A flame lamp using a liquid or wax fuel and including a container for the fuel, and a support means for holding the container. The supported fuel container is positioned into an outer casing and handle means are provided to enable the container in an upright position to be lifted out of the casing. The support means includes spring members to secure the container and prevent movement of the container inside the casing.
FUEL HOLDER FOR FLAME LAMPS

BACKGROUND OF INVENTION

This invention relates generally to flame type lamps and more particularly relates to a holder means for supporting a fuel container inside the lamp. The subject invention is particularly suitable for use with flame lamps utilizing a liquid fuel, which are frequently referred to as artificial candles.

Prior flame lamps using a liquid fuel comprised a fuel can having a removable cap on which a wick holder was mounted, to receive one end portion of the wick and the other end portion thereof extended into the liquid fuel. The fuel can was loosely positioned inside an outer glass receptacle. The can would rattle or shake within the receptacle whenever the lamp was moved or shifted even slightly from one spot to another.

When the fuel in the can of the aforedescribed previous lamps, was fully consumed or nearly depleted, it was required to tilt the receptacle downward to one side so that the fuel can would fall out, or at least slide down to the receptacle opening where it would be manually retrieved. Thereafter, the can was refilled with fuel. Frequently, as the can was being removed, residue fuel would drip or spill on the inside or outside of the receptacle, and often would even drip on to the table or other adjacent surface. Thus, it was necessary to thoroughly clean the lamp prior to reinserting the fuel can into the receptacle after refueling, as well as clean any other areas spotted by the fuel.

The subject invention overcomes the aforedescribed undesirable features of such prior liquid fuel flame lamps by providing a support means that removably secures the fuel container in place inside the lamp and includes means for easily removing the container in an upright position from the lamp. Furthermore, such holder means of the invention herein prevents the fuel container, whether containing a liquid or wax fuel, from moving around inside the lamp, in the event the position of the lamp is varied.

It is therefore a primary object of the subject invention to provide a flame type lamp which is not required to be tilted downward to one side or turned over from its upright stable position, in order to remove a fuel container held inside the lamp. A related object is to remove the fuel container from the lamp in an upright position.

Another object is to provide a lamp having a fuel container therein, which does not rattle or slide around, when the lamp is moved from one spot to another.

Another object is to provide a lamp which secures a fuel container inside the lamp to prevent such container from falling out in the event the lamp tips or falls over.

Another object is to provide a cushion inside the lamp for preventing movement of the various parts of the lamp during use.

BRIEF DESCRIPTION OF THE DRAWINGS

Referring to the drawings in which the same characters of reference are employed to indicate corresponding or similar parts throughout the several figures of the drawings:

FIG. 1 is a front view of a flame lamp embodying the principals of the invention;

FIG. 2 is a perspective view of the support means for the fuel container and showing the container in phantom;

FIG. 3 is a front sectional view of the lamp in FIG. 1 including the outer casing, fuel container and the support means for the container;

FIG. 4 illustrates the support means with the fuel container held therein being lifted out of the casing; and

FIG. 5 illustrates the support means holding a container filled with wax.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now more particularly to FIGS. 1, 2 and 3 of the drawings, the reference numeral 10 indicates generally a flame type lamp using a liquid fuel 11. Lamp 10 includes a base 12, a fuel holder means 14 (FIGS. 3 and 4), a wick holder 16 and a decorative shade 18.

The base 12 has a circular cavity 20 formed therein, to receive the holder means 14 (FIG. 1). A resilient ring 22 secures the holder means 14 in place.

Turning now specifically to FIG. 3, it will be seen that the holder means 14 comprises a support means 24 snugly holding a fuel container 26, and such support means and container are positioned in an outer casing 28 of lamp 10. The casing 28 may be formed of glass or other type non-combustible material, and would normally be colored or have a decorative outer surface 30, and at least partially transparent in order to see light from the burning flame.

The support means 24 comprises a pair of resilient spaced apart fingers 32, 33, extending upward from the periphery of a circular plate 34. Each finger 32, 33 includes a main section 35 and an upper tip 36 bent outward from a pivot line or joint 38. The outer end 40 of the tips 36 contact the inside surface 42 of the casing 28, when the support 24 holding the container 26 is operatively positioned inside the casing 28. Fingers 32, 33 may be formed from a single wire, as shown in FIG. 2, with the intermediate portion 43 of such wire being welded to plate 34.

An elongated resilient handle 44 also extends upward from the periphery of plate 34. The handle 44 includes a body portion 45 and an upper end 46 bent from the body portion 45. Upper end 46 is a right angled shape and includes a horizontal leg 47 bent 90° from body portion 45, and a vertical leg 47' bent 90° from leg 47. Hence, upper end 46 provides a finger grip when lifting the support 24 with the container 26 out of the casing 28 (FIG. 4).

The resilient handle 44 also cooperates with the spring fingers 32, 33 to hold and retain the container 28 in place. Fingers 32, 33 and the handle 44 have a normal-position when not holding the container 28 (not a strained condition), and an operative-position (FIGS. 2 and 3) when holding the container (which is a strained condition). Thus, the operative-position is outward from the normal-position. When container 26 is initially positioned in the support means 24, the fingers 32, 33 and handle 44 are spread outward and then resiliently maintain contact with the outside of the container. The greatest force applied by the fingers 32, 33 is at the joints 38, as may be seen from FIG. 3. This provides a clamping action between the fingers 32, 33 and
container 26. The bottom of the container 26 is seated on the plate 34.

When the support means 24 and the container 26 are positioned in the casing 28 (FIG. 3), the outer ends 40 of the tips 36 of the fingers 32, 33 contact the inside surface 42 of the casing 28, and thus, impart an additional force against the container 26 at the joints 38. Hence, support means 24 is secured inside the casing 28 by the action of tips 36 which cushion and prevent the container 26 from rattling or otherwise sliding and shaking inside the casing 28, when the lamp 10 is moved from one location to another.

An upper cap 50 is screwed on to the neck 52 of the container 26. An opening 53 is formed on the top of the cap 50 to receive the wick holder 16. The upper end portion of a wick 56 is held in place by the wick holder 16 and the lower end portion thereof extends into the liquid fuel 11.

In FIG. 5, the support means 24 is clamped on to a glass 58 containing wax fuel 60. The support means 24 with the wax holding container 58 may be similarly positioned in the casing 28 as shown in FIG. 3 for the liquid fuel holding container 26.

A ridge 62 may be formed on the inside surface 42 of casing 28, as shown in FIG. 3, to provide an abutment for any movement of the support means 24 in the event the lamp 10 falls or is tipped over. The clamping action of the resilient fingers 32, 33 cooperating with resilient handle 44 affords protection against the can slipping out of the support means 24. The force of the tips 36 against the inside surface 42 of the casing 28 provides protection against the support means 24 with the container 26 slipping out of the casing 28. However, in the event the support means slips on the inside surface 42 due for example, to the smoothness thereof, the ridge 62 affords an added safeguard.

Referring now to FIG. 4, it will be seen that by manually applying an upward force at the upper end 46 of the handle 44, the support means 24 and container 26 are lifted out of casing 28. Thus, the container 26 is removed in an upright position from the casing 28, when casing 28 is stable and also upright. No tilting of the casing 28 is required, and hence, no spillage or spotting of any fuel or residue thereof need occur. The container 26 may be replenished with liquid fuel 11 and then re-positioned inside the support means 24, and thereafter inserted inside the upright casing 28.

When reinserting the support means into the casing 28, the tips 36 of fingers 32, 33 bend inward as the support means 24 is moved toward the bottom of casing 28. When the support means 24 is at the bottom, the tips resiliently move outward into an abutting association with the inside surface 42 of casing 28, thereby cushioning and preventing movement of the support means.

The description of the preferred embodiment of this invention is intended merely as illustrative of this invention, the scope and limits of which are set forth in the following claims.

1. In a flame lamp including a fuel holder means containing fuel to be consumed by a flame, said holder means comprising:
   a) a casing;
   b) a container for storing said fuel; and
   c) a support means for securely holding said container in a removable relationship, said support means with said container being removably positioned in said casing, said support means including means for preventing any substantial movement of the support means when the support means holding said container is positioned in said casing.

2. The flame lamp of claim 1, wherein said holder means includes:
   a) means for simultaneously removing said container and support means from said casing.

3. The flame lamp of claim 1, wherein the support means of said holder means includes:
   a) a spring means for resiliently contacting the inside surface of said casing to prevent any substantial movement of the container and support means inside said casing.

4. In a flame lamp including a fuel holder means containing fuel to be consumed by the flame, said holder means comprising:
   a) a casing;
   b) a container for storing said fuel; and
   c) support means for holding said container, said support means and container being removably positioned in said casing, said support means including at least one spring finger having a normal-position and an operative-position, said finger resiliently contacting said container outward from the normal-position when in the operative-position.

5. The flame lamp of claim 4, wherein said finger includes means for restraining movement of the container and support means inside the casing.

6. The flame lamp of claim 5, wherein said finger includes a main section and an upper tip extending outward from said main section, said upper tip contacting the inside surface of said casing when the finger is in said operative position.

7. The flame lamp of claim 6, wherein said finger includes a joint connecting said tip with said main section, the outer end of said tip contacting the inside surface of said casing and said joint contacting said container.

8. In a flame lamp including a fuel holder means containing fuel to be consumed by the flame, said holder means comprising:
   a) a casing;
   b) a container for storing said fuel;
   c) an elongated member rigidly secured at the lower end to said plate and extending upward from the periphery thereof, said container being seated on said plate; and
   d) grip means disposed at the upper end of said member for lifting the container and support means out of the casing.

9. The flame lamp of claim 8, wherein said elongated member is a spring having a normal-position and an operative-position, said member being forced outward from the normal position and resiliently contacting said container when in the operative-position.

10. The flame lamp of claim 9, wherein said elongated member includes a body portion and an upper end portion bent substantially at a right angle from the body portion, said grip means including said upper end portion.

11. In a flame lamp including a fuel holder means containing fuel to be consumed by a flame, said holder means comprising:
   a) a casing;
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a container for storing said fuel;
a support means for holding said container, said sup-
port means and container being removably posi-
tioned in said casing; and
means for preventing said holder means from slipping
out of said casing when said casing changes posi-
tion from an upright stable position to an unstable
position.

12. The flame lamp of claim 11, wherein said pre-
venting means includes a ridge extending inward from
the inside surface of said casing to provide an abutment
for preventing said support means with said container
from passing to the outside of said container except
with an application of an external force.

13. In a flame lamp including a fuel holder means
containing fuel to be consumed by a flame, said holder
means comprising:
a casing;
a container for storing said fuel;
a spring finger including a main section and an upper
tip bent from said main section;
a handle spring member having a body portion and
an upper end bent from said body portion; and
a plate, the lower ends of said finger and handle being
secured to the plate and extending upward from
the periphery of the plate, said finger and said han-
dle each having a normal-position and an opera-
tive-position outward from said normal-position,
said container being seated on said plate and said
finger and handle resiliently contacting said con-
tainer in the operative-position when the container
and support means are positioned in said casing.

14. The flame lamp of claim 13, wherein said upper
tip of the finger contacts the inside surface of said cas-
ing when the finger is in said operative-position.

15. The flame lamp of claim 14, wherein a second
spring finger spaced from the first finger extends up-
ward from the plate and also including a main section
and an upper tip bent from the main section, each of
said fingers including a joint connecting the upper tip
with the main section, the outer ends of the upper tips
of the fingers contacting the inside surface of the casing
and said joints contacting said container when said
holder means is positioned inside the casing.

16. In a flame lamp including a fuel holder means
containing fuel to be consumed by a flame, said holder
means comprising:
a casing;
a container for storing said fuel; and
a single wire bent to provide a pair of resilient end
fingers, said container being operatively positioned
between said fingers in a tight holding relationship.

17. In a flame lamp including a fuel holder means
containing fuel to be consumed by a flame, said holder
means comprising:
a casing;
a container for storing said fuel; and
a support means for removably holding said con-
tainer, said support means and container being re-
movably positioned in the casing, said support
means including spring means for removably secur-
ing said container to the support means and for
preventing any substantial movement of the con-
tainer and support means inside said casing; and
a handle means to enable said container to be in-
serted and removed from said casing in a substan-
tially upright position.

18. A support means for holding a fuel container in
a flame type lamp comprising:
a base;
spring means associated with said base for resiliently
gripping said container in a secure and removable
relationship; and
handle means attached to said base to enable said
container to be inserted into or removed from the
lamp in a substantially upright position.

19. The support means of claim 18, wherein said
flame lamp includes a casing to hold said support
means, said spring means includes:
at least one spring finger having a main section and
an upper tip bent outward from the main section to
form a joint between said tip and main section for
contacting said container, said tip providing an
abutting edge for contacting the inside surface of
said casing, for preventing any substantial move-
ment of said support means in said casing.

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