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[54] **INCINERATOR**

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[52] **U.S. Cl.** ..... **110/18 R,** 110/40 R

[51] **Int. Cl.** **F23g 5/00**

[58] **Field of Search** ..... 110/8 R, 18 R, 19, 110/8 A, 40 R

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[57] **ABSTRACT**

This disclosure relates to a mobile incinerator intended for the collection of refuse and the immediate incineration thereof as the incinerator travels from one location to another. The incinerator includes a hopper having a shredder mounted therein. Shredded refuse is moved by an elevator into a storage area and from the storage area through a fire door into a combustion chamber. The refuse is moved through the combustion chamber with ashes passing into an ash pit through a grate and the combustion gases passing upwardly through a filter into an afterburner chamber. Air is added to the unburnt gases and pollution-free gases pass up through a further filter where the hot gases are cooled before escaping from the incinerator.

21 Claims, 6 Drawing Figures

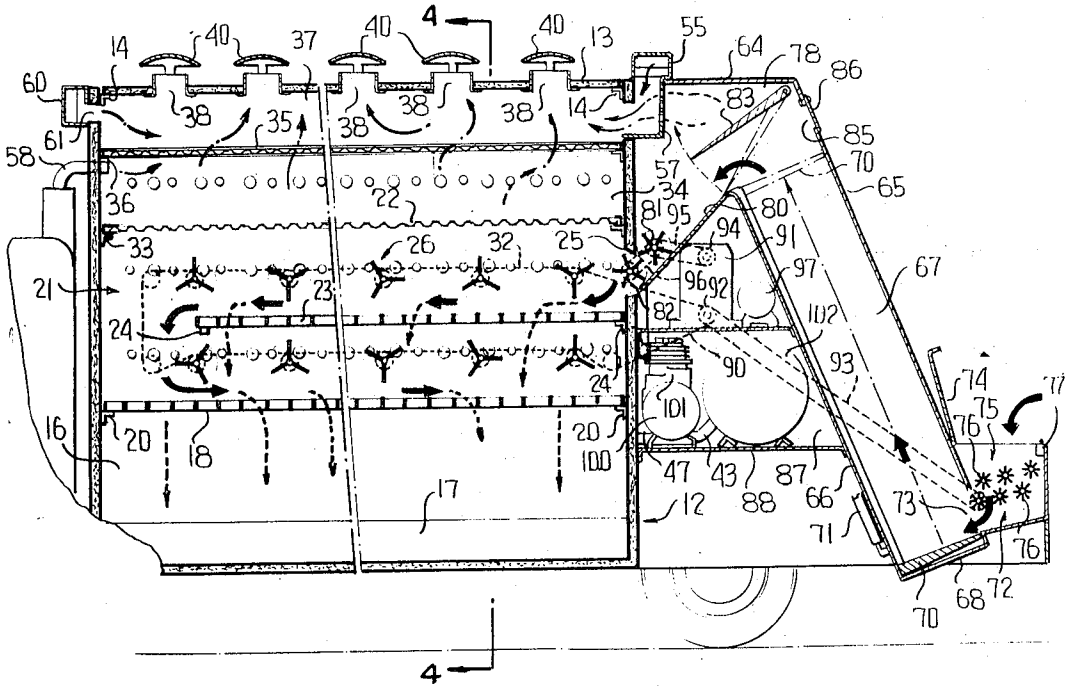


FIG.1

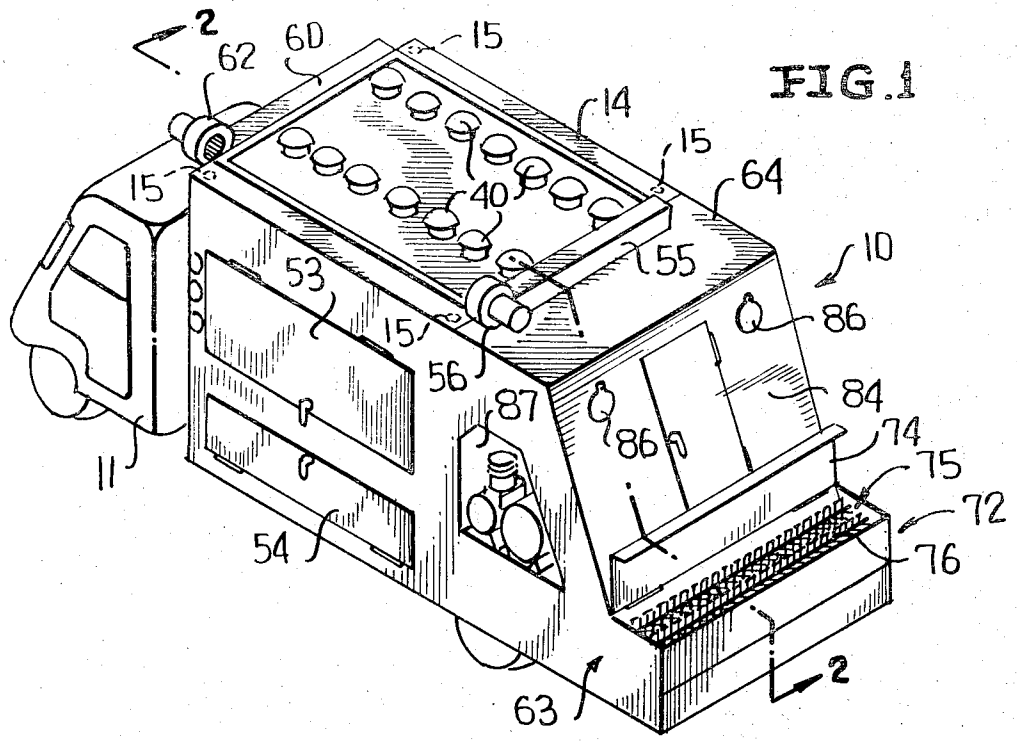
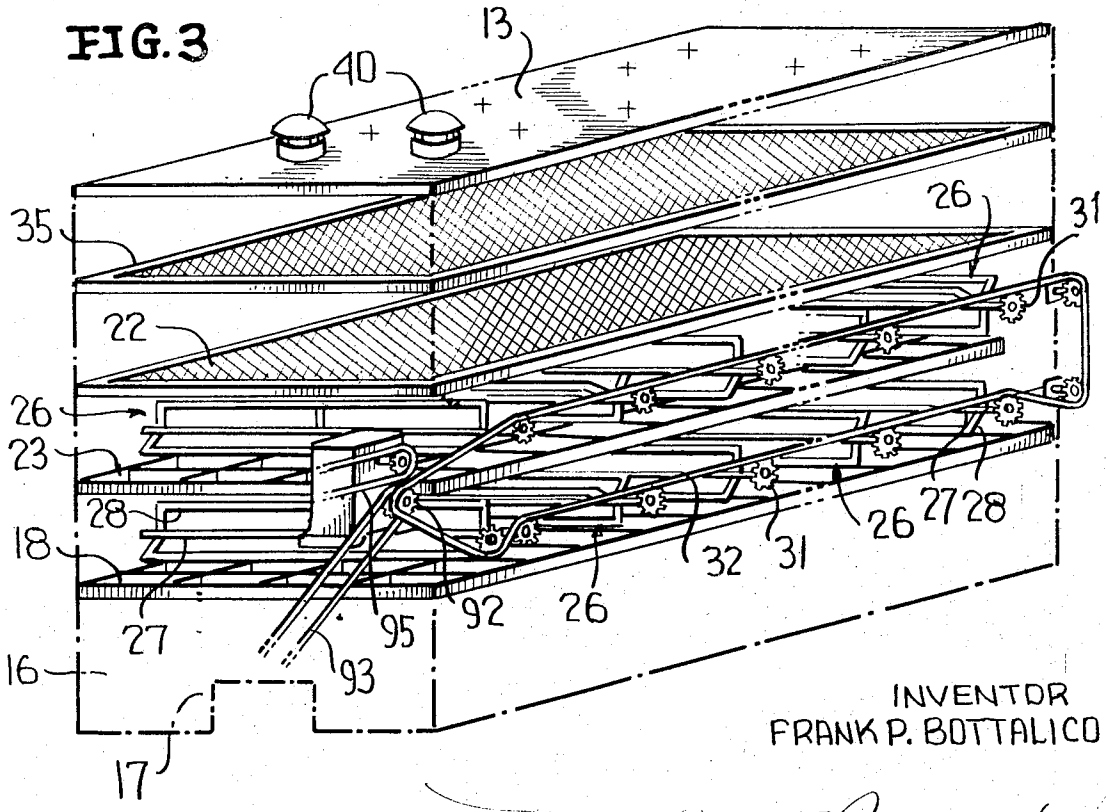


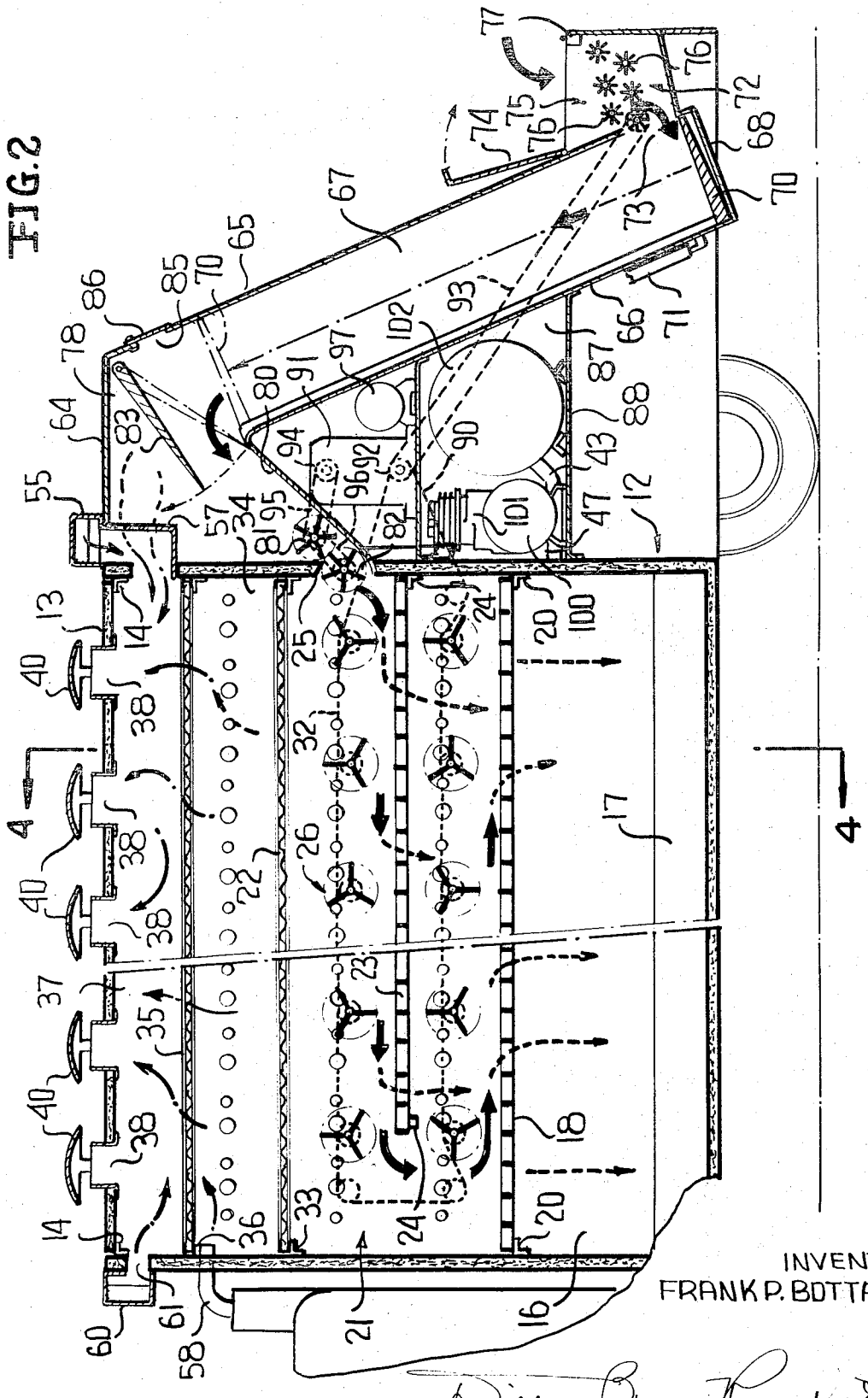
FIG.3



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FIG. 2



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FIG.4

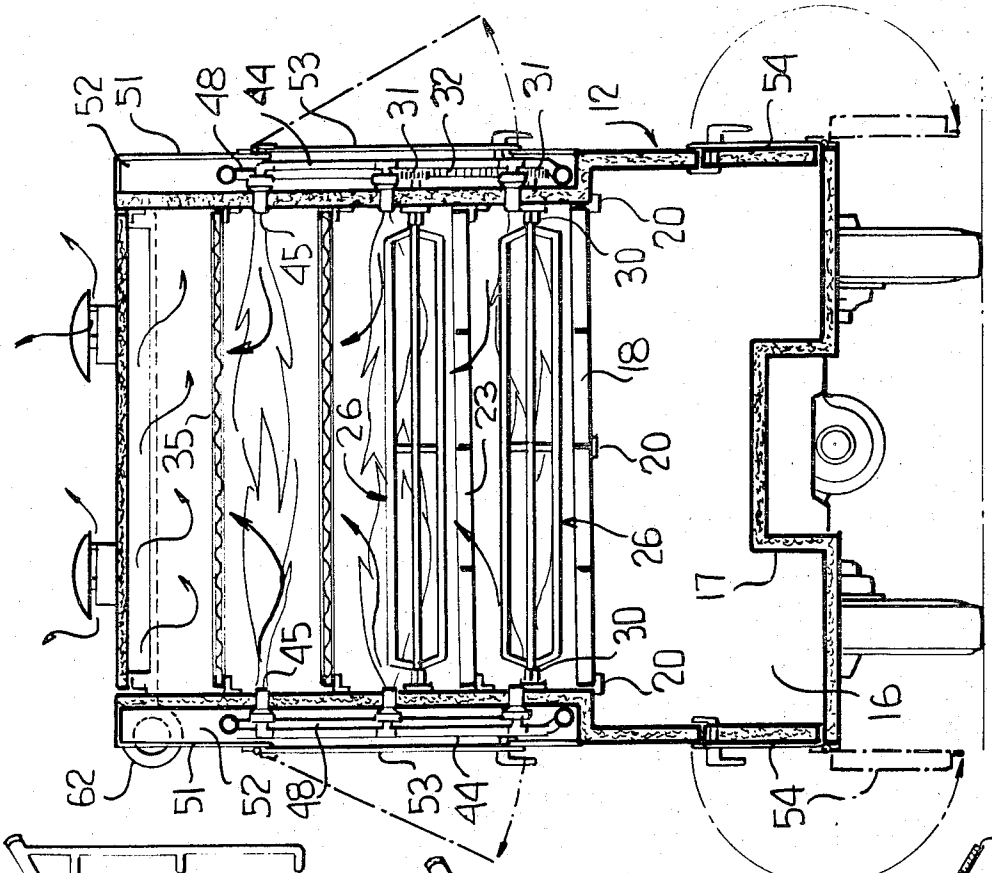


FIG.5

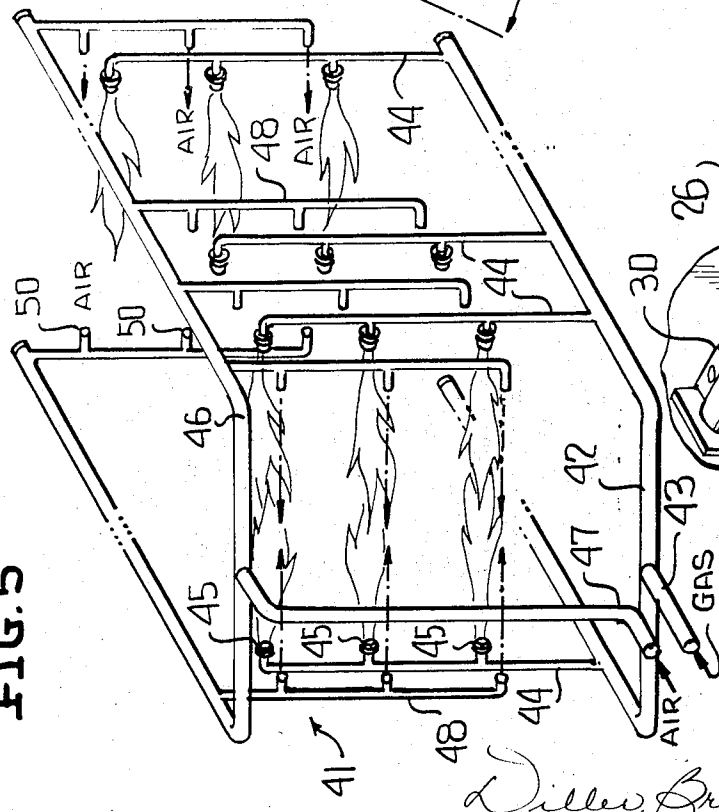
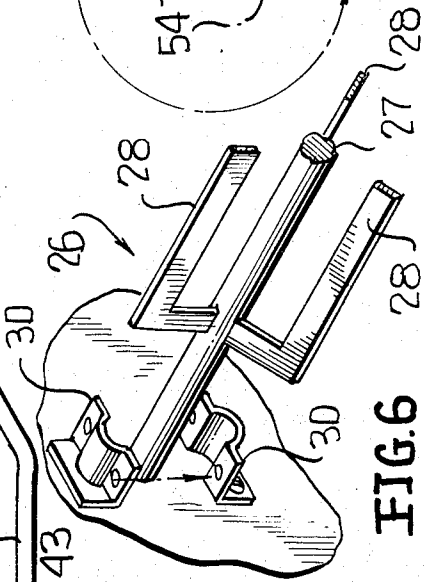


FIG.6



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INCINERATOR

This invention relates in general to new and useful improvements in incinerators, and more particularly to a mobile incinerator wherein refuse, as it is collected, may be incinerated, thereby reducing the effective volume of the refuse to be transported to a minimum while at the same time enhancing the collection of the refuse.

BACKGROUND OF THE INVENTION

Various mobile incinerators have been proposed in the past. While the basic principles of said mobile incinerators are practical, they have contained many deficiencies.

One of the primary deficiencies of prior incinerators is that the refuse is moved into the interior of the incinerator before any reducing action takes place. As a result, when a shredder is provided, jams cannot be readily cleared.

Another deficiency of past incinerators is that the combustion chamber cannot immediately take a full hopper load of refuse and as a result, the combustion chamber becomes immediately overloaded upon the dumping of a hopper full of refuse. Also, when the incinerator is provided with a shredder or other refuse mechanical reducing mechanism, this mechanism also becomes immediately jammed.

Another major deficiency of mobile incinerators has been the gaseous discharge therefrom. It will be readily apparent that inasmuch as the incineration of the refuse takes place at or adjacent a point of collection, pollution must be held to a minimum. However, in the past most mobile incinerators have exhausted the gases of combustion directly to the atmosphere. These gases are not only polluted, but are also hot and the hot gases, even when not polluted, cause damage to the vegetation.

SUMMARY OF THE INVENTION

In accordance with this invention there is provided a mobile incinerator which is provided with a hopper into which refuse is directly emptied by the collector. The hopper is provided with refuse reduction means principally in the form of a shredder. By placing the shredder in the hopper, it is readily accessible for the clearance of jams and necessary repairs.

A further advantage of placing the shredder within the hopper is that the shredded refuse may be more readily handled and when delivered to the combustion chamber, may be more readily moved therethrough.

In the incinerator, instead of the shreaded refuse being directly delivered into the combustion chamber, it passes into a storage area from which it is progressively fed into the combustion chamber, thereby preventing overloading of the combustion chamber.

When desired, the means for feeding refuse from the storage area into the combustion chamber may include a rotating fire door.

The grate of the combustion chamber is mounted in an uneven manner on supports whereby as the mobile incinerator is transported, the roadway shocks imparted thereto will effect the automatic vibration of the grate so as to continuously clear the grate.

The gases of combustion are prevented from escaping directly into the atmosphere, but pass through a filter into an afterburner chamber where air is added thereto to assure complete combustion and the release of pollution-free gases from the incinerator.

Gases pass out of the afterburner chamber into a mixing chamber wherein fresh air is mixed with the pollution-free gases to cool the same so that gases discharged from the incinerator are relatively cool and do not unduly heat the surrounding area.

A further feature of the incinerator, when it is mounted for transportation, is that the vehicle internal combustion engine has the exhaust gases thereof directed into the afterburner chamber for further combustion.

A further feature of the incinerator is that it is primarily in the form of an insulated housing having an open top with a readily removable and replaceable closure. When the closure of the housing is removed, the filters may be removed and ready access to the working components of the combustion chamber is readily obtainable.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claimed subject matter, and the several views illustrated in the accompanying drawings.

In the drawings:

FIG. 1 is a perspective view of the mobile incinerator and shows generally the details thereof.

FIG. 2 is an enlarged longitudinal vertical sectional view taken along the line 2—2 of FIG. 1 and shows the specific construction of the incinerator.

FIG. 3 is a schematic perspective view showing the relationship of the various components of the combustion chamber and the associated filters as well as the removable closure of the housing.

FIG. 4 is a transverse vertical sectional view taken along the line 4—4 of FIG. 2 and shows other constructional details of the incinerator.

FIG. 5 is a schematic perspective view of the gas and air manifolds for the incinerator.

FIG. 6 is an exploded perspective view showing the typical mounting of one of the refuse moving panels of the combustion chamber.

Referring now to the drawings in detail, it will be seen that the mobile incinerator, which is the subject of this invention, is generally identified by the numeral **10**. It is to be understood that the incinerator **10** will be suitably mounted on the frame of a conventional truck **11** and except for specific features which will be described in detail hereinafter, the incinerator **10** is entirely separate and apart from the truck **11**. Provided with a separate power source, the incinerator **10** could equally as well be mounted on a trailer or could be utilized in a stationary location.

The incinerator **10** basically is in the form of a rectangular housing **12** (FIG. 2) which is of a double wall, insulated construction and is provided with an open top which is normally closed by a removable closure panel **13**. The closure panel **13** seats on suitable supports **14** and is removably secured in place by simple fasteners, such as bolts **15** (FIG. 1).

The lower portion of the housing **12** is in the form of an ash pit **16** which may have formed therein a longitudinally extending tunnel **17** to clear the drive shaft of the truck **11**.

Above the ash pit **16** there is a bottom grate **18** having an outline corresponding to the cross section of the

housing 12. The grate 18 is mounted on suitable supports 20 with the supports 20 arranged so that the grate 18 does not seat flush thereon, but is unevenly supported so that it is free to rock a limited amount. The purpose of this mounting of the grate 18 is that when the incinerator 10 is being transported, roadway shocks imparted to the grate 18 will result in the automatic vibration thereof to effect the necessary grate shaking as is most beneficial in the operation of an effective incinerator.

The space above the grate 18 is considered to be a combustion chamber and is generally identified by the numeral 21. The combustion chamber 21 has the upper limits thereof defined by a filter 22 which, like the grate 18, has an outline corresponding to the cross section of the housing 12. The combustion chamber 21 is preferably of a two level or two stage construction and includes a second grate 23 which is similar to the grate 18, but terminates short of the forward end of the housing 12. The grate 23 is mounted on supports 24 in an unlevel condition in the same general manner as that described above with respect to the grate 18 so as to effect an automatic shaking of the grate 23 during the transporting of the incinerator 10.

The rear vertical wall of the housing 12 is provided with a refuse entrance opening 25 through which refuse is delivered into the combustion chamber 21 above the grate 23 at the rear end of the grate 23. In accordance with this invention, the refuse or charred portions thereof are moved along the grate 23 in a forward direction with smaller particles falling through the grate 23 and larger particles falling off of the forward end of the grate 23 and down onto the forward portion of the grate 18. The refuse is then progressively moved rearwardly along the grate 18 and under all efficient operating conditions of the combustion chamber 21, by the time the refuse reaches the rear end of the grate 18, combustion thereof will have been completed.

In order to effect the desired movement of refuse along the grates 23 and 18, paddles, generally identified by the numeral 26, are mounted within the combustion chamber 21 above the grates 23 and 18. A typical paddle construction is shown in FIGS. 4 and 6. Each paddle 26 includes a shaft 27 having a plurality of paddle blades 28 radiating therefrom.

Each shaft 27 is mounted with respect to the housing 12 by means of simple split bearing type supports 30, as is best shown in FIG. 6. At this time it is pointed out that the upper portion of the housing 12 is narrower than the bottom portion thereof with the reduction in width occurring along the plane of the grate 18. The supports 30 are carried by the side walls of the housing 12 and one end portion of each shaft 27 extends through the housing wall in the manner best shown in FIG. 4. The outer ends of the shafts 27 projecting outwardly of the housing 12 are provided with drive sprockets 31 and are engaged by a chain 32 to effect the simultaneous driving of all of the paddles 26.

The filter 22, which defines the top of the combustion chamber 21, is suitably mounted on supports 33 for ease of removal. The filter 22 is preferably constructed of steel, but may be formed of any materials which will withstand the high temperatures of the combustion chamber 21 and will produce the desired filtering action. During the burning of refuse, gases (primarily smoke) and soot will rise to the top of the combustion chamber to the filter 22 with the filter catching the soot and letting the partially burned gases pass therethrough into an afterburner chamber 34 which is disposed above the filter 22.

The upper limits of the afterburner chamber 34 are defined by a second filter 35 which extends the full cross section of the housing 12 and is mounted on suitable supports 36. The space between the filter 34 and the closure panel 13 is in the form of a mixing chamber 37 which, for all practical purposes, receives pollution-free gases from the afterburner chambr 34, these gases passing through the filter 35. The gases entering the mixing chamber 37 are very hot and it is undesirable to release them directly into the atmosphere. Accordingly, cool air is mixed with the hot pollution-free gases in a manner to be described hereinafter so as to effect the cooling thereof before they are released to the atmoshere.

It is to be noted that the closure panel 13 is provided with a plurality of exhaust vents 38. The exhaust vents 38 open directly into the atmosphere by discharging the cool pollution-free gases from the mixing chamber 37. Each exhaust vent 38 is provided with a hood 40 overlying the same. The hoods 40 prevent the entrance of rain water and other fine matter into the mixing chamber 37 from above.

Combustion within the combustion chamber 21 and the afterburner chamber 34 is supported by the introduction of combustible gas and air through the use of a manifolding system which is best illustrated in FIG. 5 and is generally identified by the numeral 41. The manifold system 41 includes a gas manifold 42 which is generally U-shaped in outline and which has a supply line 43 connected thereto. The gas manifold 42 extends around the lower portion of the combustion chamber 21 (FIG. 4) and has branch pipes 44 extending upwardly therefrom on opposite sides of the upper portion of the housing 12. It is to be understood that only certain of the branch pipes 44 have been illustrated. Each of the branch pipes 44 is provided with a plurality of nozzles for delivering gases into a combustion chamber 21 above the grates 18 and 23 and into the afterburner chamber 34.

The manifold system 41 also includes an air manifold 46. The air manifold 46 is also of a U-shaped configuration and extends around the upper portion of the housing 12. It generally lies in the plane of the filter 35 as is best shown in FIG. 4. The air manifold 46 has connected thereto an air supply pipe 47 and is provided with a plurality of depending branch lines 48. The branch lines 48, of which only a few have been illustrated, are provided with a plurality of nozzles 50 for directing air into the combustion chamber 21 above the grates 18 and 23 and into the afterburner chamber 34.

As is best shown in FIGS. 2 and 5, the nozzles 45 and 50 are preferably arranged in lines on opposite sides of the housing 12. Thus, the air is immediately available adjacent the gas nozzles 45 to support combustion therefrom.

With reference to FIG. 4, it will be seen that although the upper portion of the housing 12 is of a reduced width, the overall incinerator configuration is of the same width through the diversion of body panels 51 which are spaced outwardly of the upper side walls of the housing 12 so as to define compartments 52 on opposite sides of the upper portion of the housing 12. The manifolds and the drives for the paddles are mounted within these compartments 52. Access to the interior of

these compartments 52 is readily available by means of doors 53 which are best shown in FIGS. 1 and 4.

At this time it is also pointed out that access to the ash box 16 is obtainable from both sides of the housing 12 by way of lower doors 54 which are hingedly mounted to swing downwardly, as is best shown in FIGS. 1 and 4. It will be readily apparent that the position of the doors 54 is such that the ash box may be readily cleaned.

Referring once again to the afterburner chamber 34 and the function thereof to completely burn the unburned and partially burned gases passing up through the filter 22, it is to be noted that at the top rear portion of the housing 12 there is mounted an air duct 55 extending substantially the width of the housing 12 which, as is best shown in FIG. 1, has associated therewith a blower 56. The air duct 55 has an elongated opening for directing air into a housing 57 from which air enters the mixing chamber 37 through an opening 59. The air supplied the mixing chamber 37 supplements that delivered thereto through the air manifold 46 so that there is an overabundance of oxygen available in the afterburner chamber 34 to support a complete combustion of all gases entering the same. The housing 57 also has a plurality of openings (unnumbered) for drawing any gases which may migrate from the chamber 21 into the storage area 78 to the mixing chamber 37 for subsequent discharge to atmosphere.

It is also to be noted that a further beneficial result may be obtained when the incinerator 10 is mounted on a truck in that the exhaust pipe 58 of the internal combustion engine (not shown) of the truck 11 may open directly into the afterburner chamber 34 with the exhaust gases of the internal combustion engine entering into the afterburner chamber 34. In this manner the afterburner chamber 34 may also be utilized to completely burn and thus purify the exhaust gases of the internal combustion engine of the truck.

Considering next the mixing chamber 37, it is to be noted that a duct 60, which is similar to the duct 55, is mounted at the upper forward edge of the housing 12. The duct 60 is provided with a housing 61 which opens into the mixing chamber 37 for delivering outside air thereto. Air flow through the ducts 60 is enhanced by means of a blower 62 (FIG. 1) mounted at one end of the duct. The flow of outside air into the mixing chamber 37 results in a supply of air which mixes with the exhaust gases passing into the mixing chamber 37 through the filter 35 which cools the relatively hot gases so as to make certain that the gases released to the atmosphere are not sufficiently hot to damage any of the vegetation.

Referring once again to FIGS. 1 and 2 in particular, it will be seen that the incinerator 10 includes a rear extension of the housing 12, this rear extension being generally identified by the numeral 63. The rear extension 63 is in part defined by extensions of the outer side walls of the housing 12. The extension 63 further includes a relatively short top wall 64 which terminates in a downwardly sloping rear wall 65.

The extension 63 also includes a downwardly sloping inner wall 66 which is disposed forwardly of and generally parallel to the wall 65. The walls 65 and 66, together with the side walls of the incinerator, combine to define an elevator area 67. The elevator area 67 also includes a bottom wall 68 and there is mounted within the elevator area 76 an elevator platform 70 which is mounted in a conventional manner for vertical movement within the elevator area 67. The elevator 70 may be actuated, for example, by a pair of hydraulic cylinders of which a piston rod 71 is shown in FIG. 2 for illustrative purposes only.

At the extreme rear of the extension 63 is a hopper, which is generally identified by the numeral 72. The hopper 72 in in the form of a generally rectangular box and is in direct communication with the lower portion of the elevator area 67 through an opening 73. The hopper 72 is provided with a cover 74 which is hingedly mounted for upward swinging to an open position wherein refuse may be readily dumped into the upper end of the hopper 72, which upper end will be disposed at an elevation so as to permit the ready dumping of refuse from containers into the hopper 72.

In accordance with the principles of this invention, there is mounted within the hopper 72 means for reducing the refuse to relatively small pieces. These means are in the form of a shredder, which is generally identified by the numeral 75. The shredder 75 may be of any construction and is illustrated as including a plurality of shredding rolls 76 which are interconnected in a conventional manner, either by gearing or by chain drive, for simultaneous rotation.

It will be readily apparent that all refuse emptied into the top of the hopper 72 will be directed into the shredder 75 for shredding into relatively small pieces. There is sufficient space above the shredder 75 to empty several containers of refuse and after the refuse has been placed within the hopper 72, the cover 74 is moved to the closed position thereof. In accordance with this invention, a suitable switch, such as the switch 77, will be provided for controlling the operation of the shredder 75. Although it has not been specifically illustrated herein, it is to be understood that the switch 77 may control an electric clutch coupled in the drive for the shredder 75.

After the cover 74 has been moved to its closed position, the shredder 75 will function in the normal manner to shred the refuse and deliver the same through the opening 73 into the elevator area 67 above the elevator 70. It is to be noted that inasmuch as the shredder 75 is mounted within the hopper 72 in a readily accessible position, if there should be any jamming of the shredder such as by large metal articles or the like, the jam may be readily cleared by opening the cover 74 and reaching in and taking out the jamming elements. This is highly advantageous inasmuch as jamming is very apt to occur in the shredder because one cannot assure the refuse to be free of such articles which are capable of jamming the shredder.

It also is to be noted that the placing of the shredder within the hopper 72 is advantageous inasmuch as it reduces the refuse to alter the small particles which may be more readily received by the elevator 70 in a compact relation for movement up through the elevator area 67.

At the upper end of the elevator area 67 there is a storage area 78 which is in part defined by a transversely extending, downwardly and forwardly sloping wall 80. The elevator member 70 is disposed at such an angle wherein when it reaches its uppermost position, as is shown in phantom lines in FIG. 2, the refuse will slide off the same and generally down the wall 80 toward the entrance opening 25 into the combustion chamber 21.

At the lower end of the storage area **78** there are a pair of feeders **81** and **82.** These feeders are utilized to move refuse from the storage area **78** into the combustion chamber **21.** It is also to be noted that the feeder **82,** which is disposed within the entrance opening **25** functions as a fire stop and serves to close the entrance opening **25** in the stationary position thereof.

While normally refuse delivered into the storage area **78** will be immediately delivered to the combustion chamber **21,** if the loading of the combustion chamber **21** occurs at a too rapid rate under normal collection routine, overloading of the combustion chamber **21** can be prevented by permitting the refuse to be stored in the storage area **78.** Since the lower feeder **82** functions as a fire stop, it will be readily apparent that combustion will not occur within the storage area **78.**

It is also pointed out at this time that movement of the refuse stored within the storage area **78** back down through the elevator area **67** is normally prevented by a gravity actuated door **83** which is automatically opened by refuse moved up into the storage area **78** by the elevator member **70.** This door **83** also functions as a fire stop so as to prevent any combustion occurring in the elevator area **67** if accidently combustion does occur in the storage area **78.**

At this time reference is once again made to FIGS. **1** and **2** wherein it is shown that access to the elevator area **67** is readily obtainable by means of a door **84** in the rear wall **65.** Also, access to the storage area **78** is obtained by means of a pair of ports **85** which are normally closed by pivotally mounted cover plates **86.**

Beneath the storage area **78** and between the rear wall of the housing **12** and the wall **67** there is a machinery and supply area **87.** This area is, in part, defined by a lower platform **88** and an upper platform **90.** The upper platform **90** has supported thereon a power take-off drive unit **91** which is coupled to the drive train of the truck **11** in any conventional manner. The drive unit **91** includes an output shaft **92** which drives both the chain **32** and a chain **93** which, in turn, drives the shredder **75.** It is to be understood that the aforementioned clutch for controlling the operation of the shredder **75** will be suitably incorporated between the drive unit **91** and the shredder **75.**

The drive unit **91** also includes an output shaft **94** which is connected by means of a chain **95** to the feeder **81.** The feeder **81,** in turn, is connected by means of a chain **96** to the feeder **82** to drive the same.

In view of the fact that certain of the components of the incinerator **10** are electrically driven, for example, the blowers **56, 62** and the nonillustrated electric clutch for effecting the driving of the shredder **75,** it is desirable that the incinerator **10** have its own electrical power supply. Accordingly, a generator **97** is mounted on the shelf **90** and is suitably driven from the drive unit **91.**

On the shelf **88** there is mounted a compressed air tank **100** to which the air line **47** is connected. The compressed air tank **100** has associated therewith an air compressor **101** which, in turn, will be driven from the drive unit **91** in the customary manner.

Alongside the compressed air tank **100** and also mounted on the shelf **88** is a gas supply tank **102.** The gas supply tank is connected to the gas manifold **42** by means of the supply line **43.** It is to be understood that a suitable, readily available and relatively inexpensive gas, such as propane, will be stored in the gas supply tank **102** under pressure and will be utilized as the fuel in the combustion chamber **21** and the afterburner chamber **34.**

It will be readily apparent from the foregoing that there has not only been provided a compact incinerator construction which may be readily mounted on a truck chassis in a conventional manner so as to be mobile, but also the incinerator construction is highly efficient, substantially jam-proof and readily repairable. In addition, the construction of the incinerator is such that it may be readily cleansed with the expenditure of a minimum amount of time and effort.

Although only a preferred embodiment of the incinerator has been specifically illustrated and described herein, it is to be understood that minor modifications may be made therein without departing from the sphere and scope of the invention, as defined by the appended claims.

I claim:

1. An incinerator comprising means defining a combustion chamber, means defining a holding chamber adjacent said combustion chamber, first access means between said holding and combustion chambers through which refuse passes from said holding chamber to said combustion chamber, second access means through which refuse passes from the exterior of said holding chamber into the interior thereof, operable closure means for normally closing said second access means, and other means closing said first access means past which refuse passes during movement from said storage chamber to said combustion chamber.

2. The incinerator as defined in claim **1** wherein said operable closure means is a door mounted for swinging movement about a generally horizontal axis.

3. The incinerator as defined in claim **2** wherein said other closing means is a rotatable fire door of a paddle wheel configuration mounted for rotation about a generally horizontal axis.

4. The incinerator as defined in claim **1** wherein said other closing means is a rotatable fire door of a paddle wheel configuration mounted for rotation about a generally horizontal axis.

5. The incinerator as defined in claim **2** including means for rotating said fire door.

6. The incinerator as defined in claim **4** constituting means defining a mixing chamber above said combustion chamber, and means for venting gases from said holding chamber to said mixing chamber.

7. The incinerator as defined in claim **1** including means defining a mixing chamber above said combustion chamber, and means for venting gases from said holding chamber to said mixing chamber.

8. An incinerator comprising means defining a combustion chamber, means defining a hopper for receiving refuse, means for conveying refuse from said hopper to an elevated area, means normally closing communication between said area and said combustion chamber, said closing means being a door, and means mounting said door for swinging movement between open and closed positions whereby in said open position refuse may be transferred from said elevated area to said combustion chamber whereas in said closed position combustion gases are precluded from back drafting into said area, said elevated rea includes a wall inclined in a downward direction toward said combustion chamber, said inclined wall and door when in its closed position cooperatively close communication between

said elevated area and said combustion chamber, said mounting means mounts said door for swinging movement about a generally horizontal axis, said conveying means includes a platform inclined in a like direction as that of said inclined wall, and means for linearly reciprocating said platform between said hopper and said inclined wall whereby said door will be automatically opened by movement of said platform and refuse will slide off said platform and upon said inclined wall when the platform is disposed contiguous thereto.

9. An incinerator comprising means defining a combustion chamber, means defining a hopper for receiving refuse, means for conveying refuse from said hopper to an elevated area adjacent an inclined wall which in part defines a holding chamber positioned between said combustion chamber and said elevated area, first means normally closing first access means through which refuse moves between said elevated area and said holding chamber, second means normally closing second access means through which refuse moves between said holding and combustion chambers, at least two grate means in said combustion chamber along which refuse is adapted for movement, said grate means being in vertical spaced relationship to each other, first means for moving refuse along an uppermost one of said grate means in a first direction, and second means for thereafter moving refuse along a next lowermost one of said grate means in a second direction opposite to said first direction.

10. The incinerator as defined in claim **9** wherein said elevated area includes a wall inclined in a downward direction toward said combustion chamber, said conveying means includes a platform inclined in a like direction, and means for linearly reciprocating said conveying means between said hopper and said inclined wall whereby refuse will slide off said platform and upon said inclined wall when the platform is disposed contiguous thereto.

11. The incinerator as defined in claim **9** wherein said first closing means is a door mounted for swinging movement about a generally horizontal axis.

12. The incinerator as defined in claim **9** wherein said second closing means is a rotatable fire door of a paddle wheel configuration mounted for rotation about a generally horizontal axis.

13. The incinerator as defined in claim **9** wherein said hopper includes shredder means for reducing the size of the refuse, a cover for said hopper, drive means responsive to the closing of said cover for initiating the operation of said shredder means, means for reciprocating said conveying means between said hopper and said inclined wall, said conveyor means including a platform also disposed in inclined relationship to the horizontal in the same sense as said inclined wall, said first closing means being a door positioned above said inclined wall, means mounting said door for swinging movement about a generally horizontal axis, said second closing means being a rotatable fire door of a paddle wheel configuration mounted for rotation about a generally horizontal axis, means for imparting rotation to said rotatable fire door in a direction to feed refuse from said holding chamber to said combustion chamber, said first and second means for moving refuse along said at least two grate means being a plurality of paddle wheel feeders rotatable generally along a horizontal axis, means for rotating said paddle wheel feeders in appropriate directions, means mounting said grate means unevenly whereby said grate means are readily vibratable, said incinerator is mobile whereby said grate means are automatically vibrated to normal transport of said incinerator, means defining a mixing chamber above said combustion chamber, and means placing said holding chamber in fluid communication with said mixing chamber to vent gases thereinto.

14. A mobile incinerator comprising a wheeled vehicle body having front and rear ends, a combustion chamber within said vehicle body, means defining a hopper at a lower portion of said vehicle body rear end, means for conveying refuse from said hopper to an elevated area at an upper portion of said vehicle body rear end, means normally closing communication between said elevated area and a chamber housing said conveying means, said closing means being a door, means mounting said door for swinging movement between open and closed positions whereby in said open position refuse may be transferred from said conveying means to said elevated area whereas in said closed position combustion gases are precluded from back drafting into said housing, said elevated area includes a wall inclined in a downward and inward direction toward said vehicle body front end and said combustion chamber, said mounting means mounts said door for swinging movement about a generally horizontal axis spaced above said inclined wall, said conveying means includes a platform inclined in a like direction as that of said inclined wall, and means for linearly reciprocating said platform generally vertical between said hopper and said inclined wall whereby said door will be automatically opened by movement of said platform and refuse will slide off said platform and upon said inclined wall when the platform is disposed contiguous thereto.

15. The mobile incinerator as defined in claim **14** wherein said elevated area constitutes a holding chamber for refuse between said combustion chamber and said housing, access means between said storage and combustion chambers, and openable closing means past which refuse passes during movement thereof from said storage chamber to said combustion chamber.

16. The mobile incinerator as defined in claim **15** wherein said openable closing means is a rotatable door.

17. The mobile incinerator as defined in claim **15** wherein said openable closing means is a rotatable paddle-wheel.

18. The mobile incinerator as defined in claim **15** wherein said openable closing means is a pair of rotatable paddle wheels.

19. The mobile incinerator as defined in claim **14** including at least two grates in said combustion chamber along which refuse is adapted for movement, said grates being in vertical spaced relationship to each other, first means for moving refuse along an uppermost area of said grates in a direction from said vehicle body rear end toward said vehicle body front end, said uppermost one of said grates extends a lesser distance toward said vehicle body front end than a next lowermost one of said grates whereby refuse will fall from said uppermost grate upon said next lowermost grate, and second means for moving refuse along said lowermost grate in a direction from said vehicle body front end toward said vehicle body rear end.

20. The mobile incinerator as defined in claim **19** including means mounting said grates unevenly whereby

said grates are automatically vibrated through normal transport of said mobile incinerator.

21. The mobile incinerator as defined in claim 21 wherein said elevated area constitutes a holding chamber for refuse between said combustion chamber and said housing, access means between said storage and combustion chambers, and openable closing means past which refuse passes during communication thereof from said storage to said combustion chamber.

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