June 22, 1948. C. L. RUSSELL 2,443,695

DRIER FOR FOOTWEAR

Filed March 20, 1947

FIG. 1.

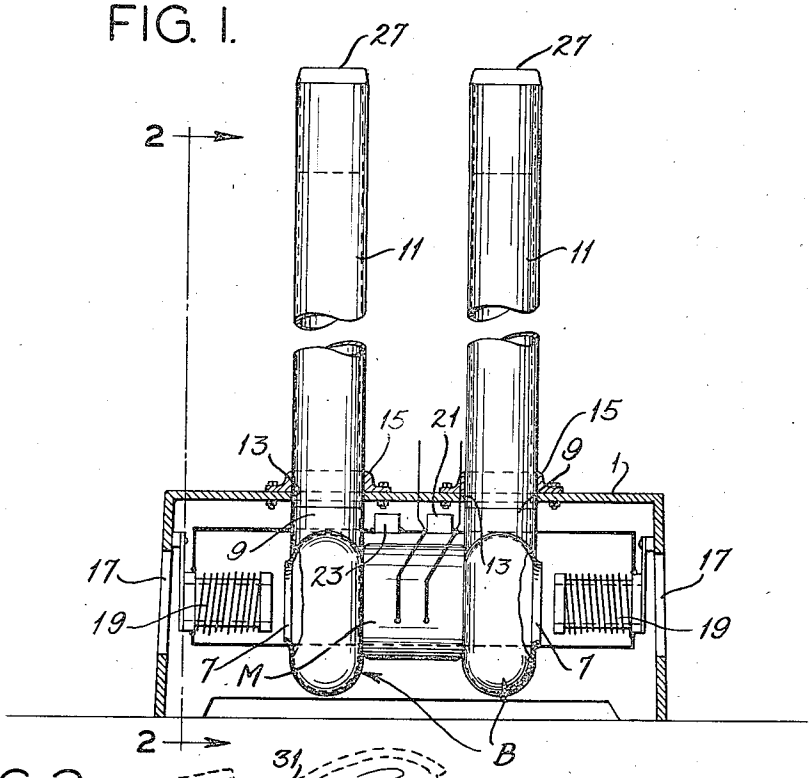
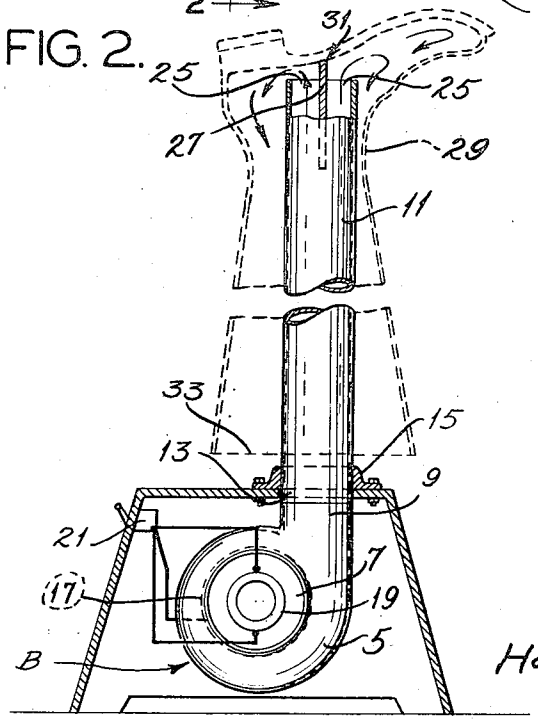


FIG. 2.



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DRIER FOR FOOTWEAR

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1 Claim. (Cl. 34—104)

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This invention relates to driers for footwear, and with regard to certain more specific features, to apparatus of this class for shoes, boots and the like.

Among the several objects of the invention may be noted the provision of a drier to which shoes, boots and the like may conveniently be applied for complete drying, including thorough inside drying; the provision of a drier of this class which has efficient means for circulating air inside of the footwear; and the provision of a drier of the class described which by efficiently circulating warm air within the footwear may employ air of a safe temperature without unduly lengthening the drying time and without damage to the footwear. Other objects will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claim.

In the accompanying drawings, in which one of various possible embodiments of the invention is illustrated,

Fig. 1 is a side elevation of the device with the near side broken open to show the interior; and,

Fig. 2 is a vertical section taken on line 2—2 of Fig. 1.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

As is known, it is difficult thoroughly to dry even ordinary shoes in a reasonably short interval of time without risk of damaging the shoes by overheating and stiffening them. This is particularly true of sportsmen's shoes, boots and the like which have become thoroughly soaked. The present invention provides convenient means for effecting safe and efficient drying of this class of articles.

Referring now more particularly to the drawings, there is shown at numeral 1 a hollow tapered base in which are two centrifugal blowers B. The inside impellers of these blowers (not shown) are driven from the opposite ends of the shaft of an intermediate common driving motor M. The blowers B have the usual volute casings 5, having central axial inlets 7 and tangent outlets 9. The motor M is mounted with its shaft horizontal. The inlets 7 are around a horizontal axis. The outlets 9 are directed upward. Attached to the outlets 9 are combination blow pipes and supports 11 which extend upward from

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the base 1, passing through openings 13 in the latter. The pipes 11 and the casings 5 are supported from the base 1 by flanges 15, and the motor M is supported between the casings. It is clear that, if desired, the motor and the casings may have additional supports within the part 1.

In the ends of the base 1 are air inlet openings 17. Mounted within the base 1 opposite the openings 17 are electric resistance heater elements 19. The heaters 19 are located between the openings 17 and 7, respectively, so as to heat the air supplying the blower inlets 7. A main line switch 21 serves to energize the motor M and both heaters 19. The heaters are wired in parallel with respect to the motor and in series with one another, although if desired the heaters could be themselves wired in parallel. A separate switch 23 in the heater circuit serves to cut out the heater operation without affecting the motor circuit.

At the upper ends of the pipe supports 11 are outlets 25, each of which is bisected by means of a diametral baffle plate 27. Each baffle plate extends some distance above the edge of its respective outlet 25 and forms a rest piece. A piece of foot wear (hunting boot) is illustrated by dotted lines at numeral 29 in Fig. 2. The article is inverted and slipped over one of the pipe supports 11, the mate being slipped over the other support. The supports are of small enough diameter to accommodate the smallest size of footwear expected. The inside of the arch or an adjacent part of the footwear will rest upon the upper end of the respective baffle 27, as shown at 31. This prevents the footwear in any position that it may assume, even if carelessly applied, from blocking the egress of air from the outlet. Each baffle also enforces a division of the air flow into two currents, such as indicated by the arrows in Fig. 2, which after circulating respectively through the heel and toe parts of the footwear, escape downward from the inverted (now bottom) opening 33 of the footwear. The pipe supports 11 are made long enough so that the opening 33 clears the top of the base 1 for the longest article of footwear which it is expected to dry. Thus it will be seen that the pipe supports 11 have a substantial length so as to accommodate full-length hunting and wading boots. If the maximum length of footwear is thus properly accommodated, all shorter lengths will also be properly accommodated.

Operation is quite simple, since it is only necessary to close switches 21 and 23 and invert and telescopically apply the inverted footwear over

the upright pipe supports 11. It is held in place by gravity. If it is desired to circulate air without the help of the heaters 19, the switch 23 may be opened. Circulation of air is continuous through the inside of the footwear and is thoroughly distributed so as to have maximum effect where most needed. The base 1 forms an air box constraining the air entering inlets 17 to flow over the heaters 19. In view of the efficient inside circulation, a much shorter drying period is required for a given air temperature. Hence the often excessively high air temperatures are not necessary.

An advantage of the invention is that the upright pipe supports 11 form convenient gravity supports for the shoes, as well as providing circulating air outlets. No careful attention is required in organizing the footwear with the pipe supports 11, since each extending baffle 27 ensures that there will always be a free outlet for free passage of the air from the respective outlet 25 into the interior of the footwear.

The indicated tandem arrangement of the centrifugal type of blowers on each side of the motor with their outlets directed upward and their inlets coaxial and directed laterally, lends itself to an economical structure. Thus the heaters may conveniently be mounted between the inlets 7 and the inlets 17 of the simple air box constituted by the base 1. Continuation of the upwardly directed outlets as footwear supporting pipes 11 also lends itself to an economical construction for gravity support of the footwear. The same is true of the baffles 27, which assure proper circulation of air into and through the footwear.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained

As many changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

A drier for footwear comprising a hollow box-like base member having walls forming an enclosure, a motor in the base member having a horizontal shaft, a pair of centrifugal blowers in the base member mounted in tandem at opposite ends of the motor and driven thereby, said blowers having volute casings with upwardly directed outlets, a pair of tubular extensions from said outlets extending upward through the base member, said blower casings having axial air inlets within the base member, heaters in the base member mounted respectively opposite said inlets, said base member also having air inlets respectively adjacent the heaters, said extensions from the outlets being of diameters adapted telescopically to receive an inverted footwear pair, and baffle means extending from the upper ends of said extensions each respectively to be engaged by the bottom of an applied piece of footwear to prevent obstruction of the outlets of the extensions in the footwear and to enforce a plurality of air currents in the footwear, said extensions being long enough so that the leg openings in the footwear are spaced with respect to the base member.

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