April 13, 1954 B. V. PACE 2,675,459

DRIER FOR DISHES

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FIG. 1.

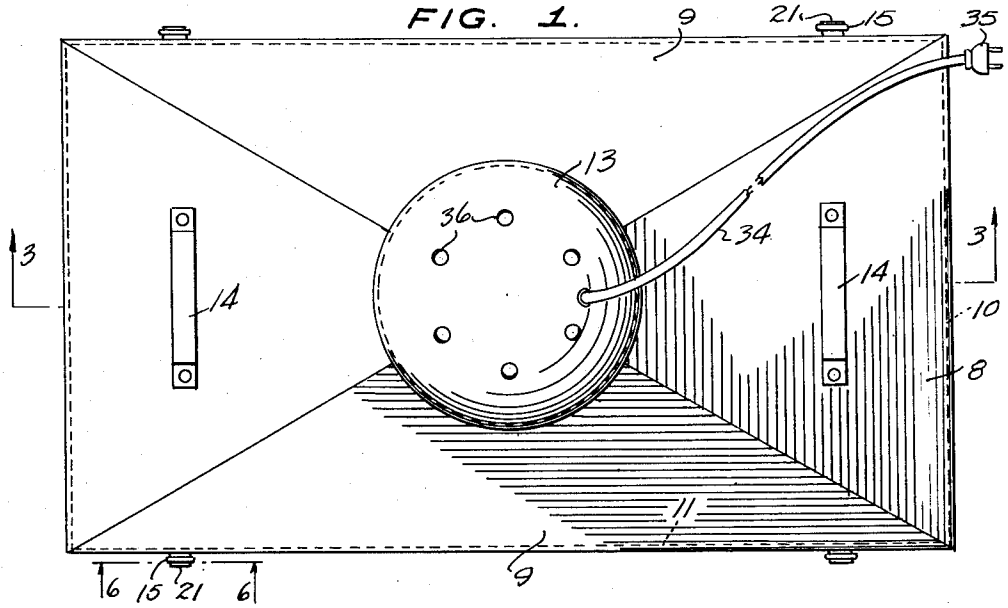
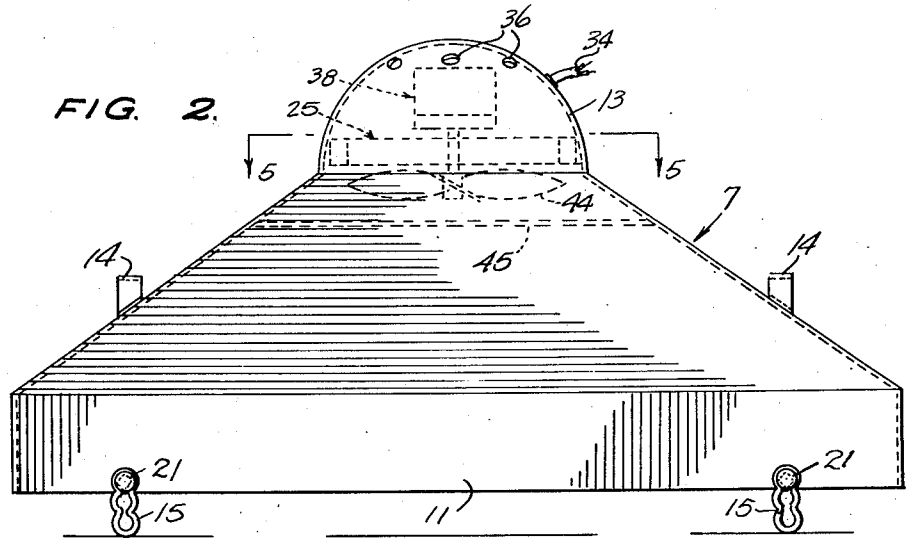


FIG. 2.



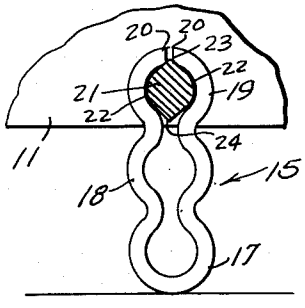


FIG. 6.

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FIG. 3.

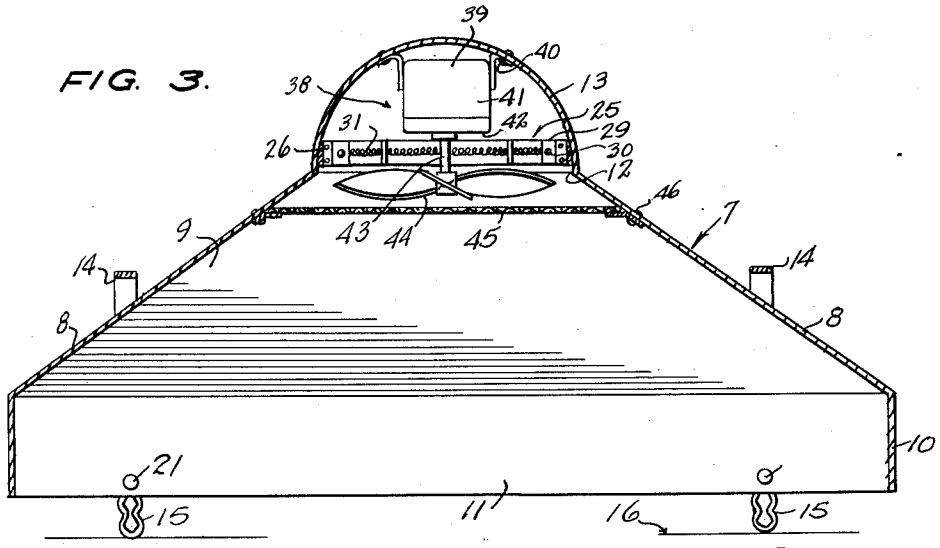
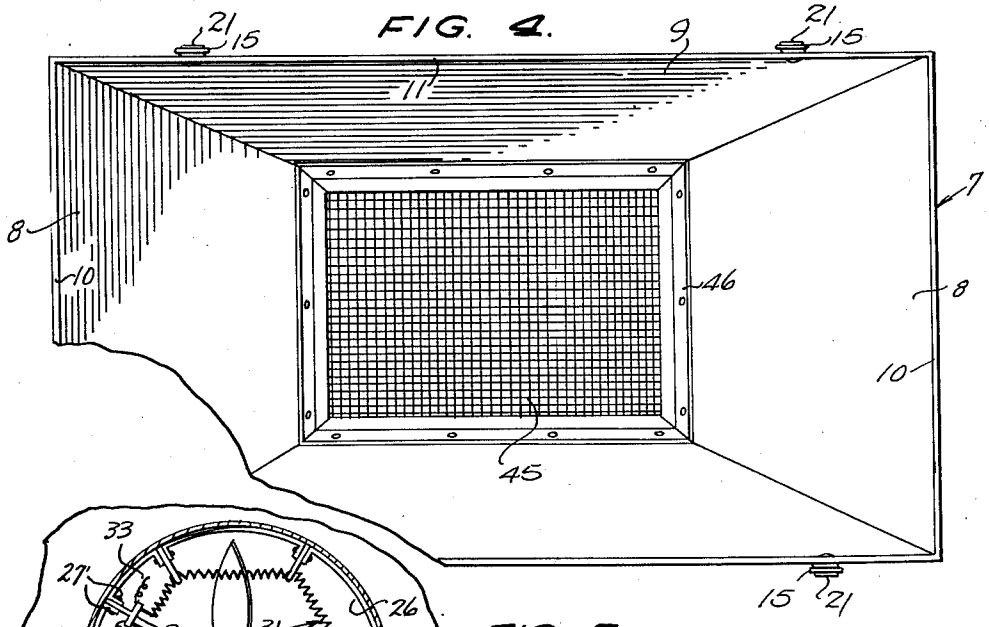


FIG. 4.



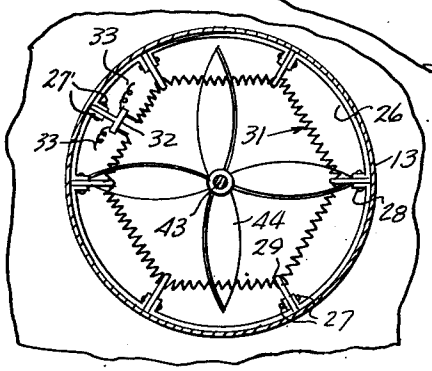


FIG. 5.

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UNITED STATES PATENT OFFICE

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DRIER FOR DISHES

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Application July 18, 1952, Serial No. 299,637

2 Claims. (Cl. 219—39)

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This invention relates to improvements in electric driers of the type involving electrical heating means and an electric fan serving to direct air heated by the heating means against the articles to be dried within the confines of a hood, the primary object of the invention being to provide a drier of this type which is especially, but not exclusively, devised for use in kitchens and the like for rapidly and efficiently drying dishes which have been washed, thereby eliminating laborious towel drying operations and/or relatively long waiting and less desirable results of open air-drying of dishes.

Another important object of the invention is the provision of a device of the type indicated above which involves a superior association of electrical heating element, fan, and enclosure therefor by means of which the production of hot air and the direction thereof onto the object to be dried are performed more effectively and efficiently, and the device is rendered safe for use under ordinary conditions of service.

A further important object of the invention is to provide a simply constructed and rugged device of the character indicated above which can be made in an attractive and serviceable form at relatively low cost.

Other important objects and advantageous features of the invention will be apparent from the following description and the accompanying drawings, wherein, for purposes of illustration only, a specific embodiment of the invention is set forth in detail.

In the drawings:

Figure 1 is a top plan view;

Figure 2 is a side elevation, with internal parts shown in dotted lines;

Figure 3 is a vertical longitudinal section, taken on the line 3—3 of Figure 1;

Figure 4 is a fragmentary bottom plan view;

Figure 5 is an enlarged fragmentary horizontal section taken on the line 5—5 of Figure 2; and,

Figure 6 is an enlarged fragmentary vertical longitudinal section taken on the line 6—6 of Figure 1.

Referring in detail to the drawings, wherein like numerals designate like parts throughout the several views, the illustrated dish drier comprises a preferably light-weight metal hood 7 having an elongated rectangular horizontal cross section and truncated pyramidal shape involving the upwardly tapering and mutually convergent end walls 8, 8 the upwardly tapering and mutually convergent side walls 9, 9 and the relatively shallow skirt composed of perpendicular end wall portions 10, 10 depending from the lower ends of the end walls 8, 8 and the perpendicular side wall portions 11, 11 depending from the lower ends of the side walls 9, 9.

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The upper ends of the end walls 8, 8, and side walls 9, 9 are formed to provide a horizontal circular opening 12. A hemispherical hollow dome 13 is formed on or made as a continuation of the upper ends of the end walls and side walls and surmounts the same, the dome 13 serving as a fan motor mounting or support and as a heat reflector.

On the end walls 8, 8 are provided transversely extending preferably bail handles 14 for handling the device.

Adjustable legs 15 are provided for supporting the device on a surface 16, such as a sink drainboard or the like, with the under edges of the skirt wall portions 10, 10 and 11, 11 spaced upwardly from the surface 16 at selected heights, in accordance with the bulk of dishes to be dried. The legs 15 are preferably vertically elongated resilient frames formed of spring wires bent between their ends to provide a lower substantially three-quarter circular loop 17 open at its upper end, one or more intermediate loops 18 open at both ends, and an upper three-quarter circular loop 19 open at its lower end, the upper loop 19 being constituted by the end portions of the wire, and the terminals 20 thereof being in close but unconnected facing relation. The disconnection of the terminals 20 of the legs permits the various loops to be spread so as to clampably accept therein the studs 21 which are secured to project beyond the outward section of the skirt side wall portions 11, 11 at points adjacent to the ends thereof. The studs 21, as shown in Figure 6, have an irregular, vertically elongated cross section, providing curved sides 22 and upper and lower points 23, 24, respectively, which constitute wedges. The irregular cross section of the studs 21 provide for non-rotating engagement of the leg loops with studs whereby the desired vertical positions of the legs are maintained, and the wedges serve to spread the loops of the legs when sufficient pressure is exerted manually on the legs to transfer the studs into different desired ones of the leg loops for adjusting the height of the hood 7 above the supporting surface 16.

The electrical heating element 25 preferably comprises a metal ring 26 fitting the inside of and secured to the dome 13 immediately above its lower end, the ring 26 being provided at equally circumferentially spaced intervals with pairs of

radially rearwardly projecting ears or legs 27 between which are secured, as by rivets 28, radially inwardly projecting preferably ceramic insulators 29 provided with holes 30, through which the heating coil 31 is extended. The ends of the heating coil 31 are secured to an insulator block 32 carried by an extra pair of legs 27' on the ring 26 located between two adjacent pairs of legs 27. Wires 33 are connected to the ends of the heating coil 31 and are led out through the dome 13 in a suitably insulated conduit 34 having a plug 35 adapted to be plugged into a suitable electric current outlet.

The dome 13 is provided in its upper part above the heating element 25 with circumferentially spaced, relatively small air inlet holes 36 which are sized and arranged to predetermine the proper volume and rate of flow of air to the heating element 25 to assure proper heating of the air before it is directed onto the dishes within the hood 7. The dome 13 is arranged so that it acts as a reflector to reflect downwardly the heat radiated from the heating element and thereby enhance the heating capacity of the device, the size and distribution of the air inlet holes 36 being devised so as not to unduly impair the heat reflecting properties of the dome 13.

The fan 38 comprises a relatively small electric motor 39 depending from the top of the dome and secured thereto by suitable brackets 40 fastened to the motor casing 41. The lower end 42 of the motor casing is positioned above and at the center of the heating element 25 and is thereby prevented from being overheated by the heating coil 31 and is in a position to be cooled by air entering the dome through the holes 36 and passing downwardly around the motor casing. Further, this arrangement of the motor does not interfere with downward reflection by the lower part of the dome sides of heat radiated from the heating coil 31. The shaft 43 of the motor depends below the heating element 25 and has secured thereto on a level close to the underside of the heating element, a relatively large diameter fan blade unit 44, which substantially spans the width of the heating element and that of the opening 12 at the upper end of the hood 7. A rectangular horizontal protective screen 45 is positioned immediately below the fan blade unit 44 and is secured to the hood walls by suitable means indicated at 46.

It will be understood from the foregoing that outstanding compactness is obtained in the relative arrangement of dome, heating element, and fan and that the arrangement also eliminates all possibility of injurious contact with the hands or fingers of a user, and that contact with dishes during a drying operation is eliminated by the screen 45.

It will also appear from the foregoing that the provision of the relatively large fan blade unit and its spanning and location directly in the top opening 12 of the hood 7 produces a relatively uniform flow of heated air throughout the interior of the hood which effectively reaches all dishes everywhere in the hood and that this assures quick and uniform drying of the dishes or the like over which the hood 7 is placed. Further, the location of its fan blade unit beneath rather than above the heating element 25 permits uninterrupted and undiffused flow of heated air from the fan downwardly in the hood. At the same time the air transfer rate of the fan and the air admission rate of the holes 36 being properly proportioned, sufficient contact of the incoming air with the heating coil 31 and with other surrounding parts which become heated thereby is assured to provide adequate heating of the air before being flowed downwardly within the hood 7.

It will be understood that changes in the form, composition, and relative arrangements of the components described hereinabove are contemplated as within the scope of the subjoined claims.

What is claimed is:

1. A portable drier comprising a downwardly flaring vertically arranged hood having its upper and lower ends open, a skirt extending about and dependingly carried by the lower end of said hood, legs connected to said skirt for supporting said hood in spaced relation above a horizontal supporting surface, a dome bridging the open upper end of said hood, said dome being provided with a plurality of air intake holes and with a reflective inner surface, air impelling means mounted in said dome, and electrical heating means mounted in said dome in cooperative relation with said air impelling means.

2. A portable drier comprising a downwardly flaring vertically arranged hood having its upper and lower ends open, a skirt extending about and dependingly carried by the lower end of said hood, legs connected to said skirt for supporting said hood in spaced relation above a horizontal supporting surface, a dome bridging the upper open end of said hood, said dome being provided with a plurality of air intake holes and with a reflective inner surface, a screen extending transversely across said hood adjacent said upper end thereof and secured to said hood, air impelling means mounted in said hood, and electrical heating means mounted in said dome in cooperative relation with said air impelling means.

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