

Aug. 24, 1965

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3,202,118

MOTOR VEHICLE LITTER DISPOSAL

Filed Feb. 21, 1963

2 Sheets-Sheet 1

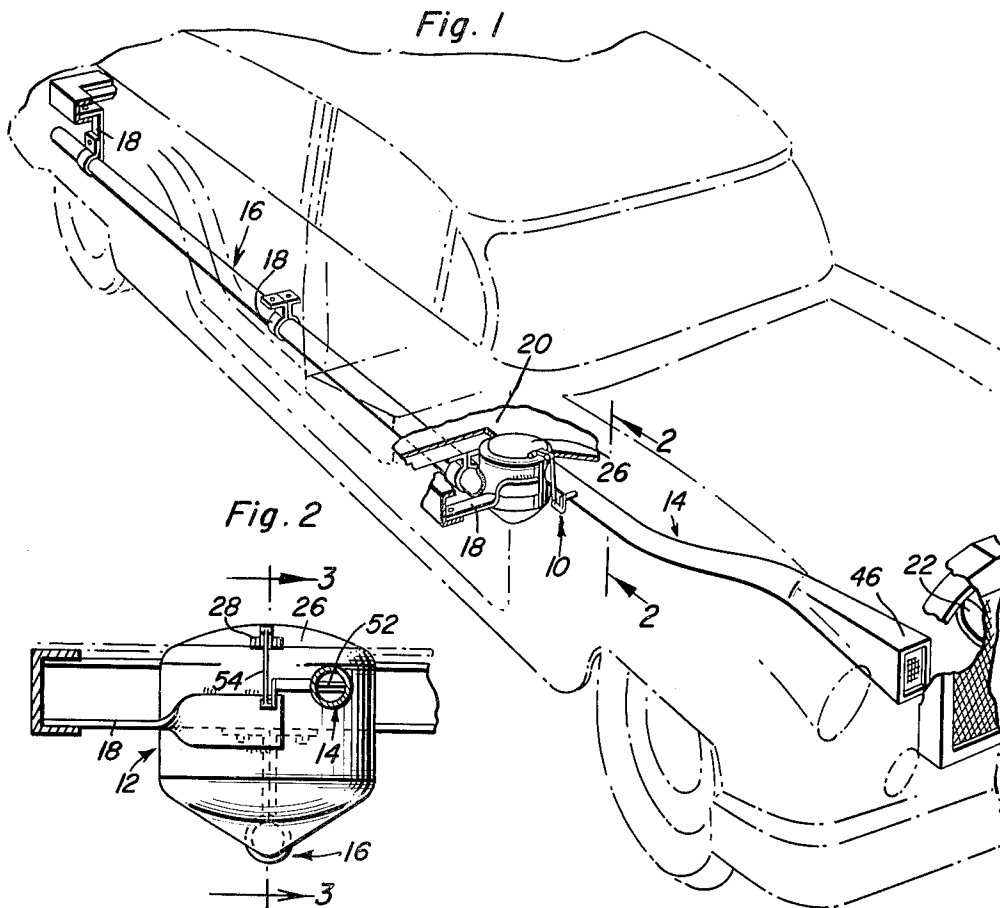
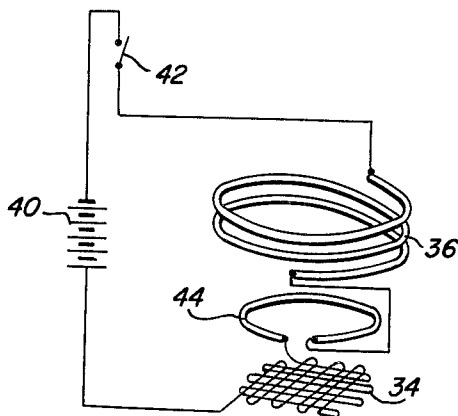


Fig. 5



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2 Sheets-Sheet 2

Fig. 3

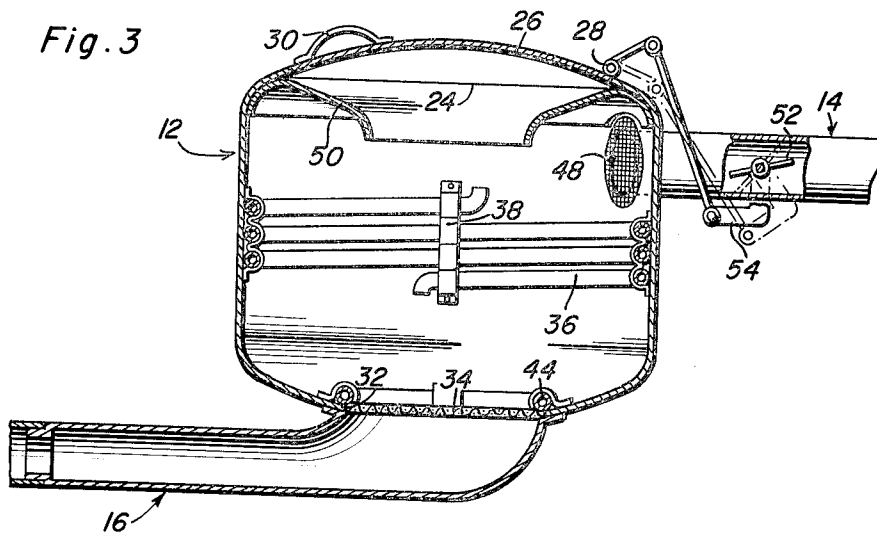
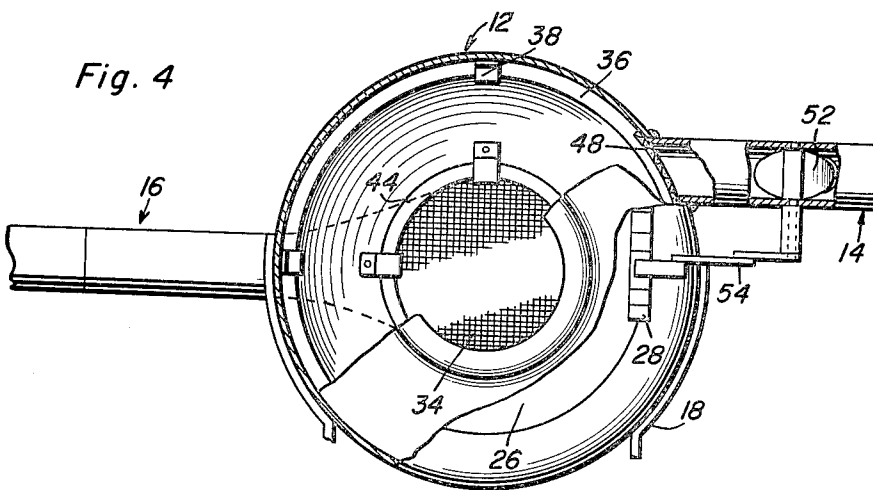


Fig. 4



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1

3,202,118
MOTOR VEHICLE LITTER DISPOSAL
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 Filed Feb. 21, 1963, Ser. No. 260,192
 6 Claims. (Cl. 110-18)

The present invention generally relates to a litter disposal device, and is more particularly concerned with a vehicle mounted portable incinerator capable of quickly incinerating and disposing of various combustible materials, such as cigarettes and paper of any type.

A problem facing those persons concerned with the maintaining of the beauty and cleanliness of our highways is the tendency for a vast majority of the motoring public to carelessly and unthinkingly dispose of any accumulated litter out of the car window, this litter being haphazardly distributed over the road and roadside. While it is appreciated that many States have imposed fines for such actions, and, in many instances, provide roadside receptacles specifically for the deposit of accumulated litter, it is doubtful whether such means has been effective to any great degree in eliminating the problem. Accordingly, it is a primary object of the present invention to provide a device, incorporated into an automobile, or any other vehicle for that matter, which enables the occupant to rapidly and cleanly dispose of any combustible litter in a manner requiring only a minimum amount of effort, certainly no more effort than is required to open a window and throw the litter from a moving vehicle.

In conjunction with the above primary object, it is also an object of the present invention to provide a litter disposal means, which because of the ease and convenience with which it can be used, is expected to greatly reduce the amount of litter now normally scattered on the roads and roadsides.

Further in conjunction with the above primary object, it is also an object of the present invention to provide a litter disposal which will effectively cause the complete burning up of the litter or trash with only a fine powdery ash being subsequently discharged from the vehicle.

It is also an object of the present invention to provide a litter disposal or portable incinerator for the vehicles wherein combustion is produced by the electric heating elements.

Likewise, an object of the present invention is to provide a fire chamber wherein air is introduced from the vehicle fan in a manner so as to produce a swirling effect on the inside thereof, this tending to ensure a complete burning of the litter.

Also, it is an object of the present invention to provide an airtight lid on the portable incinerator through which the litter is introduced, a switch for controlling the energization of the heating elements, and a valving means controlling the introduction of the air to the fire chamber.

Additionally, it is an object of the present invention to provide means for preventing the discharge of anything but a powdery ash from the disposal.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the complete litter disposal shown mounted on an automobile;

FIGURE 2 is a view taken substantially on a plane passing alone line 2-2 in FIGURE 1;

FIGURE 3 is an enlarged cross-sectional view taken substantially on a plane passing along line 3-3 in FIGURE 2;

2

FIGURE 4 is a top view of that portion of the disposal shown in FIGURE 3, portions being broken away for purposes of illustration; and

FIGURE 5 is a diagrammatic illustration of the wiring for the heating elements within the fire chamber.

Referring now more particularly to the drawings, reference numeral 10 has been used to generally indicate the litter disposal or portable incinerator comprising the present invention, this litter disposal, while having been illustrated as mounted on an automobile, being equally adaptable to other types of moving vehicles.

The disposal 10 consists basically of a fire or combustion chamber 12, an air intake pipe 14 and an exhaust pipe 16, the entire device being mounted beneath the vehicle body by suitable support brackets 18 in a manner so as to position the combustion chamber 12 under the front floor boards 20, the forward end of the air intake pipe 14 directly behind the vehicle fan 22, and the rear of the exhaust pipe adjacent the rear of the vehicle.

The combustion chamber 12, cylindrical in shape, is provided with an access opening 24 at the upper end thereof, this opening 24 being located substantially on level with the upper surface of the floor boards 20 so as to allow for easy access to the interior of the chamber 12 by the occupants of the vehicle for the introduction of combustible trash thereto. A lid 26 is provided for the access opening, this lid being pivotally mounted on the chamber 12 by suitable hinge means 28 incorporating biasing means for automatically closing and locking the lid 26 upon the release of the handle 30. The lid 26, as will be appreciated, in its closed position provides an air tight sealing of the access opening 24.

The lower end of the combustion chamber 12 is provided with a discharge opening 32, this opening 32 being suitably covered by a screen or perforated guard 34 so as to prevent discharge of any material other than a powdery ash from the combustion chamber 12.

Located within the combustion chamber 12 between the access opening 24 and discharge opening 32 is a coiled heating element 36 secured peripherally about the wall of the chamber 12 by suitable brackets 38.

The heating element 36 is suitably energized by the vehicle battery 40 and, when energized, is to be capable of producing combustion of the litter within the combustion chamber 12. A switch means 42, located in a convenient position such as for example on the dashboard of an automobile, controls the energization of the heating element 36.

In addition to the heating element 36, a second heating element 44 is coiled about the discharge opening 32 so as to further ensure a complete burning up of the litter. Also, if deemed desirable, the screen 34, as will be appreciated from FIGURE 5, can also be constructed in the manner of a heating element, however, it is contemplated that the elements 36 and 44 will be sufficient for ensuring the desired consuming of the litter.

In order to effect the disposing of the residue from the consumed refuse, an air flow is provided through the combustion chamber 12, this air flow additionally helping to maintain combustion. Air is introduced into the chamber 12 through the air intake pipe 14 which has the enlarged screen protected forward end 46 thereof immediately behind the automobile fan 22 thereby providing the desired air flow even when the vehicle is not in motion, this intake pipe 14 being suitably contoured so as to properly locate the forward end 46 thereof and simultaneously maintain a smooth flow of air therethrough. The rear end of the intake pipe 14 is in communication with the chamber 12 through a suitable screened opening 48 therein, this opening 48 being located near the upper end of the chamber and toward one side of the cham-

ber, the intake pipe 14 orientated so as to approach and join the chamber 12 along an extension of an imaginary chord of a section taken through the chamber 12 at this point thus producing a movement of the air in a circular or swirling path about the interior of the chamber, this tending to encourage a complete burning of the refuse. In order to confine both the litter and the air movement to that portion of the chamber 12 containing the heating elements 36 and 44, a circular baffle 50 is secured peripherally about the interior of the chamber 12 immediately above the screened air intake opening 48, this baffle 50 sloping downwardly and inwardly in the manner of a funnel.

In order to prevent any undesirable introduction of the burned or partially burned material into the vehicle upon an opening of the lid 26, a butterfly valve 52 is provided within the intake pipe 14 this valve being controlled by linking arms 54 extending between the valve 52 and the lid 26 or hinge means 28 in a manner so as to effect a closing of the valve 52 upon a raising of the lid 26. If so desired, this control of the butterfly valve can be effected in other suitable ways such as by means of a control lever mounted on the automobile dash.

The exhaust pipe 16, consisting of one or more sections suitably interconnected in the manner shown in FIGURE 3, is secured peripherally about the discharge opening 32 and receives the powdery residue of the consumed materials therefrom for discharge at the rear of the vehicle, this discharge being effected by the air flow through the intake pipe 14, this air subsequently being introduced into the chamber 12 and out through the discharge opening 32 carrying the powdery ash along with it.

Accordingly, it will be appreciated that a simple though highly novel litter disposal has been defined, this disposal containing all of the desirable features of convenience and ease of use. In operation, the lid 26 is lifted, this shutting off the flow of air through the unit, the litter is introduced into the fire chamber 12, the lid 26 closed, thus opening the valve 52 and causing a swirling of the litter within the chamber 12, and the heating elements 36 and 44 energized so as to effect the desired burning up of the litter prior to its subsequent discharge from the vehicle in the form of a finely powdered ash.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A litter disposal for use in vehicles, consisting of a combustion chamber, an access opening through the top of said chamber, a pivotally mounted closure for said access opening, a discharge opening through

the bottom of said chamber, a foraminous guard covering said discharge opening, an electric heating element for igniting refuse provided within said chamber between said access opening and said discharging opening, and means for introducing an air flow into the upper portion of said chamber for movement therethrough and out the guarded discharge opening, said combustion chamber being substantially cylindrical, and said means for introducing an air flow including an intake pipe, said intake pipe having one end thereof communicating with the interior of the cylindrical chamber along a planar chord thereof offset relative to the center of rotation of the chamber, the other end of said intake pipe being in communication with a source of moving air, thereby producing a movement of the air about the interior of the chamber in a swirling manner.

2. The device of claim 1 including a valve means located within said intake pipe for regulating the flow of air therethrough into the chamber and means interconnecting said valve means and said closure for opening the valve means upon a closing of the closure, and closing the valve means upon an opening of the closure.

3. The device of claim 2 wherein said discharge opening foraminous guard constitutes a second refuse igniting electric heating element.

4. The device of claim 3 including an annular baffle positioned peripherally about the interior of the chamber above the intake opening and below the access opening, said baffle being downwardly and inwardly directed so as to effecting a downward directing of the air flow.

5. The device of claim 4 wherein said first mentioned electric heating element consists of an elongated resistance element coiled about the interior of the cylindrical chamber between the access opening and the discharge opening.

6. The device of claim 1 wherein said electric heating element consists of an elongated resistance element coiled about the interior of the cylindrical chamber between the access opening and the discharge opening.

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