April 7, 1964 P. F. ROUSSELET 3,128,006

PLUG, PARTICULARLY FOR GASOLINE TANKS AND OIL PANS IN MOTORCARS

Filed May 14, 1962

FIG.1

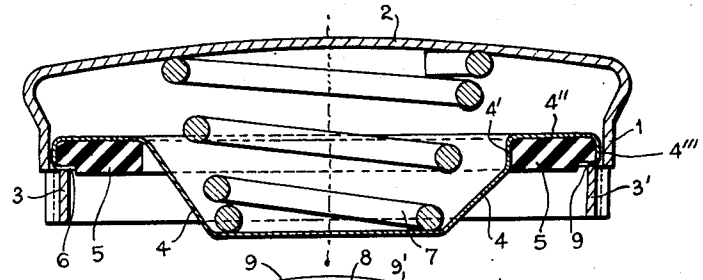


FIG.2

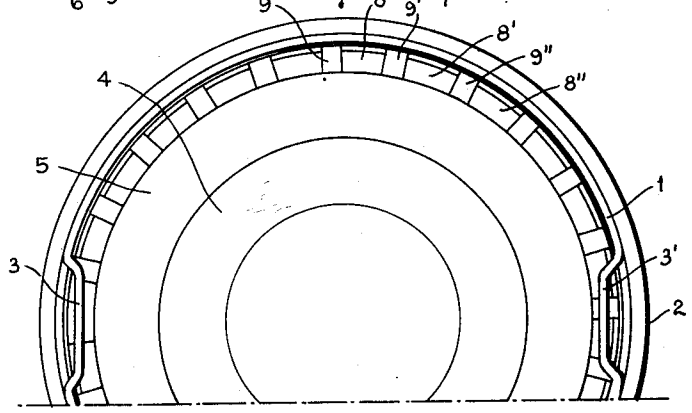


FIG.3

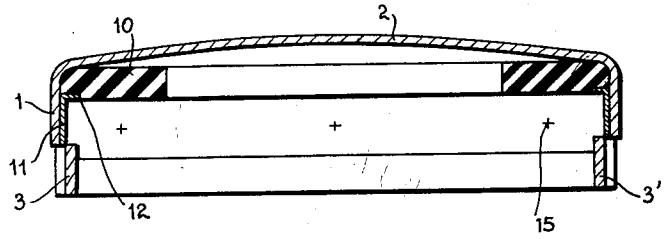


FIG.4

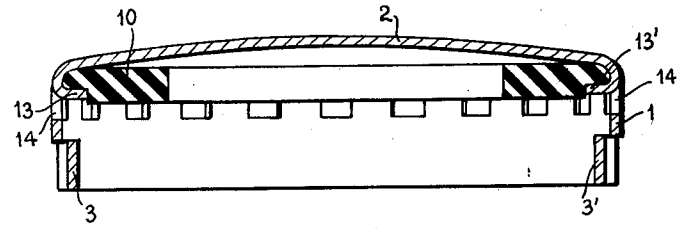
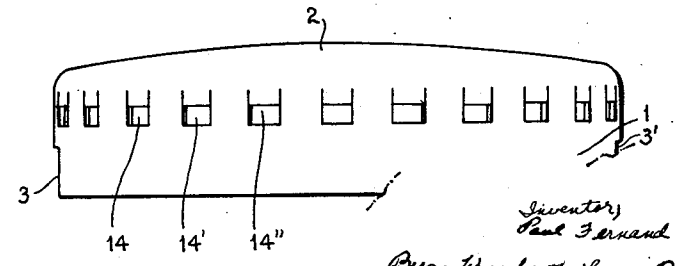


FIG.5



Inventor,
Paul Fernand Rousselet

By: Wenderoth, Lind & Mack, Attorneys

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PLUG, PARTICULARLY FOR GASOLINE TANKS AND OIL PANS IN MOTORCARS

Paul Fernand Rousselet, 1 Place de la Porte Molitor, Paris 16, France

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The object of the invention hereafter described is a plug, particularly of the type actually in general use to close the filling apertures of the gasoline tanks and oil pans in motor cars.

These plugs are constituted by a rigid cylindrical cap of small height in the inside of which is retained a flat joint ring made of a suitably distortable material. This plug caps the projecting ledge of the aperture and is fixed generally by means of a bayonet device so as to impart to the joint some crushing distortion between its support in the plug and the side of the projecting ledge of the aperture, in order of securing the tightening and preventing any unscrewing.

In some types of plugs, the joint is fixed in the cap, in others it is mounted on a floating disk urged outwardly by a spring taking its bearing on the bottom of the cap. The disk must have very accurate dimensions, be easily introduced and freely slide in the cap, without any possibility of an unseasonable escape.

In any case, the device to hold the joint requires an accurate fitting with a very small distortion of the joint.

The plug according to the present invention meets these requirements and it is characterized in that the joint is maintained, at its outer edge, by a crown of small claws: the setting of these claws by a folding back on the joint allows to obtain an accurate floating disk while treating carefully the rubber.

By way of example, three forms of embodiment of a plug according to the invention are described hereafter and illustrated in the annexed drawing.

FIGURES 1 and 2 are views, in axial cross section and in plane view, of a first form of embodiment.

FIGURE 3 is an axial cross section of a second form of embodiment.

FIGURES 4 and 5 illustrate respectively in cross section and in elevation a third form of embodiment.

The plug, illustrated in FIGURES 1 and 2, includes a rigid cylindrical cap **1**, **2**, having at its base two locking projections, **3**, **3'**. A floating disk is disposed inside the plug: this disk has the shape of a bowl with an edge **4**, the tightening joint **5** being set against the lower face of this edge and, at rest, the whole is urged against the locking projections **3**, **3'**, by a spring **7** taking its bearing upon the bottom of the cap **2**.

To make easier the folding back of the edge **6** of the bowl **4** for the setting on the joint **5** and prevent a crushing of said joint, the edge of the cup is weakened, for instance made thinner or preferably cut to form a crown of crenels, **8**, **8'** . . ., the claws **9**, **9'** . . . subsisting between these crenels being then easily folded back on the lower face of the joint **5**, while keeping for the edge of the bowl **4** the required dimensions.

In the right part of FIGURE 1 is illustrated a form of embodiment which differs from the form of the left side in the shape of the flat edge of the bowl **4**: in this embodiment, the upper part of the bowl **4** extends in a vertical ascending wall **4'**, a flat ring **4''** and a descending vertical wall **4'''** which ends in the claws **9**. The joint **5** is thereby imprisoned and is less liable to a crushing.

A construction of this type presents several advantages when compared with the present model of general use of a plug, provided with a floating joint and a spring, for gasoline tanks and oil pans in motor cars. One knows that such a plug includes a flat joint ring maintained on its inner face by a disk having a flat edge and a central bowl, (similar to the disk **4** of the FIGURE 1) and on its outer face by a smaller bowl, the edge of which covers only a small inner ring of this face: the two bowls are assembled by a central rivet. This construction is more complicated and more costly than the construction according to FIGURE 1 and in addition, the rivet is often the cause of leakages.

The forms of realization of the invention according to FIGURE 3 and FIGURES 4, 5, are plugs with a fixed joint, without an inner spring.

According to FIGURES 4 and 5, the joint **10** disposed in the bottom of the cap **2** is maintained by claws **13**, **13'** . . . obtained by the smashing in of embrasures **14**, **14'** . . . in the upper part of the cap. This device is particularly simple and inexpensive. In addition, the crown of embrasures **14**, **14'** . . ., constitutes a discontinuous surface which makes easier a good hand gripping for the closing or the opening of the plug.

According to the embodiment illustrated in FIGURE 3, the joint ring **10** is disposed in the bottom of the cap and it is maintained at its periphery by an inserted socket **11** provided with a collar **12** which can be constituted by turned down small tongues. The socket **11** is held in position by welding spots **15**.

The plug according to the invention can be applied to any apparatus containing a liquid or a gas and powdered matters.

What is claimed is:

1. A closure for gasoline tanks and the like having a projecting spout comprising a rigid cylindrical cap having a cylindrical side wall, a freely movable disk located inside said cap, a spring located between said disk and said cap, spaced claws provided on the periphery of said disk, a ring of elastically distortable material fixed against the lower face of said disk adjacent the periphery thereof by means of said claws, and spaced projections provided inside said cylindrical side wall of said cap near its lower end serving simultaneously as locking means for said closure on said spout and as abutments to maintain said disk and said ring in said cap.

2. A closure for gasoline tanks and the like having a projecting spout comprising a rigid cylindrical cap having a cylindrical side wall, a freely movable disk located inside said cap, a spring located between said disk and said cap, spaced claws provided on the periphery of said disk, a ring of elastically distortable material fixed against the lower face of said disk adjacent the periphery thereof by means of said claws, and spaced projections provided inside said cylindrical side wall of said cap near its lower end serving simultaneously as locking means for said closure on said spout and as abutments to maintain said disk and said ring in said cap, said projections being inwardly depressed zones in said side wall at diametrically opposed points.

3. A closure for gasoline tanks and the like having a projecting spout comprising a rigid cylindrical cap having a cylindrical side wall, a freely axially movable disk located inside said cap having an outer annular flat part and a central frusto-conical downwardly depressed part, a helical spring arranged between the bottom of said cap and the bottom of said central depressed part, spaced claws provided on the peripheral edge of said disk, a flat ring of elastically deformable material fixed against the lower face of said outer annular part by said claws, two projections provided inside said cylindrical side wall of said cap near its lower edge simultaneously serving as locking means for said closure on said spout and as abutments to maintain said disk and said ring inside said cap.

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