This invention relates generally to portable devices for superfluously treating parts of the human body for therapeutic purposes and more particularly, relates to a novel structure for a device of the character described which may be used both for affecting transfer of heat between the device and part of the body treated and for massaging benefits.

It is well recognized that heat transfer between parts of the human body and a source of higher or lower temperature achieves therapeutic benefits in connection with a large variety of conditions. The same is true of massaging techniques in connection with soft parts of the body to relieve pain and discomfort and increase circulation of blood to the treated area. Hot and cold applications are common medical treatments for assuaging pain, reducing swelling and relieving fatigue of parts of the body, such as arms, eyes, and others. These techniques are widely utilized in beauty salons, gymnasiums and like establishments for relieving fatigue, tightening of skin over facial areas, and toning up muscles and skin tissue.

The benefits of such heat transfer and/or massaging techniques are desirable to achieve especially in connection with certain intimate parts of the human body not readily accessible for self-treatment. For instance, pregnant women experience frequent and consistent pain and fatigue in mammary glands and vago-abdominal regions which cause considerable discomfort. Such pain and discomfort may be temporarily relieved by applying heat or massaging. These intimate parts of the human body may be constricted in area so that soothing contact therewith in order to massage or heat or cool the same is difficult.

Accordingly, it is a principal object of the invention to provide a portable device for affecting transfer of heat between the device and selected parts of the body and for massaging such parts which by reason of its novel construction is capable of achieving the desirable advantages mentioned above.

Another object of the invention is to provide a portable device of the character described which may be employed successfully safely in self-treatment of parts of the body or by another person without requiring any special skill or training.

Another object of the invention is to provide a portable heat or cold applicator of the character described which is capable of simultaneous use as a massager.

A further object of the invention is to provide a device of the character described which comprises a hollow pre-shaped body or vessel formed of a highly thermal conductive material and provided with advantageously curved and elongated portions so that the device may be brought into intimate contact with ordinarily non-accessible or not conveniently accessible parts of the body.

Another object of the invention is to provide a portable device of the character described having an inlet for introduction thereinto of a heated or cooled liquid or a chemical refrigerant and novel removable closure means for sealing the inlet against leakage of the contents of the device during manipulation thereof.

Other objects of the invention include the provision of a device of the character described which is very economical to manufacture, which can be used conveniently, safely, and expertly even by medically inexperienced persons and which is sturdy and sanitary.

The foregoing and other objects of the invention will become apparent as the description thereof proceeds, in connection with which a preferred embodiment has been described in detail in the specification and illustrated in the accompanying drawings. Such compliance with the patent laws has necessitated specific reference and illustration to structure of the device embodying the invention and hence, it is contemplated that minor variations in such structure may occur to the skilled artisan without departing from the broad principles or sacrificing any of the advantages of the invention.

In the drawing:

Fig. 1 is a top plan view of the combination applicator and massager embodying the invention.

Fig. 2 is a side elevational view of the said device.

Fig. 3 is a sectional view taken through the device along the line 3—3 of Fig. 2, and in the general direction indicated.

Fig. 4 is a sectional view taken through the closure means provided for the said device along the line 4—4 of Fig. 1 and in the direction indicated generally.

Fig. 5 is a fragmentary sectional view taken through the hollow body to show one manner of forming said hollow body from a pair of conjoined body segments.

Referring now to the drawing, the reference character 10 designates generally the device embodying the invention. Same includes a hollow body or vessel 12 having a throat formation 14 providing an inlet or mouth 16 for sealing the vessel during use thereof. There is provided a handle 20 of thermal insulative material, such as wood or plastic, secured to the throat formation by means of which the device is manipulated.

Vessel 12 and formation 14 preferably are formed of a thermally conductive metal, such as aluminum, which also contributes to a light-weight, highly portable implement. Also, aluminum is easily and readily shaped to achieve the pre-determined configuration for the vessel 12.

The configuration of the vessel 12 is very important since the vessel is enabled thereby to be employed for substantially universal superficial treatment of external areas of the human body. The vessel 12 has a modified pear-shaped configuration of which one end 22 is highly rounded or substantially hemispherical. The end 22 is continued forwardly into a tapered or nose-like formation 24, the extremity 26 of which is relatively narrow and rounded. The bottom surface 28 of the vessel is moderately curved concavely from end 22 to extremity 26 with the deepest part of the concave surface 28 being located, approximately in the medial portion of the tapered formation 24. The upper surface 30 of said nose-like extension 24 likewise is curved and sloping upwardly from end 26, and said extension 24 has substantially parallel, vertically arranged side walls 32 which connect with surfaces 28 and 30 along curved junctures respectively. Thus, the vessel 12 is smooth and/or rounded on all surfaces thereof and presents no sharp corners or protuberances.

The end or segment 22 of the device bulges outwardly and is continued upwardly to join with the throat formation 14 on the upper end of said segment 22. As illus-
trated in Fig. 4, the formation 14 is cylindrical in forma-
tion and has a central passageway therethrough, the sur-
faces 36 of which are smooth. The inlet or mouth 16 is
situated at the entrance to formation 14. The upper sur-
face 30 of said extension 24 tapers downwardly at a
steep angle from the formation 14 to the extremity 26.
Referring to Fig. 4, the closing means 15 may be seen
to comprise a cap which includes an annular disc 38 the
diameter of which is greater than the outer diameter of
formation 14. Along the lateral surfaces of said disc
are provided spaced apart recesses or grooves 40 which
function as hand grips for the closure. Depending from
disc 38 is said annular boss or island-like extension 42
the diameter of which is less than the inner diameter
of the passageway through throat 14 and substantially
equal in length to the length of said throat. Adjacent the
bottom end 43 of said boss 42 is provided an annular
groove 44 in which is seated a circular gasket 46 capable
of achieving a sealing connection between boss 42 and
surfaces 36 when the cap is installed.

Gasket 46 is formed from natural or synthetic rubber
or other suitable gasketing material as a ring member
of substantially channel-shaped cross section. The con-
necting web 48 of the gasket is securely seated against
the surface of groove 44. The parallel lateral 50 are
flexible and protrude outwardly of the groove 44 into
a press-fit against surfaces 36 when the closure 18 is
installed. As seen in Fig. 4, the gasket 46 functions to
double a seal by virtue of the legs 50 engaging sur-
faces 36 to prevent leakage and spilling of vestiges
during the installation of the gasket 46 is readily ac-
complished merely by stretching same over end 43 and
snapping same in place in groove 44. It is contemplated
that the annular surface 36 may be modified to provide
for sealing of gasket 44 and have the protruding, flexi-
ble legs or ring annular boss 42 engage the annular surface
of the boss 42 when the cap 18 is introduced into the
throat 14. Likewise, the gasket may be formed with
more or less than two legs, although two such legs 50
have been found adequate.

It is contemplated that the device 10 may be made in
any one of a variety of ways conducive to mass produc-
tion thereof. Shown in Fig. 5 is one manner con-
F. 1807, 01Lplated for making the device. Vessel 12 and formation
14 are formed from a pair of stampings each of which
is suitably shaped to provide one-half of the vessel 12
and formation 14. Considering a vertical plane passing
through the ends 22 and 26 along a medial longitudinal
line of the device, the half of the vessel and formation
14 on opposite sides of the plane would comprise the
shape and size of such a stamping. The suggested
stampings are identified by numerals 59 and 60 respec-
tively in Fig. 5 and when conjoined along matingly
arranged edges 61 and 62 respectively by welding, as in-
dicated at 63, the entire device is completed. The line
of juncture between stampings 59 and 60 may then be
smoothed and the exterior surfaces of the device buffed
and polished to achieve an attractive finish.

The handle 20 may be attached in many different ways.
I have provided the handle 20 with an enlarged segment
51 at its inner end to the lateral surfaces of which are
secured, as by fasteners 52, the separated ends 54 of a
metal strap 56. The strap 56 is formed as a loop with
the bight of the loop tightly engaged around the throat
formation 14. The handle 20 may be provided with an
annular seat 58 as seen in Fig. 4 in which the bight of
loop 56 is accommodated.

The device is used by filling same with a heated liquid
such as water or a refrigerant and seating same by in-
stalling closure 18. Held by insulating handle 20, the
device is easily manipulated. Where filled with a heated
liquid protective boot may be slapped over the vessel
12 to prevent burns or discomfort. The nose section 24
with its tapered extremity 26 is easily and conveniently
applied to such areas of the human body as the entrance
to the ear, the rounded surfaces between the eye and
bridge of the nose, the nasal passages and genital parts.
The flat curved surface 28 is easily conformed to other
parts of the body, such as the abdomen and chest. The
surface 50 is conveniently applied to armpits, crotch
areas, and optional surfaces of the elbow and knees. In
case of the variant curvatures and tapered sections of
the device are individually suitable to enable substantial-
ly universal treatment of exterior areas of the human
body with the device 10. At the same time, the device
may be reciprocated to realize massaging benefits, which
benefits can be realized even without the vessel being
filled.

Heat transfer is highly effective and rapid because of
the thermally conductive metal from which the device
is made. Also, the device retains its heat transfer prop-
erties over periods of time substantially greater than is
realized with conventional ice bags, for instance, forms
of cloth. The device is easily washed and cleansed be-
fore each use thereof thereby being more sanitary.
It is believed the invention has been described in suf-
cient detail to enable understanding thereof and the
manner in which same is to be practiced. The principles
of the invention embodied in the claims hereof have
been elucidated in language in which it is desired be broadly
construed commensurate with the improvement in the
arts and sciences contributed by the invention.
What it is desired to secure by Letters Patent of the
United States is:
1. A portable applicator and massage device of the
character described comprising, a hollow vessel formed
of a thermal conducting metal material and having an
inlet thereunto, removable closure means seated across
the inlet to seal the vessel against leakage of liquid con-
ents thereof, a thermally insulating handle 20 seated
in the vessel and said vessel having a modified, substanc-
tially pear-shaped configuration including a sharply
tapered, nose-like extension at one end thereof, the
bottom surface of said vessel being sub-
stantially flat and concavely curved inwardly along the
length thereof, the extremity of said tapered extension
being rounded, said vessel having an annular upstanding
throat formation containing said inlet, the annular in-
terior surface of said formation being smooth, said
closure means comprising a cap member having an
extension adapted to be telescopically engaged in said
throat formation, gasket means arranged between said
extension and said throat formation, said exterior surface of said formation effecting said seal, said cap member extension and interior sur-
face being spaced apart, said cap member extension hav-
ing an annular seat for accommodating the gasket means
therein, said gasket means having protruding, resilient
lips extending across the space entirely around said cap
member extension to engage against said smooth annu-
lar surface to effect said seal.
2. A portable application and massage device of the
character described comprising, a hollow vessel formed
of a thermal conducting metal material and having an
inlet thereunto, removable closure means seated across
the inlet to seal the vessel against leakage of liquid contents
thereof, a thermally insulating handle secured to the ves-
sel for manipulating same, said vessel having a modified,
substantially pear-shaped configuration including a sharp-
ly tapered, nose-like extension at one end thereof, the
extremity of said tapered extension being rounded, said
vessel having an annular upstanding throat formation
containing said inlet, the annular interior surface of said
formation being smooth over substantially between said area
thereof, said closure means comprising a cap member
having an island-like depending formation telescopically
engaged in said throat formation through said inlet, gasket
means arranged between said depending formation and
said interior surface to effect said seal, said depending
formation and inlet being complementary in configuration albeit, said depending formation being smaller in size, said gasket means comprising a channel-shaped ring member supported on the depending formation, the spaced apart legs of the ring member protruding outwardly into engagement with said annular interior surface.

3. A portable applicator and massage device of the character described comprising, a hollow vessel formed of a thermal conducting metal material and having an inlet thereinto, removable closure means seated across the inlet to seal the vessel against leakage of liquid contents thereof, a thermally insulative handle secured to the vessel for manipulating same, said vessel having a modified, substantially pear-shaped configuration including a sharply tapered, nose-like extension at one end thereof, the bottom surface of said vessel being substantially flat and concavely curved inwardly along the length thereof, the extremity of said tapered extension being rounded, said vessel having an annular upstanding throat formation containing said inlet, the annular interior surface of said formation being smooth, said closure means comprising a cap member having an extension adapted to be telescopically engaged in said throat formation, gasket means arranged between said extension and interior surface of said formation effecting said seal, said cap member extension and interior surface being spaced apart, said cap member extension having an annular seat for accommodating the gasket means therein, said gasket means having protruding, resilient lips extending across the space entirely around said cap member extension to engage against said smooth annular surface to effect said seal, said vessel comprising a pair of conjoined mating half-shell members having abutting peripheral edges, said shells being substantially symmetrical with respect to a medial longitudinal plane taken vertically through the device.

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