

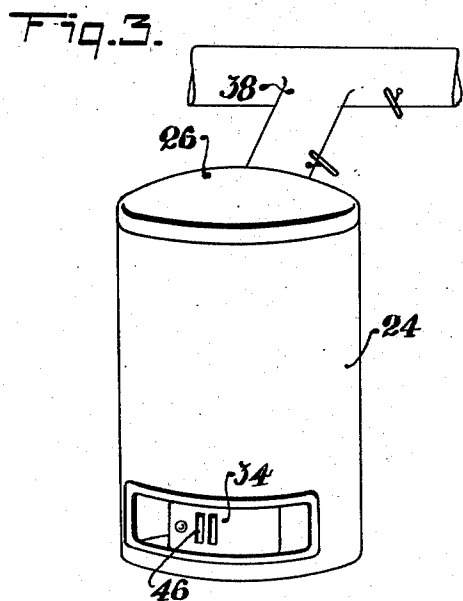
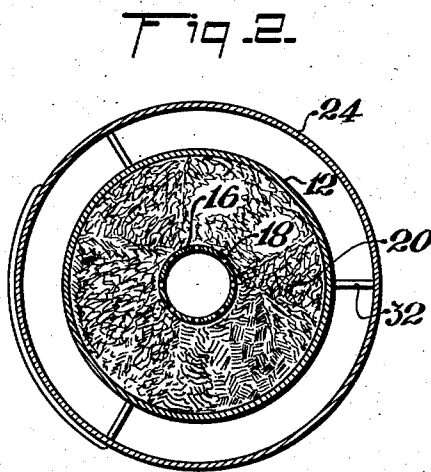
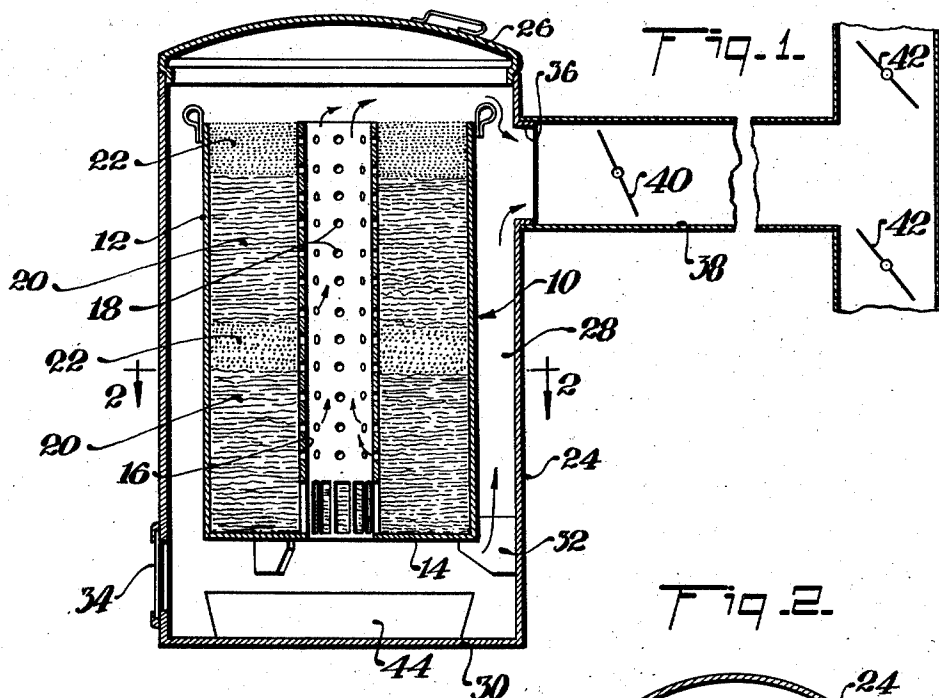
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M. LIPSCHUTZ

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METHOD OF SMOKING FOOD AND APPARATUS FOR USE IN CONNECTION THEREWITH

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INVENTOR
Martin Lipschutz
 BY
Brown & Jones
 ATTORNEY

UNITED STATES PATENT OFFICE

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METHOD OF SMOKING FOOD AND APPARATUS FOR USE IN CONNECTION THEREWITH

Martin Lipschutz, New York, N. Y.

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6 Claims. (Cl. 99-229)

This invention relates to a method of smoking food and to apparatus for use in connection therewith.

In general, it is an object of the invention to provide a device of the character described, which will efficiently perform the purposes for which it is intended, which is simple and economical of construction, which can be expeditiously, conveniently and safely manipulated, and which can be readily manufactured and assembled.

Another object of the invention is to provide a method which requires less supervision than previous methods and which subjects the food to a more constant supply of smoke and to a denser smoke and to less danger of contamination with ash; and to provide a method which uses considerably less fuel to obtain the same result.

Another object is to provide apparatus to which fresh fuel may be added without harm to the food; which draws the smoke out without an ash-disturbing or enveloping draft; which provides uniform combustion throughout the smoldering fuel; in which the fuel is consumed toward the upper surface of the fuel supply and not from the surface of the fuel supply inwardly and which does not leave an ash on the outside of the fuel supply to be carried along with the smoke to the food; and which gives a more thorough consumption of the fuel.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the several steps and the relation of one or more of such steps with respect to each of the others, and the apparatus embodying features of construction, combination of elements, and arrangement of parts which are adapted to effect such steps, all as exemplified in the following detailed disclosure, and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description, taken in connection with the accompanying drawing, in which:

Figure 1 is a sectional view, in elevation, of a device embodying one form of the invention;

Fig. 2 is a sectional view, in plan, of the device shown in Fig. 1 and taken along the line 2-2; and

Fig. 3 is a perspective view, on a smaller scale, of the device shown in Fig. 1.

It has heretofore been the custom in the smoking of food to build up an open hearth on the floor of the smoke house or in a depression in

that floor. Smoke houses have been of all sizes, one of ordinary size containing about 350 cubic feet. The food is suspended toward the top of the house and subjected to the action of the smoke. When wood has been used as a fuel, it has been in the form of logs or of sawdust. It has been found that it has been necessary to tend to the burning material on the open hearth as often as every half hour, or more often. The attendant has had to open the door of the smoke house. This caused chilling of the smoke and loss of some smoke. The drafts set up conveyed the ash from the fire onto the food. In the case of sawdust, an extra forced draft had to be employed because the sawdust packed so tightly that it would not smolder if left to itself, or at least would give an entirely insufficient amount of smoke.

The present invention overcomes the difficulties described above. The smoldering fuel, which is preferably wood in the form of chips, is entirely enclosed except for a relatively small area which acts as a vent. The smoke is drawn off usually through a tube and supplied to the chamber containing the food. The food chamber or house may surround the container for the fuel or it may be at some distance from that container. With such a smoke-producing device, the air currents are not so directed as to pick up any ash. The combustion is so steady that it may continue for hours or for an entire day without requiring the attention of an attendant. The fuel, the smoke, and the air are so disposed that there is no need of any added, forced draft. The container for the fuel may take various forms all embodying the principle that the fuel is not to be exposed as it burns. In the following, one type of device is described which has given very satisfactory results.

In the drawing, 10 denotes a container. As shown, it is an upright cylinder with closed side wall 12 and bottom 14. It is preferably supported above the bottom or floor in a manner to be described. A conduit 16 extends through the container and through the floor. One end of the conduit may be flush with the floor 14. The other end may be at or near the top of the container. A plurality of openings 18 extend through the wall of the conduit and open into the container. If desired, the holes near the bottom may be larger than the upper holes. In its simplest form, means may be provided for providing a passageway from the upper end of the conduit to the place where the food is.

Wood chips 20 are packed into the container

and surround the conduit. These chips preferably have each one surface at an angle with the direction of the veins in the wood. An angle of 45 degrees is satisfactory. The chips also preferably have at least one surface which is arcuate. The bend of this surface may arise from the manner in which the chip is produced or may arise from the natural contraction of the wood as it dries. It is advantageous to have a layer of similar, small chips 22 near the top of the fuel. There may be one or more similar layers at different heights in the container. The larger chips may range from one to ten inches in length and/or breadth and may have a thickness of from about one quarter of an inch to about an inch or so.

If desired, a little water may be added to the fuel in the top of the container. This water tends to seep down and wet the fuel below.

Just enough air or oxygen may be supplied to the lower end of the conduit to supply the combustion of the smoldering, smoke-producing action.

In the preferred form of the device, the container 10 is surrounded by an outer container 24 which may also be cylindrical and have a cover 26. There is a space 28 between the containers. The container 10 is usually above the floor 30 of container 24. Container 10 may be supported in any suitable fashion as by the brackets 32 which extend inwardly from container 24. The latter may have a door 34 in the side and located near the bottom. The outer container is also provided with an opening 36 preferably in the upper part thereof.

In operation, a small fire is started on the floor 30 beneath container 10 or in a drawer-like element 44 which may be inserted and removed when door 34 is open. This fire is temporary and only supplies such heat and flame as are necessary to start the combustion of the wood 20. The heat and flame pass into the lower end of conduit 16 and through the openings 18 in the lower part of the conduit to the lowermost fuel 20. When the latter starts to smolder, the temporary or kindling fire may be permitted to die out or be withdrawn. As the fuel smolders, air is supplied through controllable vents 46 in the container 24. These vents are usually in the bottom of the container and may be in the door 34. A part of the fresh air passes into conduit 16 through the openings 18 to the fuel 20 and supports the combustion of the latter. The smoke from the smoldering fuel passes through the openings 18 and into the upper part of the conduit 16 from which it escapes into the space 28 between the containers and out through the opening 36. The side wall 12 of the inner container 10 becomes heated and heats the air in the space 28. The heated air rises and passes out through the opening 36 and, in so doing, draws, by indirect draft, the smoke which comes from conduit 16 along with it.

The entire device may be placed in the smoke house itself or a conduit 38 may lead from the opening 36 to the smoke house which may be removed from the device. In the latter case, it may be some distance away or it may be no farther than the intervening walls of the house and device. The conduit 38 may be bifurcated so as to supply a plurality of smoke houses or rooms. A damper 40 controls the passage of smoke through conduit 38 and dampers 42 determine into which house the smoke or a portion thereof shall pass.

An inner container which is 30 inches tall and has a diameter of 19 inches may have a conduit 16 with a diameter of 3 inches. In such a case, the outer container may have an inner diameter of 23 inches. Such a device has been found to contain a bag of chips weighing about 35 pounds. A device of this size will continue to give off smoke for at least eight to ten hours in sufficient quantity to smoke food suspended in a smoke house of about 350 cubic feet. The same amount of wood in an open hearth in a smoke house of that size would have been consumed in about two and one-half hours and would have given only about half enough smoke during that time.

By enclosing the smoldering fuel, except for a relatively small air inlet and relatively small smoke outlets, there is obtained a smoldering reaction which provides, from a given quantity of fuel, a quantity of smoke of density and smoking quality heretofore unknown. The entire process is controllable. After a period of time, the cover 26 may be opened and fresh fuel supplied to the top of the smoldering material without setting up air drafts which contain ashes. Aside from such replenishment, this method of smoldering not only gives more and better smoke but it requires practically no watching, supervision or labor.

The device described above may be made in any size to fit the requirements of a very small smoke house or of a very large one.

Since certain changes in carrying out the above process and in the constructions set forth which embody the invention may be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A device for smoking food comprising means providing a chamber for fuel, means providing a passageway through said chamber, means providing openings between said chamber and said passageway, means for delivering smoke from said passageway to the food to be smoked, and a conduit positioned to receive heat from said chamber-providing means and leading to said delivering means.

2. A device for smoking food comprising means providing a chamber for fuel, means providing a passageway through said chamber, means providing openings between said chamber and said passageway, means for delivering smoke from said passageway to the food to be smoked, means providing a second chamber at least in part surrounding the first-mentioned chamber and leading to said delivering means, and means for supplying fresh air to the last-mentioned chamber.

3. A device for smoking food comprising an inner receptacle having closed sides and bottom, a perforated conduit extending through said receptacle and said bottom, an outer receptacle enclosing and spaced from said inner receptacle, means for delivering fresh air to said outer receptacle and to said conduit, and means for mingling gases from said conduit and air from said outer receptacle.

4. A device for producing smoke for smoking food comprising an inner receptacle having closed sides and bottom, a perforated conduit extending centrally through said receptacle and said

bottom, an outer receptacle enclosing and spaced from said inner receptacle, means for delivering fresh air to the bottom of said outer receptacle and to said conduit, means for removing gases from the top of said conduit and heated air from the upper portion of said outer receptacle, and means for mingling gases from said conduit and air from said outer receptacle.

5. A method of delivering smoke from smoldering fuel in one enclosure to food in another enclosure comprising providing a supply of air, making said supply available to said fuel in said one enclosure assisting the withdrawal of the smoke from said fuel-containing enclosure by heating other air on the outer surface of the fuel-containing enclosure, and permitting the heated other air to rise and add the force of

its convection to the smoke, to draw some of the first mentioned air into said one enclosure.

6. A method of delivering smoke from smoldering fuel in one enclosure to food in another enclosure comprising providing a supply of air, making said supply available to said fuel in said one enclosure assisting the withdrawal of the smoke from the fuel-containing enclosure by heating other air with heat from the smoldering fuel without bringing the other air and fuel in contact, permitting the heated other air to rise, and then adding the force of its convection to the smoke by mixing the air and the smoke whereby said first mentioned air is drawn from said supply into said one enclosure.

MARTIN LIPSCHUTZ.