZER

Alan J. Turnbull, Racine, Wis.

Application October 5, 1933, Serial No. 692,230

2 Claims. (Cl. 299—87)

The present invention relates to aspirators or liquid atomizers. One of the objects of the present invention is to provide an improved aspirating system in which aspirating mechanism is secured to the feed pipe, which is connected with a source of pressure, and in which the liquid receptacle is detachable and attachable for ready recharging of the same.

In accordance with the present invention, the lid or cover for the liquid receptacle, is carried directly by the pressure pipe and it is another object of the present invention to utilize the cap, which closes the end of the pipe, as the means for securing the lid or cover in a fixed position.

Further objects and advantages will be apparent from the following description, reference being had to the accompanying drawing wherein a preferred form of embodiment of the present invention is clearly shown.

In the drawing:

Fig. 1 shows several improved aspirators connected with a high pressure pipe;

Fig. 2 is a front view of an aspirator;

Fig. 3 is a top plan view of the aspirator looking in the direction of arrows 3—3 of Fig. 2; and

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3.

Referring to the drawing, the aspirator 20 includes a glass receptacle or jar 21, the neck 22 of which is exteriorly threaded and is attached to a lid or cover 23 having a threaded skirt 24. Cover 23 depends from a vertical distributing pipe 26. The lower end of pipe 26 is provided with a shoulder, the pipe being threaded and carrying a nut 27. The cover 23 is clamped between the shoulder i. e. the bottom side of nut 27 and a pipe cap 28 which cap also closes the lower end of pipe 26. A plurality of short tubes 30, which function as nozzles, extend radially from pipe 26. These nozzles 30 conduct fluid from the pipe 26 outwardly. A plurality of vertical tubes 31 are secured, as by solder at 32, to the cover 23 and are spaced to coincide with the positions of the nozzles 30. The upper ends of these tubes terminate adjacent the outlet ends of nozzles 30 and when fluid under pressure is discharged from the nozzles, a partial vacuum is created in the tubes 31. The lower ends of tubes 31 extend within the jar 21 and when the jar contains a liquid, liquid will be forced upwardly through tubes 31. A small pipe 32 secured to the cover 23 provides an air inlet for the jar 21 so that substantially atmospheric pressure is maintained on the liquid in the jar 21.

The atomizer herein shown is particularly applicable for use in an insect exterminator system for creameries, fur storages, etc. Such system is shown in Fig. 1. In the illustration, the source of high pressure comprises a feed pipe 34 for steam which extends into rooms 35. The vertical distributing pipes 26 depend from feed pipe 34 and a shut off valve 37 is provided in each distributing pipe for individually varying the pressure at the nozzles 30.

The jars 21 are filled with a suitable liquid insecticide or the like and screwed in position with the cover 23. When the valve 37 is opened to the desired amount, a spray of steam is ejected at each nozzle 30 causing the insecticide to be withdrawn from the ends of tubes 31, where the liquid insecticide will be atomized and will commingle with the steam and thereby permeate the atmosphere. When it is necessary to refill a jar 21, the valve 37 is closed and the jar is then screwed from the cover 23.

By permanently securing the nozzles 30 and tubes 31 in a stationary position by providing for the ready removal of jar 21 for refilling or substitution of a filled jar, the cooperative position of nozzles 30 and tubes 31 is not disturbed.

While the form of embodiment of the present invention as herein described constitutes a preferred form, it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

I claim:

1. In a device of the character described, the combination with a feed pipe connected with a source of high pressure, of a distributing pipe depending from said feed pipe and having a shoulder, a nozzle extending outwardly from said distributing pipe, a receptacle cover having an opening for receiving the distributing pipe, a cap for securing the receptacle cover in position against said shoulder and for closing the bottom end of said distributing pipe, a liquid feed conduit open at opposite ends and extending through said receptacle cover, said conduit having its upper end in aspirating relation with the nozzle, and a liquid receptacle detachably secured to the cover and receiving the lower end of said conduit.

2. In a device of the character described, the combination with a vertical pipe connectable with a source of high pressure and having a shoulder, of a plurality of nozzles extending radially from the pipe, a receptacle cover having an opening for receiving the distributing pipe, a cap for securing the receptacle cover in position against said shoulder and for closing the bottom end of said pipe, a plurality of liquid feed conduits carried by the receptacle cover and spaced to coincide with the nozzles, and a liquid receptacle detachably secured to the receptacle cover, said conduits being open at opposite ends, one end of each conduit extending into the receptacle and the opposite end extending above the receptacle cover in aspirating relation with the nozzle.

ALAN J. TURNBULL.