

[54] **SOLID FUEL EMERGENCY BURNER FOR LIGHT AND HEAT**

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[51] Int. Cl. **F23d 3/16**

[58] Field of Search **431/291, 288**

[56] **References Cited**

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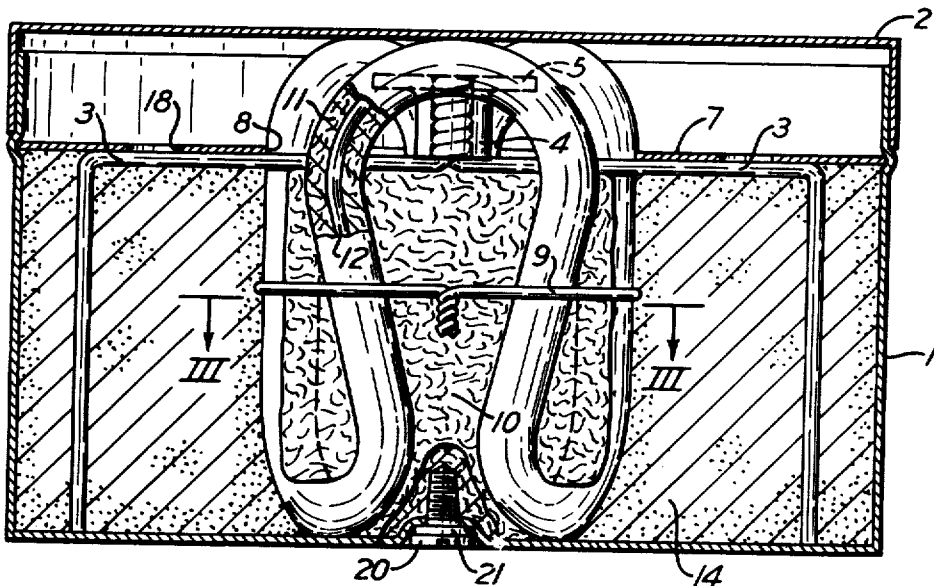
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[57] **ABSTRACT**

A burner is formed from a metal can having a removable cover with at least three wires joined together at the center of the can near the top and extending outwardly therefrom in substantially uniformly spaced relationship to the side wall of the can where they are integrally connected to the upper ends of vertical portions extending downwardly to the bottom of the can. A metal plate resting on the wires is provided with a central opening, and a metal heat conductor is mounted on the wires at their junction and extends up through the plate opening. Wicks means extend from the bottom of the can up through the plate opening beside the heat conductor, and a body of wax beneath the said plate fills the can around the wick means, whereby when the burner is burning, the wires will conduct heat from the central heat conductor.

8 Claims, 5 Drawing Figures



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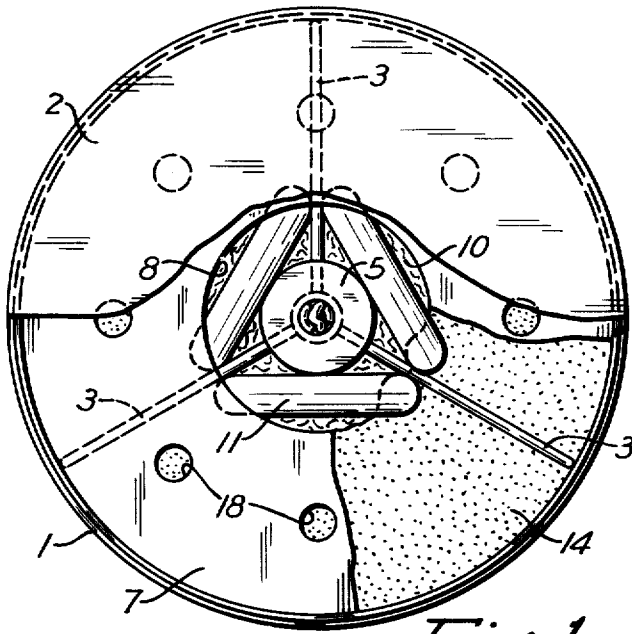


Fig. 1

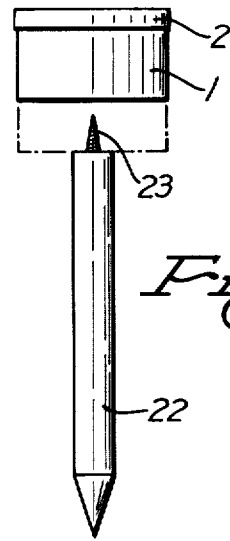


Fig. 5

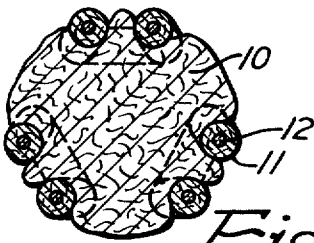


Fig. 3

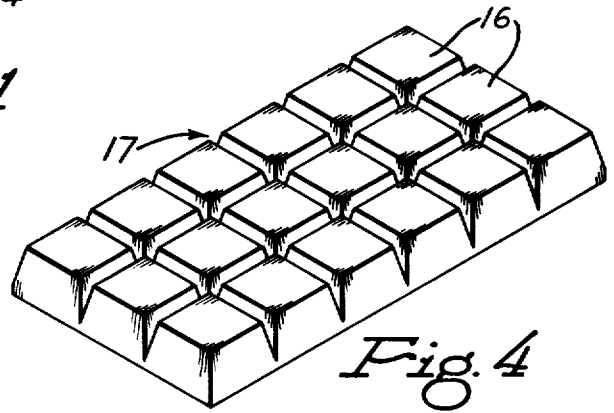


Fig. 4

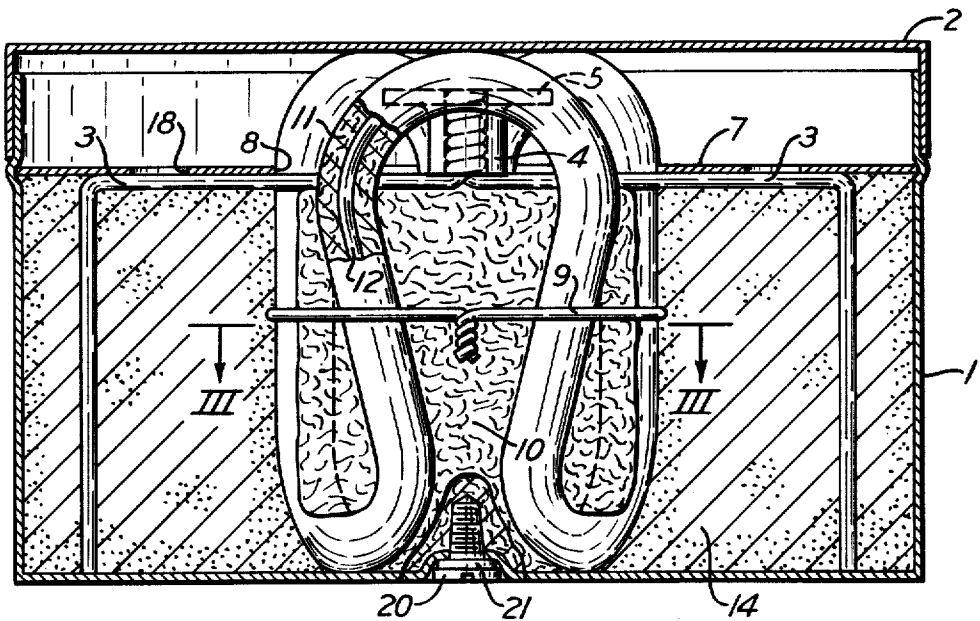


Fig. 2

SOLID FUEL EMERGENCY BURNER FOR LIGHT AND HEAT

There are occasions when it is highly desirable to have an emergency burner in order to produce light or heat or both. For example, an automobile stalled along the road may need an emergency light. Also, snowmobiles sometimes become stranded in distant places and the occupants may need both heat and light. Campers likewise may require an emergency source of light and heat. There have been devices designed for such purposes, but generally they use liquid fuel which may have leaked out or evaporated by the time it is desired to use them. Burners using wax have likewise been proposed, but their construction has been such that the light they produce is relatively weak and they cannot burn very long.

It is among the objects of this invention to provide a solid fuel burner which will burn for several hours, which can be replenished with fuel indefinitely to prolong the burning, which produces light of considerable intensity, which generates considerable heat, and which is always ready for use regardless of the time it has been stored.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which

FIG. 1 is a plan view with parts broken away;

FIG. 2 is an enlarged vertical section;

FIG. 3 is a reduced horizontal section taken of the line III—III of FIG. 2;

FIG. 4 is a perspective view of a slab of supplemental fuel; and

FIG. 5 is a reduced exploded side view of the burner and a handle for it.

Referring to FIGS. 1, 2, and 3 of the drawings, a metal can, preferably cylindrical and of greater diameter than height, has a body 1 with a removable cover 2. A short distance below the cover there are at least three wires that are joined together at the center of the can and that extend outwardly to its side wall, where they are bent to provide downwardly extending portions that rest on the bottom of the can. These vertical portions are spaced apart uniformly. The upper or inner ends of the wires are connected by twisting them together and mounting a metal heat conductor on the upwardly extending twisted ends. This conductor has a hollow stem 4 that fits tightly around the twisted ends of the wires, and an outwardly extending flange 5 at its upper end.

Resting on the three wires is a circular metal plate 7 that extends out to the side of the can and is provided with a central opening 8 considerably larger than the flange on the heat conductor above it.

Disposed in the center of the can are wick means, which include a body or a core 10 of fiber glass extending from the bottom of the can up to the horizontal wires 3. A number of wicks are bound against the side of this fiber glass core by a binding wire 9 encircling them. The wicks extend up through the central opening in plate 7 and on up beside the heat conductor. Preferably, the wicks are lengths of a single tubular member 11 that has a wire 12 extending lengthwise through it. This wire and the surrounding tubular members are bent back and forth in order to form vertical loops at the top and bottom. The bottom loops are at the bottom of the can and the upper loops extend up between the horizontal wires 3 and above plate 7. With three such wires, there are three upper loops.

The space around the central wicks beneath top plate 7 is filled with solid fuel 14, such as wax or tallow, which will not leak out of the can or evaporate. The fuel used will melt and feed the multiple wicks when the burner is lighted. Upon lighting the burner after the cover has been removed, three flames rise a considerable distance from the three upper loops of the wick and form a torch that produces a strong light. At the same time, it gives off considerable heat. The wire 12 in the tubular wick member conducts heat from the flames down into the wax to melt it. The heat from the flames also raises the temperature of the heat conductor 4-5 considerably and this heat is conducted by wires 3 out to the side wall of the can and down through the wax. The heat from these wires and the side wall of the can melts the wax that is farthest from the wicks so that it, too, can feed the wicks. In other words, due to the heat conductor and the various wires, all of the wax is melted so that all of it can be burned.

A burner such as disclosed herein, that is about four inches in diameter and that contains a body of wax about two inches deep, will burn about three hours, producing considerable light and heat. To keep the burner burning longer, blocks 16 of wax can be broken from a molded supplemental fuel slab 17 and placed upon the plate 7 inside the burner. This plate also becomes heated by the flames and therefore it melts the blocks of wax. The melted wax can run down the edge of the plate, through its center opening 8, and also through perforations 18 with which the plate can be provided. By adding blocks of wax in this manner, the burner can be kept lit as long as the supply of fuel blocks lasts.

Another feature of this invention as shown in FIG. 2, is that the center of the bottom of the can can be provided with a hole that normally is closed by a screw plug 20 and a sealing washer 21. If it is desired to carry the lighted burner in the hand or to support it above the ground, a handle 22 that is shown in FIG. 5 and provided with an upwardly projecting screw 23 in its upper end can be screwed into the hole in the bottom of the can after the screw plug has been removed. This handle can then be held in the hand or pushed a short distance into the ground like a stake.

Whenever it is desired to extinguish the burner before the supply of wax has been consumed, all that has to be done is to place the cover on the can to smother the flames.

Since this burner does not use liquid fuel, there is no chance of loss of fuel due to leakage or evaporation before the burner is used. The burner can be carried for years in an automobile trunk, for example, and still be ready to use at any time in case of an emergency. By keeping slabs of supplemental fuel with the burner, the length of time that it will burn can be greatly increased. Also, if aluminum foil is carried along for use as a reflector, the intensity of the light and heat produced by the burner can be increased by directing them more or less in one direction by means of the foil.

According to the provisions of the patent statutes, I have explained the principle of my invention and have illustrated and described what I now consider to represent its best embodiment. However, I desire to have it understood that, within the scope of the appended claims, the invention may be practiced otherwise than specifically illustrated and described.

I claim:

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1. A burner comprising a metal can having a removable cover, at least three wires joined together at the center of the can near the top and extending outwardly therefrom in substantially uniformly spaced relation to the side wall of the can where they are integrally connected to the upper ends of vertical portions extending downwardly to the bottom of the can, a metal plate resting on said wires and provided with a central opening, a metal heat conductor mounted on the wires at the junction thereof and extending up through said plate opening, wick means extending from the bottom of the can up through said plate opening beside said heat conductor, and a body of wax beneath said plate and filling the can around said wick means, whereby when the burner is burning, said wires will conduct heat from said heat conductor down into the wax to help melt it.

2. A burner according to claim 1, in which said wick means include a tubular with a wire extending lengthwise through it.

3. A burner according to claim 1, in which said wick means include a fiber glass core, wicks against the side of the core, and a binder surrounding the core and pressing the wicks against it.

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4. A burner according to claim 3, in which said wicks are lengths of a single tubular member with a wire extending lengthwise through it, said member being provided with vertical loops extending up through said plate opening between said wires.

5. A burner according to claim 4, in which there are only three of said first mentioned wires and three of said loops.

6. A burner according to claim 1, in which said heat conductor has a hollow stem receiving the upper ends of said wires, and a flange surrounds the top of the stem.

7. A burner according to claim 1, in which said plate is spaced downwardly from the top of the can to provide a receptacle above the plate for cakes of wax to melt and run down beneath the plate, whereby the supply of wax in the burner can be replenished.

8. A burner according to claim 1, in which the bottom of the can is provided with a central hole, and a screw plug normally extends up through said hole to seal it, the screw plug being removable to permit the upper end of a vertical handle to be screwed up into said hole to support the can.

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