

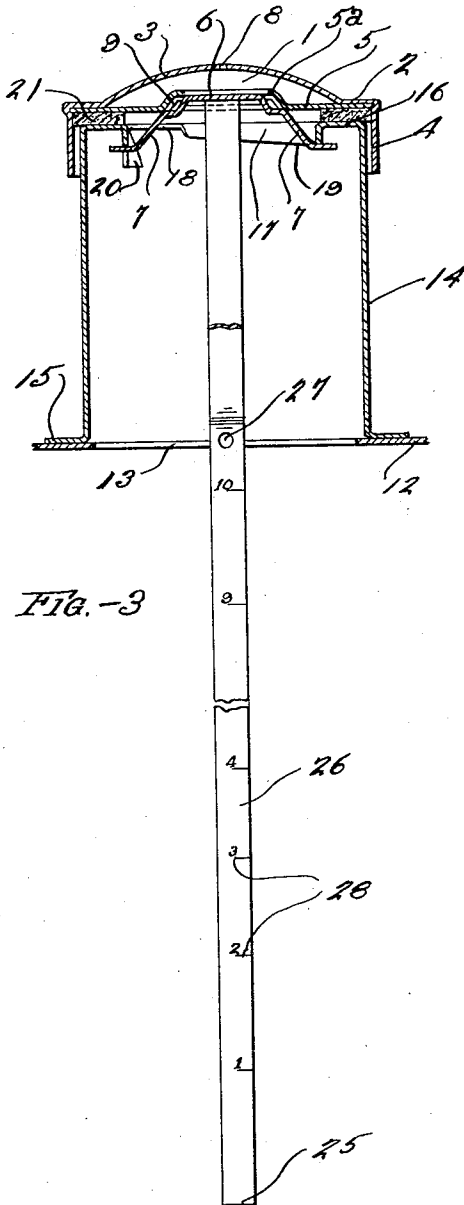
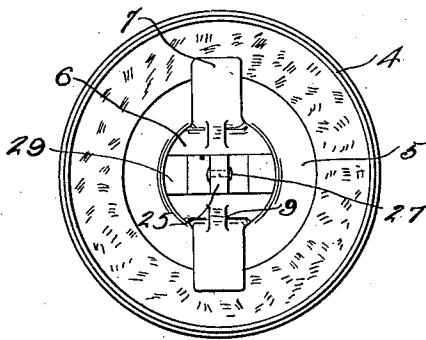
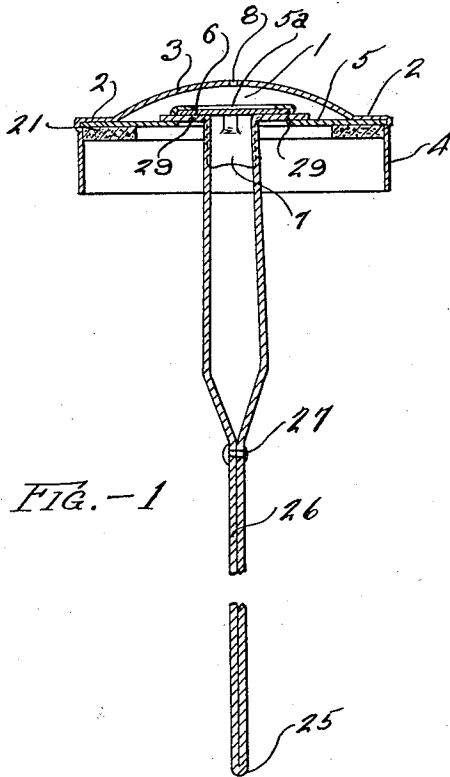
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CLOSURE AND GAUGE STRUCTURE

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UNITED STATES PATENT OFFICE

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CLOSURE AND GAUGE STRUCTURE

Application filed November 4, 1926. Serial No. 146,132.

This invention relates to improvements in closure and gauge structures such as are used, for example, with the gasoline tanks of motor driven vehicles.

5 The object of the present invention is to provide an improved closure and gauge structure in which the gauge, of "measuring stick" form, comprises a single strip of resilient metal having its free end portions engaging in suitable openings in the closure, the resiliency of the gauge member effectively maintaining the end portions thereof in the closure openings. The necessity of providing separate means, such as screws or bolts and nuts, for securing the gauge to the closure is therefore avoided, and assembly of the structure rendered quick and easy.

Further objects of the invention are in part obvious and in part will appear more in detail hereinafter.

10 In the drawing, which represents one suitable embodiment of the invention, Fig. 1 is a cross sectional view of my improved closure and gauge structure; Fig. 2 is a bottom plan view thereof; and Fig. 3 is a cross sectional view, taken at ninety degrees to Fig. 1, and showing the structure applied to a fuel tank.

15 In the present embodiment of the invention, the structure is shown as including a closure of the construction illustrated in the prior patent for closures, No. 1,593,847, granted July 27, 1926, although it is to be understood that the structure may include a closure of any suitable type.

20 The closure illustrated in the drawing includes outer and inner walls having portions thereof separated to provide an air chamber 1 therebetween. The outer wall includes a substantially circular top portion 2 provided with a centrally disposed dome 3 and a marginal flange or skirt portion 4. The inner wall comprises a substantially flat annular member 5 having its outer edge portion crimped or otherwise suitably secured to the outer wall at the junction of the top and skirt portions thereof. Crimped or otherwise suitably secured to an upwardly extending, annular flange 5a at the inner edge of said annular member 5 is the substantially flat, circular body portion 6 of a locking member.

The body portion of said locking member is provided at two diametrically opposed points with two downwardly and outwardly extending, inherently resilient locking finger portions 7, which are adapted for co-operation with cam portions of the tank to be closed, as will later appear. The air chamber 1 of the closure is vented to the outside atmosphere through an aperture 8 in the dome 3 of the outer wall and to the inside of the device to be closed, when the closure is applied thereto, through openings 9 provided by shearing the locking member at the junction of the body and finger portions thereof.

25 The liquid containing tank, with which the present structure is used, includes a body portion 12 provided with a filling opening 13, around the edge of which is arranged a suitable filler neck, as is usual. Said neck comprises a substantially cylindrical body portion 14 which may be an integral part of the tank or separate therefrom, as shown, and provided with a laterally extending base flange 15 suitably secured to said tank. Said body portion is provided at its upper end with an inwardly extending, substantially horizontal flange 16 which terminates in a depending flange 17. At two diametrically opposite points, portions of flanges 16 and 17 are cut away, to provide two openings or passageways 18, through which the closure locking fingers 7 are adapted to be passed, as will later appear. The cutting away of portions of flanges 16, 17 provides two depending flange portions 17 of substantially semi-circular form, and the bottom edges of these flange portions are suitably inclined to provide two substantially semi-circular cam portions 19. At the rear ends of said cam portions, flanges 17 are each provided with a depending lug or projection 20, which provide stops for the closure locking fingers 7 when said fingers are travelling along the cam portion 19, thereby limiting relative rotary movement between the closure and the tank filler neck.

30 The closure is applied to the tank filler neck in the usual manner of bayonet joint connections, the closure locking fingers 7 being passed down through the passageways 18 in the neck flanges 16, 17. The closure is then

turned in a clockwise direction, which causes the locking fingers thereof to ride up the cam portions 19, the turning movement of the closure being continued until said fingers strike the stop portions 20, which denotes full seating position of the closure. To remove the closure, it is only necessary to turn it in the reverse direction, which causes the locking fingers 7 to ride down cam portions 19, as will be readily understood.

Preferably the closure is provided with a cork or leather gasket 21, which is adapted to lie within the closure skirt portion 4, and when the closure is applied to the tank filler neck, to engage the horizontal flange 16 of the latter and the annular supporting member 5 of the former. The gasket is maintained in associated relation with the closure by the outwardly extending locking fingers 7 thereof which lie below the gasket and hence prevent its escape.

The "measuring stick" gauge of the present structure comprises a single strip of resilient metal, which is bent at substantially its middle point 25 to provide two legs or gauge portions 26. At an intermediate point 27, nearer to the free ends of the metal strip than to the bend 25 therein, the two gauge portions 26 are riveted or otherwise suitably secured together, with the parts of the two gauge portions between said securement point 27 and the bend 25 lying in substantially contacting relation. Each gauge portion is provided on its outer face with suitable graduating indicia or scale divisions 28, which may indicate either the proportional capacity of the tank 12 or its capacity in units of measurement, such as gallons, the latter form being here shown.

The free ends of the two gauge portions 26 are bent laterally outward, as at 29, and extends through diametrically opposed, correspondingly sized openings in the upwardly extending flange 5a of the closure inner wall member 5, said gauge end portions lying just below and in engagement with the body portion 6 of the closure locking member. The resiliency of the gauge member tends to further separate or outwardly move the free ends 29 of the two gauge portions 26, so that said end portions are effectively maintained in the closure openings. There is therefore no necessity of providing separate means, such as screws or bolts and nuts, for securing the gauge to the closure, with the result that assembly of the structure is easily and simply made.

The provision of the present structure provides a "measuring stick" gauge which is always available for convenient use, and which does not carry into the fuel tank dirt and other foreign matter which so materially lowers the efficiency of the vehicle motor. Other advantages of the present structure are readily apparent.

What I claim is:

1. A structure of the character described, comprising a closure having an annular skirt and a wall portion extending transversely with respect to said skirt, said wall portion being formed with a circular depression in one surface thereof and with diametrically opposed openings through the side wall of said depression, locking means engaging in said depression, and a gauge extending axially of said annular skirt, said gauge having a "measuring stick" portion and a bifurcated securing portion, the two parts of said bifurcated portion terminating in oppositely extending lugs which engage a surface of said locking means and project through said diametrically opposed openings, whereby said gauge is securely maintained in assembly with said closure and assists in maintaining the locking means of said closure in said depression.

2. A structure of the character described, comprising a closure having an annular skirt and a wall portion extending transversely with respect to said skirt, said wall portion being formed with a circular depression in one surface thereof and with diametrically opposed openings through the side wall of said depression, locking means engaging in said depression, and a gauge extending axially of said annular skirt, said gauge having a "measuring stick" portion and a bifurcated securing portion, the two parts of said bifurcated portion terminating in oppositely extending lugs which engage a surface of said locking means and project through said diametrically opposed openings, whereby said gauge is securely maintained in assembly with said closure and assists in maintaining the locking means of said closure in said depression, the two parts of said bifurcated portion being of resilient metal and having a tendency to separate thereby causing said lugs to be retained in said openings.

In testimony whereof I hereby affix my signature.

PETER J. MACHONIS.