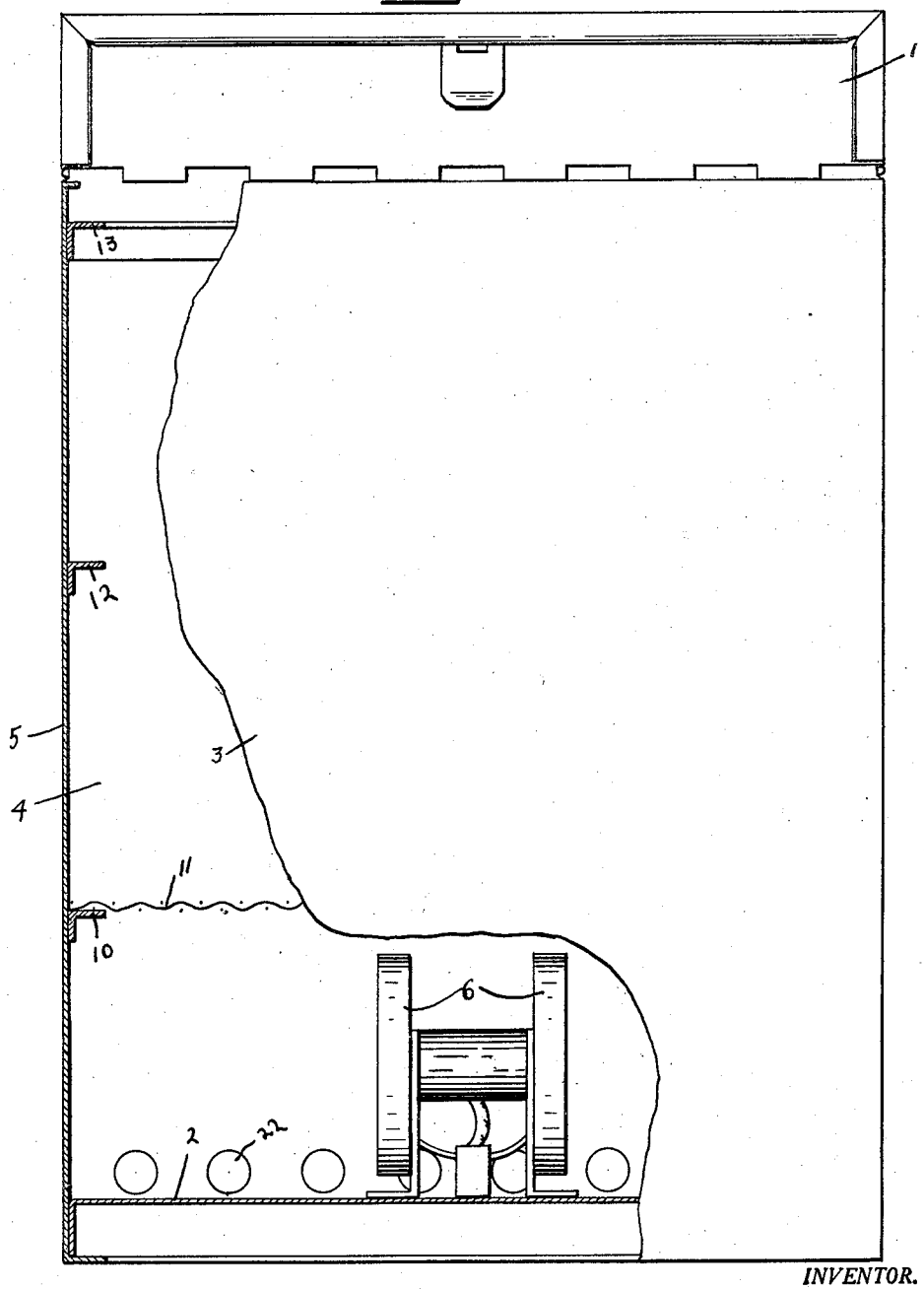
July 8, 1947. W. E. DREWES 2,423,587

DRIER AND HEATER

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Fig-1



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Fig-2—

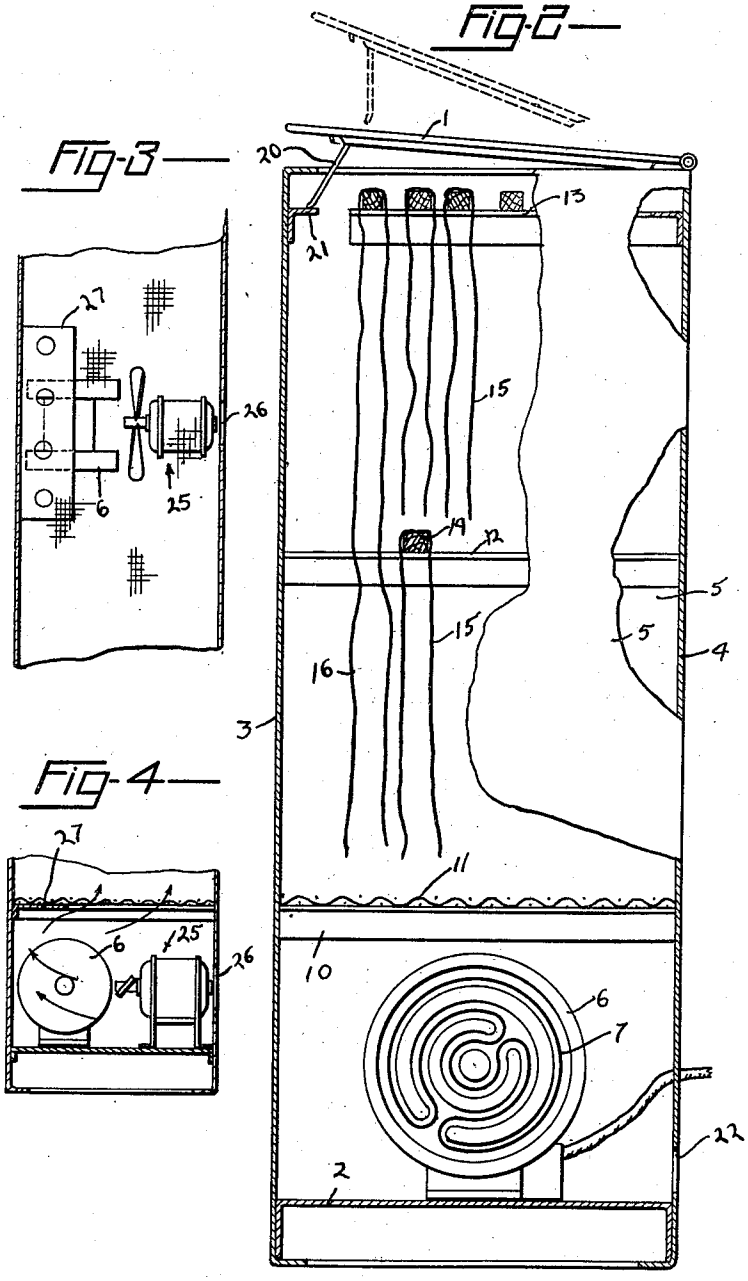


Fig-3—

Fig-4—

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DRIER AND HEATER

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5 Claims. (Cl. 34—233)

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This invention relates to a drier and heater, and has for one of its objects the provision of a portable device for use in the drying of clothing, such as babies' diapers, and various other relatively small articles that are adapted to be suspended from bars or racks, and which device is simple, economical to make, easy to use, safe, efficient, and that is adapted to hold a relatively large amount of clothing in a relatively small space.

Another object of the invention is a clothes drier that is adapted to function as a portable space heater when not used as a drier, and that is safe and efficient for this purpose.

Other objects and advantages will appear in the description and drawings.

In the drawings,

Fig. 1 is a part sectional, part elevational view of the drier looking from the front side thereof and with the cover partially open.

Fig. 2 is a part elevational and part sectional view of the drier of Fig. 2 as seen from one of its lateral ends.

Fig. 3 is a reduced fragmentary sectional view showing a slightly modified form of the invention in which a blower is used in association with the heating elements in the bottom of the drier, the blower and elements being shown in plan view.

Fig. 4 is a fragmentary sectional view of the arrangement shown in Fig. 3, but with the blower and one of the elements shown in elevation as seen from one side.

In detail, the device of this invention comprises a rectangular, vertically elongated container that has a top wall 1, bottom wall 2, front wall 3, rear wall 4, and opposed vertical end walls 5. The actual dimensions of the container may vary, but preferably it is about the size of the average household clothes hamper, being about 30 to 36 inches high, about 20 to 24 inches deep (from front to rear) and about 30 inches wide (between end walls). A drier of this size is readily moved about by one person, even though the walls are of metal, and a very efficient drying action is accomplished economically and safely.

Supported on the bottom 2 of the container in the central portion thereof is a pair of electrical heaters, each having a flat face 6 of ceramic insulation material disposed vertically and provided with grooves on one side in which the heating elements 7 are disposed. While these heaters are shown as being circular with the grooves and elements therein arranged generally concentrically, it is obvious that they be of any other desired shape, but it is preferable that the insulation bases be arranged for supporting the elements in a vertical plane, substantially as shown, in which the heating elements face oppositely outwardly toward the end walls 5 with a space between the bases 6. The electrical elements are themselves spaced a substantial distance from the end walls 5, and by the above arrangement, the heat from the elements is directed laterally toward said end walls for reflection back toward the center of the container.

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The end walls 5 carry a series of horizontally disposed strips on their inner sides, which strips are arranged in opposed pairs, the lowermost pair of strips being designated 10. Strips 10 are disposed at a level slightly above that of the uppermost edges of the heaters, and a relatively large mesh screen 11 is supported on said strips. This screen is to prevent any clothing above the same from accidentally coming into contact with the electrical heating elements.

About midway between the pair of strips 10 and the upper end of the container is a second pair of similar strips 12, and adjacent the upper edges of the container is a third pair of similar strips 13. Strips 12, 13, like strips 10, are secured to end walls 5, and their purpose is to support the ends of cross bars 14 of generally rectangular cross-sectional contour thereon.

The ends of strips 13 adjacent front wall 3 terminate short of said front wall a sufficient distance to enable the cross bars to be slipped past said ends, either for removing cross bars from strips 12 or in placing more cross bars on strips 12. Inasmuch as there may be a considerable number of cross bars on strips 12 and 13, some or all of which may carry garments 15 (Fig. 2), except for the provision herein made for placing additional cross bars on the strips 12, it would be very difficult to accomplish this result. The ends of the cross bars preferably come very close to the end walls, and the strips 12, 13 are relatively wide so as to prevent accidental dislodgement of the cross bars from the strips. In some instances where long garments 16 (Fig. 2) are to be dried, cross bars 14 on strips 12 may be spaced or removed so as to enable the garments 16 to be suspended from the bars that are carried on strips 13. Where shorter garments, such as diapers, are to be dried, both rows of cross bars may be employed to full capacity merely leaving enough space between the bars to insure adequate circulation of air between adjacent garments.

Some persons prefer to arrange the garments

on the cross rods before inserting the cross rods in the drier, while others prefer to leave the cross bars in the container. By the structure herein disclosed, either manner of operation is possible.

The rectangular cross-sectional form for the cross bars is not absolutely essential, but it is preferable at least at the ends of the bars to prevent their rolling on the strips 12, 13.

The top 1 is preferably hinged along one of its edges to the upper end of the rear side wall 4 for swinging from fully closed position (when the drier is inoperative) to fully open position for loading the drier with clothes. However, when the drier is loaded for drying, the cover is supported partially open by means of a prop 20 pivotally carried by the top 1 and depending from a point adjacent the edge that is opposite the hinged edge of the top. The front wall 3 may carry an inwardly projecting member 21 adjacent its upper edge for engagement by the lower end of the prop and for thereby supporting said top partially open in slightly inclined position as seen in Fig. 2, in full line. Upon lifting the top the prop 20 will automatically swing away from the member 21, and the top may then be fully closed. However, the prop is readily accessible to a finger of the lifting hand of the operator for swinging to cover supporting position.

The lower portion of the container is provided with air inlets that are in the form of openings 22 formed in the rear wall 4 just above bottom wall 2. By this arrangement a very efficient distribution of rising heated air is assured, the air entering said inlets which are at the side of the container opposite the maximum width of the outlet opening provided by the partially open top. It has been found that by opening the top as indicated, and by positioning the heaters in the central portion of the bottom so that their heat will be reflected oppositely outwardly, and by providing openings, as shown, in said rear wall, the clothing hanging in the upper portion will be uniformly dried without the necessity for a complicated system of heat deflecting baffles. The imperforate top appears to also be very important in accomplishing this result inasmuch as perforations in the top or in the side walls near the top are not as satisfactory. The desirability of being able to close the top is apparent, in that no dust or dirt will settle in the clothes compartment when the drier is not in use.

If desired, a blower 25 adjacent one of the edges of the heaters may be used (Figs. 3, 4) so as to direct a current of air across the faces of the heaters and between them. In this form of device an additional inlet opening 26 adjacent the motor may be used for air cooling the motor. Also the heater will be set nearer front wall 3 and a perforated baffle 27 over the heaters may be used to prevent an excess of hot air from being directed directly upwardly alongside the front wall. Otherwise the structure may be the same as shown in Figs. 1, 2, and when the same structure is used the same numbers are employed to identify identical parts.

The device as described in the foregoing has been found to perform very efficiently as a space heater when clothes are not being dried therein, and in which case it is preferable that the cross bars remain in the heater to cause even distribution of heated air in the container before its ejection into the room. By supporting the container adjacent a crack in the lower portion of a vertically sliding window so that openings 22 are adjacent such crack, the air in the room will be constantly replenished by fresh heated air.

It is to be understood that the detailed description and drawings are not to be considered restrictive of the invention, but merely illustrative of the preferred form thereof.

I claim:

1. A device of the character described comprising a vertically elongated rectangular container having a front wall, a rear wall, opposed end walls, a bottom wall, and a top wall, means hingedly supporting said top wall from the upper edge of said rear wall for swinging upwardly from closed position covering the top of said container to a vertical fully open position, means including an element carried by said top wall for supporting the latter in inclined partially open position, a pair of horizontally spaced heating elements disposed in parallel vertical planes carried on the central portion of said bottom wall and facing oppositely outwardly toward said end walls whereby heat from said elements will be directed toward said end walls from said central portion, a grill in said bottom portion above said elements and adjacent thereto, openings formed in the bottom portion of said container for admitting atmospheric air into the space between said grill and said bottom wall, means above said grill and below said top wall for suspending clothing above said grill.

2. A device of the character described comprising a vertically elongated rectangular container having a front wall, a rear wall, opposed end walls, a bottom wall, and a top wall, means hingedly supporting said top wall from the upper edge of said rear wall for swinging upwardly from closed position covering the top of said container to a vertical fully open position, means including an element carried by said top wall for supporting the latter in inclined partially open position, a pair of horizontally spaced heating elements disposed in parallel vertical planes carried on the central portion of said bottom wall and facing oppositely outwardly toward said end walls whereby heat from said elements will be directed toward said end walls from said central portion, a grill in said bottom portion above said elements and adjacent thereto, air inlet openings formed in said rear wall adjacent and above said bottom wall, strips carried by said end walls above said grill, cross bars slidably supported at their ends on said strips for suspending clothing therefrom.

3. A device of the character described comprising a four sided, rectangular, vertically elongated container having a top wall and a bottom wall, means hingedly securing one edge of said top wall to the upper end of one of the side walls of said container for upward swinging of the opposite edge of said top wall, a prop carried by said top wall adjacent said opposite edge and means carried by the side wall adjacent said prop and inside said container for engagement by the latter when said top is in partially open inclined position, electrical heating elements in the lower portion of said container, a grill above said elements, air inlets formed in the side wall to which said top wall is hingedly secured at points adjacent and above said bottom wall, cross bars in the upper portion of said container carried at their ends by two of the opposed side walls that are adjacent the one carrying said top wall for suspending clothes in said upper portion.

4. A device of the character described com-

prising a four sided, rectangular, vertically elongated container having a top wall and a bottom wall, means hingedly securing one edge of said top wall to the upper end of one of the side walls of said container for upward swinging of the opposite edge of said top wall, a prop carried by said top wall adjacent said opposite edge and means carried by the side wall adjacent said prop and inside said container for engagement by the latter when said top is in partially open inclined position, electrical heating elements in the lower portion of said container, a grill above said elements, air inlets formed in the side wall to which said top wall is hingedly secured at points adjacent and above said bottom wall, cross bars in the upper portion of said container carried at their ends by two of the opposed side walls that are adjacent the one carrying said top wall for suspending clothes in said upper portion, said heating elements including flat, opposedly positioned, spaced, vertical base members supporting said elements for directing heat therefrom oppositely outwardly toward said two opposed side walls for reflection therefrom.

5. A device of the character described comprising a four sided, rectangular, vertically elongated container having a top wall and a bottom wall, means hingedly securing one edge of said top wall to the upper end of one of the side walls of said container for upward swinging of the opposite edge of said top wall, a prop carried by said top wall adjacent said opposite edge and means carried by the side wall adjacent said prop and inside said container for engagement by the latter when said top is in partially open inclined position, electrical heating elements in

the lower portion of said container, a grill above said elements, air inlets formed in the side wall to which said top wall is hingedly secured at points adjacent and above said bottom wall, cross bars in the upper portion of said container carried at their ends by two of the opposed side walls that are adjacent the one carrying said top wall for suspending clothes in said upper portion, said heating elements including flat, opposedly positioned, spaced, vertical base members supporting said elements for directing heat therefrom oppositely outwardly toward said two opposed side walls for reflection therefrom, a blower positioned alongside said heating elements and positioned for directing a current of air over said bases and elements in direction toward said front wall.

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