

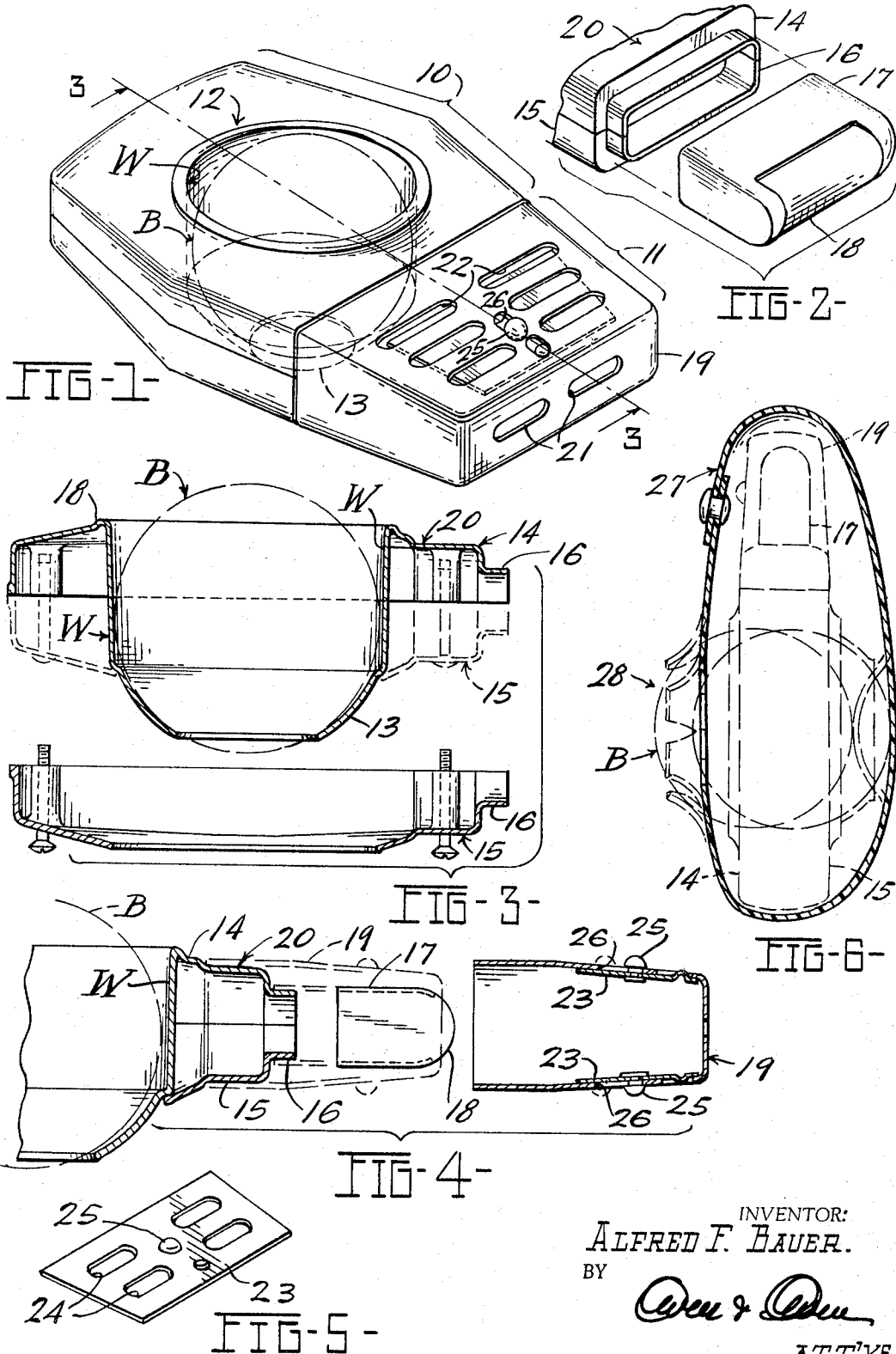
April 30, 1968

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3,380,720

GOLF BALL WARMER

Filed July 15, 1966



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GOLF BALL WARMER

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Filed July 15, 1966, Ser. No. 565,621

3 Claims. (Cl. 263—5)

ABSTRACT OF THE DISCLOSURE

A device for warming golf balls having a catalytic type combustion device which is contained within a burner housing secured to one side of an annular space which provides a wick and fuel chamber. Extending transversely into the annular space is a golf ball aperture which has a diameter adapted to tightly receive the golf ball so that a ball positioned therein is in substantial contact throughout the periphery of the adjacent wall. Heat transfer from the combustion chamber to the ball is accomplished by conduction through the burner housing, the walls of the annular space to the inner wall in contact with the ball. The combustion chamber is isolated from the golf ball aperture so that products of combustion cannot directly heat or discolor the surface of the ball.

This invention relates to a portable warmer for golf balls in which the heat of combustion from a liquid fuel such as alcohol, is used to increase the temperature of a golf ball prior to its use. More specifically, this invention relates to a portable warmer for golf balls in which the golf ball is positioned in a portion of the warmer remote from the burner area and in which heat is conducted from the burner area through a metallic shell which encloses the golf ball and applies heat to it throughout a substantial portion of its surface.

It is well known that golfers may increase the distance of their drives by increasing the temperature and thus the resiliency of a golf ball prior to putting it into play. Any device for increasing the temperature of the golf ball must, of course, be light-weight and portable in order to facilitate its use through the course played by the golfer. Catalytic-combustion type warmers, of the general type disclosed in United States Patent 2,942,601, because of their light-weight, simplicity and portability, may be used for warming golf balls.

United States Patents 2,181,821 and 3,066,925 disclose catalytic-combustion type warmers for golf balls in which the ball is positioned closely adjacent or in contact with the combustion or burner portion of the heater. In each of these designs, it is necessary to provide some means for enclosing the ball within a metallic shell and for insulating the surface of the rubber golf ball which may be damaged if it is too near the direct area of combustion.

It has been found that a better approach is to construct a catalytic-combustion type heater having a metallic shell which separates the area of combustion or burner portion from the ball receiving portion. If the shell is comprised of a good conductor of heat, such as light-weight metal, and if the ball is placed in surface contact with portions of the shell, the ball may be quickly and uniformly heated without the danger of harming the rubber surface or by discoloring it through too close contact with the combustion portion.

Accordingly, it is an object of this invention to provide a golf ball warmer including a body portion having a ball receiving aperture and a spaced apart burner portion in good thermal contact with the body portion whereby the heat of combustion from the burner portion is conducted through the shell to the golf ball.

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It is another object of this invention to provide a golf ball warmer having a ball receiving body portion, which body portion can receive the golf ball without the necessity of opening or closing any movable parts thereof.

It is still another object of this invention to provide a catalytic-combustion type golf ball warmer of relatively small size and having an annular body portion adapted to receive a golf ball, which annular portion in addition to conducting the heat of combustion to a golf ball serves to provide an enclosed wick space for carrying liquid fuel.

Other objects and advantages of this invention will be apparent from the following description of a preferred embodiment thereof, reference being made to the accompanying drawings in which:

FIG. 1 is a view in perspective of the golf ball warmer of this invention, showing a golf ball placed in the ball receiving aperture extending through the body portion and also showing a burner cap assembly attached over the burner assembly;

FIG. 2 is a partial view in perspective of a golf ball warmer of FIG. 1, with the burner cap removed and showing the burner assembly as it would be attached to the body portion;

FIG. 3 is a cross-sectional view taken along lines 3—3 of FIG. 1 and showing the construction of the body portion of the golf ball warmer, with the burner cap removed and the parts expanded to clearly show the method of construction;

FIG. 4 is an expanded cross-sectional view similar to FIG. 3, but showing the construction details of the burner assembly with the burner cap removed;

FIG. 5 is a view in perspective of a movable air regulation plate which is movably secured to the interior of the burner cap as shown in FIGS. 1 and 4, and;

FIG. 6 is a schematic cross-sectional view of the entire warmer assembly with the ball installed with a flexible cover attached thereto.

It is to be understood that the various parts of the golf ball warmer described are preferably comprised of light-weight metal such as stamped sheet metal or die cast metals. Such parts may be economically manufactured, are light weight and have good heat conducting characteristics. Referring to FIG. 1, the preferred embodiment of this invention includes a body portion, generally designated by reference numeral 10 and a burner portion, generally designated by reference numeral 11. The body portion 10 includes a transversely extending ball-receiving aperture 12 which is open on its other end and has a restricted web 13 at its lower end, as best seen in FIG. 3.

Referring to FIG. 3, the body portion 10 is comprised of an upper half shell 14 and a lower half shell 15, which when secured together by bolts or studs, form the body portion 10 which comprises an annular enclosed space surrounding the transverse aperture 12. The outer walls of the upper and lower shells 14 and 15 have complementary shaped abutting surfaces which are held together by the bolts or studs. The upper shell 14 includes an annular inner wall W which extends from an upper lip 18 on the upper shell 14 downwardly to form the cylindrical transverse passage 12. At the lower edge of the annular wall W the restricted web 13 extends downwardly and radially inwardly to form a ball receiving pocket with the wall W. The radius of curvature of the web 13, as seen in FIG. 3, is the same as the radius of curvature of a standard size golf ball so that when such a ball, designated as B in FIG. 3, is placed within the transverse passage 12 against the web 13, there is substantial contact throughout the surface of the lowermost portions of the ball. This substantial surface contact increases heat

transfer with the body portion of the warmer as will be subsequently explained.

The annular space around the transverse passage 12 which receives the ball is entirely enclosed on all sides except for the one side extending towards the burner portion 11. As best seen in FIG. 2, the upper and lower shells 14 and 15, when mated, form an outwardly extending flange 16 upon which the burner assembly or burner cup 17 is removably secured. The burner cup 17 includes a perforated area of holes or screen 18 which transmits air to the interior of the burner cup 17 for combustion therein. It is to be understood that a wick of liquid saturable material, such as cotton, is placed within the annular space surrounding the transverse passage 12 in the body portion 10 and extends through the opening formed by the flange 16 into the combustion chamber within the burner cup 17. The details of construction of the interior of the combustion chamber including the positioning of the catalyst, etc. are well known to those skilled in the art and will not be described in detail.

Referring to FIGS. 1 and 4, the burner cap, generally designated by reference numeral 19, is removably secured to the body portion 10 by sliding it over the burner cup 17 and upon a cap receiving surface 20 adjacent the flange 16. The burner cap 19 comprises a hollow shell closed at one end and having a pair of air admitting perforations 21 through the closed end and a plurality of air perforations or vents 22 on the upper and lower surfaces thereof. Referring to FIG. 5, a movable damper plate 23 with air vents 24 extending therethrough is loosely secured to the inner surface of each upper and lower side of the burner cap 19 by a sliding rivet 25 which extends through an elongate slot 26 positioned between the air vents 22 in the burner cap 19. It will be apparent that the adjustment of the position of the air vents 24 in the plate 23 relative to the air vents 22 in the burner cap 19 will vary the effective area of the air vent 22 to adjust the amount of air admitted to the combustion chamber through the air cap 19. This adjustment is made by manually manipulating the plate 23 by moving the head of the rivet 25 so that the optimum amount of air for proper combustion may be utilized.

FIG. 6 shows the golf ball warmer previously described as it would be enclosed in a flexible case which is snapped over the entire assembly. The flexible case, designated by reference numeral 27, may be comprised of a perforate material or may be an imperforate material and have air perforations adjacent its upper end, as shown in FIG. 6, near the burner portion. The flexible case includes a flapped opening 28 aligned with the transverse passage 12 and the body portion 10 of the burner through which a golf ball may be inserted. The purpose of the flexible case is to reduce the heat transfer from the golf ball warmer to the user, who may carry the entire device in his pocket, and also the flaps on the case will assist in maintaining the ball B in warming position.

It will be understood that the preferred embodiment described, because the body portion 10 is comprised of a good conductor of heat, and because it is enclosed within a flexible case 27 which is a relatively poor conductor, can generate substantial amounts of heat which are transferred to the golf ball but yet may be conveniently car-

ried in the hand or pocket of the user. Additionally, because of the configuration of the transverse passage 12 and its restricting web 13, the rate and amount of heat transfer to the ball B are excellent.

Various modifications of the above described preferred embodiments will be apparent to those skilled in the art and may be made without departing from the scope of the attached claims.

I claim:

1. A device for warming golf balls having a circular inner wall, an outer wall encompassing said inner wall, and upper and lower surfaces extending across and joined to the upper and lower edges of said walls to form an enclosed annular wick space circumjacent a transverse aperture defined by said inner circular wall and having one open end adapted to receive a golf ball, said walls and said upper and lower surfaces consisting of a fluid impervious, heat conducting material with said inner circular wall having an inside diameter at said open end only slightly larger than that of a golf ball whereby such ball, when placed within said transverse aperture, will be in heat conducting relationship throughout the periphery of said inner wall, a burner housing extending from one side of said outer wall over a wick passage extending through said outer wall, said burner housing defining a combustion chamber and composed of a heat conducting material and secured to said outer wall in heat conducting relation therewith, whereby, when a wick extending around said enclosed annular wick space through said wick passage into said combustion chamber is saturated with fuel and ignited within said combustion chamber, the heat of combustion will be directly conducted from said burner housing through said outer wall to said inner wall and thus to such golf ball within said transverse passage but said golf ball will be isolated from the products of combustion.

2. The device of claim 1 in which the other end of said transverse passage defined by said circular inner wall is restricted by a web of heat conducting material secured to said inner wall in heat conducting relation, said web having a radius of curvature conforming to that of a golf ball whereby such ball, when positioned within said aperture against said web, will have substantial surface contact therewith to facilitate heat transfer by conduction.

3. The device of claim 1 wherein the inside diameter of said circular wall is sloped to be slightly smaller than that of a golf ball at the end remote from said one open end whereby said golf ball received by said open end may be tightly seated within said transverse passage.

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