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HINGED WHISTLE CONSTRUCTION

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7 Claims. (Cl. 126—388)

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This invention relates to a closure for a vessel, such as a teakettle, having a comparatively wide pouring mouth and same herein is illustrated as formed in a spout, but the invention is not necessarily restricted thereto.

One object of this invention is to provide a cover that will facilitate the pouring of a minute stream without interference or drippage and which will permit pouring as from a teakettle without requiring hand contact to remove or open the closure.

Another object of this invention is to provide a cover for a teakettle wherein excessive steam pressures, such as generated when little water is in the kettle, will be vented automatically before the explosive stage is reached.

A further object of this invention is to provide such a cover which will be of audible warning type.

A still further object of this invention, in one form, is to position the whistle formation so that in pouring the formation is normally above the level of the water being poured.

A still further object of this invention is to provide a whistle of self-draining type.

A further object of this invention is to position the whistle formation and drain vent relative to each other so that air venting of the cover including chamber is effected.

Another object of this invention is to provide a cover that can be permanently applied to the vessel to prevent loss of the cover, but which cover is so connected to the vessel that the cover may be readily positioned in a non-closing position and automatically held therein for vessel filling. Such a connection also prevents insect entrance to the vessel.

The chief feature of the present invention resides in the cover and its support, etc., whereby any or all of the aforesaid objects are accomplished.

Other objects and features of the invention will be set forth more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawing Fig. 1 is a side elevation of a handled vessel with the invention applied thereto and in spout closing position, the vessel spout being inclined at approximately forty-five degrees.

Fig. 2 is an enlarged central sectional view of one embodiment of the vessel closure including one form of closure support, one form of closure and one form of spout.

Fig. 3 is a top plan view of said closure.

Fig. 4 is a similar view of a modified form of a closure.

Fig. 5 is a similar view of a further modified form of closure.

Fig. 6 is a central sectional view of a second form of closure support and spout.

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Fig. 7 is a similar view of a further modified form of closure support and spout.

In Fig. 1 of the drawings 10 indicates a glass vessel having a 45° pouring and filling spout 11 with spaced beads 11a and a flat faced end 12 forming a comparatively wide mouth for filling and pouring purposes. A band 13, for example, encompasses the spout or neck 11 between spaced beads 11a and the band ends 13a nest in grooves 14 formed in base 15 of handle 16. This base includes a notch 17 through which extends clamping means 18 that engage the exteriors of ends 13a of the band 13 and clamp the handle and bands together and upon the kettle 10.

One form of cover is illustrated in Figs. 2 and 3. Herein same includes a sealing plate 20 having, as it were, a heart-like or inverted tear drop outline shape, see Fig. 3. An upper plate 21 has a similar but smaller outline and the projecting portion of plate 20 is turned upwardly as at 22 to seat plate 21 and then the edge is turned back over the edge of plate 21 as at 23. This forms a smooth side edge and stiffens the structure, permitting the use of comparatively thin sheet metal, such as aluminum for example.

Note that this shape of the cover permits the mouth to have a V-shaped pouring lip 19 and still be closed by the cover. This is impossible with present detachable whistle type closures now employed. However, this shape also has utility with a circular sectioned spout as hereinafter pointed out.

Plate 20 has a circular embossment 24 projecting into the spout 11 and it is rounded as at 24a to facilitate automatic location and seating. The spout nested central portion may, if desired, be dished as at 25 and centrally thereof in drawn neck 26a is a small aperture 26. This in area is much smaller than the present conventional whistle structure aperture, because the present invention is of safety type, that is it automatically relieves excessive pressures, whereas standard structures do not possess this inherent safety feature and, accordingly, must provide a larger area whistling aperture.

The upper plate 21 is also outwardly embossed as at 27 and this also may be of concave character as illustrated. The central portion is dished further at 28a and centrally apertured at 28. This is of slightly larger area than aperture 26. Dishing the embossments towards each other brings the apertures closer together. This means less steam pressure is required for whistling purposes. The smaller apertures likewise have the same advantage. Thus very shortly after steam initially is formed, whistling or warning occurs.

Opposite the tip T or lowermost portion of the cover is the highest or back portion B. Adjacent the same is the elongated slot 29. Herein a strap member 30 externally of the spout and opposite lip 19 thereof extends upwardly through the slot

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and is curved upwardly and rearwardly and thence downwardly and forwardly forming a loose hinge 31 for the cover. The lower end of strap 30 is offset as at 32 and same seats in notch 17 in base 15 of the handle.

Thus the curled end 31 of strap 30 hingedly supports the cover adjacent the mouth of the spout and the curl is such that pressure tending to elevate the cover merely tilts it for pressure release. This permits automatic venting of excessive pressure. The curl, coupled with the inner embossment and its rounded edge, prevents excessive displacement of the cover relative to the mouth and insures guidance for return seating of the cover.

Since the whistling apertures are herein centrally positioned, and frequently, when the kettle is filled, the whistle chamber, in the pouring, is partially filled, said chamber is vented by a minute vent 33 at or near the low end of the whistling chamber.

Since capillary attraction and other phenomena have certain effects on the closure, if desired, same may be weighted. Herein a quadrant-like weight plate 34 is staked or otherwise secured at 35 to embossment 25. To prevent interference with the whistle formation this weight is cut out or away at 35 adjacent aperture 25. The center of arcuate face 34a is the axis of the hinge or curl 31 and the radius is such that for all relative tilted positions of the cover, the weight clears the spout interior.

When the kettle is to be filled the cover is tilted upwardly and rearwardly and when tip T lies against handle 15 back face 34b of weight will not interfere with the filling operation by obstructing the spout or area thereabove. Also, when the spout is vertically positioned for filling, this weight serves to maintain the cover in the open position for filling since the center of gravity of the cover and weight is then located to left of hinge axis, see Fig. 1. Manual retention of the cover in this position for filling thus is not required.

Note also that the weight is so associated with the cover that only a tilting of about five degrees clockwise of the vessel from the position shown in Fig. 1, will serve to automatically tilt the cover on its pivot so that tip T is separated from lip 19.

This tip T also serves as a water guide and even the smallest stream poured will follow from the spout or lip thereof to the tip. Hence, the spout will be of non-dripping character. Also, the weight being of plate form with cutout 35 therein, whistle operation is not effected. Further, this form is parallel to water flow from the spout and causes a minimum of obstruction, in fact it serves as direction element for diverting water for lip discharge of the kettle when tilted, as well as tipped in the pouring operation.

With a loose hinge construction, as specified, the embossing 24 with its rounded portion 24a and the arcuity of face 34a of weight 34 each serve to facilitate closure location, proper seating and spout sealing.

From the foregoing it will be evident that when the kettle is heated, the water first boils and steam generated expels air from the vessel, this expelled air and discharging steam then has sufficient velocity to cause whistle operation. Continued heating then creates a pressure that overcomes the mass and weight of the closure and weight, capillary attraction, etc., and the cover tilts relieving the excess pressure. This action then is continuous resulting in intermit-

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tent whistle operation that sounds like a twittering or warbling. The housewife knows when the initial whistling is produced that the water is boiling and that when twittering occurs fuel is being wasted.

The form of support for the cover herein has the advantage that it readily accommodates itself to variations in spout length and other slight imperfections common to the glass vessel industry.

The invention is shown applied to a 45° spout. It can be applied to a spout at any angle to the horizontal, not excluding the vertical, and function satisfactorily. The preferred position of the hinge is at the top, but it need not be. It may be otherwise located and the cover function satisfactorily.

When the whistle apertures are centrally positioned, same are liable to permit filling of the whistling chamber when a full kettle is heated and a portion poured off for one use. Accordingly, it is desirable to position these whistle openings at the high point of the embossment 27. Such an arrangement is indicated at 226 and 228 in Fig. 5 and at 126 and 128 in Fig. 4. In each of these instances, the back edge 234b and 134b of weight 234 and 134, respectively, if utilized, is offset from the aligned apertures for non-interference with whistle operation.

Referring to Fig. 5, it will be noted that embossment 227 is also heart or inverted tear drop shape, while the inner embossment 225 is still circular. With a lipped spout, it also could be heart shaped and naturally the lip 19 would facilitate cover seating. The heart-shaped form has the advantage that its tip is not as high as the apertured portion so that drainage to and through vent 233 at the tip is facilitated. As stated, positioning of the whistle apertures near the hinge axis and having same at the high point reduces materially the chances of flooding the whistle.

Each of the several covers previously described, of which three are illustrated herein, may, when required, be mounted other than by a strap 30 and handle anchoring band. In Fig. 6, for example, opposite sides of the spout 311 may be provided with a Y-shaped inverted groove 311a forming, in effect, a bayonet slot. A metal sleeve 313 herein includes inwardly directed diametrical positioned embossments or indentations forming bayonet pins 318 seatable in the slots 311a and lockingly securing sleeve 313 to the spout.

Herein, rigid with sleeve 313, is strap 330 terminating in the upwardly and outwardly offset curl or hinge-forming portion 331 to which any one of the aforesaid covers may be secured. If desired, sleeve 313 may have an inwardly directed flange 313a overlying mouth 312 of spout 311. This provides a preformed seat for the cover and eliminates the effect of any mouth irregularities. Of course, sleeve 313 herein closely envelopes spout 311 so leakage therebetween is negligible.

In Fig. 7 another form of support is illustrated, which is associated with a circular sectional spout 411. Herein tube 413 is frictionally seated therein and an outwardly directed flange 413a on the end thereof overlies and bears upon mouth 412. Extending upwardly and rearwardly therefrom is the curl or hinge 431. Whenever desired, of course, see dotted lines, the sleeve or tube 413 may be positioned externally of the spout. In this event the cover seat may still be flange 413a, or may be mouth 412, as desired. Naturally, any

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one of the covers described may be utilized with this form of anchorage.

It is again pointed out that the basic embodiment of the invention is not restricted to the heart or inverted tear drop outline of the cover, nor to the whistle formation projecting from both sides of the cover, nor to the weight addition, nor to the seepage vent provision, nor to any particular form of hinge or curl support, but the same is directed to an offset hinged cover and one having a whistle formation, and one that is relatively permanently secured to the spout so that detachment for either filling or pouring, or both, is not required and which automatically relieves excessive pressure.

While the invention has been illustrated and described in great detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character.

The several modifications described herein as well as others which will readily suggest themselves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. In combination with a vessel of wide mouth character for pouring from and filling through the mouth thereof, a mouth cover therefor, means pivotally supporting the cover for mouth closure, the weight of the cover when in mouth covering position normally constraining said cover to mouth closing position, and separate weight means carried by the cover and normally disposed in the mouth for constraining the cover to mouth closing position, but permitting mouth discharge of the vessel contents when the mouth is sufficiently tilted, said cover having a whistle formation included therein, the weight means insuring whistling.

2. In combination with a vessel of wide mouth character for pouring from and filling through the mouth thereof, a mouth cover therefor, means pivotally supporting the cover for mouth closure, the weight of the cover when in mouth covering position normally constraining said cover to mouth closing position, and separate weight means carried by the cover and normally disposed in the mouth for constraining the cover to mouth closing position, and insufficient in amount to prevent automatic pressure venting, by cover tilting when a predetermined pressure is attained in the vessel, said cover having a whistle formation included therein, the weight means insuring whistling.

3. In combination with a vessel having a comparatively wide pouring mouth in an inclined plane, a cover for the mouth and normally gravity constrained to mouth closing position, means hingedly supporting the cover at the high portion thereof, and a whistle formation carried by the cover, the whistle formation being positioned adjacent the hinge means and having a drainage vent opposite the hinge means.

4. In combination with a vessel having a comparatively wide pouring mouth in an inclined plane, a cover for the mouth and normally gravity constrained to mouth closing position, means hingedly supporting the cover at the high portion thereof, and a whistle formation carried by the cover, the cover being of heart outline with the tip lowermost and projecting laterally be-

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yond the mouth and also having opposite therefrom a portion projecting laterally beyond the mouth and oppositely of the tip, the last mentioned portion having operative connection with the hinge means outside of the mouth, the whistle formation having a drainage vent at a low portion of the formation, same exteriorly being of heart outline with the vent at the tip thereof.

5. In combination with a vessel having a comparatively wide pouring mouth in an inclined plane, a cover for the mouth and normally gravity constrained to mouth closing position, means hingedly supporting the cover at the high portion thereof, and a whistle formation carried by the cover, the whistle formation having a drainage vent at a low portion of the formation, said formation interiorly and exteriorly having registering apertures centrally positioned relative to the mouth when the cover is seated thereon.

6. In combination with a vessel having a comparatively wide pouring mouth in an inclined plane, a cover for the mouth and normally gravity constrained to mouth closing position, means hingedly supporting the cover at the high portion thereof, said cover comprising a pair of plates peripherally secured together, and a whistle formation carried by the cover, said whistle formation comprising opposed plate embossments projecting oppositely from opposite faces of the cover, the inner face projection portion of said formation nesting in the vessel mouth, the faces of said formation being dishd towards each other and having registering apertures positioned relatively close together, the inner aperture being smaller than the outer aperture.

7. Structure as defined by claim 6 wherein the cover is substantially heart-shaped in outline with the tip disposed downwardly, the whistle formation immediately contiguous thereto including a drainage vent in the inner projecting portion.

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