

Nov. 1, 1932.

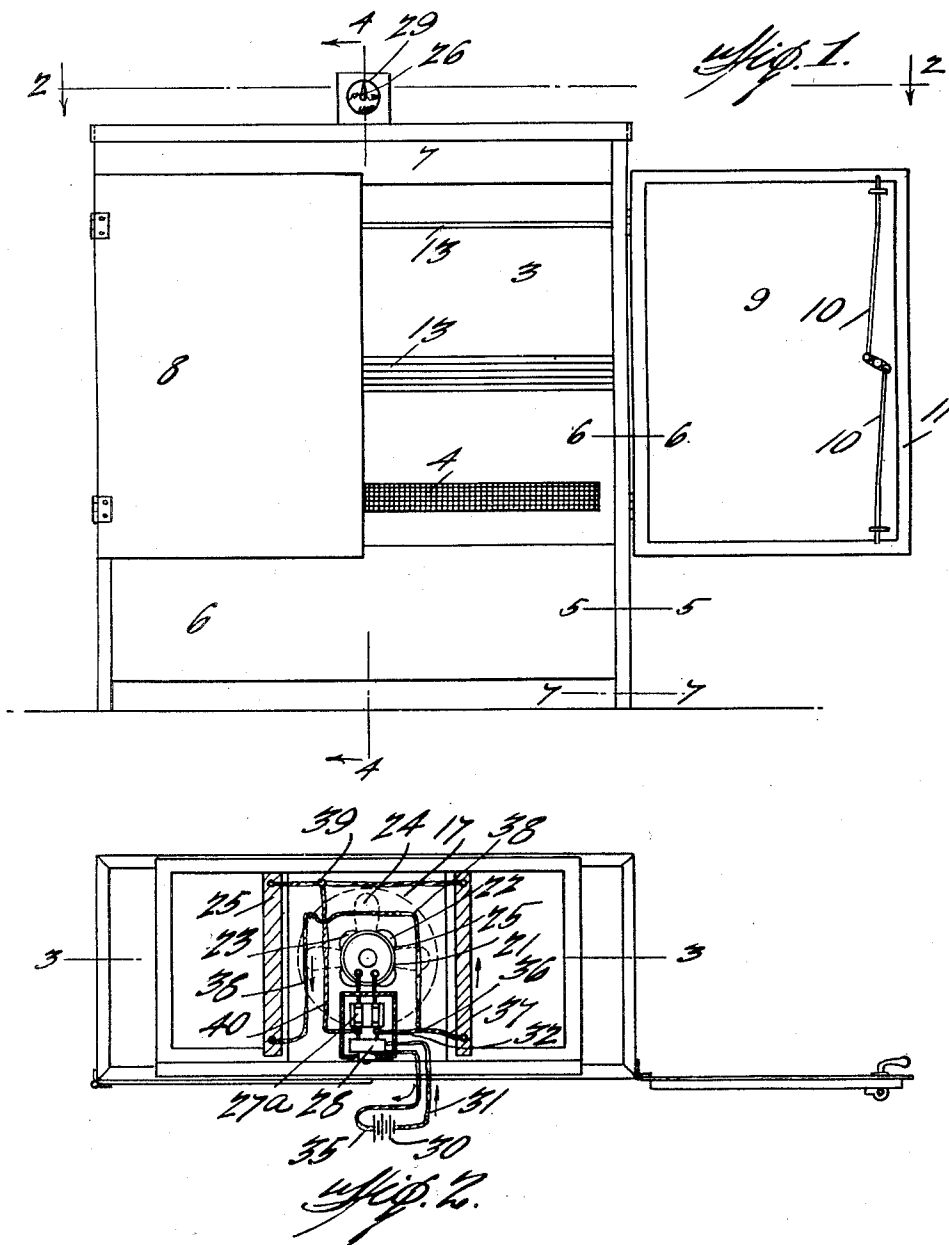
L. I. MARTIN

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ELECTRIC CLOTHES DRIER

Filed Oct. 6, 1930

2 Sheets-Sheet 1



L. I. MARTIN
INVENTOR

BY *F. P. Loren*
ATTORNEY

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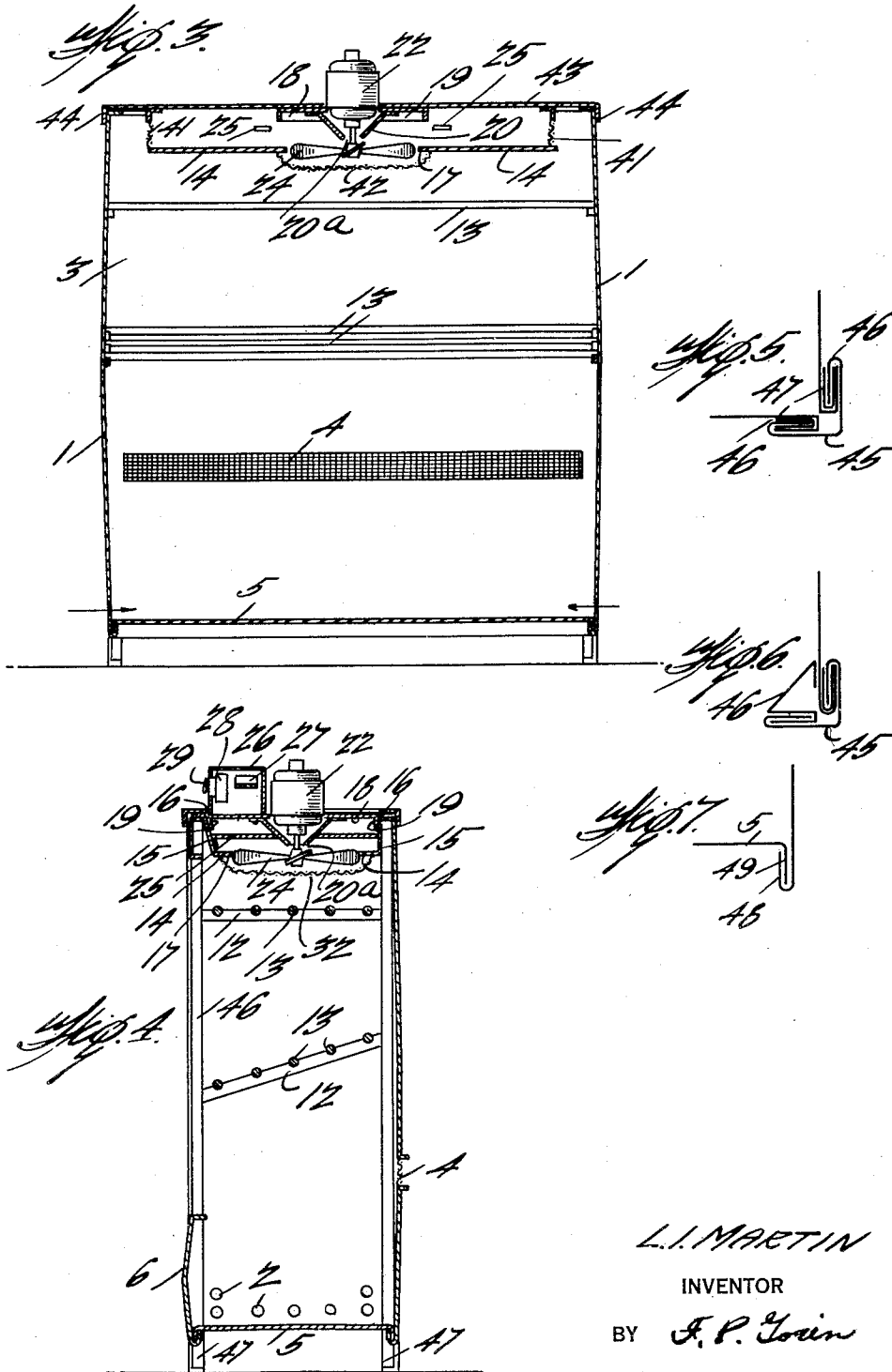
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UNITED STATES PATENT OFFICE

LEO I. MARTIN, OF SEATTLE, WASHINGTON

ELECTRIC CLOTHES DRIER

Application filed October 6, 1930. Serial No. 486,830.

This invention relates to improvements in driers to be used for the drying of clothes, including means for utilizing a current of heated air as the drying medium.

5 The principal object of this invention is to provide a drier that is compact, economical in operation, and easy to assemble and disassemble, to which end the drier is so constructed that no tools of any kind are re-
10 quired for its erection, and assembling can be easily carried out by one man in a few minutes.

In the drawings:—

15 Figure 1 is a front view of the drier with one of the doors open.

Figure 2 is a view taken at the line 2—2 of Figure 1 and shows the top cover of the drier removed.

20 Figure 3 is a section taken upon the line 3—3 of Figure 2.

Figure 4 is a section taken upon the line 4—4 of Figure 1.

Figure 5 is a section of one corner as indicated at 5—5 of Figure 1.

25 Figure 6 is a section taken of one corner as at 6—6 or 7—7 of Figure 1.

Figure 7 is an enlarged detail showing how the bottom is attached.

30 Referring now more particularly to the drawings, 1 indicates the sides of a rectangular, box-like casing provided with holes 2 near the bottom 5. 3 is a back provided with a transverse screen 4 (Figures 3 and 4). The front of the casing is composed of lower
35 member 6 and an upper member 7, and doors 8 and 9. The door 9 is provided with a latch 10. Upon closing door 9 after door 8 is closed latch 10 will lock both doors, as a flange 11 on door 9 overlaps the inner edge
40 of door 8, see Figure 1. The inside walls of sides 1 are provided with transverse cleats 12 notched at the top edges to receive bars 13 upon which the clothes to be dried are hung.

45 The top of the casing is provided with a form of basket or carrier in which are mounted the heating elements, a motor for circulating the warm air, and the switch and time clock by which the drying period can be set
50 to any desired limit. This carrier contain-

ing the motor and elements is made into one unit and suspended from the top of the box. A more detailed description of the carrier is as follows:—

55 The carrier includes a bottom 14 and up-turned sides 15 provided with overturned flanges at the top, as shown at 16 (see Figure 4). The bottom 14 is provided with a hole 17 of a little larger diameter than a fan to
60 be used, (see dotted lines in Figure 2 for hole 17). The top of this carrier is provided with a support 18 rigidly attached to the sides 15 of the carrier by means of flanges 19. To the lower side of the support 18 is secured a frustum of a hollow cone, as 20. This cone has a
65 small opening, as at 20a. The support 18 is provided with a hole 21 to receive a motor 22. Around the hole 21 are small indentations 23, through which a small amount of air may pass around the lower end of the motor
70 through the opening 20a in the cone and carried away by the fan 24, which is attached to the motor shaft (see Figures 2 and 4). Supported between the sides 15 of the carrier are heating elements 25 which are designed to
75 be in the path of the circulating air. 26 is a metal case in which are located fuses 27 and 27a, and a combination switch and time clock 28. This time clock is so arranged that by
80 turning the handle 29, the electrical circuit is first closed and remains closed for a predetermined time, depending upon the setting of the handle 29 as, for example, for fifteen minutes, half an hour, or other desired length
85 of time.

The current in the circuit is led from the source 30 through the wire 31 through a switch in the time clock 28, to point 32 where it divides, part passing to fuse 27, through
90 motor 22, through fuse 27a, and back through the switch in the time clock through wire 25 back to source 30. From point 32 the current passes to point 36, where it divides, passing through wires 37 and 38 through heating elements 25 to point 39, through wire 40 back to
95 switch in time clock 28, through wire 35 and to source 30.

The ends of the carrier are provided with screens 41 (see Figure 3) and a screen 42 which serves as a guard for the fan 24. Over
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the top of the entire box or drier is a cover 43 provided with a proper opening to slip over the motor 22 of metal case 26, and provided with downturned flanges 44 to keep it in place.

Referring particularly to the method of construction, a detail of the corner is shown in Figure 5. 45 represents a corner angle with inturned edges, as shown at 46. The edges of side and back are bent, as shown at 47. From this it will be clearly seen that it is merely necessary to slide the sides into the angle 45, as shown in Figure 5. Figure 6 is a detail taken at the front edge of the box, as shown at section 6-6 of Figure 1, 45 representing the same corner angle as before and 46 a metal spacer of the shape indicated, and serves only to separate the front members 6 and 7 of the box (see Figures 1 and 4). To the lower ends of corner angles 45 are metal spacers 47 (see Figure 4) of same cross section as spacers 46. This prevents the bottom and sides from sliding down to the floor. The lower edges of sides 1, back 3, and front members 6 are turned up, as shown at 48 (see Figure 7) to receive the bottom 5 which has a down-turned flange, as shown at 49.

To operate the device, the clothes or garments to be dried are hung over bars 13 and the doors 8 and 9 closed. The handle 29 of time clock 28 is turned and set for the length of drying period desired. Upon turning this handle, the motor is immediately set into operation, causing a continual circulation of air in the drier. Some air is drawn in through indentations 23 (Figure 2) around the motor so as to cool it, such air being forced downwardly toward the fan. Other air is drawn in through screens 41 (see Figure 3) behind the fan and thus forced downwardly as before, forming a continuous circulation. Still more air enters through the upper portion of the screen, while some air escapes through the lower portion. The holes 2 (Figure 4) in the lower corners of the drier are to relieve a partial vacuum due to eddy current, etc. The location and size of screen 4 is very important and has definite relations with respect to the cubical contents and height of the drier.

It has been found by experiment that if the screen is located at an appreciable greater height than that shown, the moisture in the air condenses and large quantities of water formed on the upper part of the wall of the drier and if the screen is located lower a very great amount of water collects in the bottom of the drier, but the screen 4 located in the position shown, the walls of the drier are always dry.

From the above, it will be seen that I have provided a drier involving a recirculatory system. That is to say, the air is drawn into the cabinet by the fan, passes downwardly through the cabinet and thence upwardly through the screens 41, whence it is again

taken up by the same fan and forced downwardly again as before. The screen 4 has a definite relation to the cubical contents of the cabinet, in that it must be nearer to the floor of the cabinet than to the top or roof of the same. If this principle be not adhered to, then water will collect within the cabinet and deposit upon the floor thereof. The screen 4 may be omitted, of course, its function being to prevent ingress of dirt, dust and foreign particles into the cabinet. However, it is essential that the opening for the screen be present. I find from usual experiments of candle flame tests and the like that when the device is in operation some air passes readily through the upper part of the screen 4, while air is passing out through the lower part thereof.

While I have shown and described a particular form of embodiment of my invention, I am aware that many minor changes will readily suggest themselves to those skilled in the art without departing from the spirit and scope of my invention. I, therefore, desire to avoid being limited to the particular form of embodiment which I have hereinabove shown and described.

I claim:—

1. In a drier, the combination of a casing formed near its bottom with an opening, a partition spaced from the top of the casing, said partition having its ends open and the sides having flanges with overhanging portions which engage the upper edge of the casing, said partition having an opening covered by a screen, a top above the partition and supported thereby, an inverted hollow cone-shaped casing open at its bottom and supported by the top, motor means at the top, a fan connected to the motor means and operating in the opening in the partition, and heating means in the space between the top and the partition for heating the air, whereby the fan creates a downward current of air in the chamber and circulates same through the open ends of the partition.

2. In a drier, the combination of a casing formed near its bottom with an opening, a partition passage from the top of the casing to form an air circulating passage, the partition having an opening and the space being open at the ends to afford communication with the interior of the casing, a hollow inverted cone-shaped casing open at its bottom and supported above the partition, motor means mounted above and within the hollow inverted cone-shaped casing, a fan mounted on the motor and operating in the opening in the partition, whereby the fan creates a downward current of air in the casing and circulation of air through the ends of the passage above the partition.

In testimony whereof I affix my signature.

LEO I. MARTIN.