(No Model.)

J. T. ELLIS.

POCKET STOVE OR PORTABLE WARMER.

No. 527,598. Patented Oct. 16, 1894.

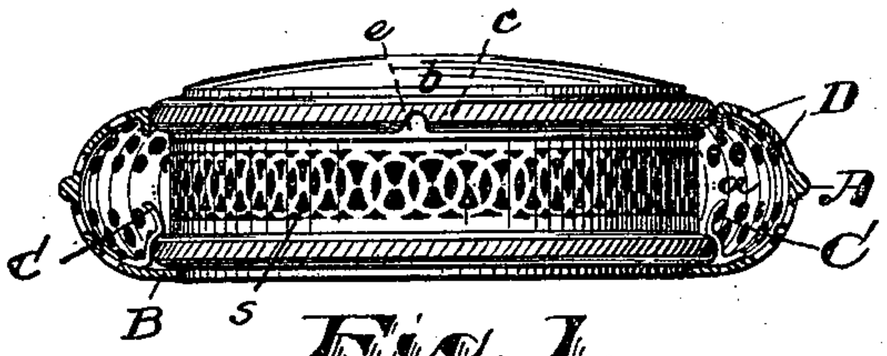


Fig. 1.

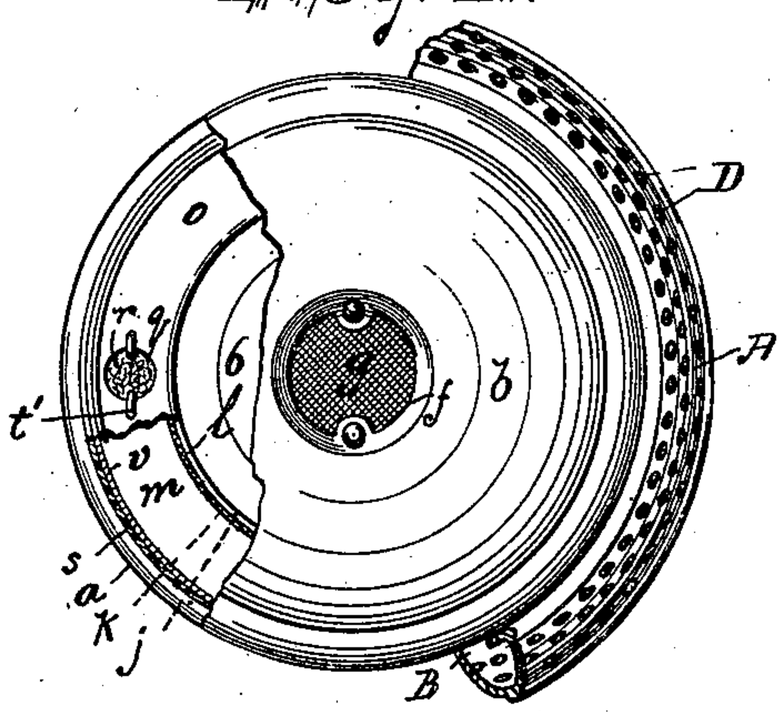


Fig. 2.

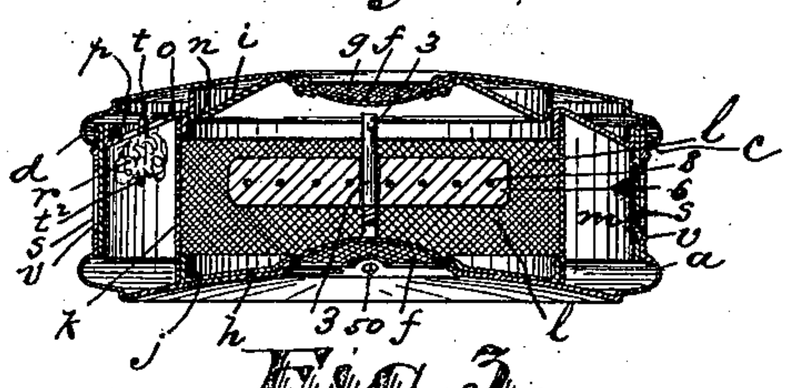
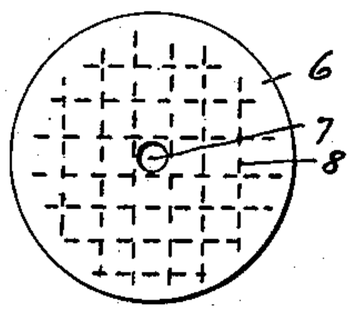


Fig. 3.

Fig. 5.



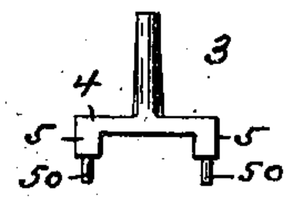


Fig. 6.

Fig. 4.

Witnesses

Robert Sollberger

Olof Ohlson

Inventor.

Jonathan T. Ellis,

By Dyrenforth Co., Atty's.

UNITED STATES PATENT OFFICE.

JONATHAN TOBEY ELLIS, OF NEWARK, NEW JERSEY.

POCKET-STOVE OR PORTABLE WARMER.

SPECIFICATION forming part of Letters Patent No. 527,598, dated October 16, 1894.

Application filed December 18, 1893. Serial No. 493,955. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN TOBEY ELLIS, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Pocket-Stoves or Portable Warmers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in that class of pocket stoves or warmers represented by the device shown in my United States patent, No. 444,395, dated January 6, 1891.

The objects of these improvements are to reduce the cost of construction; to render the device more convenient and effective in its warming operations; to provide a more perfect combustion; to more effectually prevent an exit of fine ashes from the fire chamber and thus more perfectly avoid a soiling of the hands or garments, and to secure other advantages and results, some of which will be referred to in connection with the descriptions of the working parts.

The invention consists in the improved pocket stove or portable warmer, having the arrangements and combinations of parts, all substantially as will be hereinafter set forth and finally embodied in the clauses of the claim.

Referring to the accompanying drawings in which like letters and figures indicate corresponding parts in each of the several figures, Figure 1 is a side view of the improved warmer, a certain outer casing being in section. Fig. 2 is a plan of the same, partly broken away to show the interior parts more clearly. Fig. 3 is a central vertical section. Fig. 4 is a detail plan of a fuel disk; Fig. 5 an elevation of a sponge support in detail, and Fig. 6 is an elevation of a fuel disk holder, all of which parts I will now proceed to describe more fully.

In said drawings, *a* indicates the body portion of the stove or warmer, which is made from sheet metal and preferably in circular form, the bottom and sides being in one integral piece. *b* is a cover fitting the mouth of said body, the said cover being provided with an edge flange which is adapted to pass over the edge of the body and be caught by teats or lugs, *c*, pressed out from said body at opposite sides thereof. The edge flange is downwardly and inwardly curved, and is notched, as at *e*, Fig. 1, and thus the cover may be quickly pressed down upon the body and be turned into holding relation thereto, as will be understood. The central parts of the cover and bottom are perforated, as shown in Figs. 2 and 3, the large perforations lying close to the fuel and thus giving thereto a full supply of oxygenated air, and being covered over with fine wire cloth or gauze, *f*, open to allow a sufficient inflow of air, but sufficiently close in texture to prevent an exit of ashes through the meshes.

The pieces of gauze or wire cloth are clamped at their edges between plates riveted together, the bottom gauze being clamped by the centrally perforated fire-chamber bottom plate, *h*, and the upper one by the centrally perforated fire chamber cover, *i*, secured to the bottom of the body and inside of the cover respectively, as indicated in Fig. 3.

The bottom plate, *h*, of the fire chamber, at its outer edge, is provided with an upwardly extending flange, *j*, which lies considerably in from the side wall of the body, *a*, and provides a bearing for the lower edge of the annular wire gauze partition *k*. Said partition *k*, divides the space within the body into a central fire chamber, *l*, and an outer annular air chamber, *m*, which serves to modify the heat from the fuel at the periphery so that the warmer may be handled without discomfort.

The bottom plate, *h*, of the fire chamber is riveted to the bottom of the body clamping the gauze, *f*, in place as above indicated.

The upper edge of the gauze partition is held in position by an annular cover, *o*, of the air chamber, the said cover being provided with a flange, *n*, which rests against the inner face of the gauze, the flange forming on the under side an acute angle with the body portion of the cover, in which the edge of the gauze is held. Said annular cover is in turn held in place in the box by the outer flange,

p, which is riveted, soldered or otherwise secured to the inner wall of the body.

The annular air chamber cover is preferably perforated, as at *q*, Fig. 2, and receives a sponge, *r*, or other receptacle for an essential oil, or other odoriferous substance or material. When a sponge is employed, I prefer to hold it in position in said chamber, *m*, by a suspensory holder, *t*, shown in detail in Fig. 5, which holder consists of a doubled wire having its ends bent outwardly at *t'*, *t'*, so that the sponge-holding part, t^2, will lie in the chamber, *m*, in position to hold the sponge so that the heat will effect an evaporation of the odoriferous matter. The bent extremities, *t'*, rest on the upper face of the cover and are held firmly by the resilience of the wire.

The air chamber is supplied with air through perforations, *s*, Figs. 1 and 3, in the side walls of the body. These are protected by an inside lining, *v*, of cloth, so that the fine dust of the fuel, should any find its way through the gauze of the partition, *k*, can not pass from the air chamber to the hands or clothing of the person using the article. Outside of the body, I may employ an annular casing, A, similar to the casing used in the construction of the device shown in my former patent, excepting that, in the present form, it is not sectional or in parts adapted to clamp the body therebetween, but is of one piece having its upper opening larger than its lower one so that the body can be entered through the larger opening and seated on the flange, B, Fig. 1, bordering the smaller opening, a spring catch, or catches, C, C, serving to hold the parts together. The casing is perforated as at D, and further serves to modify the heat at the periphery, so that the device may be handled thereat.

At the center of the fire chamber, *l*, is arranged a fuel support, 3, Figs. 3 and 6, consisting of a pin or stud, the base of which spans the bottom gauze, *f*, the horizontal part, 4, at its opposite ends being provided with lugs 5, 5, adapted to engage the bottom plate and hold said horizontal part above the gauze, so as not to obstruct the passage of air therethrough. Said lugs are provided with rivets, 50, which extend through the bottom plates and hold the same together, and hold said fuel support erect. The pin portion of the support is tapering as in Fig. 6, so that it may be wedged into the central perforation and hold the fuel firmly in place at the center of the fire chamber with an air-space at all sides.

The block, 6, of fuel consists of compressed carbonaceous matter with salt peter, or similar salts or matter adapted to induce combustion. It is centrally perforated, at 7, as before indicated, so as to receive the tapering pin, 3, and is provided through its horizontal center plane with a grating, 8, of coarse wire which serves to hold the block from disintegration while burning and from falling prematurely from the pin when the fire has arrived at the center perforation. The fuel matter is pressed into the meshes of the cloth-like grating while in a plastic condition.

In operating the invention, the cover, *b*, is opened by turning so that the notches in the flange, *d*, coincide with the teats on the body. The fuel disk or block is pressed on the pin or support, 3, and ignited and the cover is again closed. The slow burning of the fuel produces a heat which is ample for many purposes.

Having thus described the invention, what I claim as new is—

1. The improved warmer, comprising an outer casing having upper and lower openings, the latter being smaller than the other to provide a bearing for the body, a body and cover, seated in said casing and held therein by spring catches, said body consisting of a perforated piece having an interior fire chamber and air chamber separated by a wire gauze partition and a fuel support, substantially as set forth.

2. The combination with a body and cover having air perforations protected by gauze, of a central pin having inclined sides secured within the chamber formed by said body and cover, on which may be imposed or impaled a disk of compressed fuel having a central perforation to receive said pin, the walls of said perforation engaging the inclines of the pin and the said fuel being thus held away from the walls of the fire chamber both at the bottom, sides and top, substantially as set forth.

3. The combination with the body *a*, and cover *b*, and annular partition, *k*, of gauze, the flanged fire chamber bottom *h*, the flanged air chamber cover *o*, and the fire chamber cover, *i*, fastened to the cover, *b*, all arranged and combined substantially as and for the purposes set forth.

4. The improved pocket stove comprising a body and its cover, a wire gauze partition forming a central air chamber and an outer cooling chamber and an outer casing of perforated and concavo-convex and annular metal formed of one piece and a spring or springs for holding said parts in position in said casing, substantially as set forth.

5. The improved pocket stove, comprising a body and its cover, a wire partition within said body forming a fire chamber and a cooling chamber and an annular casing forming another outside cooling chamber, said casing being of one piece and having a side hole or perforation in which the body may enter and be seated and means for holding said body within said hole, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 11th day of December, 1893.

JONATHAN TOBEY ELLIS.

Witnesses:
CHARLES H. PELL,
OLIVER DRAKE.