C. E. VARNUM.

HEATER.

APPLICATION FILED NOV. 25, 1907.

898,613. Patented Sept. 15, 1908.

Fig. 1.

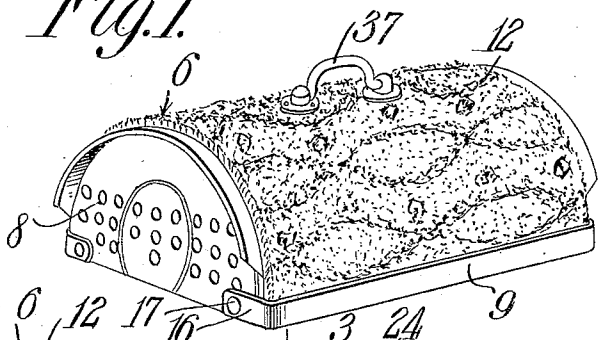


Fig. 2.

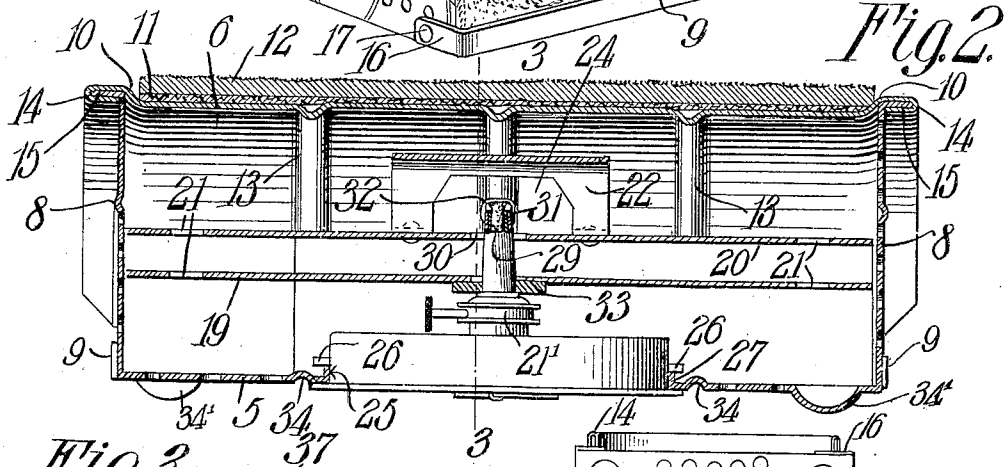
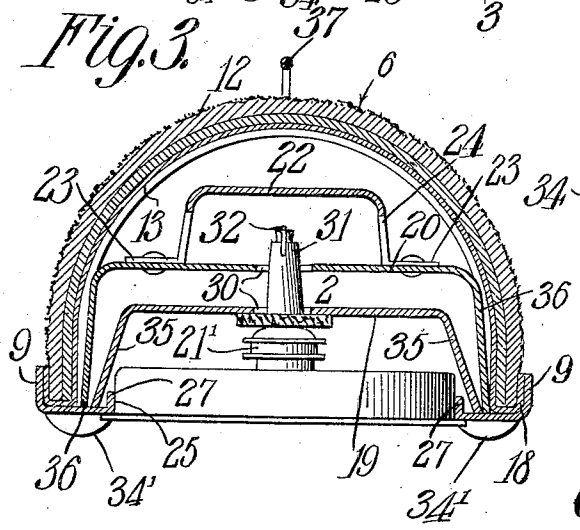


Fig. 3.



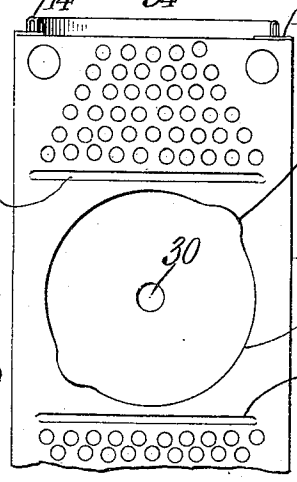


Fig. 4.

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CHARLES E. VARNUM, OF LAWRENCE, KANSAS.

HEATER.

No. 898,613. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed November 25, 1907. Serial No. 403,823.

To all whom it may concern:

Be it known that I, CHARLES E. VARNUM, a citizen of the United States, residing at Lawrence, in the county of Douglas and State of Kansas, have invented a new and useful Heater, of which the following is a specification.

This invention relates to portable heaters of that general class especially designed for use in carriages, wagons, automobiles, sleighs and other vehicles and has for its object to provide a comparatively simple and inexpensive device of this character which performs the dual function of a hand and foot warmer.

A further object of the invention is to provide a heater including a casing having spaced longitudinal partitions defining superposed heating compartments, there being perforations formed in the end walls of the casing to permit the free circulation of air through said compartments.

A further object is to provide a hood or shield for deflecting the hot air from the burner laterally and downwardly into contact with the partitions so that the hot air may be distributed uniformly throughout the casing.

A further object is to provide improved means for locking the lamp within the casing, and means for regulating the size of the flame at the burner tip.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a perspective view of a heater constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2. Fig. 4 is a bottom plan view of a portion of the casing.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved heater forming the subject matter of the present invention includes a casing or housing having a flat perforated base 5 and a semi-circular top or cover 6, the metal forming the base 5 having its opposite transverse edges bent upwardly to form perforated walls 8 and its longitudinal edges bent laterally to produce longitudinal flanges 9.

The cover 6 is off set at 10 to form a pocket for the reception of a strip of asbestos or similar insulating material 11, the latter being covered by a jacket 12 preferably formed of carpet or similar material so as to give the heater a neat attractive appearance as well as to form a yieldable tread surface.

The metal forming the top or cover 6 is provided with spaced circumferential strengthening ribs or corrugations 13 while the opposite ends of the metal are extended longitudinally beyond the end walls 8 and thence bent inwardly to form grooves 14 adapted to receive suitable flanges 15 carried by the end walls thereby to lock the cover in engagement with said end walls.

The opposite ends of the flanges 9 are bent to form laterally extending retaining ears 16 which are riveted or otherwise rigidly secured to the adjacent end walls, as indicated at 17, the metal forming the grooves 14 being cut away to accommodate the ears 16, as shown.

The opposite longitudinal edges of the cover 6 are bent to form vertical flanges 18 which engage the flanges 9 and form longitudinal grooves for the reception of the adjacent lower edges of the insulating material and fabric jacket whereby the several parts may be clamped together when the ears 16 are secured to the adjacent ends of the casing.

Arranged within the casing are spaced longitudinal partitions 19 and 20 defining a plurality of superposed heating compartments, said partitions being formed with openings 21 so as to permit the heat from the lamp or burner 21′ in the lower compartment to pass through the openings in the partitions to the upper compartment.

Arranged in the upper heating compartment is a hood or shield 22 provided with laterally extending lugs 23 which are riveted or otherwise secured to the upper partition 20.

The hood or shield 22 extends longitudinally of the casing and is provided with oppositely disposed openings 24 through which the hot air passes in contact with the reinforced walls of the cover.

The heater 21′ is preferably in the form of a lamp the body portion of which is seated in

a circular opening 25 formed in the bottom of the casing and is provided with laterally extending lugs 26 which engage the reinforcing flange 27 of the opening 25, there being oppositely disposed recesses or depressions 28 formed in the walls of the opening 25 so that by forcing the lugs 26 upwardly at the depressions 28 and then partially rotating the lamp the latter may be locked in position on the base of the casing.

The burner 29 extends through alined openings 30 formed in the partitions 19 and 20 and is provided with a removable cap 31 having one or more bars 32 secured thereto and extending transversely across the wick so as to regulate the height of the flame at the burner tip.

Mounted on the burner tube 29 and preferably bearing against the lower partition 19 is a removable disk or collar 33 preferably formed of asbestos or other suitable insulating material.

The base of the casing is preferably reinforced and strengthened by one or more transverse ribs 34, the metal at the opposite ends of the casing being pressed downwardly to form depending feet 34′ which serves to support the base of the casing in elevated position above the bed of the carriage or other suitable support.

In operation the lamp is filled with alcohol or other fluid and inserted in the opening 25 in the base of the casing by rotating the lamp until the lugs 26 register with the recesses or depressions 28 after which the lamp is partially rotated which causes the lugs 26 to engage the reinforcing flange 27 and thus lock the lamp in position in the lower compartment of the casing.

It will thus be seen that the hot air will strike the hood or casing 22 and be deflected downwardly into contact with the upper longitudinal partition 20 and thence pass through the perforations 21 to the intermediate and lower compartment, the fresh air at the same time entering the casing through the perforations in the end walls thereof thus permitting the free circulation of air both longitudinally and vertically of the casing.

Attention is here called to the fact that the lower longitudinal partition 19 is provided with depending supporting flanges 35 which bear against the interior walls of the casing at the base of the latter and engage similar flanges 36 formed on the upper partition 20 and serve to force the flanges 36 in engagement with the side walls of the casing thereby to prevent accidental displacement of the same.

The heater is provided with a suitable handle or finger piece 37 by means of which the casing may be conveniently transported from place to place.

The heaters may be made in different sizes and shapes and used as either a foot or hand warmer.

Having thus described the invention what is claimed is:

1. A device of the class described including a casing having spaced longitudinal partitions defining superposed heating compartments, the opposite longitudinal edges of the partitions being bent downwardly on converging lines with their terminal portions disposed in contact with each other and resting on the base of the casing, said partitions being provided with vertically alined openings, a lamp seated in one of the heating compartments and provided with a burner extending through the openings in the partitions, and a hood disposed within the upper compartment at said burner.

2. A device of the class described including a casing having a base provided with a circular opening the walls of which are bent upwardly to form a vertically disposed reinforcing flange, there being oppositely disposed depressions formed in the walls of the opening and also in the vertical flange, longitudinal partitions arranged within the casing and forming spaced heating compartments, a lamp engaging the opening in the base of the casing and provided with lugs adapted to register with the depressions and engage the vertical flange when the lamp is partially rotated, a flange extending laterally from the base of the lamp for engagement with the bottom of the casing, said lamp being provided with a burner extending through the partitions, and a shield disposed within the upper compartment and engaging the adjacent partition at said burner.

3. A device of the class described including a casing having a flat base and perforated end walls provided with terminal over-hanging flanges extending in the direction of the length of the casing, a semi-circular plate engaging the base and flanges and provided with a pocket, insulating material seated in said pocket, a jacket surrounding the insulating material, and means for heating the casing.

4. A device of the class described including a casing having a flat base and perforated end walls, the longitudinal edges of the base being bent upwardly to form vertically disposed flanges terminating in attaching ears, a semi-circular plate forming the cover of the casing, insulating material engaging the cover and interposed between the flanges and said cover, said ears being bent laterally in engagement with the end walls of the casing, and means for heating the latter.

5. A device of the class described including a casing having a flat base and provided with perforated end walls, the opposite longitudinal edges of the base being bent upwardly to form vertically disposed flanges, a semi-circular plate forming the top of the casing and having its opposite ends extended longitudinally beyond the end walls of the casing to form grooves, an insulating jacket

surrounding the top of the casing and engaging the vertical flanges, lateral flanges formed on the end walls and engaging the grooves in the cover of the casing, and a lamp arranged within the casing for heating the latter.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHAS. E. VARNUM.

Witnesses:
C. A. OLSON,
F. A. VARNUM.