

[54] PORTABLE WARDROBE REFRESHER  
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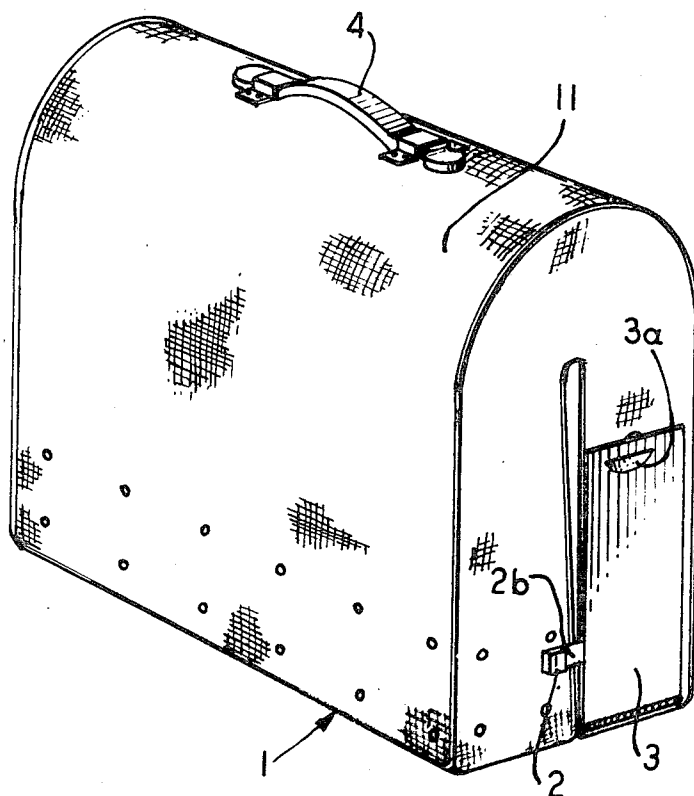
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[57] ABSTRACT

A conventional bag for hanging and transporting clothes is fitted at its lower end with a pair of superposed rectangular compartments. The bottom compartment contains steam generating means, whereas a compartment just above the bottom compartment contains a hot air blower. The aforesaid compartment is separated from the upper clothes carrying portion of the bag by a drainboard partition, at whose low point is centered a pipe which drains collected liquid into the steam compartment. Generated steam is transmitted uniformly throughout the clothes carrying portion of the bag through spaced perforations in a pair of flexible or hinged pipes which serve as part of a supporting frame when the bag is in vertically extended position. The bag is constructed to double over with the ends latched together for carrying.

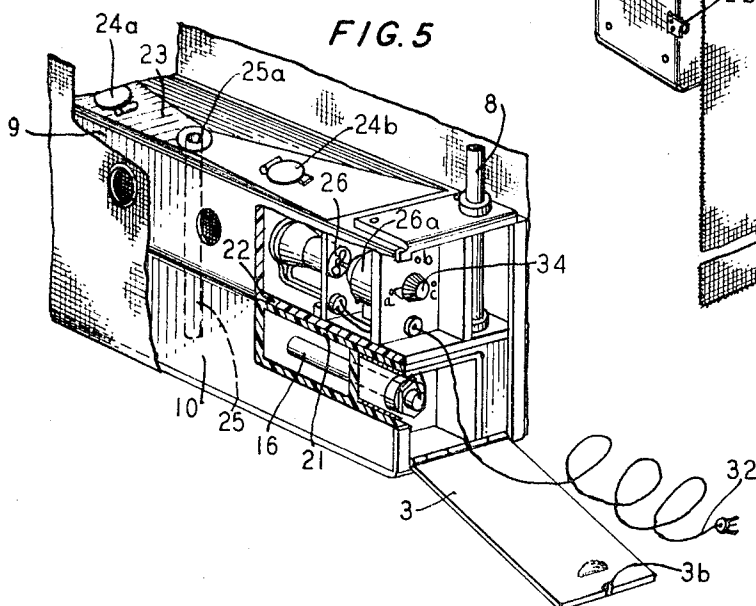
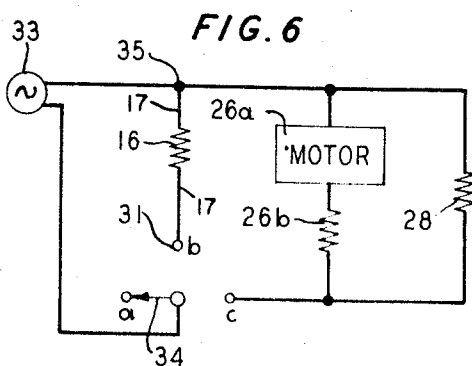
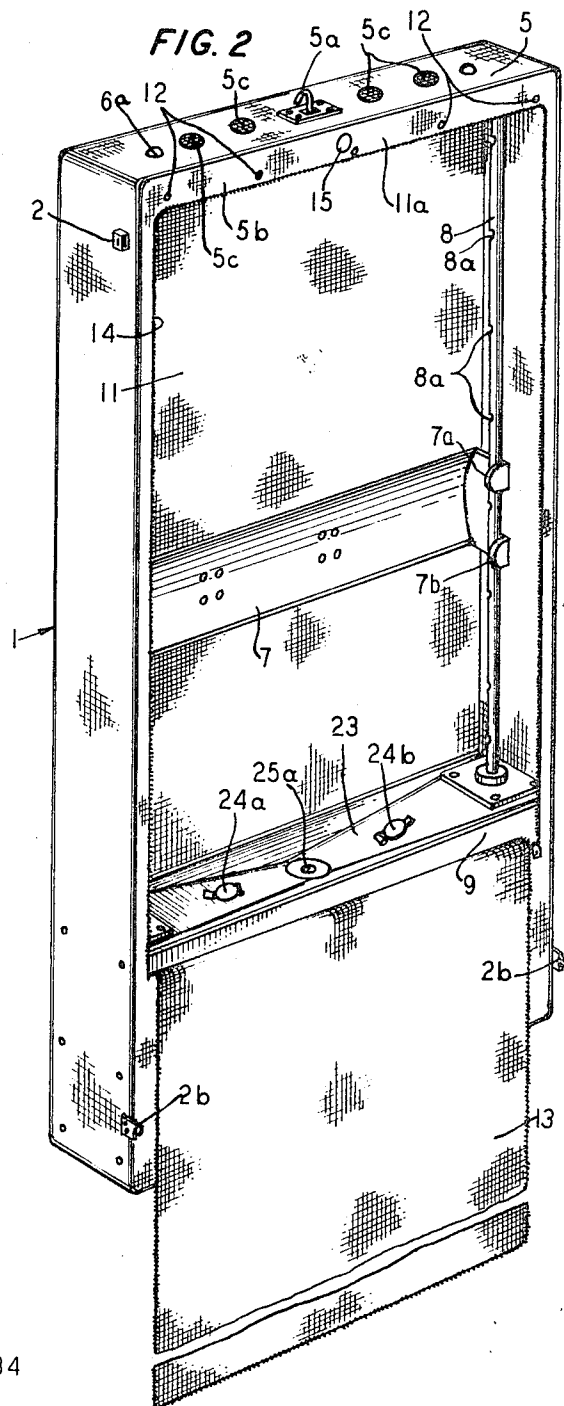
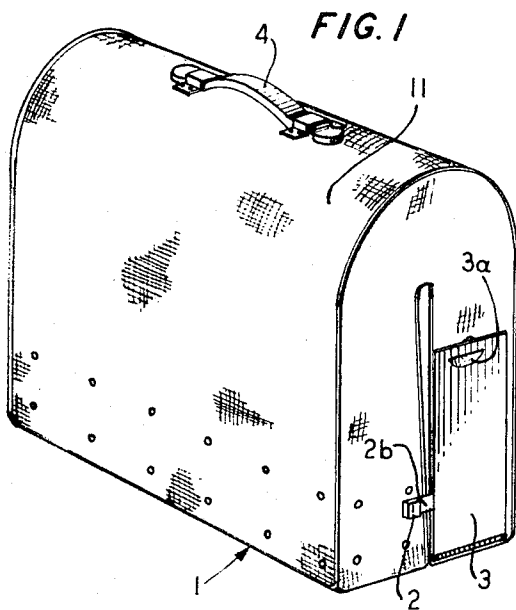
5 Claims, 6 Drawing Figures

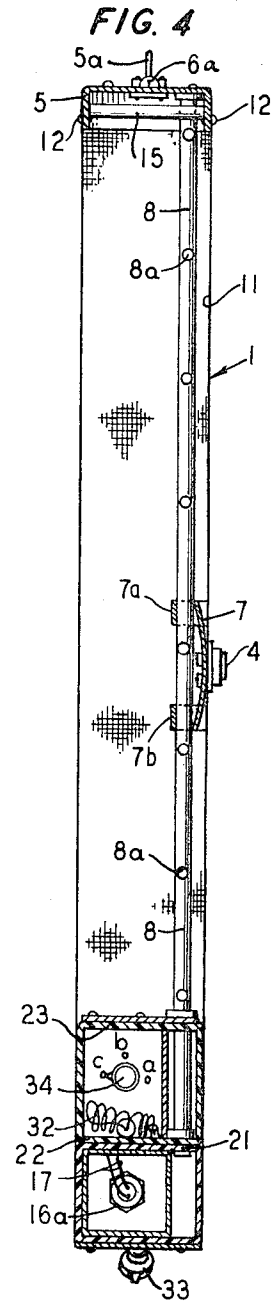
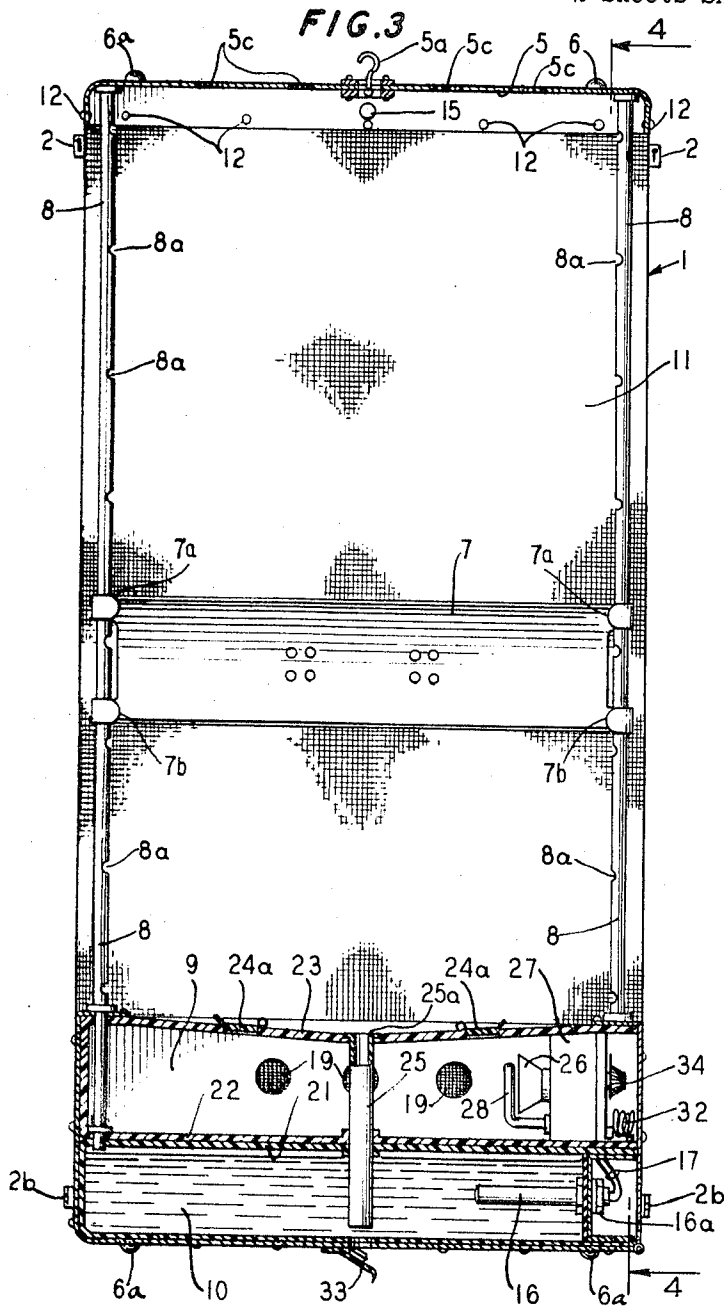


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2 Sheets-Sheet 1





## PORTABLE WARDROBE REFRESHER

This relates in general to devices for refreshing, drying and/or removing the wrinkles from clothing; and more particularly to devices of the type described which are readily portable.

## DESCRIPTION OF THE PRIOR ART

Portable, zipper bags of the types provided by the prior art for refreshing and removing wrinkles from garments have been found unsatisfactory for the reason that the steam, which passes up from the bottom of the apparatus, is unevenly distributed through the bag, and tends to be concentrated in the lower portions of the bag. Moreover, no means is provided for draining off water which might condense from the steam and collect in the bottom of the bag. Furthermore, there is no provision for accumulated drippings in case one wishes to use the bag for drying a wash, rather than for merely steaming non-washables.

## SUMMARY OF THE INVENTION

Accordingly, it is the principal object of the present invention to provide certain improvements in portable garment treating bags whereby the bag, in addition to serving as an envelope for steaming garments, may also be employed for drying conventional wash. Another object of the invention is to provide a steaming operation in which the steam is fairly uniformly distributed throughout the garments under treatment. A further object of the invention is to provide a garment treating bag which, although portable, is constructed to open up for hanging, or alternatively, to stand in a vertically extended position without external support, so that clothes on hangers can be supported internally.

These and other objects are realized in accordance with the present invention in a device comprising an elongated, rectangular bag of plastic, fabric or the like, which is substantially impervious to moisture. The bag is constructed to lock in doubled-up position for carrying. Fitted inside the lower end of the bag, when in vertically extended position, are a pair of rectangular tanks, substantially coextensive, located one on top of the other, the lower moistureproof tank serving as a receptacle for water or other liquid, and the upper tank, which has air intake and exhaust vents, serving to house a blower. A pair of semirigid, flexible tubes of plastic or the like extend upwardly, inside the bag, from the two ends of the lower tank. These tubes are perforated at intervals to release steam evenly into the garments hung in the bag. The semirigid, flexible tubes may alternatively be rigid at the upper and lower ends, but flexible or jointed in the middle. Preferably, the midportions of the semirigid tubes are braced against the two inside ends of a slightly curved lateral member at the back center of the bag, which is contoured to provide a semicircular form to the upper folded end of the garment bag when doubled over and locked in carrying position. When the bag is upright, the perforated tubes also serve, together with the rigid top portion to which they are connected in supporting relation, to provide an inner frame for the bag, wherein garments may be supported on a short pole which passes through the center of the top.

A drainboard, which operates as the upper partition between the hot air chamber and clothes carrying compartment, is constructed around a central drainpipe

leading into the lower steam tank. This drainpipe serves as a means for filling the lower tank; and also, for draining moisture from the upper part of the bag into the tank. For example, a wash can be hung in the bag for drying, the drippings being collected in the lower tank by way of the drainboard and drainpipe. A manually operated switch is provided for alternatively activating the steam generating means, or the hot air dryer.

These and other objects, features and advantages will be apparent from a detailed description with reference to the drawings, hereinafter.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows, in perspective, a portable wardrobe refresher in accordance with the present invention, folded and locked in carrying position;

FIG. 2 is a perspective showing of the portable wardrobe refresher of FIG. 1, unfolded in vertically extended position for supporting clothes in the usual manner on hangers;

FIG. 3 is a longitudinal section through the structure as shown in FIG. 2;

FIG. 4 is a side section of the structure of FIGS. 2 and 3, in the direction of the arrows 4—4, showing the regulator switch, and retractible electrical connecting cord;

FIG. 5 is a partial perspective view of the lower portion of the structure of the previous figures, broken away to show the details of the steam generating equipment in the lower compartment and the hot air blower in the compartment above, and with the side panel open; and

FIG. 6 is a schematic of the electrical circuit for driving the heaters and blower motor for the structure indicated in the previous figures.

## DETAILED DESCRIPTION

Referring in detail to the drawings, FIG. 1 shows a waterproof, heat resistant zipper bag of a type conventionally used for storing garments or the like, folded double in carrying position. In this position the two halves are internally latched together by means of a conventional latch 2, having a tongue 2b. FIGS. 2, 3 and 4 show the same bag in unfolded, vertically extended position, standing erect so as to support clothes on hangers.

In the embodiment under description, the bag, extended as shown in FIG. 2, is rectangular, 60 inches high, when extended, 24 inches wide and 5 inches deep. The bag is preferably formed of a waterproof or water resistant plastic material fabric characterized by negligible water absorption and low water permeability, and which is capable of being subjected without deterioration to maximum continuous service temperature at least as high as the boiling point of water, so that the interior of the bag can be subjected to live steam for sustained periods, with a normal life expectancy. A preferred material for this purpose is polyethylene having a specific gravity at least exceeding about 0.935. Alternatively, other plastic film materials of similar characteristics can be used for this purpose, or a combination of plastic material, such as polyvinylchloride, laminated to cotton.

The three-dimensional rectangular shape of the bag is sustained by means of an inner end stiffening frame member 5, as indicated in cross-section in FIGS. 3 and 4. This may comprise, for example, a rectangular box-

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like member, closed at the top, comprising rigid nylon, or alternatively, metal, such as stainless steel or aluminum, about one-eighth inch thick, having a length and width coextensive with the upper end of the bag, to the inside of which it is rivetted or otherwise secured. Preferably, to protect the corners of the bag, the projecting edges 5b extend down an inch or two, as the bag is vertically extended, the corner portions of the bag being smoothly secured to the projecting edges 5b by a series of rivets 12.

At the top of the bag, centered in frame member 5, is a retractible hook member 5a which is disposed to move to a position flat against the end of the bag when the latter is in folded position, as shown in FIG. 1. The knobs 6a serve as supports for the bottom end of the bag, in folded position. Similar knobs, not shown, are on the other end. A series of small vent openings 5c is provided in member 5.

A conventional carrying handle 4 is disposed in carrying position atop the bag in folded position, as shown in FIG. 1. This is supported internally by being rivetted or otherwise secured to a slightly arcuate supporting member 7 of nylon, or metal or the like, which extends laterally the width of the bag, and is centered inside the vertically extended backside, as shown in FIG. 2, and formed to shape the top of the closed bag, as indicated, in FIG. 1.

At the base of the bag 1, as shown in FIGS. 2 and 5, are a pair of superposed compartments comprising a steam chamber 10 and a hot air chamber 9 which are coextensive rectangular boxes of rigid nylon, thin-walled metal or the like, which conform in shape to the interior of the bag, to which they are rivetted or otherwise secured. These compartments may be, for example, 24 inches long, 5 inches deep and 8 inches high. A pair of flexible steam pipes 8 protrude upwardly from central positions at the two opposite sides of the lower steam compartment 10, and up through the hot air chamber 9. These pipes respectively extend to the top of the garment bag 1 on both sides and terminate on the inside ends of the supporting member 5. Each of the pipes 8, which may be, say, one-half inch in inner diameter and one-sixteenth inch thick, has a series of perforations 8a, about one-sixteenth inch in diameter and four inches apart, directed inwardly along their length, which serve as steam vents for steam generated in the chamber 10, in a manner to be described. These pipes may, for example, be formed of any semirigid, flexible plastic material which will sustain contact with steam without harm, such as, for example, high density polyethylene; or, alternatively, they may be formed of thin-walled metal, such as aluminum or stainless steel, and may be jointed at the central portion in the manner of an electrical conduit so that they can be readily folded over when the case is in carrying position. These may be mounted to guides 7a, 7b on the inside ends of the arcuate member 7 (identical guides on the other side not being shown) so that when the bag is folded double, the pipes bend smoothly to the desired arcuate shape.

A rigid rectangular panel 3, shown closed in FIG. 1 and open in FIG. 5, opens in the ends of the compartments 9 and 10 to provide access to the control panel and working unit for the steam and dryer mechanism, which will be described in detail hereinafter. This is actuated by a handle 3a so that it pulls forward, pivoting about its lower end. When panel 3 closes, it is latched with a conventional latch 3b.

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Clothing on hangers is stored in a conventional manner in the upper compartment 11 of the bag by hanging the hangers on the rigid crossrod 15, which extends through the thickness of the bag and is anchored at its ends to central positions on opposite faces of downwardly projecting long edges 5b. In the present embodiment, clothes compartment 11 is about 42 inches long, 24 inches wide and 5 inches deep, although this may vary.

Access to compartment 11 is had by a front panel 13, about 20 inches wide and 40 inches long, which opens up in the manner indicated in FIG. 2 by means of a continuous zipper 14, which runs along a track in a clockwise direction from the lower left-hand corner, across the top, and down to the lower right-hand corner to open the bag, and in the opposite direction to close the bag.

The bottom of compartment 11 is formed by a partition 23, about 24 inches long and 5 inches deep, which slopes downwardly in the manner of a drainboard to a centrally located opening 25a leading into a water return pipe 25 which extends vertically downward through the upper compartment 9 into the lower water storage compartment 10, where the water is released near the bottom of the latter compartment for generating steam. The partition or drainboard 23 is equipped with a pair of air vents 24a and 24b to the right and left respectively of the opening 25a, which permit air jets to flow out of the hot air chamber 9, and into clothes chamber 11.

Referring now to FIG. 5, which shows in detail perspective the chambers 9 and 10 broken away to show the interior, the lower chamber is indicated as being partially filled, say, to a depth of 1 inch or 2, with liquid, which in general application of the invention will be water; although, it will be understood that other nontoxic, noncorrosive, noninflammable, volatile cleaning liquids can also be employed for the purposes of the present invention.

Extending laterally into one end of the chamber 10 is an immersion heater 16 for generating steam. This may take any of the forms well known in the art, such as, for example, a form similar to that disclosed in U.S. Pat. No. 3,476,915 issued Nov. 4, 1969 to Michael J. Rapsis, in which case a high temperature metal or plastic sheath would be substituted for the frangible sheath there disclosed. Another much simpler type of immersion heater suitable for the purposes of the present invention is similar to those used for baby bottle sterilizers, and may be purchased on the market under the trademark "Royal" immersion heater, made in Japan, stock number 69, from a distributor located at P. O. Box 412, Flushing, New York 11372. Another suitable type of heater is one sold on the market under the trademark "HEETGRID" by the George Ulanet Company of Newark, New Jersey, and indicated as Model No. 288, in their catalog No. 60. The latter consumes 100 watts when connected to a 115 volt outlet. The immersion heater 16 is supported in the end wall of the tank 10 by means of a fitting 16a so that it protrudes through the wall in a liquid tight seal. The electrical leads 17 extend to a junction 35 which leads through the control switch 31 to a conventional source of power 33, which may be the usual 110 or 115 volt alternating current electrical outlet.

The lateral partitions 21 and 22, which extend the entire length and width of the bag to form a separation be-

tween the chambers 10 and 11, are fluid tight, supporting the pipe 25 at their centers, which passes through a water tight seal. The partitions 21 and 22 also serve at their two ends to anchor and support the steam vent pipes 8 which protrude vertically upward in externally sealed relation to the partitions.

Supported in the air chamber 9, which is above the steam chamber, is a motor fan 26 which is of a conventional type, driven by a motor 26a of, say, one-quarter horsepower. Disposed in grill-like fashion across the front of the fan 26 is a second electrical resistance heater 28 which serves to heat the turbulent air emerging from the fan. A series of air intake vents 19, say one-half inch in diameter, are located in spaced relation along the two broad sides and left-hand end of the air chamber 9.

FIG. 6 of the drawings is a schematic showing of the circuit of the present invention. The steam generating heater 16 is connected between the junction 35 and the button *b* of the switch 31. The rotatable wiper contact 34 of switch 31 is connected to one terminal of the 110-115 volt alternating current power source 33; and the other terminal of the latter leads to junction 35. The fan motor 26a, in series with a protective resistor 26b, is connected between button *c* of switch 31 and junction 35, in parallel with the hot air heater 28. Thus, when the wiper 34 is turned to button *a* of switch 31, the circuit is open; when button *b* is contacted, the steam generator is activated; and when button *c* is contacted, the fan and hot air heater are activated. The cord 32 is retractible into the case when cover 3 is closed.

It will be apparent that clothes can be refreshed and steamed, and then dried; or alternatively, a wash can be hung in the bag for drying. The bag can either be hung from an external hanger by means of retractible hook 5a, or, where no external hanger is available, can stand upright, supported by its own internal frame, including the semirigid steam pipes 8 and the top frame member 5.

The present invention is not limited to the specific form disclosed by way of example, but only by the scope of the appended claims.

What is claimed is:

1. A wardrobe refresher comprising in combination: a bag constructed to receive garments for hanging, a first moistureproof steam tank located in the bottom of said bag, liquid heating means for generating steam interposed

in said first tank, a second hot air tank located above said first tank and including a fan and air heating means associated with said fan,

a pair of semirigid tubes protruding upwardly from opposite ends of said steam tank in sealed relation to said hot air tank and extending substantially the height of said bag in upright position, said tubes supporting an end frame at the upper end of said upright bag,

said tubes each having a series of spaced perforations for conveying steam into the garment portion of said bag, and

means for alternatively connecting to a source of power said heating means for generating steam, and said air heating means including said fan.

2. The combination in accordance with claim 1 wherein said bag including said tubes is constructed to be folded double and locked in carrying position,

said combination including a handle supported internally on said bag at a midpoint between said upper and lower ends in an upright position.

3. The combination in accordance with claim 2 wherein the supporting means for said handle is a semirigid member fastened to the back of said bag and having its long axis extending the width of said bag for providing stiffening to the top of said bag in folded position,

said semirigid member constructed to include inwardly projecting guide means at its two ends disposed to guide the flexing of said tubes in the opening and closing of said bag.

4. The combination in accordance with claim 1 including a slightly inclined drain board wherein said second tank for hot air is separated from the garment carrying portion of said bag by said drainboard serving as a partition there between,

the central portion of said drainboard surrounding and constructed to drain into a pipe located centrally relative to said tanks, said pipe disposed to pass in sealed relation through said hot air tank and to extend into and terminate in said lower steam tank for draining moisture into said tank, and said drainboard including vents for the passage of hot air into said clothes carrying portion.

5. The combination in accordance with claim 3 including an outlet for draining liquid from said lower steam tank.

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