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FOOTBALL DRYER

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FIG. 1

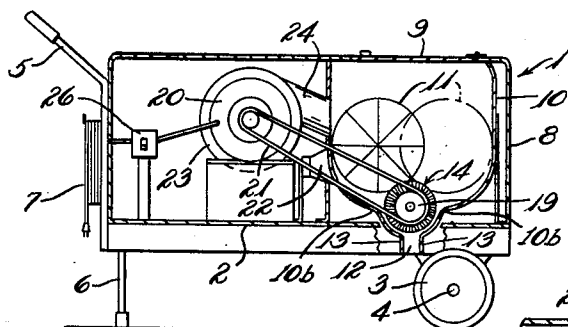


FIG. 2

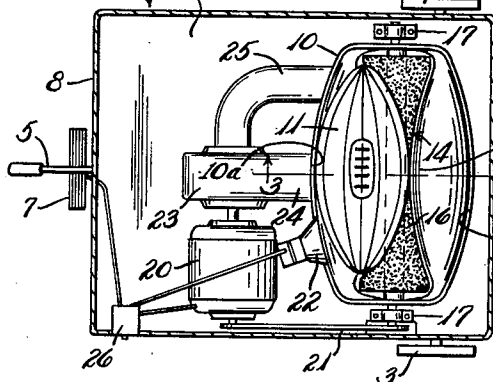
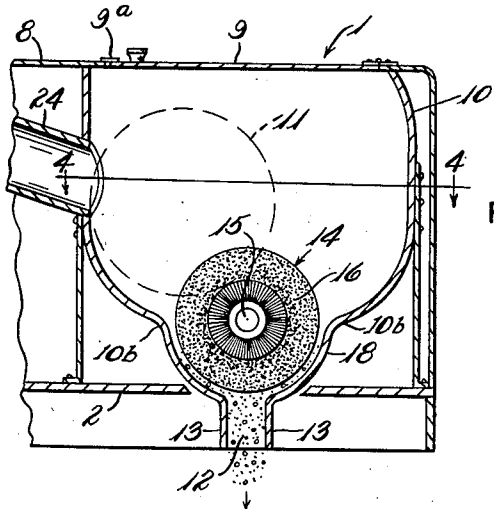


FIG. 4

FIG. 3



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FOOTBALL DRYER
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The present invention relates to dryers, and especially to a dryer particularly adapted for rapidly and effectively drying a wet, cold football.

Inasmuch as the sport of football is frequently played under adverse weather conditions, in many games the football becomes wet and slippery by being covered with mud from the playing field, or when absorbing water due to using the football under rain or snow conditions. Frequently the officials of the football game, or the teams, provide towels by which the ball can be wiped clean, and it is the practice in football games usually to have several footballs that are alternately put into use while endeavoring to dry the balls not in use by towels, or to dry the balls in other manners.

At the present time, insofar as I am aware, there is no practical dryer available by which footballs can be conveniently and effectively dried when being used under adverse weather conditions and with only two footballs being required, for example, in order to provide relatively dry footballs at frequent periods for use in the game.

It is well known that it is much more difficult to handle, pass and kick a football when saturated with water or when made slippery by mud and water on the surface of the football. Hence the caliber of the game and the effectiveness of the players is greatly increased when dry footballs are available for use in the game and it thus is very desirable to have dry footballs used in a football game whenever possible.

The general object of the present invention is to provide a new and improved dryer particularly characterized by its ability to rapidly and effectively dry and clean footballs by removing water embedded in the pores of the ball, and/or dirt on the surface of the ball.

Another object of the invention is to provide a special receptacle for receiving a support and rotating brush therein in association with a football for knocking off dirt particles on the surface of the football and permitting such particles to drop down by gravity through a discharge chute out of the dryer compartment.

Another object of the invention is to provide a portable, enclosed football dryer unit having a ball receiving bowl or compartment therein in which a ball is received for rotary movement by a support brush in the dryer chamber.

A further object of the invention is to provide a compact, enclosed dryer designed to receive a football therein for rotating and cleaning action thereof while blowing heated dry air into the dryer unit.

Another object of the invention is to provide a heater and dryer unit particularly adapted for retaining a football, or similar article therein and performing a mechanical abrading and cleaning action thereon while blowing heated air into the football treating unit.

The foregoing and other objects and advantages of the invention will be made more apparent as the specification proceeds.

In order to understand the present invention more completely, reference should be had to the accompanying drawings, wherein:

FIG. 1 is a side elevation, with portions of the cover of the unit of the invention removed, of a football dryer apparatus embodying the principles of the invention;

FIG. 2 is a plan view of the football dryer unit of FIG. 1 with the upper portion of the cover therefor being removed;

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FIG. 3 is an enlarged fragmentary vertical section taken on line 3—3 of FIG. 2; and

FIG. 4 is a horizontal section on line 4—4 of FIG. 3.

When referring to corresponding members shown in the drawings and referred to in the specification, corresponding numerals are used to facilitate comparison therebetween.

Reference now is particularly directed to the details of the structure shown in the drawings, and a dryer of the invention is indicated as a whole by the numeral 1. This dryer 1 includes a conventional base plate, or other type of frame 2. In some instances it is desirable to make the dryer 1 portable, and to this end, a pair of wheels 3, 3 are journaled on an axle 4 suitably supported by and underneath the frame 2. By lifting the frame by means of a handle 5 provided thereon, the dryer can readily be moved from place to place on the wheels 3. A support leg 6 is provided on the frame 2 and extends downwardly therefrom at the end thereof remote from that to which the wheels 3, 3 are secured. Usually it is desirable to provide a length of electric cord 7 that is shown provided on a coil at one end of the frame 2 so that electric power can be supplied to the dryer 1 of the invention by connecting the cord to a suitable power outlet.

Any desired type of a cover, indicated at 8, usually made from sheet metal, is secured to the frame 2 and extends upwardly therefrom. A door, or section 9, is provided in the upper portion of the cover 8 at one end thereof for convenient access to one portion of the enclosure formed in the dryer 1 and it may be kept closed by a pivotal lock tab 9a. Any suitable removable means may be associated with other portions of the cover 8 to facilitate access to the interior of the dryer 1, as desired.

An important feature of the invention is the provision of a generally bowl-shaped football receiving section 10 provided in the dryer 1 within the cover 8 at one end of the frame 2. Section 10 includes inwardly concaved side walls 10a having inwardly and upwardly convex lower portions 10b for receiving and guiding a football 11 within such bowl or football receiving section 10 and preventing the ball 11 from being trapped, or wedged in the bowl or football receiving section 10 by the support means therefor, as hereinafter described. In all events, the bowl or football receiving section 10 is provided with a longitudinally directed discharge opening 12 at the bottom thereof, and such opening may be formed by metal means integral with either the bowl 10 or with the frame 2, as desired. FIG. 3 of the drawings best shows that the bowl or section 10 may have dependent or downwardly extending parallel walls, or flanges 13 provided thereon, to outline and define the discharge opening 12 for the bowl. Thus any loose dirt particles or other foreign matter received in the bowl 10 normally will fall or drop therefrom by gravity action through the discharge opening 12 which also serves as an air inlet for the bowl or section 10.

A further feature of the present invention is that a contoured cleaning brush 14, carried on a support shaft 15, is positioned within the bowl 10 at the base or bottom portion thereof. This support shaft 15 extends from the brush 14 at the ends thereof and any suitable means, such as tufts of nylon bristles 16 or equivalent means, are provided on, or secured to the support brush 14 and shaped to give the periphery of the brush concavity in a longitudinal direction. The support shaft 15 is received in and journaled by brackets 17 carried on the frame 2. FIG. 3 of the drawings shows that the lower portion of the bowl 10 may have a special recessed section therein, indicated at 18, that is formed complementary in contour to the peripheral contour of the lower portion of the brush 14. The bowl 10 and brush

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14 cooperate so that the football 11 received within the bowl 10 can be partially supported on the walls of the bowl and on the bristles of the brush 14. This brush 14 is driven by means of a pulley 19 secured to the support shaft 15 and connected to the output shaft of a motor 20 by a belt 21 or other conventional member. Hence the brush 14 will rapidly rotate the ball when positioned in the bowl 10 because the brush partially supports the ball. This will provide a cleaning or abrading action on the surface of the ball 11 to remove foreign material therefrom, and at the same time will provide substantially even distribution of heat flow to and over the surfaces of the ball 11. The ball 11 is retained in the bowl 10 parallel to the discharge opening 12 by the combined support action and shape of the bowl 10 and brush 14.

Heat can be supplied to the bowl 10 in any desired manner, but I prefer to use an infra-red lamp 22 secured to the frame 2 and positioned to direct the heat rays therefrom into the interior of the bowl 10 through a suitable aperture or opening provided therein. Further heating and drying action is provided in the dryer 1 by means of a fan 23 secured to the frame 2 and driven by the output shaft of the motor 20. The fan 23 has a discharge tube or conduit 24 connecting the fan 23 to the interior of the bowl 10, while a return air conduit 25 extends from a portion of the bowl 10 remote from the tube 24 to the fan so that heated air can be exhausted from the bowl 10 and pulled into the fan 23 to be recirculated through the bowl 10.

Any suitable type of a control, such as a switch 26, is provided in the circuit of the motor 20 and such switch likewise usually controls the lamp 22 and operation thereof. Such switch 26 naturally is connected to the cord 7 for supply of electrical energy to the motor and lamp in the dryer unit for operation thereof when desired.

It has been shown by use of a dryer 1 of the invention that a ball having mud and water thereon can be placed within the bowl 10 and be rapidly heated, dried and cleaned therein. The rotating or abrading action provided on the ball by the brush 14 plus the heating action exerted by the lamp 22 and the forced circulation of air through the bowl 10 all aid materially in drying this ball and removing foreign material therefrom. The loose foreign matter will drop from the bowl 10 through the exhaust chute or discharge opening 12 by gravity. A conventional size infra-red lamp 22 will provide satisfactory heat supply so that a wet and dirty ball placed in the dryer can be removed therefrom in a short time, such as in two or three minutes, and have such a ball be warm and substantially 100 percent dry and dirt free. When the ball is warm and dry, it is much easier handled by a passer, or other player in the game, and better playing action is secured. A punter will be provided with a dry, warm ball of proper weight so that better kicking action is secured than if a wet, or partially waterlogged ball is in play. Greatly improved playing action will be secured by use of dry, warm balls in football games because of the effective drying and heating action of the ball by the apparatus of the invention.

It is thought that only two balls need be used in a game as the alternate ball could be cleaned and dried while the other ball is in play. The apparatus does a good cleaning job even if no drying action is also obtained. Likewise the dryer 1 may be used as a heater for footballs on cold days to furnish warm easily handled balls to the players. Less fumbling will occur when dried and/or heated balls are used on cold and/or wet days.

It will be seen that the bowl 10 of the apparatus has the brush 14 provided at the lowest portion thereof and that the bowl is of such size that a football received therein must extend longitudinally of the bowl. Furthermore, the football is at all times supported partially on the upper surface of the brush 14 and partially on ad-

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jacent side walls of the bowl. Hence, when the brush is rotated it will positively rotate the ball 1.

It also should be realized that any desired clearance can be provided between the outer edges of the bristles 16 on the brush 14 and the adjacent downwardly sloping walls of the bowl, such as at the contoured section 18 thereof. Thus dirt and foreign material can move by gravity down between the brush and the adjacent surfaces of the bowl to fall from the discharge opening 12.

The apparatus of the invention is satisfactory for use with both footballs made from pigskin or from other materials such as rubber, or rubberlike substances and it will remove foreign matter therefrom as well as to withdraw moisture from the material forming the ball, or present on the surface of the ball. The apparatus can use any type of blower or fan in it, as desired. Suitable support means, such as a pivotal wheel, may be used in place of the support 6.

It is believed that the objects of the invention have been secured and that a relatively inexpensive, compact, sturdy type of football drying apparatus is provided, which apparatus will give good service life with a minimum of maintenance thereon.

While one complete embodiment of the invention has been disclosed herein, it will be appreciated that modification of this particular embodiment of the invention may be resorted to without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

30 1. A dryer for a football or the like, which dryer comprises a frame, a football receiving bowl positioned on said frame, said bowl having a discharge chute operatively connected to a lower portion thereof to collect dirt particles removed from a ball in the bowl and to enable such particles to drop by gravity from the dryer, a cleaning brush including a support shaft positioned on said frame, said brush extending into said bowl at the lower portion thereof and being positioned adjacent and above said chute, said brush having a concave contour and cooperating with adjacent portions of said bowl to support a ball therein, heater means carried by said frame and operatively connecting to said bowl to heat said bowl and any article therein, drive means carried by said frame and connected to said support shaft to rotate said support shaft and a football received in said bowl for cleaning and drying action thereon, and means carried by said frame and connecting to said bowl for circulating air therein.

45 2. A dryer for a football or the like, which dryer comprises a frame, a football receiving bowl positioned on said frame, said bowl having a discharge chute formed in the lower portion thereof for passing dirt particles removed from a ball in the bowl from the bowl, a cleaning brush including a support shaft positioned on said frame, the upper portion of said brush extending into said bowl at the lower portion thereof and being positioned adjacent and above said chute, said brush having a longitudinally concave contour and cooperating with adjacent portions of said bowl to support a ball therein, heater means carried by said frame and operatively connecting to said bowl to heat said bowl and any article therein, drive means carried by said frame and connected to said support shaft to rotate said support shaft and a football received in said bowl for cleaning and drying action thereon and the blower and air return means connecting to each other and to said bowl to force air circulation in said bowl to return at least some of the same air to said blower and air return means for recirculation.

70 3. A portable dryer for a football or the like, which dryer comprises a portable frame, a football receiving bowl of greater length than width positioned on said frame, said bowl having a discharge chute formed in the lower portion thereof for gravity discharge of dirt particles removed from a ball in the bowl and being of a size as to retain a ball therein with its longitudinal axis

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extending longitudinally of said bowl, a cleaning brush including a support shaft positioned on said frame, said brush extending into said bowl and longitudinally thereof at the lower portion thereof and being positioned adjacent and above said chute, said brush having a concave contour and cooperating with adjacent portions of said bowl to support a ball therein, heater means carried by said frame and operatively connecting to said bowl to heat said bowl and any article therein, drive means operatively carried by said frame and connected to said support shaft to rotate said support shaft and a football received in said bowl for cleaning and drying action thereon, blower means operatively connecting to said bowl to supply an air stream thereto, and means connecting the interior of said bowl to said blower means for supply of air thereto to recirculate heated air from said bowl through said blower means.

4. A portable dryer for a football or the like, which dryer comprises a portable frame forming an enclosure having a football receiving section therein, discharge means formed in the lower portion of said football receiving section for gravity discharge of particles removed from a ball, a cleaning brush including a support shaft operatively positioned on said frame, said brush being positioned adjacent and above said discharge means and having a concave contour, said brush and means within said frame cooperating to support a ball on said brush, heater means operatively positioned within said frame, drive means operatively carried by said frame and connected to said support shaft to rotate said support shaft and a football received in said section and positioned on said brush for cleaning and drying action thereon, blower means operatively associated with said section to supply an air stream thereto, and means operatively connecting the interior of said section to said blower means for recirculation of heated air from said section to said blower means.

5. A portable dryer for a football or the like, which dryer comprises a portable frame forming an enclosure having a football receiving section and a second section provided therein, an elongated cleaning brush including a support shaft operatively positioned on said frame

within said football receiving section, said brush having a concave contour, said football receiving section including inwardly concaved side walls extending longitudinally of said brush and upwardly and inwardly convexed portions, said brush and said side walls cooperating to support a ball in engagement with said brush, heater means within said frame and operatively connected to said football receiving section to heat an article therein, drive means operatively connected to said support shaft to rotate said support shaft and a football engaging said brush for cleaning and drying action thereon, blower means in said second section operatively connected to said football receiving section to supply air thereto, and means operatively connecting the interior of said football receiving section to said blower means to permit flow of air therebetween whereby air can be recirculated to and from said football receiving section by said blower means.

6. A portable dryer for a football or the like, which dryer comprises a portable frame forming an enclosure having a football receiving section provided therein, a cleaning brush including a support shaft operatively positioned on said frame, said brush having a concave contour, said brush and means within said frame cooperating to support a ball in engagement with said brush, heater means operatively positioned within said frame to heat any article therein, and drive means operatively connected to said support shaft to rotate said support shaft and a football engaging said brush for cleaning and drying action thereon, said frame having a discharge opening therein adjacent said brush for dirt and other matter removed from a football.

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