Nov. 15, 1932. A. M. PETERSON 1,887,782

PORTABLE HEATER

Filed Nov 22, 1930

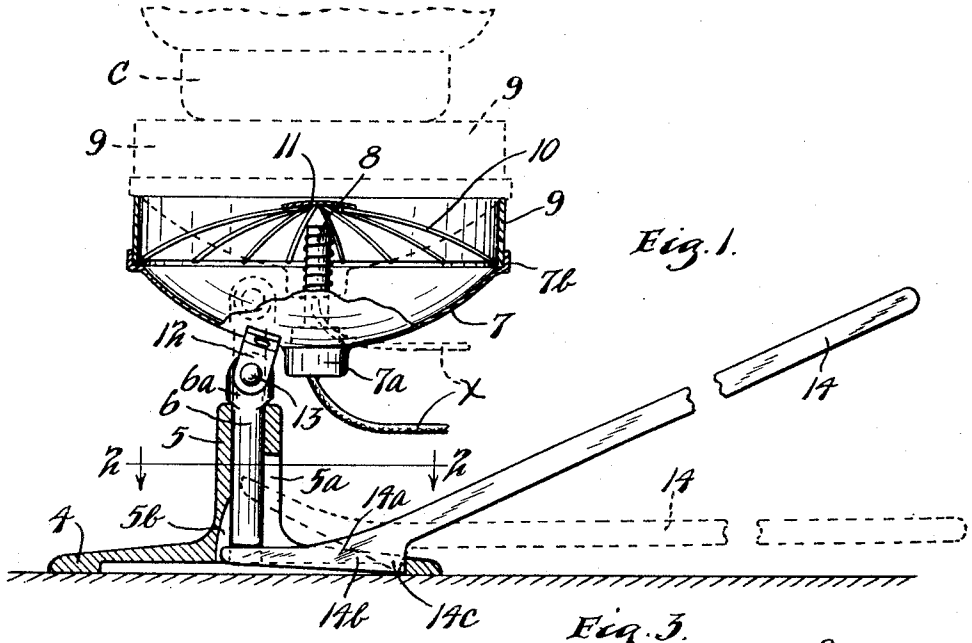



Fig. 1.

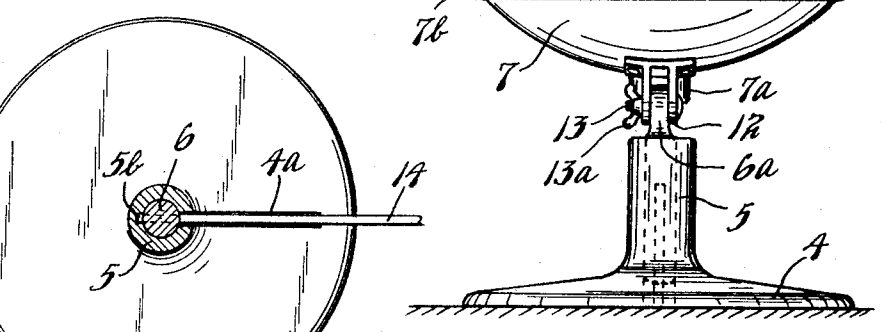



Fig. 3.




Fig. 2.

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# UNITED STATES PATENT OFFICE

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## PORTABLE HEATER

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This invention relates to portable heaters especially adapted for heating the crank case of an automobile in a garage or when the same is parked.

It is an object of my invention to provide an extremely simple but highly efficient portable heater which is supported from the floor or ground and which may be readily positioned beneath a crank case and projected upwardly to receive and surround a portion of the crank case, particularly the bottom adjacent the sump to heat and liquefy the oil and facilitate the starting of the motor.

More specifically it is an object to provide an efficient heater of the class described having an elongated handle by which the heater proper may be readily slid or moved to position below a crank case and by which moreover the heater proper may be projected upwardly into close contact with the sump portion of the crank case and maintained in operative heating position.

Still a further object is to provide a simple, inexpensive electric heater of the reflector type especially adapted for efficiently heating the bottom of an automobile crank case and readily convertible into an ornate reflector heater for domestic use by the removal of one or two parts.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawing, in which like reference characters refer to similar parts throughout the several views, and in which:—

Fig. 1 is a view partly in side elevation and partly in vertical section showing an embodiment of my invention, certain of the dotted lines indicating the operative and raised positions of the parts and other of the dotted lines indicating the bottom of an automobile crank case;

Fig. 2 is a cross section taken on the line 2—2 of Fig. 1, and

Fig. 3 is an elevation showing the manner in which the reflector and heater casing are adjustably secured to the upper end of the short supporting post.

In the embodiment of the invention illustrated a short pedestal or support is provided having a base 4 of substantial area and a vertical sleeve 5 projecting axially and upwardly therefrom.

A short supporting post 6 is slidably mounted in sleeve 5 and as shown has a flat attachment head 6*a* to which my heater proper is adjustably secured.

The heater proper comprises, as shown, a concavo-convex reflector 7 having axially disposed therein an electrical socket which is housed by a cap or boss 7*a*. An electrical heating element 8 of conventional type is detachably connected with said socket and in the form shown projects upward axially of reflector 7. The said electrical socket is supplied by means of a flexible extension cord X having electric service wires therein, which cord may be connected with a conventional outlet plug of the household source of electricity. Heating element 8 may comprise a cylindrical core upon which a nichrome wire or other resistant element is spirally wound. The reflector shell 7, as shown, is provided with an attachment flange 7*b* to which a shallow heater casing 9 is detachably secured. The heater casing may simply telescope within flange 7*b* or any suitable readily detachable means may be provided for securing the parts together. I prefer to provide a protective grating 10 traversing the open side of the reflector and disposed above the heating element 8 and centrally of said grating a protective disk 11 may be mounted directly overlying the upper end of heating element 8 and of considerably greater diameter to prevent oil and moisture from dropping upon the heating element when the device is in operation.

The reflector shell 7 is secured to the attachment head 6*a* of the supporting post by any suitable means preferably a clamp or bracket permitting a relative tilting of the reflector on a horizontal axis. To this end I have provided a depending bifurcated bracket 12 riveted or otherwise secured to the exterior of reflector 7 and straddling the flat attachment head 6*a*. A clamping bolt 13 extends through the bifurcated ends of the

bracket and attachment head 6*a* may be provided with a wing clamping nut 13*a*.

An elongated handle or lever 14 is detachably connected with the supporting pedestal for handling and manipulating the device and for also projecting or raising the supporting post 6 and heater proper into operative heating position. In the embodiment illustrated the vertical sleeve 5 of the pedestal is provided with a narrow vertical slot 5*a* communicating with the hollow interior thereof and defined preferably by an arcuate edge 5*b* at its innermost portion. As shown a horizontal slot 4*a* is provided in the base 4, said last mentioned slot lying in the same vertical plane as the slot 5*a* and being substantially a continuation of slot 5*a*. The lever 14 has a working end 14*a* which is angled slightly relative to the main or handle portion thereof and which has a lower straight edge 14*b* disposed substantially horizontally when the heater proper is disposed in lowered position. A rectangular shoulder 14*c* is formed in the outer and lower portion of the working end 14*a* and constitutes a fulcrum for the lever as well as a retaining element for detachably connecting the lever with the pedestal. The extremity of the working end 14*a* of the lever is positioned directly below the lower end of supporting post 6.

In operation for heating an automobile crank case the reflector 7 is secured in the horizontal position shown in the drawing by means of a clamping device 13 and 13*a* and the shallow heater casing 9 is attached to the flange of the reflector. The handle or lever 14 is positioned in the raised position shown in Fig. 1 and the pedestal may be easily slid beneath the crank case of an automobile by the lever. When the heater casing is disposed directly beneath the sump portion of the crank case, handle 14 is dropped or swung downwardly thereby operating as a lever to raise post 6 causing the heater casing to receive and clamp against a considerable portion of the crank case. The heat furnished by the heating element 8 is radiated and reflected against the crank case and convection currents are also present, quickly liquefying the congealed oil and facilitating the starting of the motor in cold weather as well as preventing crank case oil dilution due to excessive use of the motor choke and also effecting a considerable saving upon the consumption of current from the automobile battery.

The lever 14 is preferably of such length and weight as to maintain the heater proper in raised position against the bottom of the crank case, although of course friction or other means may be provided for positively holding the post 6 in the desired raised position.

In the form of the invention illustrated the working end of lever 14 is merely confined laterally by the slots 5*a* and 4*a* and detachably connected to the pedestal by said confining slots and the engagement of the rectangular shoulder 14*c* with the outer end of the slotted portion 4*a* in the base. It will thus be seen that the lever or handle may be readily disconnected from the base by merely lifting the shoulder 14*c* out of engagement with the terminal of the slotted portion in the base. The cylindrical heater casing 9 may also be quickly removed and the reflector tilted to a desired position for directing heat rays for domestic purposes. With the handle and shallow heater casing removed my device constitutes an ornate reflector heater which may be utilized in the household.

It will, of course, be understood that various changes may be made in the form, details, proportions and arrangement of the parts, without departing from the scope of my invention, which, generally stated, consists in a device capable of carrying out the objects above set forth and in the novel parts and combinations of parts disclosed and defined in the appended claims.

It will further be understood that my invention may be applied to various uses in addition to those specifically enumerated herein. For instance, it might be clamped against the lower tank of an automobile radiator or utilized to prevent liquid from freezing in a tank disposed above the level of the ground or floor or due to the heat directional properties of the reflector it may be used to concentrate radiation of heat upon any desired object.

What is claimed is:—

1. In a heater of the class described, a base or support adapted to rest on the ground, a heater casing having an open outer side, said casing being connected with said base for limited rectilinear vertical movement relatively thereto, a heating element in said casing, said casing having an edge adapted to project upwardly and engage the lower portion of an automobile crank case and a handle fulcrumed in said support by which the support and casing may be shifted in any direction to position them below said crank case, said handle being further connected with said casing to raise the same against the bottom of said crank case and of sufficient length to project outwardly towards the side of the automobile for convenient manipulation.

2. In a heater of the class described, a portable base, a supporting element slidably connected with said base for limited vertical movement, a heater casing connected with the upper end of said supporting element having an open outer side, a heating element in said casing and an elongated lever fulcrumed in said base with its working end

connected with said supporting element for elevating the same and also constituting a handle for manipulating said base from a remote point, the length and mass distribution of said handle being such that its moment arm about the fulcrum is sufficient to hold the supporting element and the casing in elevated position.

3. In a heater of the class described, a portable base having an upstanding tubular portion, a supporting post slidably mounted in said tubular portion for limited vertical movement relatively to said base, a heater casing mounted upon the upper end of said post and an elongated lever fulcrumed in said base and having a working end positioned below said post for elevating the same with said heater from a removed point.

4. In a heater of the class described, a portable base having a short upright standard, a reflector mounted in said standard for limited vertical sliding movement, means for swingably adjusting said reflector upon a horizontal axis through such a range that the reflector may face either horizontally or upwardly, a heating element mounted within said reflector and an elongated lever fulcrumed in said base and detachably connected therewith for raising said reflector from a point removed from said base.

5. In a heater of the class described, a portable base having a short upright standard, a supporting post slidably mounted on said standard for limited vertical sliding movement, a heater casing attached to the upper end of said post, said casing having an open outer side adapted to face upwardly and engage a portion of an automobile crank case, a heating element mounted within said casing, said base having a recess extending therein adjacent the lower end of said post, an elongated handle in the form of a lever fulcrumed in the recessed portion of the base with its inner end underlying said post, said handle normally extending substantially radially from the axis of said base and inclined in an upward direction and constructed and positioned for manipulating and positioning said base from a remote point, as well as for elevating said heater casing to raise the same against the bottom of said crank case.

6. The structure set forth in claim 5 wherein said heater casing is swingably mounted upon the upper end of said post and wherein said elongated handle is quickly detachable from said base.

In testimony whereof I affix my signature.

AXEL M. PETERSON.