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2,386,501

HEATING DEVICE FOR CANTEENS

Filed April 4, 1941

FIG. 1.

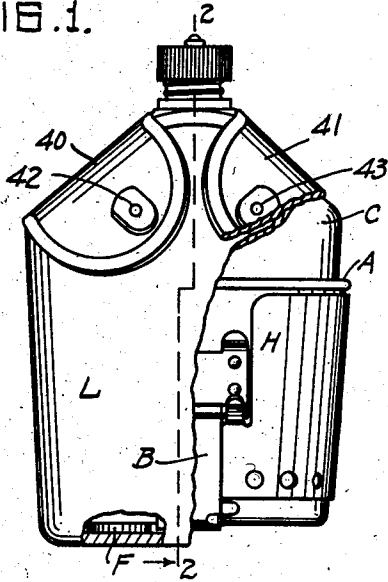


FIG. 2.

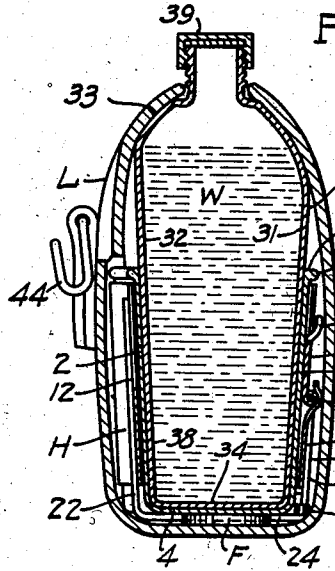


FIG. 3.

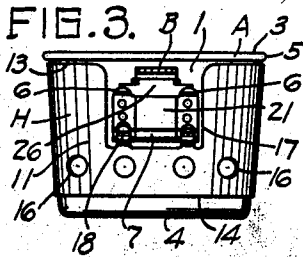


FIG. 4.

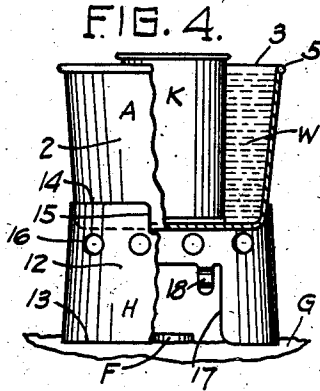


FIG. 5.

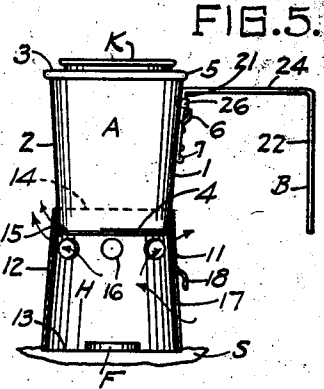


FIG. 6.

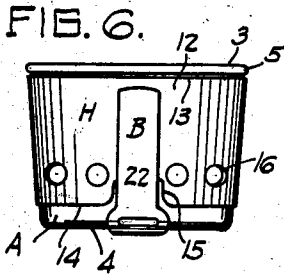


FIG. 7.

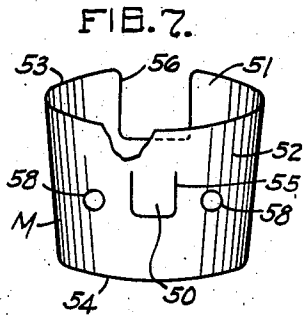
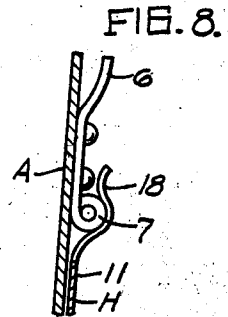


FIG. 8.



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HEATING DEVICE FOR CANTEENS

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a corporation of Massachusetts

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9 Claims. (Cl. 126—266)

This invention is an assembly or part of an assembly which is particularly useful for a soldier who is alone in a dangerous position especially if there are unfavorable weather conditions such as wind, rain, or snow. It allows him to heat food anywhere without burning it, at any time and without the use of any fire or smoke which might make him a target. It is also useful for a soldier travelling by railroad, boat, truck, automobile, or tank.

It can be used by campers, tourists, or by anyone who wishes to quickly prepare the whole or part of a hot meal.

The device is an improvement on what might be called a canteen assembly of the type now in use by the Army of the United States. Such canteens are usually made of aluminum or of some light metal and are carried in a canvas carrier from which they can readily be removed. Such canteens are formed with a truncated conical lower part of substantially oval cross section, a closed bottom and with a front wall which is convex and with a back wall which is concave.

There is also a cup with similar front and back walls and bottom. The cup is provided with a folding handle pivoted on the convex front wall and normally extending down the convex wall, around the bottom and up along and into the concave back wall. The bearing or pivot for the handle projects outward and above it are upwardly extending ears. There is also a keeper slidable on the first section of the handle which, when the handle is to be used, is slipped down behind the ears to hold the handle firmly in place.

The particular feature of this device is a heater member which fits the outside walls of the cup but which has no bottom at its small end and of which the walls at the small end are of the same cross sectional size as the part of the cup which is a short distance from its bottom or small end.

This allows the base of the cup to set into the small end of the heater.

This heater in fact is a very light portable stove which, when removed and turned upside down, allows the cup to be set firmly into its small end. It is so constructed that what is known as canned heat or a material such as is known as "Sterno," which burns with a very hot blue flame without smoke, can be put inside so as to heat the contents of the cup, which may be water from the canteen and in which may also be placed a can of food.

The water serves to prevent the food from be-

ing burned and the amount of fuel can be so regulated that it burns out at just the time when the food and water are at the right palatable temperature.

The whole package is so constructed that when assembled and carried by a marching soldier, there is nothing which can rattle.

In a modified form, the heater can be slipped down and held in place instead of being removed and turned upside down.

In the drawing, Fig. 1 is an elevation with parts broken away of the entire assembly including the carrier, canteen, cup, heater and fuel.

Fig. 2 is a sectional elevation on the line 2—2 of Fig. 1.

Fig. 3 is an elevation of the cup with the heater attached, removed from the canteen and carrier, the view being from the convex side with the handle locked in open position by the keeper.

Fig. 4 is an elevation of the cup and heater assembly with fuel, resting on the ground, with water and a can of food in the cup.

Fig. 5 is an elevation as from the right of Fig. 4 with the heater partly in section and resting on a support.

Fig. 6 is an elevation from the back of the cup and heater assembled with the cup handle closed.

Fig. 7 is an isometric view from the back of a modified form of heater.

Fig. 8 is a detail partly in vertical section showing the catches and projecting pivot.

In the drawing, C represents a canteen with the usual upper part 33 ending in a neck with a cap 39 and a lower part 38 which ends with a bottom 34. The lower part is of truncated conical form, the small end being at the bottom 34. The front wall 31 is convex and the back wall 32 is concave so that a horizontal cross section is of distorted oval form somewhat like the cross section of a kidney, the concave curve being intended to fit the body of the wearer.

The canteen C is fitted into a bag or carrier L of flexible material which fits around all of the canteen except the neck and is provided at the front with flaps 40 and 41 which can be opened to remove the canteen or held in place by snap catches 42 and 43.

There is also a hanger 44 on the back wall by which the whole assembly can be attached to or detached as from a belt.

A is a cup of truncated conical form and of such a shape at its bottom 4, front wall 1 and back wall 2 that it fits detachably on the lower part 38 of the canteen C. Its bottom 4 is closed and its top 3 is open and there is usually a bead 5 around

the top. On the front wall 1 are upwardly projecting ears 6, 6, and below them a projecting pivot 7.

B represents a handle pivoted at 7 and extending down at 21 along the front wall 1. It is then bent at a right angle and extends at 24 under the bottom 4 at the end of which it is again bent at right angles upwardly at 22 so that it fits inside the concavity of the back wall 2. The fit is made fairly loose but the last section 22 of the handle is so bent that it hugs the concave wall 2 of the cup to prevent rattling.

This looseness also allows a keeper 26 to be carried on the first section 21 of the handle and to be slipped down behind the ears 6, 6, as shown in Fig. 5 when the handle is to be used for lifting the cup.

H is a heater member made of thin sheet metal which is removably positioned around and fits the front, back and side walls of the cup. This heater member H has a top 13 which is open and a bottom or small end 14 which is also open while the front wall 11 is convex corresponding with wall 1 and the back wall 12 is concave corresponding with the wall 2.

At the top or large end, the convex wall 11 is cut away at 17 so as to fit around the projecting pivot 7. Preferably also at the small end or bottom of the concave back wall 12, the material is also cut away at 15 so as to give more clearance to the part 22 of the handle B. There are also preferably a plurality of draft passages or holes 16 in such a position that when the parts are assembled for heating as shown in Figs. 4 and 5, part of the products of combustion can escape through them.

There are also spring catches 18, 18, extending up into the cut away part 17. These catches preferably are integral with the rest of the metal of the heater, and are so made that, as shown in Fig. 3, they will slip over the projecting pivot 7 and snugly and quietly hold the heater H up in place on the cup A under the bead 5.

Figs. 1 and 2 show the complete assembly including the water W and a thin wafer F which can be used as the fuel, and can be carried under cup A.

The fuel F is preferably of the concentrated fuel type like Sterno which will burn with a hot smokeless flame.

It will be seen that the water W in the canteen can be reached by removing the whole assembly from the belt, or the canteen can be taken out of the carrier, whichever is more convenient, and then by removing cap 39.

When it is to be used for heating, the canteen, cup, heater and fuel are all removed from the carrier. The heater is removed from the cup, turned upside down and, as shown in Fig. 4, its large end can be pressed into the ground G to hold it steady or it can be merely rested on a floor, table or on any fairly steady support S.

The cup can then be set in position with its small end inside the small end of the heater and with the handle preferably extended as shown in Fig. 5.

Water W from the canteen is now poured into the cup A and, if desired, a can of food such as K can be put into the water so that it will not burn. The fuel F is placed underneath heater member H and is ignited whereupon the heat and flame will travel in through the inlet 17 and out through the cut away part 15 and through the draft passages 16.

In speaking of draft passages in the claims,

these holes 15, 16, and 17, some or all of them are intended. While the device may work if only one, such as 17, is used, there should be enough draft so that the fire will not go out.

There are some modifications of my heater construction, one of which is shown in Fig. 7 at M. This is of a shape to fit a cup A. Heater member M has a top or large end 53 from which and from the front wall 51, there is cut a passage 56 to go around the pivot of the cup. The small end of heater member M is shown at 54 and its back wall at 52. In this back wall 52 there is a cut 55 on three sides to provide a friction spring holding member 50 which is bent inward so that, when the heater member is on the cup, this spring will hold the heater in place by friction. The front and back walls 51 and 52 may be of the same or of a less height than the front and back walls 1 and 2 of the cup. At the small end, there is no cut away passage such as 15 but there are draft passages 58.

I prefer to make my heater of metal but it may be made of fireproof paper, plastic or any suitable non-inflammable material.

I claim:

1. The combination with a canteen having a lower part of truncated conical form with a bottom end of substantially oval cross section with a front wall convex and a back wall concave; of a cup which fits on the lower part of the canteen, said cup having a bottom, ears on its convex front wall, a handle carried below the ears on a projecting pivot and shaped so that it can extend down, across the bottom of the cup and up along the concave back wall and a keeper slidable on the handle to engage the ears; a heater member of thin sheet metal removably positioned around and fitting the walls of the cup down to near the bottom of the cup, the convex front wall being cut away at its large end to fit around the projecting pivot and to serve as an inlet draft, the heater member being provided with spring catches to engage the pivot and to detachably hold the heater member in place on the cup; and its concave back wall being cut away at its small end proximate the adjoining part of the handle; together with a flexible carrier which encloses the assembly of canteen, cup and heater member.

2. The combination with a canteen having a lower part of truncated conical form with a bottom end of substantially oval cross section with a front wall convex and a back wall concave; of a cup which fits on the lower part of the canteen, said cup having a bottom, a handle carried on the convex front wall by a projecting pivot and shaped so that it can extend down, across the bottom of the cup and up along the concave back wall; a heater member of thin sheet metal removably positioned around and fitting the walls of the cup down to near the bottom of the cup, the convex front wall being cut away at its large end to fit around the projecting pivot and to serve as an inlet draft, the heater member being provided with spring catches to engage the pivot and to detachably hold the heater member in place on the cup.

3. The combination with a canteen having a lower part of truncated conical form with a bottom end of substantially oval cross section with a front wall convex and a back wall concave; of a cup which fits on the lower part of the canteen, said cup having a bottom, a handle carried on the convex front wall by a projecting pivot and shaped so that it can extend down,

across the bottom of the cup and up along the concave back wall; a heater member of thin sheet metal having open ends and positioned around and fitting the walls of the cup, the convex front wall being cut away at its large end to fit around the projecting pivot and to serve as an inlet draft and the heater member being provided with spring catches to engage the pivot, and to hold it in place on the cup.

4. The combination with a canteen having a lower part of truncated conical form with a bottom end of substantially oval cross section with a front wall convex and a back wall concave; of a cup which fits on the lower part of the canteen, said cup having a bottom, a handle carried on the convex front wall by a projecting pivot and shaped so that it can extend down, across the bottom of the cup and up along the concave back wall; a heater member of thin sheet metal having open ends and positioned around and fitting the walls of the cup, the convex front wall being cut away at its large end to fit around the projecting pivot and to serve as an inlet draft, and the heater member being provided with means to hold it in place on the cup.

5. The combination with a canteen having a lower part of truncated conical form with a bottom end of substantially oval cross section with a front wall convex and a back wall concave; of a cup which fits on the lower part of the canteen, said cup having a bottom, a handle carried on the convex front wall by a projecting pivot; a heater member of thin sheet metal having open ends and positioned around and fitting the walls of the cup, the convex front wall being cut away at its large end to fit around the projecting pivot and to serve as an inlet draft, and the heater member being provided with means to hold it in place on the cup.

6. For use with a tapering cup of kidney shaped cross section which fits on the bottom of a canteen so that both will go inside of a canvas cover, the cup having two projecting ears on the convex

side between which is pivoted a folding handle adapted to fold under the bottom of the cup and up on the concave side; a thin sheet metal sleeve having open ends and of less height than the cup, such sleeve fitting over the cup and being cut away at the small end of the concave side and at the large end of the convex side down to below the ears, there being two spring catches extending outward and upward over the ears.

7. For use with a tapering cup of kidney shaped cross section with the front wall convex and the back wall concave having two projecting ears on the convex side between which is pivoted a folding handle adapted to fold under the bottom of the cup and up on the concave side; a thin sheet metal sleeve open at both ends and of less height than the cup, such sleeve fitting over the cup and being cut away at the top of the convex side down to below the ears, there being spring means to hold the sleeve on the cup.

8. The combination with a truncated conical cup for use with a canteen, having a bottom and a handle carried on its front wall by a projecting pivot; of a removable heater member of thin sheet material which is open at both ends, and fits around the walls of the cup and is cut away at its large end to fit around the projecting pivot and to serve as an inlet draft passage, the heater member being provided with means to hold it in place on the cup.

9. The combination of a truncated conical cup with a folding handle, the small end of which cup enters into and is supported by the small end of a heater member; with such heater member of thin sheet material having open ends and of truncated conical form and of a size and shape, when reversed, to fit the cup and handle and being provided with an inlet draft passage through its wall at its large end and a plurality of outlet draft passages spaced all the way around and through its wall near its small end.

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