

Oct. 22, 1940.

W. A. BAILEY

2,219,170

PORTABLE HEATER AND COOKER

Filed Aug. 19, 1939

3 Sheets—Sheet 1

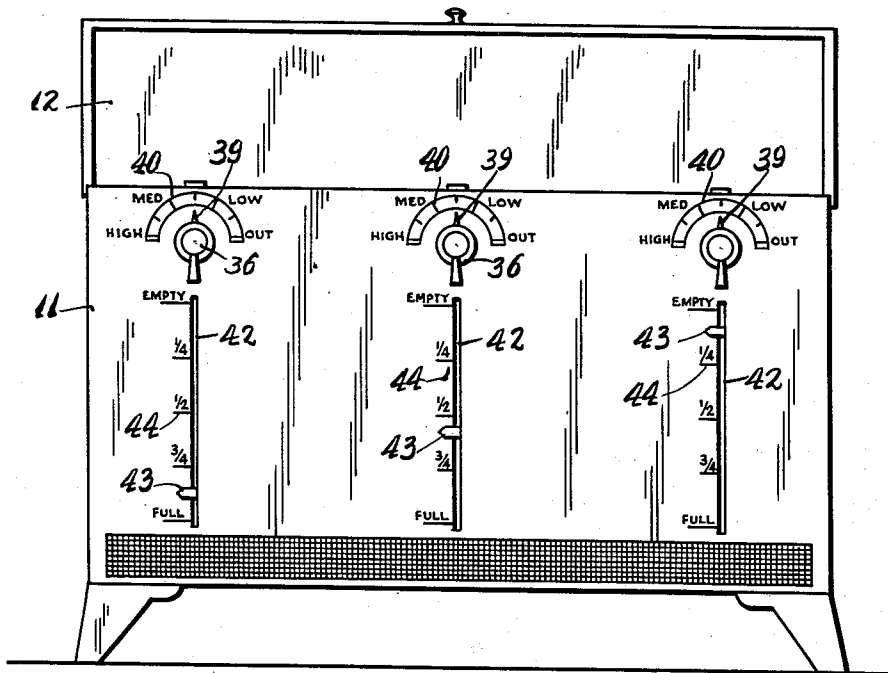


Fig. 1.

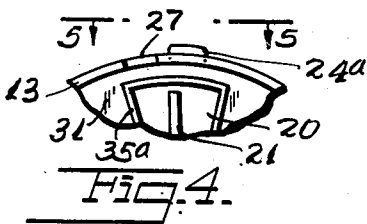


Fig. 4.

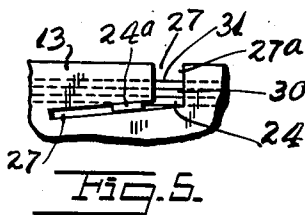


Fig. 5.

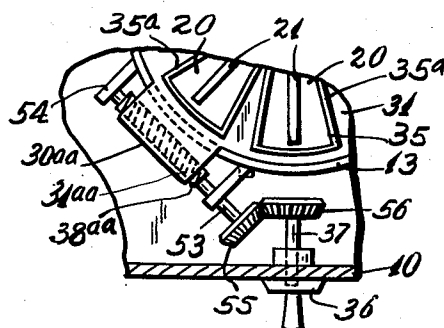


Fig. 6.

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3 Sheets-Sheet 2

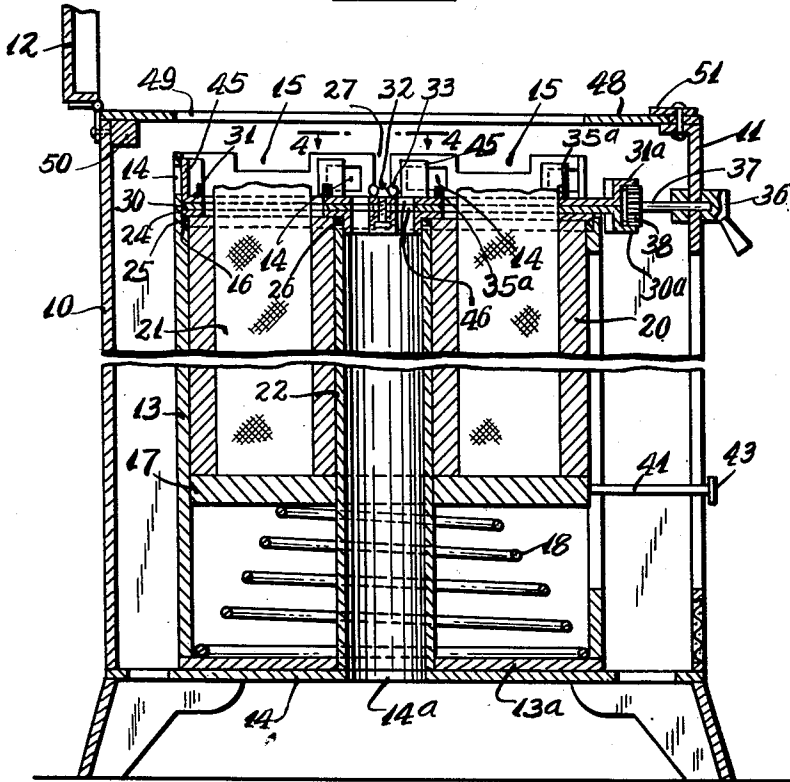
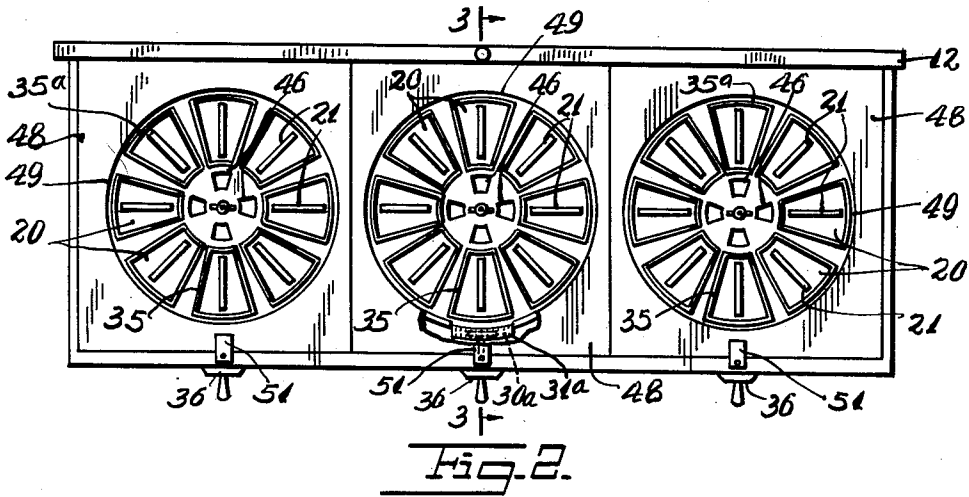


Fig. 3.

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3 Sheets-Sheet 3

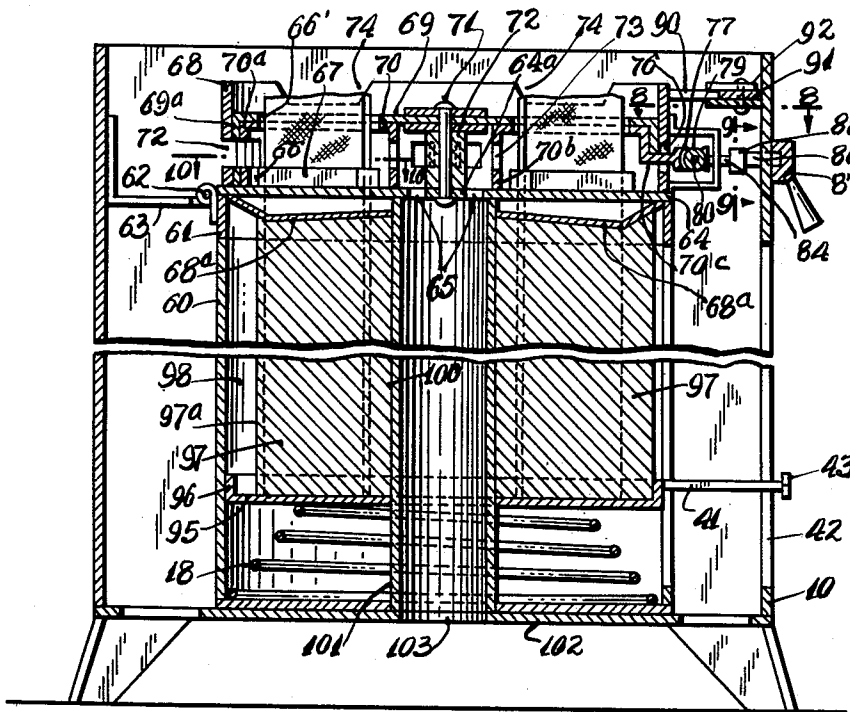


Fig. 7.

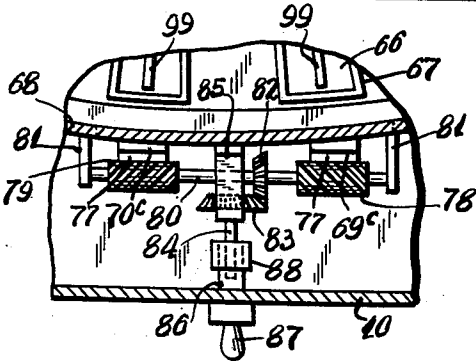


Fig. 8.

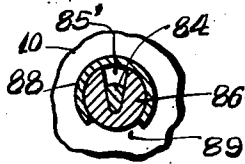


Fig. 9.

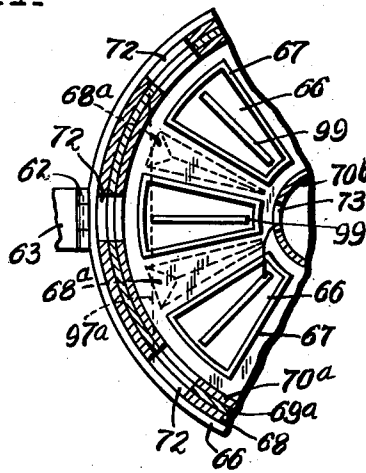


Fig. 10.

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# UNITED STATES PATENT OFFICE

2,219,170

## PORTABLE HEATER AND COOKER

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Application August 19, 1939, Serial No. 290,938

14 Claims. (Cl. 126—45)

This invention relates to new and useful improvements in a portable heater and cooker.

The invention has for an object the construction of a device as mentioned which is characterized by a cabinet having a front panel, and a top cover which may be opened and closed, and a plurality of burner units of a particular design and construction mounted in said cabinet.

It is proposed to provide an arrangement whereby each of the burner units has an indicator viewable from the outside of the cabinet, and indicating the fuel contents of the burner.

More specifically the invention proposes the use of a wax compound as the fuel for the heater and cooker.

Another object of the invention resides in the novel construction of a control handle by which the size of the flame of the burner may be controlled.

Still further the invention proposes to characterize each burner by a vertical cylindrical sleeve having certain air openings, a platform slidably mounted within said sleeve and resiliently urged upwards, and a wax compound member rested on the platform, and a novel arrangement for controlling the burning of said wax compound.

The invention also proposes the use of several discs mounted upon the wax compound and operable in certain fashion to control the flame.

Still further the invention proposes the construction of a device as mentioned which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a front elevational view of a portable heater and cooker constructed in accordance with this invention.

Fig. 2 is a plan view of Fig. 1.

Fig. 3 is a transverse vertical sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a fragmentary plan view looking in the direction of the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary elevational view looking in the direction of the line 5—5 of Fig. 4.

Fig. 6 is a fragmentary horizontal sectional view of a portion of a burner constructed in accordance with a modification of this invention.

Fig. 7 is a vertical sectional view of a portable

heater and cooker constructed according to a modification of this invention.

Fig. 8 is a fragmentary horizontal sectional view taken on the line 8—8 of Fig. 7.

Fig. 9 is a fragmentary enlarged vertical sectional view taken on the line 9—9 of Fig. 7.

Fig. 10 is a fragmentary sectional view taken on the line 10—10 of Fig. 7.

The portable heater and cooker in accordance with this invention includes a cabinet 10 having a front panel 11, and a top cover 12 which may be opened and closed. A plurality of burner units are mounted within said cabinet and each includes a vertical cylindrical sleeve 13 rested upon a bottom partition 14 arranged in the cabinet. The sleeve 13 is formed with a plurality of air intake openings 14 in its top edge portion. This top edge portion is also formed with several cut-out areas 15 to facilitate passage of air in this vicinity. The sleeve 13 is also formed with an inner annular shoulder 16 constructed by reaming out the top portion of the cylindrical wall of the cylinder 13.

A platform 17 is slidably mounted in the sleeve 13. There is a resilient means for urging said platform upwards. This means comprises a helical spiral spring 18 mounted within the cylindrical sleeve and acting between the bottom wall 13<sup>a</sup> closing the bottom of the cylindrical sleeve and the platform 17. A wax compound 20 is rested upon the platform 17 and is formed with an annular area provided with a plurality of wicks 21 arranged radially thereon. A central air intake tube 22 is mounted through the platform 17 and at its bottom is supported upon the bottom wall 14. This wall has an opening 14<sup>a</sup> communicating with the air tube 22. The wax compound member 20 is formed with a central opening which the tube extends.

A disc 24 is rested upon an annular gasket 25 which is rested on the base of the annular shoulder 16. The disc 24 also rests on another annular gasket 26 which is mounted upon the upper end of the tube 22. The disc 24 is provided with edge projections 24<sup>a</sup> preferably two in number arranged diametrically opposite to each other, and these edge projections engage into slots 27 extended downwards from the top edge of the sleeve 13. Each of the slots 27 has a vertical portion 27<sup>a</sup> communicating with the top edge of the sleeve 13, and a substantially horizontal and laterally extending portion 27<sup>b</sup>. This substantially horizontal portion 27<sup>b</sup> extends downwards at the slight angle as may be seen from inspecting Fig. 5. The arrangement is such that the disc

24 may be rested upon the gaskets 25 and 26, and then the disc may be turned laterally so that the projections 24<sup>a</sup> engage into the inclined portions 27<sup>b</sup> of the slots 27, which forces the disc 24 tightly against the gaskets 25 and 26. Thus the disc is firmly held in position. Should the gaskets become worn it is merely necessary to further turn the disc 24 so that the projections 24<sup>a</sup> ride further down along the inclination of the slot portions 27<sup>b</sup>.

A pair of control discs 30 and 31 are superimposed on the disc 24 and are axially rotatively connected therewith. This is accomplished by a stud bolt 32 which is axially mounted on the disc 24 and which extends upwards through central openings formed in the discs 30 and 31. A wing nut 33 threadedly connects with the stud 32 for holding the discs 30 and 31 in position.

The discs 30 and 31 are provided with projecting flanges 30<sup>a</sup> and 31<sup>a</sup> which are spaced from each other and which are opposed to each other. These flanges project through the openings 34 formed in the side of the sleeve 13. The discs 24, 30 and 31 have trapezoidal openings 35 substantially of the same size and normally superimposed insofar as the discs are concerned. It is through these openings that the wicks 21 project. The top disc 31 has its trapezoidal openings 35 surrounded with flanges 35<sup>a</sup> to prevent the melted wax from spilling over this disc.

A handle 36 is rotatively mounted on the cabinet 10 and connects with a stem 37 extending into the cabinet and connected with a gear 38. This gear engages between the flanges 30<sup>a</sup> and 31<sup>a</sup>. These flanges are formed with opposed teeth meshing at the gear 38. The arrangement is such that the handle 36 may be turned in one direction or the other, for turning the gear 38 which will turn the flanges 30<sup>a</sup> and 31<sup>a</sup> in opposite directions. The handle 36 is provided with a pointer 39 operative across a scale 40 imprinted on the panel 11 and indicating the positions of the control discs 30 and 31, and so indirectly indicating the condition of the burner, that is, whether it is opened or closed or partially opened, or closed, etc. An indicator stem 41 is mounted on the platform 17 and projects through a slot 42 formed in the cabinet 10. A pointer 43 is mounted on the outer end of the stem 41 and operates over a scale 44 imprinted on the cabinet 10. This indicator gives the position of the platform 17, and so indirectly indicates the amount of fuel wax material 20. The indicator may indicate the full condition, the empty condition, and intermediate conditions.

The control disc 30 has several shutter elements 35 projecting therefrom and extending over the air passages 14 formed in the upper end portion of the sleeve 30. Moreover the discs 30 and 31 are formed with openings 46 communicating with the central tube 22 and which are normally aligned in the normal positions of the discs. However when the discs are turned relative to each other, these openings 46 move out of alignment, and so the passage through the tube 22 is controlled.

Above each burner unit there is a plate 48 having a central opening 49 through which the burner unit may operate. The plate 48 is rested at the rear upon a block 50 mounted on the cabinet 10. At the front the plate 48 is held fixedly and movably, in position, by a latch 51 which may be manually operated. Pots and other articles to be heated may be placed on this plate 48, and extend over a burner unit.

In the particular heater and cooker illustrated on the drawings there are three burner units within the cabinet. This is merely for illustration purposes. Any number of burner units may be used.

The operation of the device is as follows:

The upper ends of the wicks 21 may be lighted to set the burners in operation. The heat from the flame melts the upper portion of the wax 20 which is then drawn up the wicks, and burns. As the upper portions of the wax are consumed, the platform 17 will move upwards, and it is thus continuously supplying new wax. The indicator 43 indicates the quantity of fuel still remaining. The handle 36 may be turned to control the air passages 14 and 46 which will effect the burning of the fuel. Moreover when the handle 36 is turned the discs 30 and 31 turn relative to each other and in the completely "off" position, the edge portions of the openings 35 engage against the sides of the wicks 21 cutting off additional supply of melted wax. Then the burner may easily be blown out, or it may be allowed to burn itself out when it burns all the wax on the wicks.

The burner may be reloaded with fuel by first removing the wing nut 33. This frees the top disc 31 which then may be lifted out from the top of the sleeve 13. The intermediate disc 30 may now be tilted upwards so that the flange portion 30<sup>a</sup> moves out from beneath the gear 38. It may now be lifted upwards. Then the disc 24 is removed by turning it to move the projections 24<sup>a</sup>, to align with the vertical portions 27<sup>a</sup> of the openings 27. The disc 24 is now free to be lifted. A new cylinder of wax 20 and wicks 21 may now be placed on the platform 17 and the wax material may be pressed downwards to force the platform 17 to its bottom position. The wax is then held, while the disc 24 is engaged in place. Then the discs 30 and 31 are replaced, and the burner is ready to be used again.

In Fig. 6, a modified form of the invention has been disclosed which distinguishes from the prior form, in the construction of the flanges, which operate the pair of discs 30 and 31. In this form of the invention the discs are provided with flanges 31<sup>aa</sup> and 30<sup>aa</sup>. A worm pinion 38<sup>aa</sup> engages against these flanges, and these flanges are formed with complementary teeth which are engaged with the teeth of the worm pinion 38<sup>aa</sup>. The worm pinion is supported on the shaft 53 which is rotatively supported on brackets 54 mounted upon the sides of the sleeve 13. A bevel gear 55 is mounted on the shaft 54 and meshes with a bevel gear 56 mounted on the shaft 37 which supports the handle 36. The arrangement is such that when the handle 36 is turned the rotations will be transmitted to turn the worm pinion 38<sup>aa</sup>. It will move the flanges 30<sup>aa</sup> and 31<sup>aa</sup> in opposite directions to control the discs 30 and 31 as previously explained.

In the modified form of the invention illustrated in Figs. 7 to 10 inclusive a portable burner and cooker has been illustrated in which the burner unit includes a vertical cylindrical sleeve 60 stationarily mounted within the cabinet 10 and having an open top. An annular member 61 is superimposed within the top of the cylindrical sleeve 60 and is hingedly supported at one side by a hinge 62 so that it may pivot upwards to a vertical position, and be moved downwards to a horizontal position, the latter position being illustrated on the drawings. The hinge 62 is connected with a support bracket 63 which is at-

tached to the inner face of one of the walls of the cabinet 10. The annular member 61 has a top wall 64 fixedly mounted across its top edge. This top wall 64 has a group of central air passages 65, and an annular area of trapezoidal air passages 66. These trapezoidal passages 66 are each surrounded with flanges 67 which project upwards a short distance from the top face of the wall 64.

A plurality of V-shaped spreader members 68<sup>a</sup> are mounted upon the bottom face of the top wall 64 between the trapezoidal openings 67 and serve to spread the wax compound beneath the top wall 64 as hereinafter more fully described, laterally so that the wax compound is forced up through the openings 66. An annular skirt wall 68 is fixedly mounted on the top wall 64. Several discs 69 and 70 are rotatively supported within the compass of the annular skirt wall 68 and these discs have aligned trapezoidal openings 66' adapted to be superimposed above the openings 66. A pintle rivet 71 is engaged through the axis of the discs 69 and 70 and engages through a bushing 72 mounted on an area 64<sup>a</sup> of the top wall 64 and serves to rotatively support the discs 69 and 70.

The top disc 69 at its periphery has a downwardly extending skirt flange 69<sup>a</sup> which engages along the inner face of the wall of the annular skirt wall 68. The bottom disc 70 has a similar downwardly extending skirt flange 70<sup>a</sup> arranged in intermediate contact with the inner face of the skirt flange 69<sup>a</sup>. The skirt flanges 69<sup>a</sup> and 70<sup>a</sup>, and the annular skirt wall 68 are provided with normally aligned openings 72 which comprise air passages. The bottom disc 70 also has an annular inner downwardly extending skirt flange 70<sup>b</sup> encircling the air openings 65 and extending down to and engaging the top face of the top wall 64. This annular skirt flange 70<sup>b</sup> is provided with air passages 73. The top edge of the annular skirt wall 68 is formed with a plurality of recessed edge portions 74, at certain areas, to facilitate passing of air over these edge portions.

A means is provided for turning the discs 69 and 70 for moving them to positions to which the air passages thereof are in or out of alignment with each other. This means includes a laterally extending flange 70<sup>c</sup> passing through an opening 76 formed at one area in the annular skirt wall 68. The flange 70<sup>c</sup> is a continuation of the skirt flange 70<sup>a</sup>. The skirt flange 69<sup>a</sup> is also formed with a lateral extending continuation 69<sup>c</sup> which also passes through the opening 76 of the annular skirt wall 68. The extended ends of the flanges 69<sup>c</sup> and 70<sup>c</sup> are formed with segmental worm gear portions 77 which are engaged by and meshed with worm pinions 79 and 78, respectively.

These worm pinions 79 and 78 are of opposite hand and are mounted on a shaft 80 rotatively supported on brackets 81 which are mounted on the annular skirt wall 68. A bevel gear 82 is also mounted on the shaft 80 and meshes with a bevel gear 83 which is fixedly mounted on a stem 84 rotatively supported in a bracket 85 mounted upon the annular skirt wall 68. The stem 84 is non-circular in transverse cross section, see Fig. 9, and normally engages in a socket receiving slot 85' formed in a stem 86 which is rotatively mounted through the cabinet 10. A handle 87 is mounted on the outer end of the stem 86 by which the stem may be turned. A rotative collar 88 is mounted upon the stem 86 and at one side

has a slot 89 which may align with the slot 85' in certain rotative positions of the collar. When these slots are aligned with each other it is possible to lift the stem 84 out of the slot 85'.

Latching means is provided for normally holding the top wall 64 in its horizontal position. This latching means includes a stationary bolt 90 mounted upon the annular skirt wall 68 and normally engaging against a keeper 91 mounted upon the inner face of the wall of the cabinet 10. A pivotally mounted auxiliary bolt 92 is mounted upon the keeper 91 and is extendable over the bolt 90 for locking the same fixedly in position. The arrangement is such that the auxiliary bolt 92 may be moved laterally to free the bolt 90 and then the annular member 68, the wall 64, the annular member 61 and all of the parts mounted on these parts may be hinged upwards about the hinge 62 as a pivot, provided however, that the ring 88 is turned to a position in which the slots 85' and 89 align with each other. Then the stem 84 may move upwards free from the stem 86.

A platform 95 is slidably mounted within the sleeve 60 and is urged upwards by a spring 18. This platform has a flange 96 extended upwards. A wax compound member 97 is rested upon the platform 95 and has its lower end engaged by the flange 96. This wax compound member has a flat side 97<sup>a</sup>, see Figs. 7 and 10, which produces a space 98 between the side of the wax compound member and the sleeve 60. When the annular member 61 is pivoted to its vertical position it is possible to remove the wax compound 97 by lifting it vertically upwards and it is also possible to insert a new wax compound member into the sleeve. The flat side 97<sup>a</sup> avoids interference with the inwardly projecting annular member 61. The wax compound member 97 also has an annular area provided with a plurality of wicks 99 normally extending upwards through the trapezoidal openings 66 and 66'. The wax compound member 97 also has a central circular passage 100 through which air tube 101 extends. This air tube is stationarily mounted upon the bottom wall 102 mounted on the cabinet 10. This bottom wall 102 has an opening 103 aligned with the tube 101 through which air may pass. An indicator rod 41 is mounted on the flange 96 of the platform 95 and extends out through a slot 42 formed in the cabinet 10. At its outer end the indicator rod 41 is provided with a pointer 43 operating over a scale as previously described.

The operation of this form of the invention is as follows:

When the parts are in the position illustrated in Fig. 7, it is possible to light the wicks 99 and set the heater and cooker into operation. The size of the flame may be controlled by turning the handle 87 which indirectly causes turning of the discs 69 and 70. This controls passage of the air through the device. The air comes up from the tube 101 and passes through the air passages 65 and 73. These latter two groups of air passages are of a fixed size. However then the air may escape through the passages 66' and the passages 72. These later groups of passages are controlled by relative movements of the discs 69 and 70. As the passages are closed the air supply is cut down and the burner flame may thus be controlled.

The spring 18 normally urges the platform 97 upwards so as to continually supply wax material to the top portion of the burner specifically in the region of the wall 64. The top portion of the wax

member will become soft and liquify and this liquid fuel will be retained by the flanges 67 until it is consumed. The spreader members 68\* will continuously force the wax material laterally to the openings 66, which will permit the spring 18 to function for continuously feeding upwards the wax compound member 97.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve having air intake openings and an inner annular shoulder in its top edge portion, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, a wax compound member rested on said platform and having an annular area with a plurality of wicks, a central air intake tube mounted through said platform and extending through an opening in said wax member, a disc rested on said inner annular shoulder and on the top end of said tube and having edge projections engaging in slots in said sleeve for stationarily holding said disc firmly in position, a pair of control discs superimposed on said disc and axially rotatively connected therewith and having edge projecting opposed flanges extending from said sleeve, said discs having openings through which said wicks pass, a stationary support located to the front of said flanges, a handle having a rearwardly extending stem rotatively extended through said support, a gear mounted on the rear end of said stem and engaging coacting teeth on the adjacent face of said flanges for turning said control discs when said handle is turned, and the top control disc having shutter elements engaging over said intake openings in said sleeve.

2. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve having air intake openings and an inner annular shoulder in its top edge portion, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, a wax compound member rested on said platform and having an annular area with a plurality of wicks, a central air intake tube mounted through said platform and extending through an opening in said wax member, a disc rested on said inner annular shoulder and on the top end of said tube and having edge projections engaging in slots in said sleeve for stationarily holding said disc firmly in position, a pair of control discs superimposed on said disc and axially rotatively connected therewith and having edge projecting opposed flanges extending from said sleeve, said discs having openings through which said wicks pass, a stationary support located to the front of said flanges, a handle having a rearwardly extending stem rotatively extended through said support, a gear mounted on the rear end of said stem and engaging coacting teeth on the adjacent face of said flanges for turning said control discs when said handle is turned, and the top control disc having shutter elements engaging over said intake openings in said sleeve, said resilient means comprising a spiral spring acting between said platform and a stationary wall at its bottom.

3. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve having air intake openings and an inner annular shoulder in its top edge portion, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, a wax compound member rested on said platform and having an annular area with a plurality of wicks, a central air intake tube mounted through said platform and extending through an opening in said wax member, a disc rested on said inner annular shoulder and on the top end of said tube and having edge projections engaging in slots in said sleeve for stationarily holding said disc firmly in position, a pair of control discs superimposed on said disc and axially rotatively connected therewith and having edge projecting opposed flanges extending from said sleeve, said discs having openings through which said wicks pass, a stationary support located to the front of said flanges, a handle having a rearwardly extending stem rotatively extended through said support, a gear mounted on the rear end of said stem and engaging coacting teeth on the adjacent face of said flanges for turning said control discs when said handle is turned, and the top control disc having shutter elements engaging over said intake openings in said sleeve, said slots in said sleeve being substantially of L-shape with vertical arms thereof connecting with the top edge of the sleeve and the horizontal arms extending slightly downwards at an inclination so that the disc will be forced downwards as it turns with the projections of the horizontal arms engaging said slots.

4. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve having air intake openings and an inner annular shoulder in its top edge portion, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, a wax compound member rested on said platform and having an annular area with a plurality of wicks, a central air intake tube mounted through said platform and extending through an opening in said wax member, a disc rested on said inner annular shoulder and on the top end of said tube and having edge projections engaging in slots in said sleeve for stationarily holding said disc firmly in position, a pair of control discs superimposed on said disc and axially rotatively connected therewith and having edge projecting opposed flanges extending from said sleeve, said discs having openings through which said wicks pass, a stationary support located to the front of said flanges, a handle having a rearwardly extending stem rotatively extended through said support, a gear mounted on the rear end of said stem and engaging coacting teeth on the adjacent face of said flanges for turning said control discs when said handle is turned, and the top control disc having shutter elements engaging over said intake openings in said sleeve, said stud being mounted axially on said disc and engaged through central openings in said pair of control discs and provided with a nut at the top for rotatively holding the control discs.

5. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve having air intake openings and an inner annular shoulder in its top edge portion, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, a wax compound member rested on said platform and having an annular area with a plurality of wicks, a central

air intake tube mounted through said platform and extending through an opening in said wax member, a disc rested on said inner annular shoulder and on the top end of said tube and having edge projections engaging in slots in said sleeve for stationarily holding said disc firmly in position, a pair of control discs superimposed on said disc and axially rotatively connected therewith and having edge projecting opposed flanges extending from said sleeve, said discs having openings through which said wicks pass, a stationary support located to the front of said flanges, a handle having a rearwardly extending stem rotatively extended through said support, a gear mounted on the rear end of said stem and engaging coacting teeth on the adjacent face of said flanges for turning said control discs when said handle is turned, and the top control disc having shutter elements engaging over said intake openings in said sleeve, said handle portion being provided with a pointer acting over a scale to indicate the degree to which the burner unit is "on."

6. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve having air intake openings and an inner annular shoulder in its top edge portion, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, a wax compound member rested on said platform and having an annular area with a plurality of wicks, a central air intake tube mounted through said platform and extending through an opening in said wax member, a disc rested on said inner annular shoulder and on the top end of said tube and having edge projections engaging in slots in said sleeve for stationarily holding said disc firmly in position, a pair of control discs superimposed on said disc and axially rotatively connected therewith and having edge projecting opposed flanges extending from said sleeve, said discs having openings through which said wicks pass, a stationary support located to the front of said flanges, a handle having a rearwardly extending stem rotatively extended through said support, a gear mounted on the rear end of said stem and engaging coacting teeth on the adjacent face of said flanges for turning said control discs when said handle is turned, and the top control disc having shutter elements engaging over said intake openings in said sleeve, said gear comprising a spur gear engaging complementary teeth formed on said flanges.

7. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve having air intake openings and an inner annular shoulder in its top edge portion, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, a wax compound member rested on said platform and having an annular area with a plurality of wicks, a central air intake tube mounted through said platform and extending through an opening in said wax member, a disc rested on said inner annular shoulder and on the top end of said tube and having edge projections engaging in slots in said sleeve for stationarily holding said disc firmly in position, a pair of control discs superimposed on said disc and axially rotatively connected therewith and having edge projecting opposed flanges extending from said sleeve, said discs having openings through which said wicks pass, a stationary support located to the front of said flanges, a handle having a rearwardly extending stem rotatively extended through said support, a

gear mounted on the rear end of said stem and engaging coacting teeth on the adjacent face of said flanges for turning said control discs when said handle is turned, and the top control disc having shutter elements engaging over said intake openings in said sleeve, said gear comprising a worm pinion engaging complementary teeth formed on said flanges.

8. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve having air intake openings and an inner annular shoulder in its top edge portion, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, a wax compound member rested on said platform and having an annular area with a plurality of wicks, a central air intake tube mounted through said platform and extending through an opening in said wax member, a disc rested on said inner annular shoulder and on the top end of said tube and having edge projections engaging in slots in said sleeve for stationarily holding said disc firmly in position, a pair of control discs superimposed on said disc and axially rotatively connected therewith and having edge projecting opposed flanges extending from said sleeve, said discs having openings through which said wicks pass, a stationary support located to the front of said flanges, a handle having a rearwardly extending stem rotatively extended through said support, a gear mounted on the rear end of said stem and engaging coacting teeth on the adjacent face of said flanges for turning said control discs when said handle is turned, and the top control disc having shutter elements engaging over said intake openings in said sleeve, and said discs being provided with aligned openings communicating with said air intake tube and adapted to be moved out of alignment when said control discs are turned.

9. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve stationarily mounted and having an open top, an annular member superimposed on the top of said cylindrical sleeve and hingedly supported at one side to pivot upwards and having a closed top with central air passages and an annular area of trapezoidal openings surrounded with flanges, V-shaped spreader members mounted on the bottom of said closed top between the trapezoidal openings, an annular wall mounted on said closed top, several discs rotatively supported within said compass for said annular wall and having aligned air passages, means for turning said discs for moving them to positions in which said air passages are out of line, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, and a wax compound member rested on said platform and having an annular area with a plurality of wicks extending up through said trapezoidal openings and through certain of said air passages.

10. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve stationarily mounted and having an open top, an annular member superimposed on the top of said cylindrical sleeve and hingedly supported at one side to pivot upwards and having a closed top with central air passages and an annular area of trapezoidal openings surrounded with flanges, V-shaped spreader members mounted on the bottom of said closed top between the trapezoidal openings, an annular wall mounted on said closed top, several discs rotatively supported



within said compass of said annular wall and having aligned air passages, means for turning said discs for moving them to positions in which said air passages are out of line, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, and a wax compound member rested on said platform and having an annular area with a plurality of wicks extending up through said trapezoidal openings and through certain of said air passages, said annular member being supported by a hinge engaged on a bracket mounted on a cabinet for the burner unit.

11. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve stationarily mounted and having an open top, an annular member superimposed on the top of said cylindrical sleeve and hingedly supported at one side to pivot upwards and having a closed top with central air passages and an annular area of trapezoidal openings surrounded with flanges, V-shaped spreader members mounted on the bottom of said closed top between the trapezoidal openings, an annular wall mounted on said closed top, several discs rotatively supported within said compass of said annular wall and having aligned air passages, means for turning said discs for moving them to positions in which said air passages are out of line, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, and a wax compound member rested on said platform and having an annular area with a plurality of wicks extending up through said trapezoidal openings and through certain of said air passages, said discs having annular flanges in intimate contact with each other in which certain of said air passages are formed.

12. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve stationarily mounted and having an open top, an annular member superimposed on the top of said cylindrical sleeve and hingedly supported at one side to pivot upwards and having a closed top with central air passages and an annular area of trapezoidal openings surrounded with flanges, V-shaped spreader members mounted on the bottom of said closed top between the trapezoidal openings, an annular wall mounted on said closed top, several discs rotatively supported within said compass of said annular wall and having aligned air passages, means for turning said discs for moving them to positions in which said air passages are out of line, at platform slidably mounted in said sleeve, resilient means urging said platform upwards, and a wax compound member rested on said platform and having an annular area with a plurality of wicks extending up through said trapezoidal openings and through certain of said air passages, said discs having annular flanges in intimate contact with each other in which certain of said air passages are formed, said means for turning the discs including lateral flanges projecting from said flanges and formed with teeth, and worm pinions engaging said teeth, and means for turning said worm pinions.

13. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve sta-

tionarily mounted and having an open top, an annular member superimposed on the top of said cylindrical sleeve and hingedly supported at one side to pivot upwards and having a closed top with central air passages and an annular area of trapezoidal openings surrounded with flanges, V-shaped spreader members mounted on the bottom of said closed top between the trapezoidal openings, an annular wall mounted on said closed top, several discs rotatively supported within said compass of said annular wall and having aligned air passages, means for turning said discs for moving them to positions in which said air passages are out of line, a platform slidably mounted in said sleeve, resilient means urging said platform upwards, and a wax compound member rested on said platform and having an annular area with a plurality of wicks extending up through said trapezoidal openings and through certain of said air passages, said discs having annular flanges in intimate contact with each other in which certain of said air passages are formed, said means for turning the discs including lateral flanges projecting from said flanges and formed with teeth, and worm pinions engaging said teeth, and means for turning said worm pinion, said worm pinions being mounted on a common shaft and being of opposite hand to turn said discs simultaneously in opposite directions.

14. In a portable heater and cooker, a burner unit, comprising a vertical cylindrical sleeve stationarily mounted and having an open top, an annular member superimposed on the top of said cylindrical sleeve and hingedly supported at one side to pivot upwards and having a closed top with central air passages and an annular area of trapezoidal openings surrounded with flanges, V-shaped spreader members mounted on the bottom of said closed top between the trapezoidal openings, an annular wall mounted on said closed top, several discs rotatively supported within said compass of said annular wall and having aligned air passages, means for turning said discs for moving them to positions in which said air passages are out of line, a platform slidably mounted on said sleeve, resilient means urging said platform upwards, and a wax compound member rested on said platform and having an annular area with a plurality of wicks extending up through said trapezoidal openings and through certain of said air passages, said discs having annular flanges in intimate contact with each other in which certain of said air passages are formed, said means for turning the discs including lateral flanges projecting from said flanges and formed with teeth, and worm pinions engaging said teeth, and means for turning said worm pinion, said worm pinions being mounted on a common shaft and being of opposite hand to turn said discs simultaneously in opposite directions, said shaft being operated with a gear transmission terminating in a stem of non-circular cross section engaging a receiving slot in a rotatively mounted stem provided with a turning handle, and a sleeve for holding said stems normally in connected positions.

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