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BRIQUETTE IGNITING AND GREASE ABSORBENT MATERIAL

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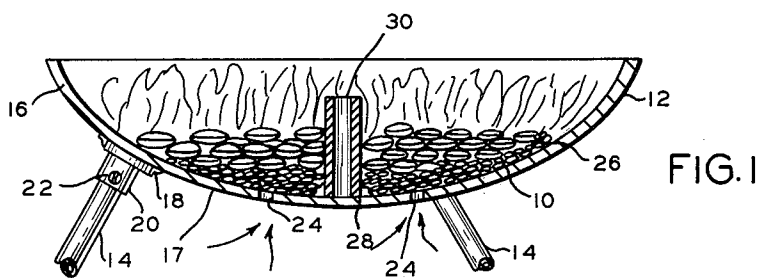


FIG. 1

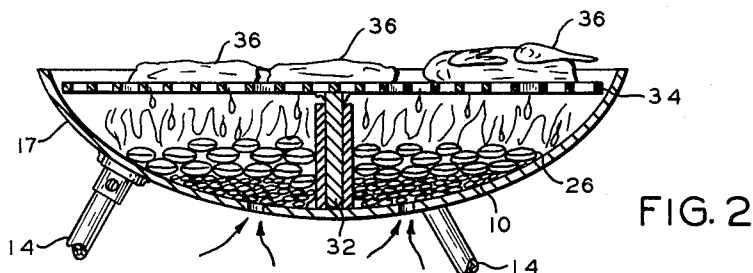


FIG. 2

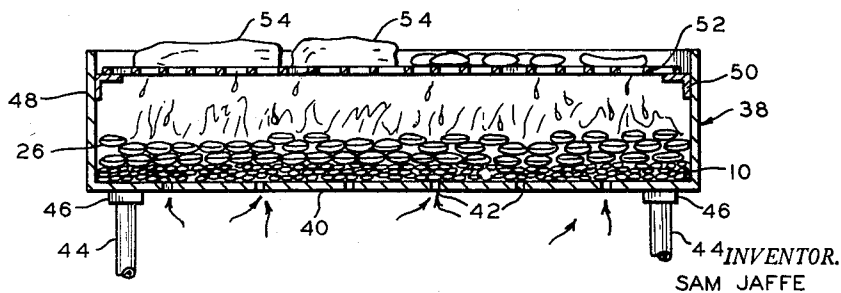


FIG. 3

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**BRIQUETTE IGNITING AND GREASE
ABSORBENT MATERIAL**

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1 Claim. (Cl. 44-41)

This invention relates to a briquette igniting and grease absorbent material and has for its object the provision of a new and highly useful material which may be used in connection with outdoor grilles or with other heating or working devices.

Ignition or kindling materials to initiate the combustion of fuels have been known and widely used for many years, and the increasing popularity of outdoor grilles employing charcoal briquettes has served to strengthen the demand for effective ignition materials.

In an attempt to meet this demand, a series of liquid igniters have been introduced to the public. Such igniters usually consist of some type of inflammable material such as liquid petroleum solvents. Such petroleum products are sold in a container, from which the consumer may directly dispense a desired amount of inflammable material upon the fuel.

While the liquid igniters have proved to be satisfactory in initiating the combustion of the briquette fuel, several objections to their use have been raised. First, the pouring of the liquid igniter onto the briquettes may be troublesome and tends to create a fire hazard whenever some of the liquid is spilled on the person, clothing or property. Second, the pouring of the liquid involves waste because it is difficult to estimate the necessary amount required, and therefore the consumer will use an excess to insure proper ignition. Third, the liquid, being inflammable, creates storage problems and is a potential fire hazard while being stored. Fourth, the high volatility and concentration of the liquid tends to create a dangerous flash at the instant of ignition and also a large flame during its further combustion.

It has further been noted that during cooking, the fat from the meat is melted and slowly drips upon the sides of the grille and on the ashes created by the burning briquettes, thereby creating a greasy mass which is difficult to remove from the grille and which necessitates extensive cleaning of the grille.

It is, therefore, an object of the present invention to provide an ignition material which eliminates the dangers involved in handling and storing a liquid ignition material.

A further object of the present invention is to provide an ignition material which substantially eliminates the waste inherent in the use of liquid ignition materials.

Still another object of the present invention is to provide an ignition material which may be laid as a bed for briquettes whereby when the ignition material is made to burn, the flame therefrom will rise from beneath the briquettes and flow around the briquettes to hasten the ignition thereof.

Another object of the present invention is to provide an ignition material which is easily and safely stored until used.

Still another object of the present invention is to provide an ignition material which does not create a dangerous flash at the instant of ignition and which burns at a satisfactory and safe rate.

Still a further object of the present invention is to provide an ignition material which will also absorb the fat dripping from meat in the process of being cooked.

Yet another object of the present invention is to provide an ignition material which will absorb fats and other waste from the food being cooked thereby obviating the

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necessity for using a cleaning agent for a grille or other cooking device.

A further object of the present invention is to provide an ignition material in dry, granular form.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

FIG. 1 is a cross-sectional view of a round-bottomed grille showing the positioning of the ignition material and the fuel;

FIG. 2 is similar to FIG. 1 but includes the food to be cooked and retaining means therefor; and

FIG. 3 is a cross-sectional view of a flat-bottomed grille showing the positioning of the ignition material and the fuel, and including the food to be cooked and retaining means therefor.

Specific reference is now made to the drawings wherein in like reference characters are used for like elements throughout.

It should be understood that the following description of the present invention is not in any way a limitation upon either the particular grille or the particular fuel or combustible material used in conjunction with the present invention.

The briquette igniting and grease absorbent material of the present invention is generally shown at 10 in FIG. 1 and is present in the form of free spreading dry granular particles which are distributed as a bed in grille 12.

Grille 12 includes legs 14 fastened to body 16 with rounded bottom 17 via adapter 18, collar 20 and bolt 22.

Apertures 24 are formed in body 16 to facilitate the passage of air to ignition and absorbent material 10 and fuel 26 which is laid over material 10. Fuel 26 may be any commonly used fuel such as charcoal briquettes which are widely used in outdoor grilles.

Body 16 also possesses in its interior a centrally positioned stand 28 which possesses a central bore 30 adapted to receive a leg 32 of grating 34 which holds the items of food 36 which are being cooked.

FIG. 3 shows another type of grille 38 having ignition and absorbent material 10 distributed as a bed in the form of free spreading dry granular particles. Said bed is established on flat bottom 40 of grille 38. Apertures 42 are formed in bottom 40 to permit air to reach material 10 and overlying fuel 26. Grille 38 is supported on legs 44 which are joined to bottom 40 via adapters 46. Walls 48 of grille 38 are provided with L-shaped brackets 50 which support a grating 52 for holding the items of food 54 which are being cooked.

Free spreading dry granular particles 10 constitute the briquette igniting and grease absorbent material of the present invention. Granular particles 10 are comprised of two (2) combined materials, a base and an inflammable material.

The base is selected from a group of non-combustible materials which possess the property of retaining liquids or vapors as, for example, by absorption or adsorption. Additionally, the base should permit the escape of the retained materials under certain conditions, such as elevated temperatures.

A preferred base is fuller's earth which has been calcined to drive off the naturally combined moisture which may be present in as much as fifty percent on a total weight basis. The fuller's earth is crushed, then calcined at about 1300 degrees F. until about three percent of the moisture remains. The resultant product is then recrushed and sized via meshing apparatus to preferred particle sizes as will be later explained.

Other bases which may be used in place of fuller's earth

are: Other clay minerals such as bentonites or bauxites, vermiculites, expanded slag aggregates, synthetic silicates, diatomaceous earth, gypsum and asbestos.

The inflammable material is a liquid which is added to the base in such proportions that the base will now support combustion but will remain a free spreading dry granular solid. A ratio by weight of two parts base to one part inflammable liquid may be used when the base is fuller's earth. The ratio by weight of base to inflammable liquid may vary from four to one to one to one so long as the final product is a dry granular solid.

The inflammable liquid should not be too volatile as ignition materials made therefrom will tend to burn too quickly and may cause dangerous flashing. An inflammable material of low volatility is usable in the present invention but is generally less desirable as the action of the ignition material will be slow and also materials of low volatility may tend to produce smoke.

As examples of inflammable materials, petroleum fractions, such as, petroleum solvents, or Stoddard solvent may be used.

The preferred petroleum solvents possess an initial boiling point in the range of 250 degrees F. to 500 degrees F., and said solvents possess an A.P.I. gravity of from 20 to 60 and a flash point from 80 to 200 degrees F.

Another petroleum fraction which may be used is a Stoddard solvent. A typical Stoddard solvent used has an A.P.I. gravity at 60 degrees F. of 49.2, an initial boiling point of 310 degrees F., a 50% boiling point of 337 degrees F., a dry end point of 390 degrees F., a final end point of 394 degrees F. and a flash point of 104 degrees F. (Tag closed cup.)

Instead of the petroleum fractions, the infammable material may be a combustible liquid having a medium volatility as above outlined. Alcohols, ketones, esters and others may be used as the inflammable component so long as their volatility is within the standards as above outlined.

Alcohols which may be used are butanol or isopropanol. A preferable ketone is diacetone alcohol. An ether which may be used is ethylene glycol mono-ethyl ether and a preferred ester is butyl acetate.

Additionally certain highly combustible solids, such as, paraffin or hexamethylene tetramine, may be used in place of the inflammable liquid and may be directly blended with the base granules.

As another alternative, an inflammable liquid of a low volatility such as, a petroleum hydrocarbon oil, may be blended with a liquid of high volatility and the blend then associated with the base material. In this manner the ignition material may be more easily fired and yet will be long burning to effectively initiate the combustion of the fuel.

As still another alternative, a first ignition material may be produced by associating an inflammable material of high volatility, such as, Stoddard solvent, with a base and a second ignition material may be produced by associating an inflammable material of low volatility, such as, a petroleum hydrocarbon oil, with a base. Then the first and second ignition materials are mixed together to form the final product which can be more easily fired and yet be long burning.

As yet another alternative, the base may be of a combustible material such as sawdust paper or wood chips. The combustible base may be intermixed with an inflammable material, as above specified, in such proportions that the resultant product is a dry granular solid. Additionally, fuller's earth may be intermixed with the combustible base in order that the resultant product may have grease absorbent properties.

The material of the present invention is of a particle size range of from 8 to 42 mesh as measured by a Tyler standard sieve although a range of from 10 to 30 mesh is preferred. Finer materials are less desirable because they may be easily blown away and also may preclude the

circulation of air through the bed. Also, a finer material may retard the "wicking" action in releasing the inflammable material at a rate sufficient to provide the desired ignition. In addition the fine particles tend to compact and therefore lose the property of being free spreading. A material coarser than the above particle size range is also less desirable since the absorbent area may be too small to retain a large amount of inflammable liquid without rendering the base "wet."

Thus, it is seen that an ignition material is provided which, because of the highly absorbent base and the additional absorbent area presented by the removal of the inflammable component, may function to absorb fats dripping from meat being cooked even after the inflammable component is completely exhausted. Moreover, a greasy mass of fat and briquette, ashes is not formed and hence the present material serves to make the grille easier to clean. Additionally, because the present material is in the form of a free spreading dry granular solid, it can be placed in layers of any desired thickness, in bands of any desired width or length and piles of any size or shape.

The following example is presented for purposes of illustration only and is not in any way a limitation upon the present invention.

A liquid petroleum material known as Stoddard solvent having an A.P.I. gravity at 60 degrees F. of 49.2 and an initial boiling point of 310 degrees F. was poured upon and admixed with fuller's earth having a particle size range of 8 to 42 mesh in a ratio by weight of two parts fuller's earth to one part Stoddard solvent. The resulting mixture was a free spreading dry granular solid. The briquette ignition and grease absorbent material thus made was laid as a bed of one-eighth inch thickness in a flat bottomed grille similar to that of FIG. 3. Then briquettes were neatly laid thereover and the bed was contacted with a flame. The bed immediately began to burn with a bright flame and soon the briquettes were ignited. It was noted that said bright flame arose from beneath the briquettes and essentially surrounded the briquettes thereby effecting a quick but safe ignition thereof. The bright flame of the ignition material ceased to burn and the briquettes continued to burn. The bed of ignition material thereafter effectively absorbed grease which dripped from the meat being cooked.

It is apparent that the present material is easier and safer to store and handle than the previously used liquid igniters. Moreover, the present material is easy to spread and lay as a bed. In addition the action of the inflammable material is slowed to avoid flashing since the base exerts a "wicking" action to gradually release the inflammable material. When the present material is laid as a bed for briquettes the flame produced therefrom emerges from beneath the briquettes and surrounds the same to enhance ignition thereof.

In addition the material of the present invention may be used as a general ignition or kindling material, such as, to initiate the burning of weeds or in furnaces.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is, therefore, to be understood that within the scope of the appended claim, the invention may be practiced otherwise than as specifically described.

I claim:

A fuel ignition grease absorbent material for use in a grille for cooking food comprising a free spreading, absorbent, dry, solid, non-combustible granular base capable of absorbing an inflammable component, and having a particle size range of 8 to 42 mesh, said base being selected from the group consisting of fuller's earth, bentonites, bauxites, vermiculites, expanded slag aggregates, synthetic silicates, diatomaceous earth, gypsum and asbestos, said base being intermixed with a dispersible absorbable, volatile, inflammable liquid component in the ratio by weight of 1 to 4 parts of base per part of inflammable liquid

component, said material being adapted to be laid as a bed for fuel in said grille whereby said material may be easily ignited to produce a flame which emerges from beneath said fuel and surrounds said fuel to initiate the combustion thereof and whereby said material is adapted to absorb grease which may drip from said food during the cooking process.

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