

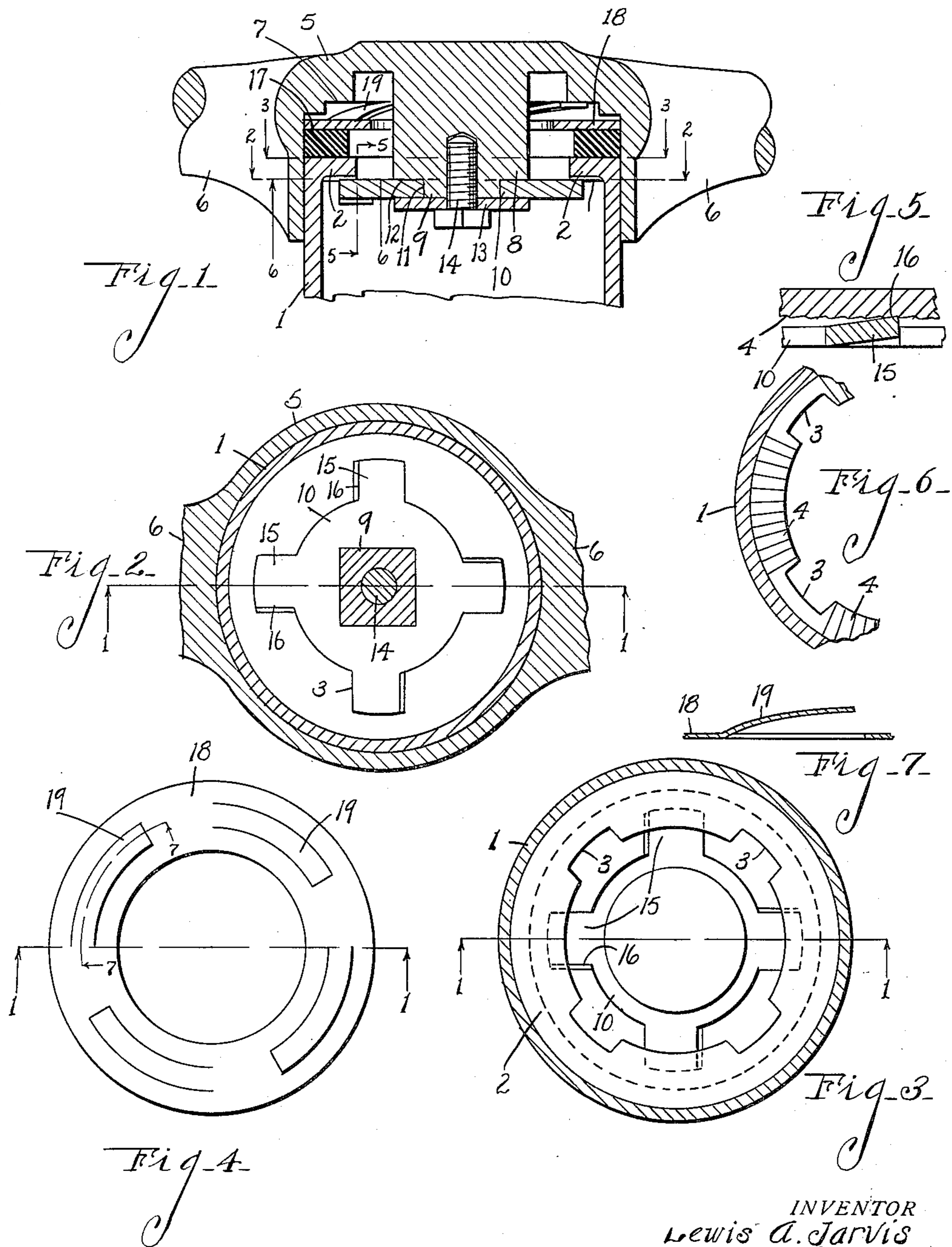
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CLOSURE FOR RADIATORS AND THE LIKE

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# UNITED STATES PATENT OFFICE

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## CLOSURE FOR RADIATORS AND THE LIKE

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The main object of this invention is to provide an improved closure for radiators, tanks and the like which eliminates the necessity for threading or screwing upon the neck of a radiator or tank; at the same time permits adjustment of the cap to properly present ornamental or projecting parts.

A further object is to provide a cap having these advantages which is effectively retained in its position of adjustment and at the same time is capable of quick attachment and detachment.

Objects relating to details and economies of my invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view partially in vertical section on line 1—1 of Figs. 2, 3 and 4, of a radiator cap embodying the features of my invention.

Fig. 2 is a horizontal section on line 2—2 of Fig. 1.

Fig. 3 is a horizontal section on line 3—3 of Fig. 1.

Fig. 4 is a plan view of the thrust member for applying yielding pressure to the gasket and for holding the cap in its adjusted positions.

Fig. 5 is a detail section on line 5—5 of Figs. 1 and 2.

Fig. 6 is a detail section on line 6—6 of Fig. 1.

Fig. 7 is a detail section of the spring thrust member on line 7—7 of Fig. 4.

In the embodiment illustrated, 1 represents the neck of a radiator having an inturned flange 2 at its upper end providing a gasket seat. This flange has uniformly spaced notches 3 therein providing a plurality of segmental lugs, the faces of these lugs being in the same plane; that is, they are without pitch. The under sides of the lugs are pro-

vided with serrations 4, as illustrated in Figs. 5 and 6.

The cap 5 illustrated has projecting arms 6. These are illustrated as plain arms but it will be understood that the cap may carry any suitable ornamentation or an instrument such as a water gage or the like. This cap has an internal annular stepped shoulder 7 and a depending centrally disposed boss 8. This boss is shouldered at its lower end to produce a non-circular reduced portion 9.

On this reduced portion I mount a retaining member 10 having a non-circular central opening 11 to receive the reduced portion 9 of the boss 8, the retaining member being clamped upon the shoulder 12 formed by the reduced portion 9 by means of the washer-like disc 13 and the screw 14.

The retaining member has radially projecting arms 15 spaced to correspond with the notches 3 in the flange so that they may be passed through the notches and engaged with the lugs by a rotating movement of the cap. The arms 15 are preferably given a slight twist so that their edges 16 will effectively engage the serrations.

The annular gasket 17 is arranged within the cap to engage the end of the neck. The annular thrust member 18 engages this gasket applying yielding pressure thereto and also a yielding pressure to the retaining member for yieldingly holding the retaining member against the under side of the flange. This thrust member 18 is provided with a plurality of springs 19 preferably struck up therefrom as illustrated, these spring fingers engaging the inner step of the shoulder 7.

With the parts thus arranged, the engaging arms of the cap are rigid or non-yielding and are fixedly mounted on the cap. It is unnecessary to provide the lugs on the neck with pitch as the yielding thrust member not only acts to yieldingly urge the gasket upon its seat but also yields to permit the

engagement of the arms with the lugs and acts to hold them in their adjusted position thereby rendering it entirely practical to provide the cap with ornaments as they can be properly presented and it is unnecessary to accurately position the neck in assembling as has heretofore been the case with structures of this type.

I have not attempted to illustrate or describe various modifications and adaptations of my improvements which are possible as it is believed this disclosure will enable those skilled in the art to embody or adapt the same as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination of a neck having an inturned flange at its outer end notched to provide a plurality of inwardly projecting segmental lugs having faces disposed in the same plane, the faces of said lugs being serrated, a chambered cap having a centrally depending internal boss shouldered at its lower end to provide a non-circular reduced portion, a retaining member having radial lug-engaging arms and a central opening engaged with said reduced portion of said boss and corresponding in shape thereto whereby it is held against rotation thereon, means for clamping said retaining member against said shoulder of said boss, an annular gasket coacting with the end of the neck, and an annular thrust member for said gasket provided with a plurality of supporting springs for applying yielding pressure to the gasket and yielding to permit the arms being passed through the notches of said flange and engaged with said lugs with a rotary motion and acting to hold said arms in engagement with said serrations in said lugs, whereby said cap may be rotated to any desired position, the serrations coacting with the arms to hold the cap in its adjusted position.

2. The combination of a neck having an inturned flange at its outer end notched to provide a plurality of inwardly projecting segmental lugs having serrated faces, a chambered cap having a centrally depending internal boss shouldered at its lower end to provide a non-circular reduced portion, a retaining member having radial lug-engaging arms and a central opening engaged with said reduced portion of said boss and corresponding in shape thereto whereby it is held against rotation thereon, means for clamping said retaining member against said shoulder of said boss, an annular gasket coacting with the end of the neck, and an annular thrust member for said gasket provided with a plurality of supporting springs for applying yielding pressure to the gasket and yielding to permit the arms being passed through the notches of said flange and engaged with said lugs with a rotary motion

and acting to hold said arms in engagement with said lugs, whereby said cap may be rotated to any desired position, the serrations coacting with the arms to hold the cap in its adjusted position.

3. The combination of a neck having an inturned notched flange at its outer end providing a plurality of segmental lugs having faces disposed in the same plane, the faces of the lugs being serrated, a chambered cap having a central depending internal boss, a retaining member fixedly mounted on said boss and provided with radial lug-engaging arms, said arms being twisted to present the edges thereof to said serrations, an annular gasket coacting with the end of the neck, and a thrust member for yieldingly supporting said gasket and yielding to permit the arms being passed through the notches of said flange and engaged with said lugs with a rotary motion and acting to hold said arms in engagement with said serrations in said lugs, whereby said cap may be rotated in any desired position, the serrations coacting with the arms to hold the cap in its adjusted position.

4. The combination of a neck having an inturned notched flange at its outer end providing a plurality of segmental lugs having serrated faces disposed in the same plane, a chambered cap having a central depending internal boss, a retaining member fixedly mounted on said boss and provided with radial lug-engaging arms, an annular gasket coacting with the end of the neck, and a thrust member for yieldingly supporting said gasket and yielding to permit the arms being passed through the notches of said flange and engaged with said lugs with a rotary motion and acting to hold said arms in engagement with said lugs, whereby said cap may be rotated to any desired position, the serrations coacting with the arms to hold the cap in its adjusted position.

5. The combination with a neck having a plurality of internal segmental lugs, the faces of which are serrated and lie in the same plane, of a cap having a depending internal centrally disposed boss, a retaining member fixedly mounted on said boss and provided with radially projecting lug-engaging arms, an annular gasket coacting with said neck, and a spring supported annular thrust member for said gasket applying yielding pressure thereto and yielding to permit engagement of said arms with said lugs and acting to urge said arms against said lugs, whereby said cap may be rotated to any desired position, the serrations coacting with the arms to hold the cap in its adjusted position.

6. The combination with a neck having a plurality of internal lugs the faces of which are serrated throughout and lie in the same plane, of a cap having a depending internal centrally disposed boss, a retaining plate

non-rotatably mounted on the end of said boss  
and provided with twisted radially projecting  
lug-engaging integral arms, a gasket coact-  
ing with said neck, and a spring yielding to  
5 permit engagement of said arms with said  
lugs and acting to urge said arms against said  
lugs, whereby said cap may be rotated to any  
desired position, the serrations coacting with  
the arms to hold the cap in its adjusted po-  
10 sition.

In witness whereof I have hereunto set my  
hand.

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