KETTLE WITH RETAINED SPOUT LID

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Abstract

A kettle has a spout closure movable between open and closed conditions, and an actuator assembly manually operable for effecting movement of the closure between the open and closed conditions, the actuator assembly including a retaining mechanism for retaining the closure in each of its open and closed conditions.
KETTLE WITH RETAINED SPOUT LID

BACKGROUND

[0001] This application relates to spouted vessels, such as teakettles, and in particular, relates to the spout closure mechanism for such kettles.

[0002] Various types of kettles have heretofore been provided, including kettles with spouts having closure mechanisms, such as pivoting lids, for opening and closing a spout. Various types of mechanisms have also been providing for effecting opening and closing of the spout lid or other closure.

[0003] U.S. Pat. No. 6,006,959 discloses a kettle with a pivoting handle coupled to the spout lid, so that when the handle is lifted, such as for lifting the kettle, the weight of the kettle causes the lid to open.

[0004] U.S. Pat. No. 5,490,616 discloses a kettle with a finger-activated trigger coupled to the spout closure for moving it to its open position.

[0005] In the aforementioned pivoting handle arrangement, the spout lid will be opened whenever the kettle is being carried by the handle, which could result in accidental spillage through the spout. Also, in the prior trigger arrangement, the spout lid could accidentally open while the kettle is being carried.

[0006] In both these prior arrangements, the spout lid or other closure will automatically close when the handle or trigger is released. However, it may be desirable that the spout closure remain open, even when the kettle is not engaged by a user's hand, such as to facilitate filling through the spout. It may also be desired that the spout closure be positively retained in a closed position.

SUMMARY

[0007] There is disclosed herein an improved kettle which permits a spout closure to be positively retained in open and closed positions.

[0008] In an embodiment, there is provided a vessel, a spout communicating with the vessel, a handle, a closure movable between open and closed conditions relative to the spout, and an actuator assembly carried by the vessel and coupled to the closure and manually operable for effecting movement of the closure between its open and closed conditions, the actuator assembly including a retaining mechanism for retaining the closure in each of its open and closed conditions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] For the purpose of facilitating an understanding of the subject matter sought to be protected, there are illustrated in the accompanying drawings embodiments thereof, from an inspection of which, when considered in connection with the following description, the subject matter sought to be protected, its construction and operation, and many of its advantages should be readily understood and appreciated.

[0010] FIG. 1 is a perspective view of a kettle with a spout closure in a closed position;

[0011] FIG. 2 is a side elevational view of the kettle of FIG. 1;

[0012] FIG. 3 is a top plan view of the kettle of FIG. 1;

[0013] FIG. 4 is a sectional view taken generally along the line 4-4 in FIG. 3;

[0014] FIG. 5 is a view similar to FIG. 4, with the spout closure shown in the open position;

[0015] FIG. 6A is an enlarged perspective view of the actuator assembly of the kettle of FIG. 1;

[0016] FIG. 6B is a side elevational view of the assembly of FIG. 6A;

[0017] FIG. 6C is a top plan view of the assembly of FIG. 6A; and

[0018] FIG. 6D is a sectional view taken generally along the line 6D-6D and FIG. 6C.

DETAILED DESCRIPTION

[0019] Referring to FIGS. 1-4, there is illustrated a kettle, generally designated by the numeral 10, which is in the nature of a tea kettle. The kettle 10 includes a vessel 11 having a generally dome-shaped side wall 12 closed at the lower end thereof by circular bottom wall 13 for cooperation to define a fluid reservoir. The bottom wall 13 has an upwardly and outwardly inclined peripheral shoulder 14, integral at its upper end with a laterally outwardly extending raised portion 15, at the distal edge of which is formed a peripheral lip or channel 16, which is generally U-shaped in transverse cross section. The lip 16 receives therein the lower edge of the vessel side wall 12 and may be sealed thereto in a suitable manner. The bottom wall 13 may be provided with a raised annular rib 17 (FIG. 4). It can be seen from FIG. 4 that the bottom wall 13 is configured so as to extend below the bottom edge of the side wall 12.

[0020] The side wall 12 is provided centrally of its upper end with a large circular top opening 18, which is defined by an intumet cylindrical lip 19 of the side wall 12. The top opening 18 is closed by a cover 20, which includes a concave wall 21 provided at its periphery with a recurved bead 22 integral with a depending cylindrical skirt 23, which fits snugly inside the cylindrical lip 19, with the bead 22 resting on the side wall 12 around the periphery of the opening 18, as can best be seen in FIG. 4. The concave wall 21 is spanned by a raised, arch-type handle 24.

[0021] A cylindrical spout 25 is integral with the side wall 12 around the periphery of a circular spout hole 26 (FIG. 4), which is disposed adjacent to the top opening 18. The spout 25 may be sealed to the side wall 12 by suitable means and is provided with an open end 27.

[0022] The spout 25 is provided with a closure 30 in the nature of a spout lid, which may be provided with a whistle opening 31. The closure 30 has an elongated lever arm 32, which projects rearwardly of the spout and is provided at its distal end with a pair of teeth 33 (FIG. 4) and with a depending bias finger 34. The lever arm 32 is pivotally mounted adjacent to its distal end by a pivot pin 35 to a handle 40, which spans the top opening 18. The handle 40 has a rear end 41, which fits over a mounting bracket 42 on the side wall 12 diametrically opposite the spout 25, being fixed to said bracket by a fastener 43. The handle 40 also has a front end 44, which fits over a mounting bracket 45 disposed at the junction between the spout 25 and the side.
wall 12, the handle being fastened to the bracket 45, as by a fastener 46. The handle 40 has an aperture 47 formed therethrough, which communicates with a channel 48 formed in the top side of the handle 40 and extending from the aperture 47 to the front end 44. The distal end of the lever arm 32 and the pivot pin 35 are disposed in the channel 48, as can best be seen in FIG. 4.

[0023] Referring also to FIGS. 6A-6D, there is also provided an actuator assembly 50 including a trigger button 51, which has a lower surface 52 and an upper surface 52a joined by a stem 53. The trigger button 51 is disposed in the aperture 47, and also fits through an opening 54 in the rear end of an elongated lever arm 55, which extends into aperture 47, the lever arm 55 being mounted for pivotal movement about the axis of a pivot pin 56 disposed at the rear end of the channel 48. The opening 54 has a large counterbore or recess 57, which seats an enlarged end of the trigger button 51. The lower end of the stem 53 is integral with an outwardly and upwardly extending peripheral wall 58, which terminates at the bottom edge of the lever arm 55 and retains the trigger button 51 securely in the opening 54. The lever arm 55 is provided at its forward end with a pair of teeth 59 disposed for meshing engagement with the teeth 33 of the lever arm 32.

[0024] The bias finger 34 of the lever arm 32 forms a part of a retaining mechanism 60, which also includes an over-center spring 61, which may be in the nature of a leaf spring, having a base 62 fixedly secured to the handle 40 at the bottom of the channel 48, as by the fastener 46, and having a distal end 63 which bears against the distal end of the lever arm 32.

[0025] In operation, when the spout closure 30 is disposed in its normal closed position, illustrated in FIGS. 1-4, closing the open end 27 of the spout 25, the engagement of the teeth 33 with the teeth 59 holds the lever arm 55 pivoted in a clockwise direction, as viewed in FIG. 4, so that the lower surface 52 of the trigger button 51 projects downwardly below the underside of the handle 40. The distal end 63 of the leaf spring 61 bears against the bias finger 34 for urging it and the lever arm 32 toward rotation in a counterclockwise direction about the axis of the pivot pin 35, for resiliently holding the parts in the closed configuration illustrated in FIG. 4. Thus, when the handle 40 is grasped for lifting and moving the kettle 10, the closure 30 cannot accidentally open, as long as the trigger button 51 is not actuated.

[0026] When it is desired to open the closure 30, the user pushes upwardly on the lower surface 52 of the trigger button 51 with an index finger, for example, moving the trigger button 51 upwardly and pivoting the lever arm 55 in a counterclockwise direction, about the axis of the pivot pin 56, as viewed in FIG. 4, thereby overcoming the bias of the leaf spring 61, and pivoting the lever arm 32 in a clockwise direction about the axis of the pivot pin 35, as viewed in FIG. 4 for moving the closure 30 to an open position, illustrated in FIG. 5. When in this open position, the upper surface 52a of the trigger button 51 projects upwardly above the top surface of the handle 40 and the distal end 63 of the leaf spring 61 bears against the rear side of the bias finger 34 for resiliently urging the lever arm 32 and the closure 30 toward rotation in the clockwise direction about the axis of the pivot pin 35, for resiliently holding the parts in the open configuration illustrated in FIG. 5. Thus, the trigger button 51 can be released and a closure 30 will remain open.

[0027] When it is desired to close the closure 30, the upper surface 52a of the trigger button 51 is pushed downwardly, as by the user's thumb, thereby pivoting the lever arm 55 in a clockwise direction, against the urging of the bias spring 61, thereby pivoting the lever arm 32 in a counterclockwise direction, for returning the closure 30 to its closed position, illustrated in FIG. 4.

[0028] From the foregoing, it can be seen that there is provided an improved kettle with a spout closure retention mechanism, which resiliently retains the spout closure in each of open and closed positions, and is manually actuable for moving the closure to the opposite position.

[0029] The matter set forth in the foregoing description and accompanying drawings is offered by way of illustration only and not as a limitation. While particular embodiments have been shown and described, it will be apparent to those skilled in the art that changes and modifications may be made without departing from the broader aspects of applicants' contribution. The actual scope of the protection sought is intended to be defined in the following claims when viewed in their proper perspective based on the prior art.

What is claimed is:

1. A kettle comprising:
   - a vessel,
   - a spout communicating with the vessel,
   - a handle on the vessel,
   - a closure movable between open and closed conditions relative to the spout, and
   - an actuator assembly carried by the vessel and coupled to the closure and manually operable for effecting movement of the closure between its open and closed conditions,
   - the actuator assembly including a retaining mechanism for retaining the closure in each of its open and closed conditions.

2. The kettle of claim 1, wherein the actuator assembly is disposed on the handle.

3. The kettle of claim 1, wherein the closure is mounted for pivotal movement between its open and closed conditions.

4. The kettle of claim 3, wherein the closure is mounted on the handle.

5. The kettle of claim 1, wherein the actuator assembly is disposed for pivotal movement relative to the handle.

6. The kettle of claim 5, wherein the actuator assembly projects downwardly beneath the handle in a first position corresponding to the closed condition of the closure for actuation by a finger of a user's hand,

   - the actuator assembly projecting upwardly above the handle in a second position corresponding to the open condition of the closure for actuation by the sum of a user's hand.
7. The kettle of claim 1, wherein the actuator assembly includes a first lever and the closure includes a second lever engageable with the first lever.

8. The kettle of claim 7, wherein the first and second levers respectively have first and second teeth disposed in meshing engagement with each other.

9. The vessel of claim 1, wherein the retaining mechanism includes an over-center spring and engageable with the closure for resiliently retaining it in each of its open and closed conditions.

10. The kettle of claim 8, wherein the spring is a leaf spring.

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