Dec. 6, 1932. M. B. ANDRIE 1,889,848

CLOSURE FOR RADIATOR NECKS AND THE LIKE

Filed April 15, 1929

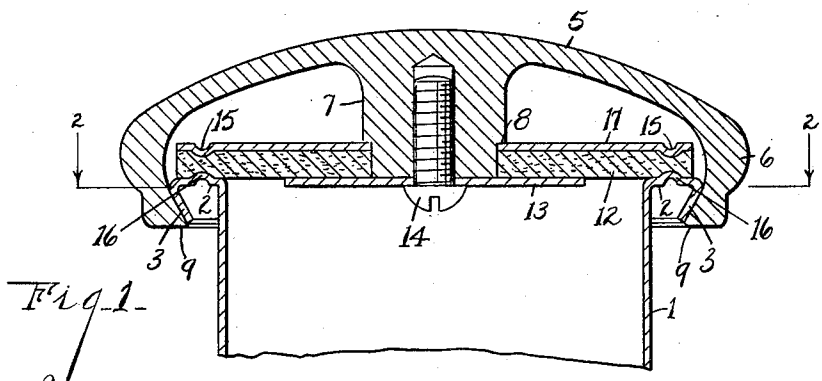


Fig. 1.

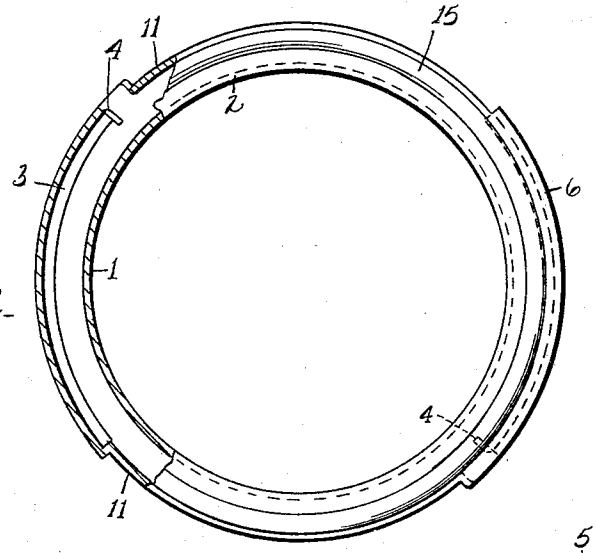


Fig. 2.

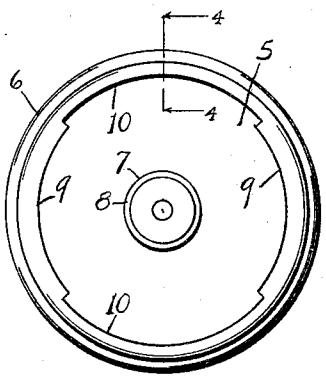


Fig. 3.

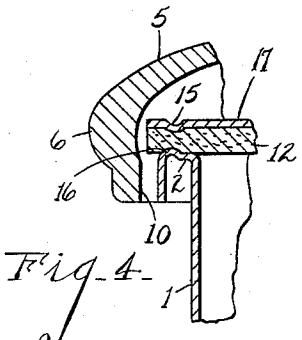


Fig. 4.

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Patented Dec. 6, 1932 1,889,848

UNITED STATES PATENT OFFICE

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CLOSURE FOR RADIATOR NECKS AND THE LIKE

Application filed April 15, 1929. Serial No. 355,105.

The main objects of this invention are:

First, to provide a closure for radiator necks, oil tanks and the like, which may be very quickly applied or removed, the neck or opening being very effectively sealed.

Second, to provide a closure having these advantages in which the parts are very simple and economical in structure and easily assembled, and at the same time are very strong and durable.

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

A structure which embodies the features of my invention is clearly illustrated in the accompanying drawing in which:

Fig. 1 is a vertical central section through a radiator closure embodying the features of my invention.

Fig. 2 is a fragmentary plan view of the neck partially in section on a line corresponding to line 2—2 of Fig. 1.

Fig. 3 is an inverted view of the cap with the closure disk and gasket or packing disk omitted.

Fig. 4 is a fragmentary section on line 4—4 of Fig. 3.

In the accompanying drawing the embodiment illustrated is such as I employ for radiator openings and the like. It will be understood that my improvements have very wide adaptability but it is believed that this disclosure will enable such adaptation as may be desired.

The neck 1 is provided with an out-turned flange 2 providing an annular gasket seat. On the outer edge of this flange I form two or more segmental downwardly converging or downwardly tapered male joint or coupling members 3. These coupling members 3 are in the form of a flange-like projection on the outer edge of the flange 2 and are provided with stops 4 at corresponding ends thereof.

The cap 5 is provided with a downwardly projecting flange-like rim 6 and with a central depending shank 7 shouldered at 8. The rim or flange of the cap is provided with segmental inwardly projecting downwardly converging socket coupling members 9 engageable and disengageable with the male coupling members 3 of the neck by relative rotation of the parts.

The flange of the neck is provided with segmental recesses 11 of such length as to receive the segmental parts 9 of the cap so that the cap may be placed on the neck and given a quarter turn, bringing the joint members of the cap and neck into engagement and applying sealing and clamping stress to the closure disk 17.

This closure disk is seated on the shoulder 8 of the shank, the disk-like gasket 12 being arranged on the under side thereof and clamped thereon by means of the clamping disk 13 retained by means of the screw 14 threaded into the shank. The gasket disk is preferably of the same diameter as the closure disk and is clamped upon the gasket seat of the neck by means of the spring closure disk.

The disk is provided with an annular bead-like rib 15 opposed to an annular bead-like rib 16 formed in the neck gasket seat. This insures a sealing joint for the neck.

The parts are simple in structure, easily assembled and the cap may be quickly applied or removed. My improvements are well adapted for closures for radiators and the like, the cap lying close to the neck.

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

1. In a closure, the combination of a neck having an out-turned annular flange provided with opposed segmental downwardly converging coupling members depending from its edge, said coupling members having stops at corresponding ends thereof, a cap having a shouldered central depending shank and a depending rim, said rim having segmental downwardly converging coupling members engageable and disengageable with said coupling members of said neck by a rotative movement, a spring closure disk seated on said shoulder of said shank with its outer edge in overhanging relation to said flange on said neck, said disk and flange having opposed annular beads, a disk-like gasket ar-

ranged on said shank below said closure disk, and a gasket retaining disk mounted on the inner end of said shank in overlapping relation to the under side of said gasket.

2. In a closure, the combination of a neck having an out-turned annular flange provided with opposed segmental converging coupling members depending from its edge, said coupling members having stops at corresponding ends thereof, a cap having a central depending integral shank and a depending rim, said rim having segmental downwardly converging coupling members engageable and disengageable with said coupling members of said neck by a rotative movement, a spring closure disk seated on said shank with its outer edge in overhanging coacting relation to said flange on said neck, said disk and flange having opposed annular beads, and a gasket disposed therebetween.

3. In a closure, the combination of a neck having an out-turned annular flange provided with opposed segmental converging coupling members depending from its edge, a cap having a depending rim provided with segmental downwardly converging coupling members engageable and disengageable with said coupling members of said neck by a rotative movement, a spring disk mounted within said cap in coacting relation to said neck, said disk and flange having opposed annular beads, and a gasket disposed therebetween.

4. In a closure, the combination of a neck having an annular outwardly projecting flange provided with opposed segmental downwardly converging joint members depending from its edge, said joint members having stops at corresponding ends, a cap having a central depending integral shank provided with opposed segmental downwardly converging joint members engageable and disengageable with said joint members of said neck by a rotative movement, a disk-like spring closure member seated on said shank with its outer edge overhanging said neck, and a gasket member supported below said disk to coact with said neck, said flange and closure member being provided with opposed annular ribs.

5. In a closure, the combination of a sheet metal neck provided with segmental downwardly converging joint members, a cap provided with coacting segmental downwardly converging joint members engageable and disengageable with said joint members of said neck by a rotative movement, a spring closure member arranged within said cap in opposed relation to said neck and acting to apply spring tension to said joint members when they are in engagement, and a gasket carried by said cap.

6. In a closure, the combination of a sheet metal neck provided with segmental inwardly inclined male joint members, a cap provided with inwardly inclined segmental socket joint members adapted to be engaged and disengaged with said joint members of said neck by a relative rotative movement, and a spring thrust disk carried by said cap and acting to apply spring tension to said joint members when in engagement.

7. In a closure, the combination of a sheet metal neck provided with segmental downwardly tapered male joint members, a cap provided with coacting downwardly tapered socket joint members engageable and disengageable with said male joint members by a relative rotative movement, and a spring closure member carried by said cap and provided with a gasket coacting with the neck to close the neck and apply spring tension to the joint members.

8. In a closure, the combination of a sheet metal neck provided with segmental downwardly tapered coupling members, a cap provided with coacting segmental downwardly tapered joint members engageable and disengageable with said joint members of said neck by a rotative movement, and a spring thrust closure member arranged within said cap in opposed relation to said neck and acting to apply spring tension to said joint members when they are in engagement.

9. In a closure, the combination of a sheet metal neck provided with segmental downwardly tapered male joint members, a cap provided with coacting tapered socket joint members engageable and disengageable with said male joint members by a relative rotative movement, and a spring closure member carried by said cap and acting to apply spring tension to the joint members when they are in engagement.

10. A sheet metal neck having an annular flange provided with depending inwardly tapered resilient projections, a cap therefor having a central integral shank, a sheet metal disk secured to said shank, and a gasket secured to said disk for engaging said flange, said cap having an integral skirt embracing said neck in spaced relation, and said skirt having tapered integral lugs adapted to register with said projections.

In witness whereof I have hereunto set my hand.

MICHAEL B. ANDRIE.