Dec. 8, 1964 A. M. FOOTE 3,160,482

COLLAPSIBLE SPACE HEATER AND DRYER FOR CLOTHING

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Fig. 1

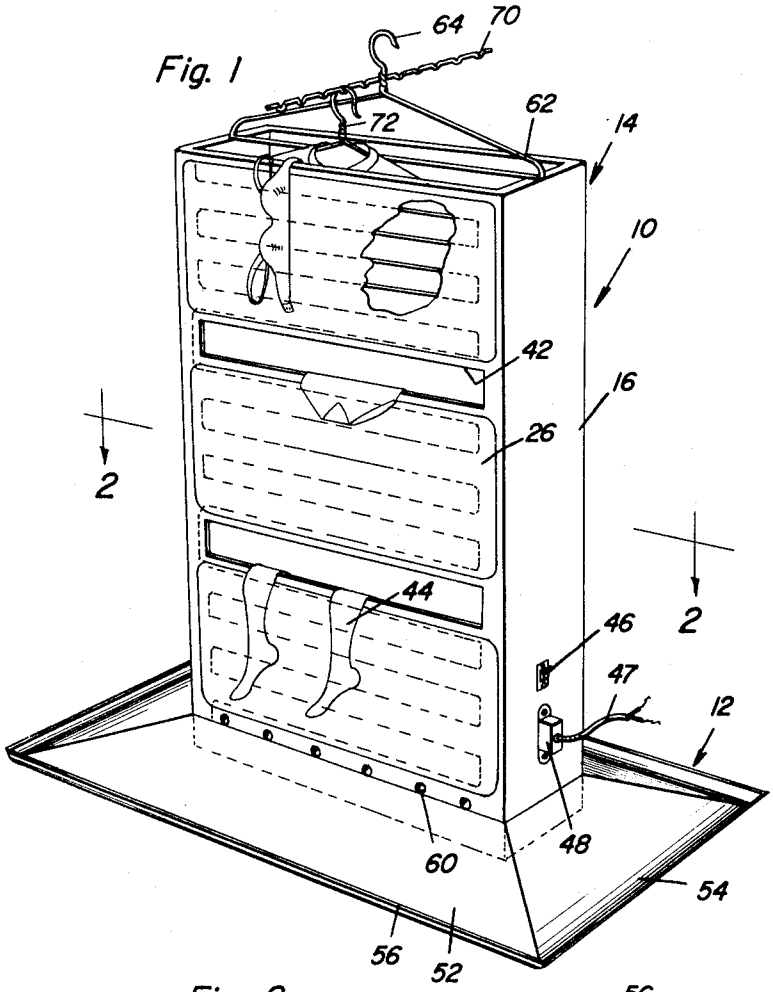


Fig. 7

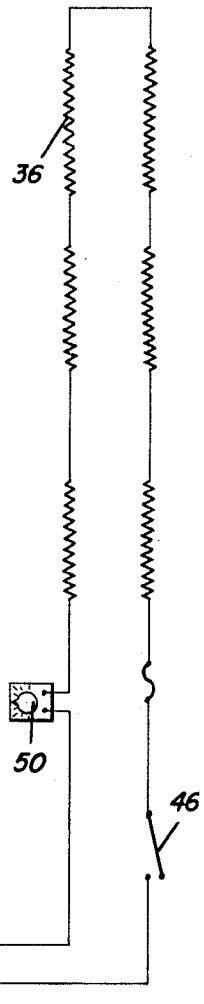
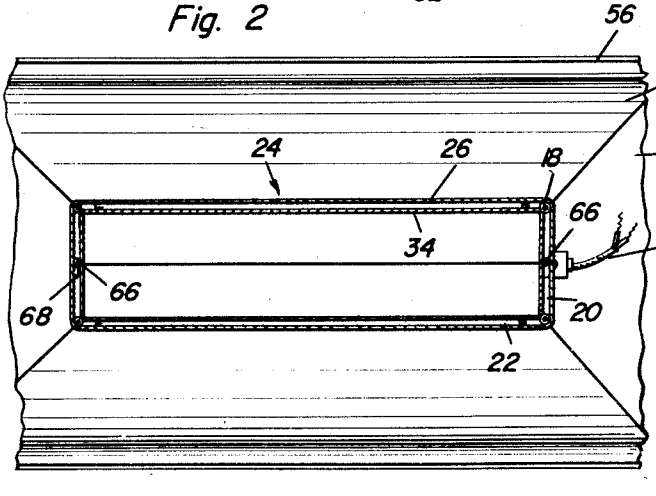


Fig. 2



Allen M. Foote
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

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Fig. 3

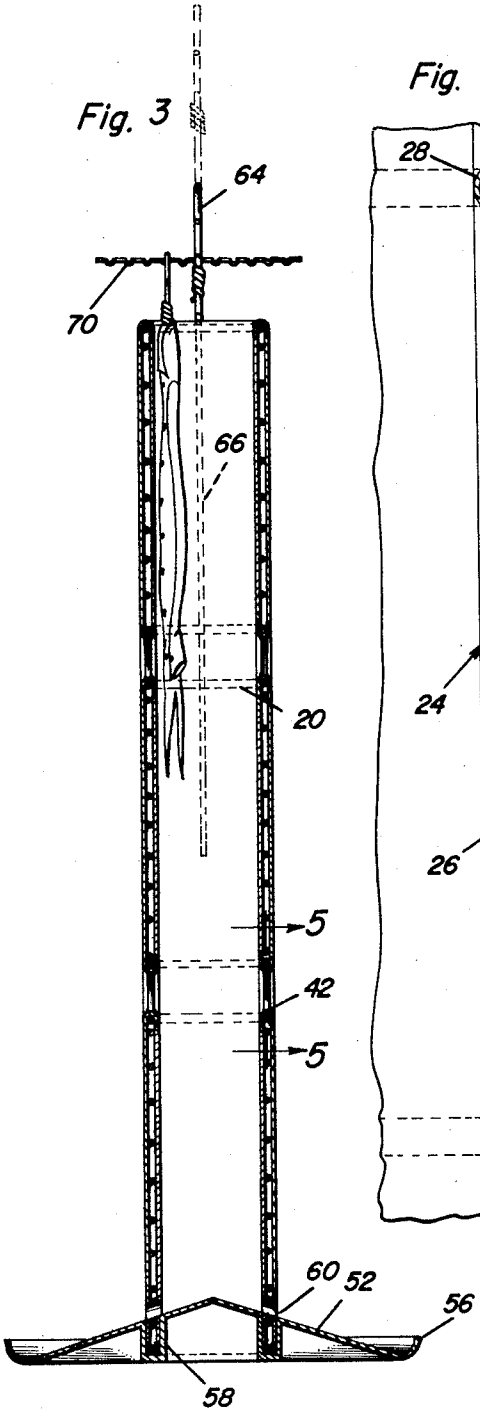


Fig. 4

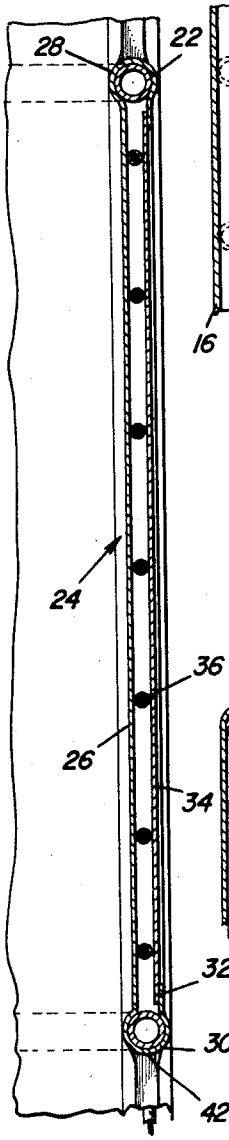


Fig. 5

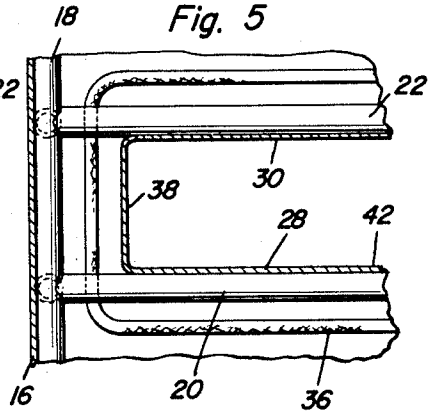
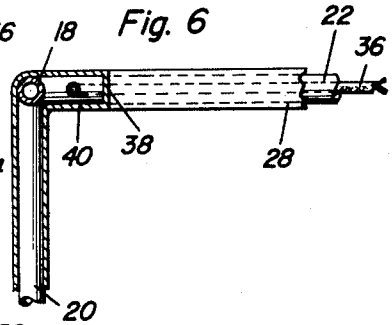


Fig. 6



Allen M. Foote
INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson
Attorneys

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COLLAPSIBLE SPACE HEATER AND DRYER FOR CLOTHING

Allen M. Foote, % Dampp-Chaser, Inc., P.O. Box 1641, Hendersonville, N.C.

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5 Claims. (Cl. 34—163)

The present invention generally relates to a heating and drying device primarily adapted for use in the home such as in the bathroom, kitchen or the like, the device serving not only to dry small articles of clothing in a rapid and expeditious manner but also serving as a space heater.

The primary object of the present invention is to provide a combination space heater and dryer having a detachable base for supporting a cabinet or framework in upright condition but enabling the base to be removed for ease of storage of the device in a compact manner, the base being in the nature of a trough in order to catch any drippage that may occur from the articles of clothing being dried.

Another object of the present invention is to provide a space heater and dryer having an extensible and retractable hanger element at the top thereof for receiving blouses, shirts or the like for retaining them in their natural condition when being dried. This hanger also enables the device to be suspended from a suitable support such as a shower rod in the bathroom so that the articles of clothing may be disposed above a bathtub or the like.

Another important object of the present invention is to provide a combined space heater and dryer constructed with spaced vertical heating panels having heating elements therein in which the panels are provided with a plurality of vertically spaced horizontal slots therein forming means for receiving small articles of clothing therethrough such as stockings or the like so that such articles may be readily dried and increasing the capacity of the device for drying clothes. In addition, this feature enables more effective circulation of air due to convection currents when used as a space heater.

A further important feature of the present invention is the provision of a space heater and dryer in which the device acts somewhat in the nature of a heated screen especially useful as a portable space heater which would be quite effective in eliminating cold walls in a home or the like.

Yet another object of the present invention is to provide a portable combined space heater and dryer which is light in weight, completely portable, small in size, provided with simple control, safe in operation and generally inexpensive to manufacture.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the combination space heater and dryer of the present invention;

FIGURE 2 is a transverse, plan sectional view taken substantially upon a plane passing along section line 2—2 of FIGURE 1 illustrating further structural details of the invention;

FIGURE 3 is a longitudinal, vertical sectional view generally along the center of the heater and dryer illustrating the construction of the slots and other structural features of the device including the trough;

FIGURE 4 is a sectional view on an enlarged scale illustrating one of the heating segments in one side panel;

FIGURE 5 is a detailed sectional view illustrating the construction of the slot assembly taken substantially upon section line 5—5 in FIGURE 3;

FIGURE 6 is a transverse detailed sectional view of the construction of FIGURE 5 illustrating the orientation of the components at one end of one of the slots; and

FIGURE 7 is a diagrammatic view of the electrical layout of the heating elements and appropriate controls including a switch and thermostat.

Referring now specifically to the drawings, the numeral 10 generally designates the combined space heater and dryer of the present invention which includes a supporting base generally designated by the numeral 12 and an upright cabinet or enclosure generally designated by numeral 14.

The upright cabinet or enclosure 14 includes end walls 16 which are generally rectangular in configuration and are parallel to each other. The end walls 16 have vertically disposed reinforcing tubes or rods 18 at each side edge thereof and the rods 18 are interconnected by transverse tubes 20 and longitudinal tubes 22 thus forming a rigid framework. Integral with the end walls 16 is a plurality of heating panels generally designated by numeral 24 each of which includes a panel 26 having continuous tubular portions 28 and 30 formed on the top and bottom edges thereof which encircle an opposed pair of tubes or rods 22 as illustrated in FIGURE 4. The tubular portions 28 and 30 terminate in flanges 32 and a closure panel 34 is provided in opposed spaced relation to the panel 26 thus forming a hollow heating panel. Disposed within the interior of the hollow heating panel 24 is a resistance type heating element 36 disposed in a serpentine manner and secured in place by any suitable means. The heating elements are secured in insulated relation to the heating panel by any suitable means and the heating capacity of the heating elements may be varied as desired.

The ends of the panels 24 are interconnected by a downward continuation of the lower tubular member 30 as indicated at 38 in FIGURES 4 and 5. The interconnecting element 38 connects the lower tube 30 with the upper tube 28 of an adjacent lower panel 24. Also, the interconnecting element 38 is provided with side walls 40 forming continuations of the bottom tube 30 which cooperate to form a tubular passageway for receiving the electrical conductors forming the heating elements so that the various panels are interconnected by virtue of the wires therefor extending around the end edges of the slots defined by the tubular members 28 and 30 and as designated by numeral 42. As illustrated in FIGURE 1, the slots 42 are horizontally disposed and enlarged so that small articles of clothing such as stockings 44 or the like may be partially inserted through the slots 42 and rested upon the top surface of the tubular member 28 thus enabling rapid drying of the article of clothing. The slots also will enable convection circulation of air into the interior of the space heater after which said air will be heated and rise from the open top of the cabinet or enclosure 14.

Once the heating panels 24 are formed, the entire structure will be unitary since the panel 26 will be rigidly affixed to the flanges 32. This material may be highly reflective and the heating elements are insulated therefrom in any suitable manner. For example, the heating panels could be constructed of a heavy gage metallic foil or sheet metal of a suitable type having sufficient rigidity for the purposes intended but still being relatively lightweight. For providing control for the heating elements, a control switch 46 is provided adjacent the bottom of one of the end panels 16. An electrical conductor 47 is connected to the cabinet or enclosure 14 by a suitable junction box 48 and a male plug may be provided on the outer end of the electrical conductor in the usual manner of electrical appliances. Also, a rheostat or thermostat control 50 may be provided wherever desired for purposes of controlling the temperature of the electrical resistance heating elements and the details of the controls form no

part of the invention in that the controls are conventional in and of themselves.

The base 12 includes two upwardly inclined side panels 52 and two upwardly inclined end panels 54 which are interconnected with each other and a peripheral upturned edge 56 is provided which forms a trough for collecting any water which may drip from the articles of clothing 44. Disposed intermediate the center of the base and the upturned edge 56 is a peripheral recess or groove defined by an integral channel-shaped member 58 which opens towards the top surface of the panels 52 and 54. The channel-shaped members 58 communicating with the upper surface of the base form a groove for releasably receiving the lower end of the cabinet 44 by virtue of the lower end of the cabinet 44 telescoping into the channel-shaped member 58. The frictional engagement between the lower end of the cabinet 14 and the channel-shaped member 58 will serve to frictionally retain the cabinet 14 in place but yet enable the base to be removed when it is desired to store the device or when it is desired to hang the device over a bathtub or the like in which event the trough or base is not required.

In order to enable any water discharged interiorly of the device to be removed therefrom, the bottom edge portion of the lowermost panels 24 are provided with a plurality of openings 60 therethrough which form drain openings from the interior to the exterior of the cabinet or enclosure 14 thus enabling any drippage that may occur interiorly of the enclosure 14 to be discharged down the inclined surface of the panels 54 into the trough formed by the upstanding edge 56. This will hold the water away from the panel with the least possible exposed surface area to prevent reevaporation which would slow down the drying action of the clothes.

Disposed centrally in the open top of the enclosure 14 is a wire hanger 62 having the usual centrally disposed hook 64 thereon so that the entire assembly may be supported from a suitable rod such as a shower rod or the like when in use and the device may also be stored by hanging it from any suitable support. The wire rod hanger 62 is of substantially conventional shape and configuration for supporting an article of clothing such as a blouse, shirt or the like. However, the wire rod hanger 62 is provided with downwardly extending vertical rods 66 which are slidably received between the inner and outer panels of the end walls 16 and an interconnecting top wall forming part of the end walls. The wire rod 66 is frictionally engaged with the end walls and the hanger 62 thus may be extended or retracted in relation to the cabinet 10. A suitable enlargement or the like may be provided on the lower end of the rod 66 to prevent it from being pulled out of the top end of the enclosure 14. The transverse rods 20 are provided with suitable apertures 68 for enabling the vertical movement of the wire rods 66. Additionally, the vertical movement of the hanger 62 will enable the hanger to be extended for positioning the garment in place thereon after which the garment and the hanger may be lowered together so that the garment will be disposed in complete encircling relation to the enclosure 14 thus facilitating the drying of the garment. When the garment is dry, the hanger may again be elevated at which time the garment may be easily removed.

A laterally extending wavy wire 70 is rigidly affixed to the base of hook 64 and extends horizontally outwardly from each side thereof to receive additional conventional wire rod hangers 72 so that several garments may be supported in vertically adjusted position. Adjustment of hanger 62 enables one garment to be positioned over the outside of both panels and extend as high or as low as desired and additional clothing can be folded over one or more hangers supported from wire member 70 or garments may be folded and hung directly on wire 70. Additionally hangers may be supported from member 70 so that an entire garment of any size such as shirts, dresses, socks and the like can be lowered completely inside enclosure 14 so that they will be disposed intermediate the heated panels.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A combined space heater and dryer comprising a generally vertically disposed cabinet including vertical spaced parallel heating panel assemblies, end walls interconnecting said panel assemblies thus defining an open top enclosure, each of said heating panel assemblies having horizontally disposed slots formed therein for receiving articles of clothing hung therethrough, a removable base, said base including an upwardly opening peripheral groove telescopically and releasably receiving the lower end of the cabinet forming the enclosure, said base comprising a plurality of panels extending downwardly and outwardly from a centrally located peak, an upstanding peripheral edge on the base located outwardly from the heating panel assemblies and forming a trough thereon for collecting any drippage from articles of clothing and holding the water away from the enclosure with the least possible exposed surface area to prevent evaporation which would slow down the drying action.

2. The structure as defined in claim 1 wherein each of said heating panel assemblies is provided with a plurality of apertures adjacent the bottom edge thereof and in alignment with the top surface of the base for enabling drainage of water from the center of the enclosure to the outside periphery of the base.

3. A dryer comprising a generally vertically disposed cabinet including vertical spaced parallel heating panels, heating elements disposed in said heating panels substantially the full height thereof, and end walls interconnecting said panels thus defining an open end drying enclosure for the reception of garments to be dried, base including a plurality of downwardly and outwardly inclined panels extending from a central peak, an upwardly opening peripheral groove formed in said base panels about said central peak intermediate the upper and lower ends of the panels, the lower end of the drying enclosure being telescopically received in said groove, a plurality of drain openings located through the heating panels in line with the upper edge of the peripheral groove, and an upstanding peripheral edge on the base forming a trough thereon for collecting drippage from the garments and holding the water remote from the enclosure.

4. The structure as defined in claim 3 wherein the upper end of said enclosure is provided with at least one wire rod hanger having a hook on the upper end thereof projecting outwardly therefrom for selective engagement with a support, and depending rod members on said hanger in vertical sliding engagement with the end walls whereby the hanger may be vertically extended for placing a garment thereon and then retracted for enabling disposal of the garment in enclosing relation to the enclosure.

5. A dryer comprising a generally vertically disposed cabinet including vertical spaced parallel heating panels, heating elements disposed in said heating panels substantially the full height thereof, each of said heating panels having at least one horizontally disposed slot formed therein for receiving articles of clothing hung therethrough, and end walls interconnecting said panels so as to define an open end drying enclosure for the reception of garments; said dryer further including a base consisting of a plurality of downwardly and outwardly inclined panels extending from a central peak, an upwardly opening peripheral groove formed in said base panels about

said central peak intermediate the upper and lower ends of the base panels, the lower end of the drying enclosure being telescopically received in said groove, a plurality of drain openings located through the heating panels in line with the upper edge of the peripheral groove, and an upstanding peripheral edge on the base forming a trough thereon for collecting drippage from the garments and holding the water remote from the enclosure; a wire rod hanger, said wire rod hanger having a hook on the upper end thereof projecting outwardly therefrom for selective engagement with a support, and depending rod members on said hanger in vertical sliding engagement with the enclosure end wall whereby the hanger may be vertically raised relative to the enclosure for placing a garment thereupon and retracted for enabling disposal of the garment in enclosing relation to the enclosure.

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