Sept. 27, 1960 E. D. SEVENICH 2,953,805

SHOE CLEANER AND DRYER

Filed April 14, 1958

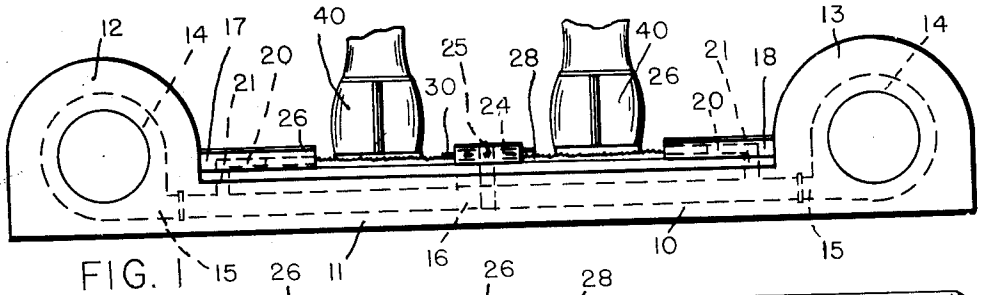


FIG. 1

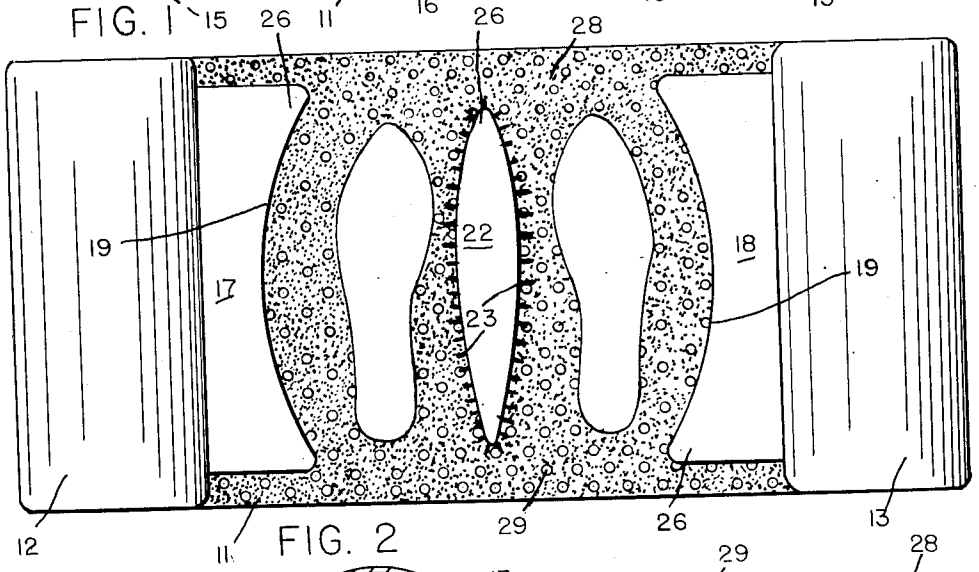


FIG. 2

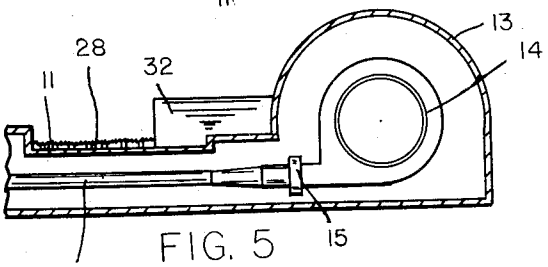


FIG. 5

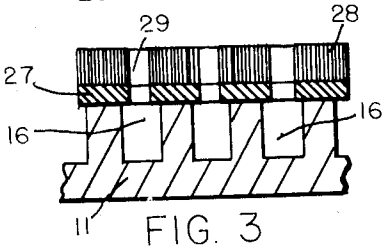


FIG. 3

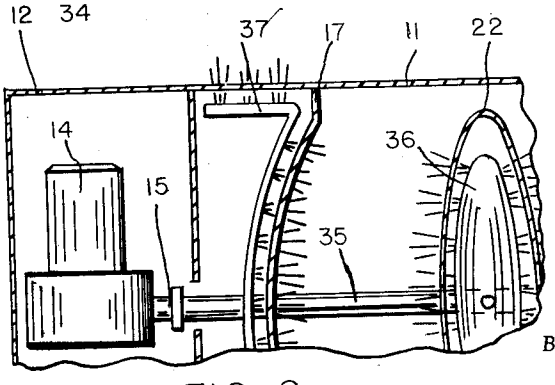


FIG. 6

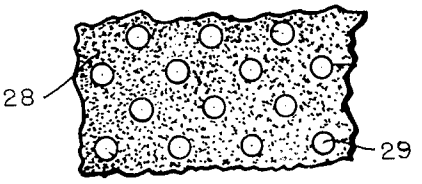


FIG. 4

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SHOE CLEANER AND DRYER

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1 Claim. (Cl. 15—310)

The present invention relates particularly to an improved appliance for cleaning and drying shoes and more particularly to an appliance of this general character adapted for cleaning and drying the shoes worn by the user.

There are many instances when a person is caught in rain or snow or must walk over muddy or slush-covered ground without proper foot wear for such conditions and as a result the shoes become throughly soaked and/or caked with mud and dirt. In most cases a change of foot wear is not readily available and this gives rise to a very serious health problem since a person wearing wet shoes for an extended period of time is very susceptible for contracting a cold or other more serious respiratory disease. Further, dirty or muddy shoes present an unpleasing appearance and a definite cleaning problem, especially when the wearer tries to clean the shoes without removing the same. Of course, various shoe cleaning devices, such as mats, brushes, scrapers or combinations thereof, have been proposed for cleaning a person's shoes. And it has further been proposed to provide appliances, such as that shown in the Lindstrom patent, No. 1,658,489, for use in shower rooms, etc. for drying the feet of a person after he has taken a shower. However, there is a definite need for an appliance which is operative to both clean and dry the shoes worn by the user.

In view of the above, it is the primary or ultimate object of the invention to provide a new and novel appliance for cleaning and drying the shoes being worn by the user. By the employment of such apparatus a serious health problem is substantially mitigated and the shoes are properly cleaned thereby improving the overall appearance of the user and eliminating the tracking of mud and dirt.

Another object of the invention is to provide apparatus of the character described which is adapted for sustained and continuous usage without the cleaning and drying ability thereof being impaired or reduced. In the furtherance of this object, as will be hereinafter more fully explained, the appliance comprises a "step-on" portion which is covered by a rough fabric or structure of a material which does not absorb water or become soggy and is adapted to withstand the abrasion of the shoes thereon during cleaning and drying.

A further object of the invention is to provide a shoe cleaner and dryer which utilizes a plurality of streams of properly directed heated air for quickly drying the shoes thereon. The air is heated by heating elements and forced by blowers through suitable passageways and/or manifolds to impinge directly on the shoes to quickly dry the same. The heating elements and blowers are of such size and capacity so that they may be operated in a continuous manner.

Another object of the invention is to provide an appliance of the character described which embodies improved means for distributing the heated air in such a manner that the shoes are quickly dried. The rough

fabric or structure covering the "step on" portion is suitably apertured and vertically extending passageways or conduits are in communication therewith so that heated air is directed against the bottoms of the shoes. Other passageways or conduits are provided to direct heated air against the uppers of the shoes and the resultant arrangement is such that the shoes are enveloped in a blanket of heated air.

Yet another object of the invention is to provide a shoe cleaner and dryer wherein there are provided accurately contoured cleaning surfaces and edges to allow complete cleaning of the shoes. The contoured cleaning surfaces allow relatively inaccessible portions of the shoes, such as the insteps, to be thoroughly and quickly cleaned.

A more specific object of the invention is to provide a shoe cleaner and dryer which is portable and adapted for use in any location.

Another object is the provision of an appliance of the type described above which is characterized by its improved construction, low manufacturing cost and improved features of design. The shoe dryer and cleaner presents a low and pleasing silhouette necessary for a "step on" appliance while yet the blowers, heating elements, etc. are amounted in such a manner and position to withstand shock forces attendant any foot operated device.

The above, as well as other objects and advantages of the invention, will become more readily apparent upon further consideration of the following specification and accompanying drawing wherein are described and shown certain representative embodiments of the invention.

In the drawing:

Figure 1 is a side elevation of a shoe dryer and cleaner constructed in accordance with the teachings of the present invention;

Figure 2 is a plan view of the apparatus of Figure 1;

Figure 3 is a fragmentary side sectional view showing specifically the passageways or conduits in the shoe cleaner and dryer of Figure 1;

Figure 4 is a plan view of the structure shown in Figure 3;

Figure 5 is a fragmentary side sectional view of another embodiment of a shoe cleaner and dryer constructed in accordance with the teaching of the present invention; and

Figure 6 is a plan sectional view of yet another embodiment of the present invention.

Referring now to the drawing, and initially to Figures 1–4 thereof, there is shown a shoe cleaner and dryer constructed in accordance with the teachings of the present invention which comprises a main housing **10** of such a size and configuration so as to provide a large platform portion **11** and a pair of identical blower and heater housing portions **12** and **13**. The platform portion has a relatively large upper exposed surface area while the blower and heater housing portions are attached to the opposite ends of the platform portion in the manner shown. The platform portion provides a supporting surface upon which the user is adapted to stand in cleaning and drying his shoes while the blower and heater housing portions encase and support the heating element and blower assemblies as will be hereinafter more fully explained. The main housing has a relatively low silhouette with the platform portion being of small thickness dimension so that the user may easily step thereon when he wishes to clean and dry his shoes. It will be noted that the upper surfaces of the blower and heater housing portions **12** and **13** are rounded and the overall design of the housing is such to present a pleasing appearance. It is suggested that the main housing be fabricated from wood, metal, plastic or other like material and the design of the main housing is such that a rugged structure

is provided well adapted to withstand the constant and hard use to which the same will be subjected.

Mounted within each of the blower and heater housing portions **12** and **13** of the shoe cleaner and dryer is a combined heating element and blower assembly **14** of a type well known in the arts. These heating element and blower assemblies comprise electric resistance heating elements and electric motor driven fan or blower units for taking air from the surrounding area and passing it over the heating elements whereby the same is heated to the desired degree and then forcing the thus heated large volume of air out of discharge nozzles **15**. The construction of the heating element and blower assemblies do not, per se, form a part of the present invention—it being sufficient to note that these assemblies perform the functions of heating large volumes of air to a proper and desired degree and delivering the same at a relatively high velocity to the discharge nozzles **15**. Of course, the heating element and blower assemblies will be of such size and capacity to accomplish the drying of the shoes of a person standing on the platform portion as will be further explained and, if desired, more than one assembly may be mounted within each of the heater element and blower housings **12** and **13**. The assemblies should be rigidly mounted within the housing portions and the arrangement is such that these members are laterally offset from the platform portion whereby the same are protected to a certain degree for shock forces and accidental kicking, etc.

The housing portions **12** and **13** are generally hollow and the interiors thereof form, in essence, distributors or manifolds for the large volume of heated air discharged through the nozzles **15**. Communicating with the hollow interiors of the housing portions **12** and **13** are a plurality of longitudinally extending passageways **16** (see Figure 3) which extend the length of the platform portion **11** and provide conduits for conducting the heated air delivered to the interiors of the housing portions to the platform portion **11** of the shoe cleaner and dryer. The passageways **16** are spaced laterally across the platform **16** so that heated air is delivered to each exposed surface portion thereof. As will become more fully apparent, the passageways **16** provide a means for delivering the properly heated air to the platform portion for drying the bottoms of the shoes of the user standing thereon.

Mounted directly on the platform portion **11** on the opposite ends thereof adjacent the housing portions **12** and **13** are a pair of upwardly extending cleaning pads **17** and **18** which have appreciable vertical dimension and are accurately contoured along their inner edges thereof to provide concave cleaning or scraping edges **19**. The cleaning or scraping edges **19** are formed in such a manner that they are adapted to nest with the outer side edges of the shoes of the user thereby allowing the dirt and mud collected on the shoes to be scraping therefrom. The upwardly extending cleaning pads are preferably made from metal, wood, plastic or some other like material and are each provided with horizontally extending laterally spaced passageways **20** throughout their width dimension which terminate in a plurality of spaced ports along the contoured cleaning and scraping edges **19**. The ports are adapted to direct heated air in the horizontal direction to dry the uppers of the shoes being worn by the user. Of course, suitable vertically extending passageways **21** are provided for interconnecting the passageways **20** with the conduits **16** and the discharge nozzles **15** of the heater and blower assemblies so that a sufficient volume of heated air is delivered to the ports along the edges of the cleaning and scraping pads.

Mounted in the center of the platform portion intermediate the ends thereof and between the cleaning pads **17** and **18** is an upwardly extending cleaning pad **22** which, in contrast to the cleaning pads **17** and **18**, has the edges thereof contoured in convex fashion to define the bowed cleaning edges **23**. This centrally disposed cleaning pad **22** has a plurality of horizontally extending passageways **24** which are in communication via vertical passageways **25** with the conduits **16** so that heated air is directed outwardly from the cleaning pad **22** against the inner side edges of the shoes being worn by the user. It will be appreciated that the above described arrangement is such that heated air is directed vertically against the soles of the shoes and horizontally against the sides thereof and the plurality of vertically and horizontally directed streams of air form a blanket or envelope of heated air that completely surrounds the shoes of the user and dries the same in a fast and efficient manner regardless of where the user is standing on the platform portion **11**. It will also be noted that the various projecting cleaning pads **17**, **18** and **22** are so contoured and are of such a configuration as to provide a plurality of relatively sharp corners **26** which are excellent for cleaning the mud and/or dirt from the insteps of shoes and other relatively inaccessible portions of the shoes.

One of the most important features of the present invention is the provision of a suitable cleaning surface on the platform portion **11** which allows the passage of the vertical stream of air, is operative to clean the shoes and yet does not become soggy or worn upon continued usage. In the illustrated embodiment of the invention a metal plate **27** having a plurality of small apertures therein overlies the platform portion and attached to this plate by bonding, screws, or other convenient attachment means, not particularly shown, is a rug-like covering **28** having a plurality of apertures **29** therein which are aligned with the apertures in the metal plate **27**. It is necessary that the rug-like covering **28** be able to withstand continuous usage without becoming soggy and I have found that a covering made from a synthetic acrylic fibre and marketed under the trademark "Acrilan" is ideally suited for this purpose. Of course, other materials having similar characteristics can be employed and it is contemplated that the covering **28** will be easily removed from the platform portion **11** so that the same may be readily replaced when it does become worn.

The apparatus of the present invention also comprises other means for insuring proper cleaning of the user's shoes. As shown in Figures 1 and 2 of the drawing the edges of the intermediate cleaning pad **22** are lined with a plurality of spaced outwardly extending rubber tips **30** which serve to assist in the cleaning of the shoes. Similar rubber tips can be provided along the edges **19** of the cleaning pads **17** and **18** if the same are desired. It should be clearly understood that the present invention is not limited to the specific design of the cleaning pads illustrated since obviously other designs of pads better suited to the contours of a particular type of shoe being cleaned may be employed and dried. As an example, a relatively short and humped cleaning pad such as shown at **32** in Figure 5 of the drawing can be incorporated or employed for cleaning high heeled shoes. And the various cleaning pads can also be covered with the material used to cover the exposed surface area of the platform portion if desired.

In Figures 5 and 6 of the drawing there are shown certain modifications of the shoe cleaning and drying appliance described above and in order to avoid unnecessary repetition in the specification similar parts between the various embodiments are designated by the same reference numerals. In Figure 5 the outlet nozzle **15** of the blower and heating assembly is connected to an elongated and transversely extending thin and hollow metal manifold **34** which is suitably apertured for directing the vertical streams of air against the shoes of the user. In the arrangement shown in Figure 6 the heated air from the nozzle **15** is conducted via conduit **35** to properly shaped manifolds **36** and **37** which are received within the cleaning pads in the manner shown. The manifolds are apertured throughout their lengths to provide means for di-

recting the horizontal streams of heated air against the user's shoes. These embodiments illustrate that various arrangements for distributing the heated air may be employed and, in fact, if the housing is generally hollow it may be used for this purpose by itself.

Considering now the operation of the apparatus above described, the user places his shoes **40** on the platform portion **11** on opposite sides of the intermediate cleaning pad **22**. This may actuate a pressure switch, not shown, or a push button, also not shown, is depressed to start the blower and heater assemblies **14** so that a large volume of heat is forced to pass through the apertures in the platform portion and the cleaning pads in vertical and horizontal streams. These streams of heated air completely envelop the shoes and dry the same irrespective of the position of the shoes on the platform portion. While the shoes are being dried the user can scrape his feet against the rough textured surface of the covering **28**, the contoured edges of the cleaning pads **17**, **18** and **22** and/or the rounded corners **26** to thoroughly clean the accumulated mud and dirt from the shoes. In a very short time the shoes will be completely dried and cleaned and the user can step from the platform portion. Of course, timing means may be employed in connection with the start switch means to effect a timed and automatic cycle of the cleaning and drying appliance.

It should thus be apparent that I have accomplished the objects initially set forth by providing an improved shoe cleaner and dryer. Although there have been described and shown several embodiments of the invention it should be understood that these are illustrative only since many changes may be made therein without departing from the teachings of the invention. Accordingly, reference should be had to the following appended claims in determining the full scope of the invention.

I claim:

A self-contained portable shoe cleaner and dryer having a low silhouette for use in cleaning and drying the shoes of a user stepping thereon comprising a relatively large platform having a small vertical dimension, a housing mounted at one end of said platform, said housing having a greater vertical dimension than the vertical dimension of said platform, an air heating and blower assembly mounted within said housing, said platform being covered with a water and wear resistant fabric, said platform and said fabric having a plurality of aligned vertical apertures therein, a pair of cleaning pad portions mounted on and positioned adjacent the ends of said platform, an intermediate cleaning pad mounted on said platform and positioned between said pair of cleaning pad portions, said cleaning pad portions and said intermediate cleaning pad having appreciable vertical dimensions and defining vertically extending edges for use in cleaning the shoes on said platform, a plurality of horizontally directing ports along said vertically extending edges, said air heating and blower assembly having a discharge nozzle, and means interconnecting said discharge nozzle with said apertures and said ports whereby streams of heated air are forced upwardly through said apertures and horizontally through said ports for enveloping and drying the shoes on said platform.

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