O. F. CARLSON.

FILLER.

APPLICATION FILED OCT. 17, 1918.

1,322,535. Patented Nov. 25, 1919.

Fig. 1

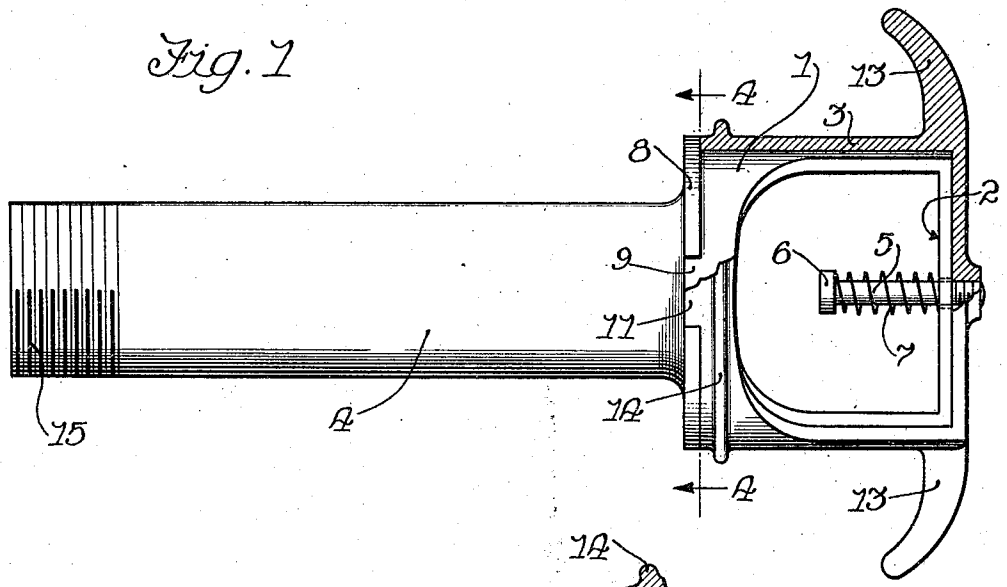


Fig. 2

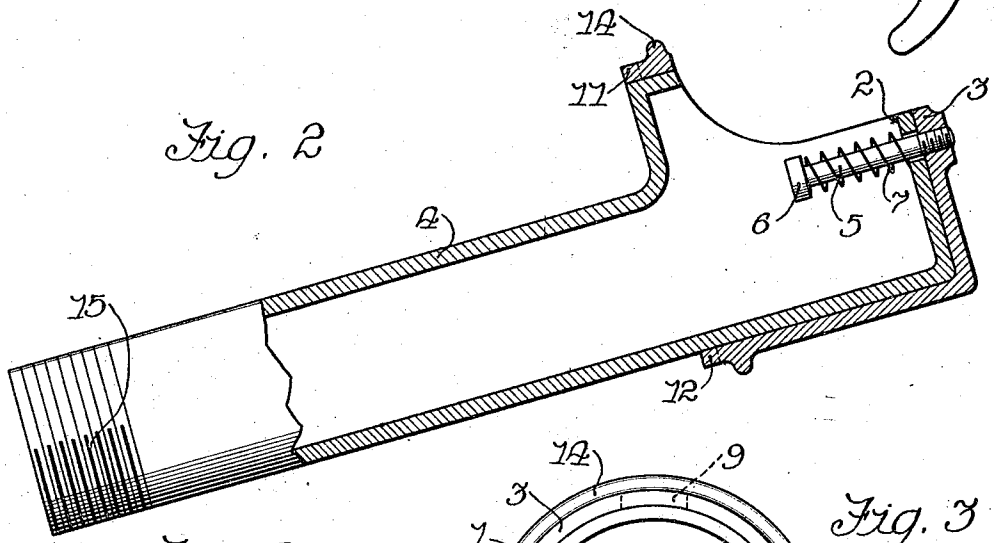
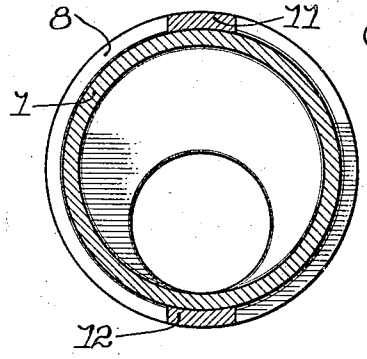


Fig. 4



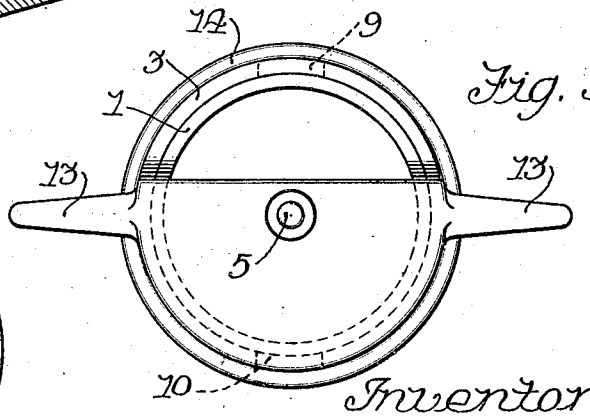


Fig. 3

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FILLER.

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Application filed October 17, 1918. Serial No. 258,661.

To all whom it may concern:

Be it known that I, OSCAR F. CARLSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Fillers, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this application.

My invention relates to a filler for tanks and the like.

The object of the present invention is to provide an improved filler for fuel tanks and the like.

While the invention is particularly adapted for fuel tanks of automobiles, I do not intend to limit the same to such use.

According to my invention, a filler head and cap are provided with registering openings permitting the introduction of liquid into the head. The head is connected by a nipple with the tank or receptacle. The head and nipple are preferably, but not necessarily, held at an inclination to the horizontal. The head and cap have their registering openings preferably, but not necessarily, cut diagonally of these two members so as to bring the openings uppermost. The lower wall of the head and the lower wall of the nipple are preferably, but not necessarily, continuous to provide a smooth draining surface for the head. The cap is fitted to the head for angular as well as axial motion, a spring being provided to resist axial motion.

The cap is provided at its lower edge with a projection or projections and the lower end of the head is provided with a circumferential flange which has notches diametrically placed so that the projection on the lower edge of the cap will automatically drop into the recesses in the flange when the cap is moved to full open or complete closed position. To move the cap from fully open or closed position, the cap is pulled out axially against the spring and is then rotated to permit the cap to be brought into the desired position. When the cap is not in either fully open or fully closed position, the projection on the lower edge thereof will ride upon the flange. When the proper position is reached, the projection will automatically drop into the recess and hold the cap against further rotation.

In order to apprise those skilled in the art how to construct and practice my invention, I shall now describe in detail a specific embodiment of the invention, in connection with the accompanying drawings.

I do not intend to be limited to the precise details shown and described, as there are a number of features which may be varied.

In the accompanying drawings, which form a part of the present case, Figure 1 is a top plan view of a filler with the cap partly broken away, the cap being in open position.

Fig. 2 is a longitudinal axial section of the same.

Fig. 3 is an end view taken from the right of Fig. 1, and

Fig. 4 is a transverse section taken on the line 4—4, looking in the direction of the arrows as shown in Fig. 1.

The filler comprises a cylindrical head member 1, having a flat end wall 2 with a cylindrical cap 3, fitting closely around the side and end walls of the head 1. A nipple 4 of suitable length is connected to the lower side of the head member 1, preferably being formed integral with the head member. The end of the nipple 4 may be threaded as at 15 to facilitate connection with the tank or receiving vessel. The filler and nipple stand preferably at an angle substantially as indicated in Fig. 2. It will be noted that the lower wall of the head member forms a direct and smooth continuation of the nipple 4 so that liquid poured into the head member 1 will drain directly down to the nipple 4 without interruption or pocketing.

The head member 1 and the cap member 3 are provided with openings which are adapted to be brought in register when the filler is open and to be moved out of register when the filler is closed. For the inclined position in which the filler is shown, these openings are preferably cut diagonally across the uppermost corner of the head and cap, as shown in Figs. 1, 2 and 3.

A pin 5 is secured at its outer end in the center of the cap member 3 and passes loosely through a hole in the end wall 2 of

the head. The inner end of the pin 5 is provided with a head 6, between which head 6 and the end walls 2, there is placed a compression spring 7. This spring tends at all times to hold the cap 3 down upon the head 1.

The lower part of the head is provided with a peripheral flange 8 which has two notches 9 and 10 cut therein at diametrically opposite parts of the circumference. In the particular form illustrated, these notches are arranged at the extreme top and bottom, this being done for the purpose of indicating the locking feature more clearly to the user.

The lower edge of the cap 3 has a pair of projections 11 and 12, at diametrically opposite points, adapted to drop into the recesses or notches 9 and 10.

The cap 3 is provided with oppositely disposed horns or handles 13 which are adapted to be engaged by the fingers of the user for pulling the cap axially against the spring 7 and for rotating the cap about the head. An ornamental and strengthening flange 14 is formed on the lower portion of the cap member particularly for strengthening the lower end of the cap between the recess and the lower edge. The placing of the projection 11 at this point also serves to strengthen this part of the cap. There is no particular strain upon this reduced portion; first because of the pin 5 which prevents the outer end of the cap from being moved eccentrically and further by the fact that the opening cut into the cap has a maximum width of slightly less than the inner diameter of the cap.

The operation of the device is as follows: The nipple 4 is secured in a suitable coupling or flange which puts it in communication with the tank or receiving vessel, the entire device being set at an angle as indicated in Fig. 2. The opening in the head member is turned upward and assuming that the parts are in the position shown in Fig. 2, the liquid may be poured in through the filling openings in the cap and head. When it is desired to close the opening the hooks or handles 13 are engaged by the fingers of the operator and the cap is pulled out axially to disengage the projections 11 and 12 from the recesses or notches 9 and 10 in the flange 8 and the cap is then rotated. As soon as the cap is rotated sufficiently to bring the projections and recesses out of register, the projections will ride up on the flange 8. The cap is then turned through 180° until the projections and recesses again come into register. The spring then automatically snaps the projections and recesses together, holding the cap firmly closed. It is apparent that a single projection, as 11, would be sufficient to lock the cap in either open or closed position. I prefer to provide two such projections because of the balancing effect secured when these projections ride up on the edge of the flange 8.

I do not intend to be limited to the precise details of construction shown and described.

I claim:

1. In combination, a filler head having cylindrical side walls and an end wall, a cylindrical cap fitting on the head, a concentric pin and a spring on the pin for holding the cap upon the head, said cap and head having filler openings, said cap being rotatable to bring the filler openings into and out of register.

2. In combination, a filler head having cylindrical side walls and an end wall, a cylindrical cap fitting on the head, a concentric pin and a spring on the pin for holding the cap upon the head, said cap and head having filler openings, said cap being rotatable to bring the filler openings into and out of register and means influenced by the springs for holding the cap against turning when in either the open or the closed position.

3. In combination, a filler head having cylindrical side walls and an end wall, a cylindrical cap fitting on the head, a concentric pin and a spring on the pin for holding the cap upon the head, said cap and head having filler openings, said cap being rotatable to bring the filler openings into and out of register, and a nipple connected to the head and having its inner wall continuous with the inner wall of the head at a point opposite the filler opening in the head.

4. In combination, a cylindrical filler head, said head being adapted to be held in inclined position, a nipple having its lower walls continuous with the lower wall of the head, a diagonal opening in the head, a cylindrical cap having a diagonal opening adapted to register with the diagonal opening in the head, an axial pin secured concentrically in the cap, and projecting through the top wall of the head, and a spring between said pin and the top wall of the head, said head and cap having coöperating cap means adapted to hold the cap in open position.

5. In combination, a cylindrical filler head, said head having a filler opening, a cap fitting on the head and having a filler opening adapted to be brought into register with the filler opening in the head, said head and cap having notch and projection means and spring means for holding the notch and projection means in engagement when the openings are in fully open or fully closed position.

6. In combination, an enlarged cylindrical head, a nipple secured to and opening into the lower corner of the head, said head and nipple being adapted to be secured in an inclined position, said head having a filler

opening therethrough, a cylindrical cap having an opening registering with the opening in the head, said cap bearing upon the cylindrical surface of the head.

7. In combination, a cylindrical filler head, having a tubular outlet, said head having a flange, said flange having diametrical notches therein, a cap closely fitting upon the head, said cap extending to the flange and having a projection adapted to fit into said notches, said cap and head having registering openings in their walls for filling purposes, a pin secured in the cap and fastened to the top wall of the head and a spring on the pin for holding the cap and head in place.

8. In combination, a filler head having a reduced tubular outlet, said head and tubular outlet being adapted to be mounted in an inclined position, a cylindrical cap fitting over the head, said cap and head having diagonal registering openings, a flange adjacent to lower edge of the cap, said flange having diametrically spaced recesses, the lower edge of the cap having diametrically spaced projections, a pin having a head at its inner end and secured in the top of the cap at its outer end, said pin passing through the top of the head, a spring between the head of the pin and the filler head, said cap having projecting finger holds.

In witness whereof I hereunto subscribe my name this 11th day of October A. D. 1918.

OSCAR F. CARLSON.