

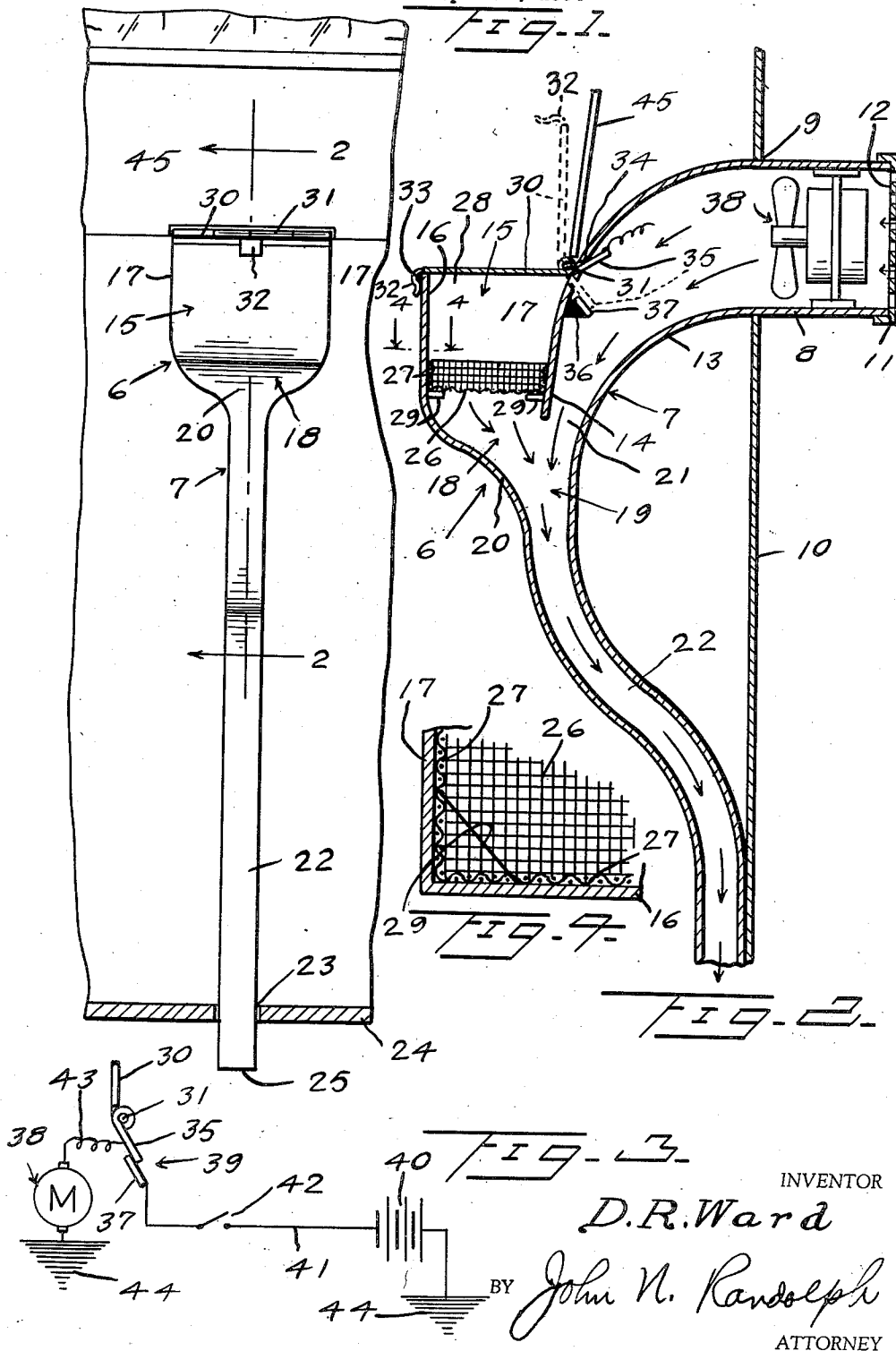
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DISPOSAL UNIT FOR BURNING ITEMS

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DISPOSAL UNIT FOR BURNING ITEMS

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2 Claims. (Cl. 110—18)

This invention relates to a novel disposal unit or incinerator primarily adapted for use in motor vehicles for receiving burning items such as burning tobacco, cigarette and cigar butts and by means of which the items will be maintained ignited for completely consuming such items within the unit and for thereafter discharging the remaining ashes from the unit.

It is a primary object of the present invention to provide a device of extremely simple construction which will eliminate the risk involved in throwing burning cigarette and cigar butts from open windows of motor vehicles and which frequently results in forest fires in wooded areas or fires within the vehicle due to such items blowing back in through another open window of the vehicle and igniting the vehicle upholstery.

Another object of the invention is to provide a device including a receptacle in which the burning items are consumed and which is so disposed that the items are visible to the user while being consumed.

Another object of the invention is to provide a disposal unit or incinerator having a chamber in which the items are consumed and which is very similar in appearance to an ash receptacle or ash tray.

Still another object of the invention is to provide a unit having a closure which is opened for applying items to be consumed to the unit and the opening of which closure renders the unit operative.

Other objects and advantages of the invention will hereinafter become more fully apparent from the following description of the drawing, illustrating a presently preferred embodiment thereof, and wherein:

Figure 1 is a front elevational view of the unit shown mounted in a motor vehicle;

Figure 2 is a somewhat enlarged fragmentary vertical sectional view thereof, taken substantially along a plane as indicated by the line 2—2 of Figure 1;

Figure 3 is a diagrammatic view of an electric circuit of the unit, and

Figure 4 is an enlarged fragmentary horizontal sectional view, taken substantially along a plane as indicated by the line 4—4 of Figure 2.

Referring more specifically to the drawing, the disposal unit or incinerator in its entirety and comprising the invention is designated generally 6 and includes a rigid conduit, designated generally 7, having an enlarged substantially straight end portion 8 which, in the embodiment of the invention as illustrated, is shown extending through and mounted in an opening 9 of a fire wall 10 of a motor vehicle. The end portion 8 of the conduit has an open end 11 opening forwardly with respect to the vehicle and which is preferably mounted beneath one of the wheel fenders, similar to the mounting of the open forward end of a ventilator conduit of a conventional passenger automobile. A perforated grill 12 is preferably mounted over the forwardly opening conduit end 11.

The conduit 7, at the opposite, rear end of its end portion 8 and on the inner side of the fire wall 10, in-

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cludes a downwardly curved portion 13 of diminishing cross sectional size in a direction away from the end portion 8 and which includes a downwardly extending rear part 14. Said rear part 14 constitutes a part of an upwardly opening receptacle, designated generally 15, as well as a part of the lower end of the conduit portion 13. Said receptacle 15 additionally includes an outer or front wall 16 and corresponding side walls 17, which side walls extend between side edges of the front wall 16 and side edge portions of the conduit part 14. The receptacle 15 has a bottom portion 18, formed by the lower portions of the front wall 16 and side walls 17 and which merges with the conduit 7, beneath the part 14, to form a lower downwardly tapering throat portion 19. The lower throat 19 and the bottom portion 18 of the receptacle are formed in part by an inwardly and downwardly curved bottom portion 20 of the front wall 16 of the receptacle. The lower end of the conduit portion 13, disposed immediately adjacent the lower end of the conduit part 14, defines a throat 21 of substantially restricted cross sectional size, as compared to the upper part of the conduit portion 13 and also as compared to the lower throat portion 19 and the bottom portion 18 of the receptacle. Said lower throat portion 19 is disposed beneath and in communication with the restricted upper throat 21 and with the bottom portion 18 of the receptacle and constitutes a flared upper end of the lower part 22 of the conduit 7. Said lower part 22 has a bore of larger cross sectional area than that of the upper throat 21 and preferably extends downwardly through an opening 23 in a floor board part 24 of the vehicle and has a downwardly opening lower end 25 disposed beneath and adjacent the floor board 24.

The receptacle 15 is provided with a foraminous bottom 26 formed of a fireproof material, preferably mesh wire fabric, which is disposed above and adjacent the lower end of the conduit part 14. The mesh wire fabric or other fireproof foraminous material forming the bottom 26 additionally includes upturned portions 27 which engage against and may be suitably secured to the inner sides of portions of the walls 16 and 17 and the side of the part 14 which faces the receptacle 15. Said foraminous wall portions 27 terminate substantially below the open upper end 28 of the receptacle 15. The receptacle 15 may be provided with projections 29 which are suitably secured to the walls thereof and extend inwardly from the corners of said walls, and on which corner portions of the foraminous bottom 26 are supported, as seen in Figures 2 and 4.

The receptacle 15 includes a closure 30 for closing its open upper end 28. In the embodiment of the invention as disclosed, the closure 30 is illustrated as being hinged at 31 to the upper rear part of the receptacle 15, immediately adjacent the conduit part 14 for swinging movement between its closed position as seen in full lines and its open position as seen in dotted lines in Figure 1. If desired, the closure 30 may be provided at its free end with a spring latch element 32 for latching engagement over a keeper part 33 of the front wall 16 to retain the closure in a closed position.

The upper portion of the conduit part 14 is provided with a longitudinally elongated slot 34 in which an arm 35, forming a movable switch contact, is swingably disposed. The arm 35 is fixed to the closure 30 and extends from its hinged end through the slot 34 and projects at an incline upwardly into the conduit portion 13, as seen in full lines in Figure 2, when the closure is in a closed position. A block 36 of electrical insulating material is supported by the part 14 within the conduit portion 13 and provides a support for a stationary electrical contact 37 which is disposed beneath and in the path of swinging movement of the movable contact 35 and which is engaged

by said movable contact, as seen in dotted lines in Figure 2, when the closure 30 is swung upwardly to an open position.

A blower 38 is mounted in the conduit portion 8 and arranged to draw air inwardly through the grill 12 to propel the air through the conduit 7 from said inlet end 11 to the outlet end 25.

Any suitable circuit may be provided for connecting the electric blower 38 to the switch 39, formed by the contacts 35 and 37, and to a source of electric current such as a storage battery 40 of the vehicle. For example, as illustrated in Figure 3, an electrical conductor 41 may lead from the positive side of the battery 40 to the stationary contact 37. A conventional ignition switch 42 of the vehicle is preferably interposed in the conductor 41. An electrical conductor 43 may lead from the movable contact 35 to one terminal of the motor of the blower 38, the other terminal of which may be suitably grounded to the vehicle frame as seen at 44, to which the opposite side of the battery 40 is grounded.

Assuming that the ignition switch 42 is closed, it will be readily apparent that the closure 30 may be swung to its open position as seen in dotted lines in Figure 2 so that burning cigarette or cigar butts to be disposed of or burning tobacco may be dropped into the receptacle 15 through its open top 28, and such items, not shown, will lodge upon the foraminous bottom 26. When the closure 30 is thus swung to a fully open position, as seen in dotted lines in Figure 2, the movable switch contact 35 will engage the stationary contact 37 to complete the electric circuit through the motor of the blower 38 so that air will be drawn inwardly through the grill 12 and propelled from the inlet conduit end 8 toward the outlet end 25 of the conduit 7. As clearly illustrated in Figure 2, the cross sectional area of the inlet portion 8 is substantially larger than that of the outlet portion 22 so that the velocity of the air passing through the conduit 7 will be increased as it travels away from the inlet end 8 thereof, and will be substantially increased in passing through the restricted upper throat 21. Thus, a substantial suction will be created downwardly through the receptacle 15 to accomplish a rapid burning of the consumable items which are supported on the foraminous bottom 26. The foraminous bottom 26 is of sufficiently fine gauge so that said items, not shown, cannot pass downwardly therethrough prior to being completely consumed. However, the suction immediately beneath the bottom 26 is sufficiently great so that the ashes of the consumed items can be broken up and can pass through the foraminous bottom 26 and conveyed downwardly through the conduit portion 28 by the down draft of air therein and discharged through the outlet 25 beneath the vehicle.

It will also be apparent that air will be forced into the conduit 7 through the grill 12 by a forward motion of the vehicle, due to the forwardly facing disposition of the inlet end 11, so that under certain circumstances the disposal unit or incinerator 6 may be utilized without operation of the blower 38 and this may be readily accomplished by positioning the closure 30 in a partially open position, between its full line and dotted line positions of Figure 2, and so that the contact 35 will be out of engagement with the contact 37. The hinge 31 is sufficiently tight to maintain the closure in either a fully open or a partially open position.

It will be obvious that the receptacle 15 may be disposed in any selected position, as for example immediately beneath and forwardly of a part of the vehicle instrument panel 45 or may be disposed in an opening or recess thereof. However, the receptacle 15 may be situated in any other desired location convenient to the driver or passengers of a vehicle and preferably where the inlet end 11 of the conduit can be disposed to open forwardly of an exterior part of the vehicle. Accordingly, the driver or a

passenger of the vehicle can by visual inspection determine when consumable items placed in the receptacle 15 have been completely consumed and accordingly when the closure 30 may be closed.

Consumable items will not burn readily when in contact with a solid surface so that air is prevented from circulating entirely around the items. Accordingly, the mesh wire or foraminous walls 27, surrounding and rising from the bottom 26, are of particular importance in that said walls 27 cooperate with the bottom 26 to prevent the consumable items from contacting any solid surface and so that a complete and rapid burning thereof will be accomplished. Accordingly, the walls 27 may extend to any necessary height above the bottom 26 to accomplish this result and prevent contact of the items to be burned with a solid surface.

Various modifications and changes are contemplated and may obviously be resorted to, without departing from the spirit or scope of the invention as hereinafter defined by the appended claims.

I claim as my invention:

1. A disposal unit comprising an elongated curved conduit having an outlet end and an inlet end, a portion of the conduit, extending from the inlet end, being substantially larger in cross section than the portion of the conduit located adjacent said outlet end, a partition disposed substantially lengthwise in and forming a part of the enlarged conduit portion and combining with a part of said enlarged conduit portion to form a receptacle and with another part thereof to form a restricted throat, said receptacle being disposed in substantially an upright position and having an open upper end and an open lower end, said lower end opening downwardly into an end of the enlarged conduit portion which is disposed remote from the inlet end thereof and in communication with said other restricted conduit portion, said restricted throat being in direct communication with the inlet end and opening downwardly into said last mentioned inner end of the enlarged conduit portion, said conduit diminishing in cross sectional size from the inlet end thereof to the throat, said throat being of substantially smaller cross sectional size than the inner end of the enlarged conduit portion located immediately therebeneath, and said receptacle having a foraminous bottom formed of a fireproof material disposed above the open lower end of the receptacle and substantially beneath the open upper end thereof for supporting the burning items to be consumed, said throat functioning as a nozzle to increase the velocity of air passing downwardly therethrough toward the outlet end of the conduit for creating a downward suction through said receptacle.

2. A disposal unit as in claim 1, said outlet end opening downward, said inlet end being disposed with its axis substantially horizontal, a blower mounted in the conduit adjacent said inlet end for propelling air through the conduit toward the outlet end thereof, a hinge closure mounted on the conduit for closing the upper end of the receptacle, and an electric switch actuated by said closure for completing an electric circuit to the blower when the closure is opened and for breaking the electric circuit to the blower when the closure is moved to a closed position.

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