

Nov. 19, 1929.

S. H. LARSEN

1,736,350

CLOSING DEVICE FOR CONTAINERS MADE OF ALUMINUM OR OTHER SOFT METALS

Filed Oct. 25, 1925

2 Sheets-Sheet 1

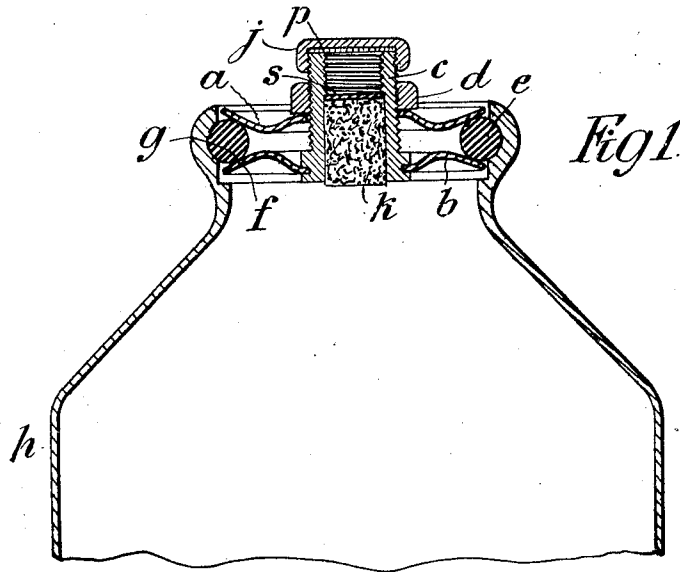
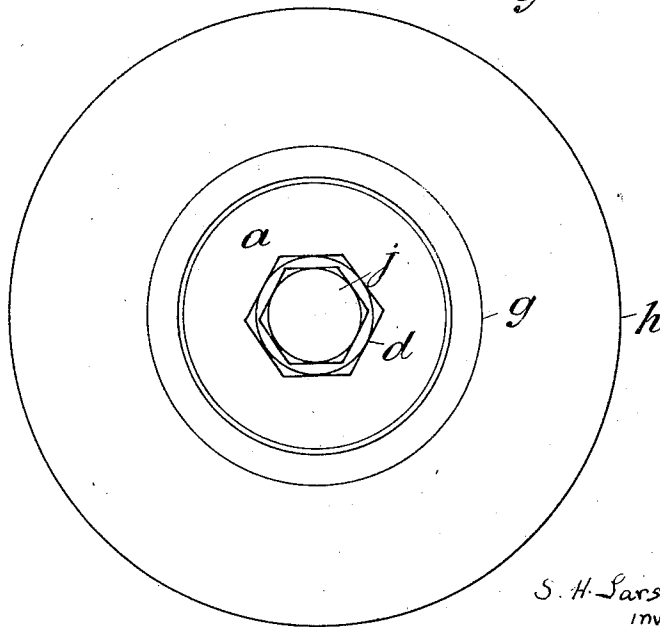


Fig 2



S. H. Larsen  
inventor

By: Markes & Clerk  
Attys.

Nov. 19, 1929.

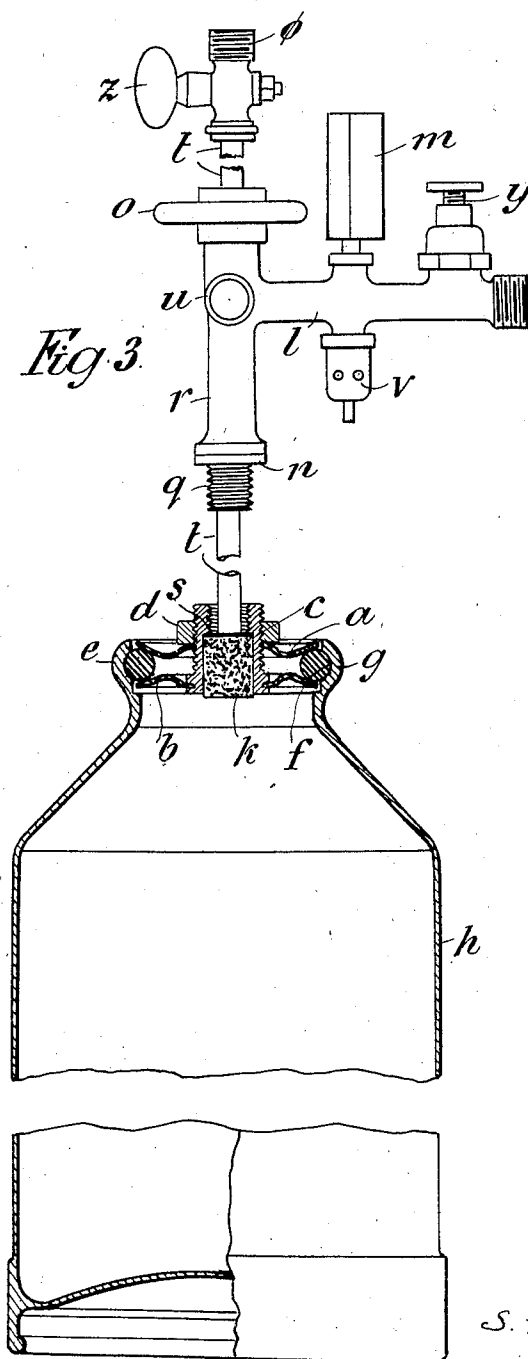
S. H. LARSEN

1,736,350

CLOSING DEVICE FOR CONTAINERS MADE OF ALUMINUM OR OTHER SOFT METALS

Filed Oct. 25, 1926

2 Sheets-Sheet 2



S. H. Larson  
inventor

By: Marks & Clerk  
Attys.

## UNITED STATES PATENT OFFICE

SVEND HØEG LARSEN, OF FREDERIKSBERG, NEAR COPENHAGEN, DENMARK, ASSIGNOR  
TO AKTIESELSKABET DE FORENEDE BRYGGERIER, OF COPENHAGEN, DENMARK

## CLOSING DEVICE FOR CONTAINERS MADE OF ALUMINUM OR OTHER SOFT METALS

Application filed October 25, 1926, Serial No. 144,078, and in Denmark February 26, 1926.

The closing of containers made of aluminum or other soft metals by means of screwed-on lids have proved unpractical, because the thread quickly becomes worn. As the lid  
5 moreover—for instance in beer containers, out of regard to the process of broaching—cannot very well be made of the same soft metal as the container, but must be made of a harder metal, this fact gives rise to the  
10 drawback that electrolytic action may be produced when the two different and heterogeneous metals come in contact with each other, such action causing corrosion of one of the metals.

15 The invention has for its object to avoid the said corrosion of one of the two metals, and consists in a special tightening lid for containers of the said nature, more especially beer containers, the metal parts of the said  
20 lid being so dimensioned that they, when the lid is in its tightened condition, will have no electric connection with the container.

The lid may suitably be of that kind in which a packing ring or the like is pressed  
25 against the container by a top part and a bottom part, and the said two parts are then made with a diameter which differs essentially from that of the corresponding container. The container may, in order to secure the  
30 position of the lid, be provided with a groove into which the packing ring is pressed, the said groove being so adapted that the bottom part of the lid is moved out of touch with the container during tightening operations.

35 The invention is illustrated in the accompanying drawings, viz:

Fig. 1 shows, in vertical section, a constructional form of a tightening lid according to the invention, fitted to a beer container,

40 Fig. 2 shows the same constructional form, as seen from above, and

Fig. 3 shows, on a reduced scale, the tightening lid in connection with the mechanism for broaching the cask or container.

45 The lid consists of a top part and a bottom part, both of essentially smaller diameter than the surrounding part of the container to ensure that they do not touch the container. The top part has essentially the form of a  
50 disc *a*, perforated in the middle, while the

bottom part is formed essentially as a sort of plug *c* which projects upwards through the top part and is provided with a flange or collar *b*, at the same time being threaded to receive a nut *d* by means of which the actual  
55 tightening operations are done. The edges of the disc *a* and the flange *b* are so curved or shaped that two conical surfaces appear. A packing ring *e*, made for instance of caoutchouc, is placed between these surfaces,  
60 and during tightening operations this ring is pressed into a groove *f* provided in the edge *g* of the container *h*. The said groove is circular in section, corresponding to the  
65 section of the packing ring. The shown arrangement of the symmetrical and conical surfaces causes a good fit between ring *e* and groove *f*, and this, again, secures the lid in its proper position.

70 It will be seen in the drawing that when the lid is tightened the two parts of the lid will not touch the container at any point, whereby the above mentioned electrolytic action is completely avoided.

75 In order to allow the cask or container to be broached the plug *c* is perforated, the lower part of the hole having smooth sides while the upper part is threaded. A metal disc *s* and a cork stopper *k* are placed in the lower part of the hole, where the sides are smooth.  
80 The plug *c* is closed at the top by means of a cap *j* with packing or gasket *p*.

Fig. 3 shows the broaching mechanism. It consists of a tube or pipe *r* provided at the bottom with a packing *n*, made for instance  
85 of caoutchouc, and threads *q*, so that the tube by means of the handle *u* may be screwed down into the plug *c*. The tube *r* is provided with a branch *l* through which carbon dioxide may be admitted under pressure, the  
90 branch pipe being provided with a pressure gauge *m*, safety valve *v* and stop cock *y*. The broaching pipe *t* proper is placed inside the tube *r*, the broaching pipe moving in a packing provided at the top of the tube *r*; the  
95 hand wheel *o* serves to secure the pipe *t* in the desired position. At the top the pipe *t* is provided with a stop cock *z* and threads *ø* for connection to the beer outlet cock. The broaching, which must be done in such a man-  
100

ner that it is possible to remove a larger or smaller quantity of beer from the container without any atmospheric air being admitted to the container, is performed in this way that the tube *r* is first screwed into the plug *c*, whereby the stopper *k* is moved some little distance downwards; after this the pipe *t* is moved downwards so that it carries the stopper *k* out of the plug *c*. The pipe *t* is moved downwards almost to the bottom of the container and the hand wheel *o* is tightened. When carbon dioxide under pressure is now admitted through the branch pipe *l* and the tube *r*, it will press the beer upwards through the pipe *t*, and when the stop cock *z* is opened the desired quantity of beer may be drawn off.

As long as there is any beer in the container the lid (parts *a* to *e*) remains in position in the container as above described, well-tightened; and the container will thus be continually shut off from the outer air.

It should be noted that the invention is not restricted to the constructional form described and illustrated in the accompanying drawing; it may be performed in various different ways without deviating from the principles of the invention.

I claim:

A device of the character described including in combination, a containing body of soft metal having a neck provided with an annular shoulder and with an annular groove situated slightly above the shoulder, the bottom of the groove being transversely curved, an adjustable clamping lid of hard metal including a central plug, top and bottom flared disc like parts of a diameter greater than the diameter of the shoulder and less than the diameter of the mouth of the body so that when in an untightened condition the lid rests on the shoulder, the bottom disc part being rigid with the plug and the upper disc part being apertured and movable on the plug, a packing ring circular in cross section situated between the flared portions of the top and bottom disc-like parts, and a clamping element adjustably engaged with the upper projecting portion of the plug for drawing the disc-like parts toward each other so that owing to the loose mounting of the upper part and the circular cross-sectional shape of the ring the latter moves upwardly and outwardly into engagement with the groove thereby raising the lower disc-like part out of contact with the shoulder to avoid corrosion of one of the metals as a consequence of electrolytic action.

In testimony whereof I affix my signature.

SVEND HØEG LARSEN.