The present invention generally relates to a grease extracting vent and more particularly to such a vent incorporated in a hot-fryer for melting the grease extracted from the fumes created by a cook stove during the cooking process together with a construction incorporating a natural drainage for grease so that the same may be discharged into a disposable receptacle.

An object of the present invention is to provide a grease extracting vent with heating means and grease drainage means that is an improvement over Patent No. 2,748,688, granted June 5, 1956, for Grease Extracting Vent.

As in the above mentioned patent, other objects of the present invention reside in the extraction of grease from fumes created by a cook stove for eliminating a serious fire hazard and for easy disposal of such grease for maintaining the cooking area in a clean and sanitary condition.

A further important feature of the present invention is to provide a heating device mounted interiorly of the hollow drum forming part of the vent for melting the grease thereon thus preventing deposit of grease on the exterior surface of the drum so that the melted grease will drop into a receptacle provided therefor together with a heating element on the undersurface of the receptacle for heating the grease therein and further providing a drainage for the receptacle by lowering one end below the other and providing a box-like drain on the lowered end of the canopy for draining the grease into a disposable container so that the disposable container may be deposited into a garbage can or the like thus disposing of the grease without any damage to a sewerage system thus greatly reducing the fire hazard in the ventilation system and also in the sewer system and further keeping these units clean and sanitary.

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 showing the grease extracting vent of the present invention assembled over a stove;

FIGURE 2 is a vertical sectional view taken substantially on a plane passing along section line 2—2 of FIGURE 1 of the grease extracting vent illustrating the details of construction thereof;

FIGURE 3 is a longitudinal sectional view taken substantially upon a plane passing along section line 3—3 of FIGURE 2 illustrating further structural details of the grease extracting vent;

FIGURE 4 is a perspective view of the drum with portions broken away for illustrating the orientation of the heating element in the drum; and

FIGURE 5 is a detailed elevation with portions broken away showing the labyrinth mechanism for the movable part of the baffle.

Referring now specifically to the drawings, the grease extracting vent of the present invention includes a canopy generally designated by the numeral 10 which is fitted over the upper edge of a stove 12 and is provided with a discharge conduit 14 and a transition conduit 16 between the canopy 10 and the discharge conduit 14. The discharge conduit 14 is provided with a suitable discharge fan (not shown) located therein for pulling the grease laden fumes through the grease extracting vent.

The canopy 10 includes a back wall 18, end walls 20 and a partial top wall 22 having a downturned flange 24 across the front portion thereof. The end wall 20 may also be provided with inturmed flanges 21 and the end of the top wall 22 may have depending flanges 25 engaged with the end walls 20 and the bottom edges of the end walls 20 may have inturmed flanges 25 for resting on the top of the stove 12. The rear wall 18 of the canopy has an inwardly bowed portion 26 forming a part of the transition conduit 16 which defines an elongated generally rectangular discharge opening 28 which extends completely across the upper portion of the canopy 10.

Secured to the rear wall 18 is a forwardly and upwardly extending bracket member 30 forming a support for a grease pan 32 and having an apron baffle member 34 pivoted to its outer edge by a suitable hinge means 36. The apron baffle member 34 is a generally vertical member and is held in its vertical position by sliding latch members 38, each having a latch housing 40 and a handle 42 for manipulating the latch member 38. The housing 40 is provided with a slot 44 for slidably receiving a shank of the handle 42 and the end walls 20 of the canopy 10 are provided with apertures 43 for receiving the outer end portion of each of the latch members 38 when they are in their extended position for securing the apron baffle member 34 in vertical position. The handle 42 may be retracted thereby withdrawing the latch member 38 from the apertured end walls 20 and permitting the apron baffle member 34 to be pivoted about hinge means 36 to an open position thereby providing access to the interior of the canopy 10 and removal of the grease pan 32 for cleaning the interior of the canopy.

As best shown in FIGURE 2, the lower edge of the opening 28 is defined by a projecting book-shaped member 46 disposed in depending relation to the transition conduit 16 with a cylindrical drum 48 supported therefrom. The cylindrical drum 48 is provided with a suspension plate 50 projecting from the periphery thereof with the suspension plate 50 having a hook member 52 along the upper edge thereof for engaging over the hook member 46 thereby removable suspending the drum 48 within the confines of the canopy 10. The drum 48 is suspended directly over the grease pan 32 and in spaced relation to the rear wall 18 and the baffle member 34 with the suspension plate 50 forming a closure from the top wall 22 down to the drum 48 thus providing a positive path of movement for the grease laden fumes as illustrated by the arrows in FIGURE 2 of the drawing. The grease laden fumes will travel up over the apron baffle member and then downwardly about the periphery of the drum 48 for deposit of the grease on the drum so that the same will drip off into the pan 32. For further support of the drum, a pair of angle brackets 54 are secured on the end walls 20 for supporting the lower periphery of the drum in the desired position. By lowering the apron baffle member 34 the drum 48 may be engaged by engaging the hook members 46 and 52 for cleaning as may become necessary. All of the elements 30, 32, 34, 46, 48, 50 and 52 extend throughout the entire length of the canopy and are engaged with both end walls 20.

Supported interiorly of the cylindrical drum 48 is a heating element in the form of an elongated heating tape or strip heater 56 provided with a female plug 58 at one end supported by a bracket 60. The female plug 58 is aligned with an opening in the end wall for receiving a male plug connected with a suitable source of electrical energy for heating the bottom peripheral portion of the drum 48 so that any grease thereon will be melted and will drip into the grease pan 32.

The grease pan 32 is provided with a heating tape or strip heater element 62 on the lower surface thereof which is provided with a female plug 64 on one end thereof sup-
ported by a bracket 65 which supports the female plug in alignment with a male plug 68 for connection with a suitable source of electrical energy for energizing the heating elements of melting the grease in the grease pan.

Disposed on the back wall 18 and inwardly of member 39 are supporting brackets 70 for the grease pan 32 which support the grease pan with one end at a higher elevation than the other. The end of the grease pan having the lowest elevation is in alignment with an opening in the end wall and connects with a nipple 73 extending into the interior of a box-like member 72 having a bottom drain pipe or nipple 74 connected therewith and having a pivoted lid or inspection cover 76 on the top thereof which forms an inspection box so that the interior of the box-like member 72 may be inspected and the drain pipe 74 may be inspected. The drain pipe 74 is communicated with a suitable conduit for leading the melted grease downwardly into a disposable container, such as a plastic bag, which may be disposed in an out-of-the-way position so that the grease is drained into the plastic bag and the plastic bag or other suitable disposable container may then be removed and disposed of in a suitable manner such as by deposit in a garbage can.

In operation of the device, the canopy 10 is installed over the stove 12 and the exhaust fan pulls the grease laden fumes from over the stove out through the discharge conduit 14. As the grease laden fumes pass over the apron baffle member 34, they are deflected downwardly away from the outer periphery of the drum 48 and then upwardly through the opening 28 to the discharge conduit 14. The grease fumes due to centrifugal action as they pass the drum 48 and due to the change of direction as they pass through the apron baffle member 34 deposit the grease therein on the surface of the drum, the apron baffle member, the rear wall and the grease pan with all of these services being tapered to drain the grease into the grease pan 32. The heat element in the drum assures that no grease or substantially no grease will be accumulated on the drum for eliminating a fire hazard and maintaining the drum in a clean condition and the heating element under the grease pan assures that the grease in the pan will be melted so that the same may drain by gravity out through the end wall thereof and downwardly into a removable hand grip portion and cause the melted grease to be removed as a number of grease strips eliminating the necessity of removing the drum and trough for cleaning.

The foregoing is considered as illustrative only of the principles of the present 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.

What is claimed as new is as follows:

1. In combination with a grease extracting vent including an enlarged generally rectangular canopy for collecting grease laden fumes, a discharge conduit extending from the upper end of the canopy for venting the grease to the atmosphere, a vertical plate extending into the interior of the canopy and forming a continuation of the front side of said discharge conduit, a bracket on each side wall of the canopy, a cylindrical drum supported from said plate and said brackets, said drum and vertical plate extending horizontally and completely across the interior of the canopy thereby forming a fume barrier, a baffle extending across said canopy and extending to the rear wall of the canopy in spaced relation to the drum and plate and being disposed between the drum and a source of fumes located forwardly of the drum, said baffle terminating in spaced relation to the top of the canopy and above the lower periphery of the drum and outwardly of the drum and plate, said discharge conduit being disposed on the opposite side of the drum from the baffle whereby grease laden fumes must pass over the upper end of the baffle and downwardly around the drum and upwardly through the discharge conduit for extracting grease from the fumes by centrifugal force as they pass around the lower periphery of the drum, an electric heating element connected with a source of electrical energy mounted on the inner surface of the bottom of the drum for melting grease deposited on the surface of the drum for preventing an accumulation of grease thereon, means underlying the drum for receiving melted drippings therefrom.

2. In combination with a grease extracting vent including an enlarged generally rectangular canopy for collecting grease laden fumes, a discharge conduit extending from the upper end of the canopy for venting the grease to the atmosphere, a vertical plate extending into the interior of the canopy and forming a continuation of the front side of said discharge conduit, a bracket on each side wall of the canopy, a cylindrical drum supported from said plate and said brackets, said drum being connected to the interior of the canopy by a box-like member mounted exteriorly of the canopy and communicated with the interior of the receptacle, said member
having a drain pipe in the bottom for connection with a disposable container, and a pivotal lid for providing access to the interior of the box-like member for inspection and cleaning thereof, and an electric heating element connected with a source of electrical energy and mounted on the undersurface of the bottom of the receptacle for melting grease in the receptacle.

3. The combination of claim 2 together with an electric heating element connected with a source of electrical energy and mounted on the inner surface of the bottom of the drum for melting grease deposited on the surface of the drum for preventing an accumulation of grease thereon.

References Cited in the file of this patent

UNITED STATES PATENTS

2,608,256 Mathews .......................... Aug. 26, 1952
2,611,070 Chandler ......................... Sept. 16, 1952
2,746,449 Pledger .......................... May 22, 1956
2,748,688 Smith ............................. June 5, 1956
2,813,477 Gaylord .......................... Nov. 19, 1957
2,880,301 Naxon ............................. Mar. 31, 1959

FOREIGN PATENTS

370,160 Great Britain ...................... Apr. 7, 1932