

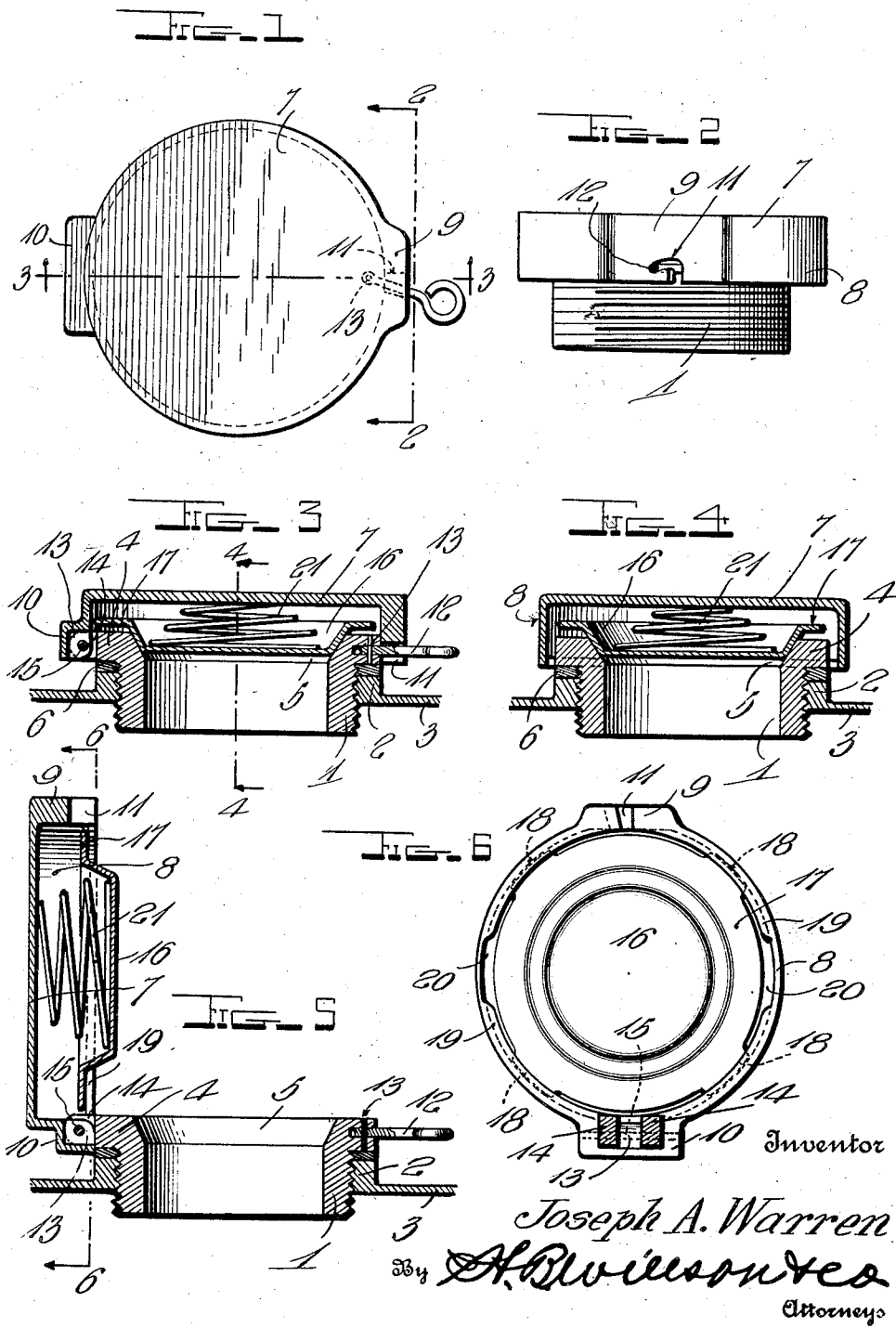
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TANK CLOSURE

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UNITED STATES PATENT OFFICE.

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TANK CLOSURE.

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To all whom it may concern:

Be it known that I, JOSEPH A. WARREN, a citizen of the United States, residing at Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Tank Closures; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improved tank closure for use in connection with storage tanks such as tanks used upon motor vehicles for carrying gasoline and also for use in connection with the inlet neck of a radiator.

One object of the invention is to provide a closure so constructed that a very tight closure may be provided and thus vapors prevented from escaping from the gasoline tank and further evaporation prevented.

Another object of the invention is to so construct this closure that a valve element carried by a cap may be held in very tight engagement with a valve seat at the outer end of a neck forming part of the closure, the valve element coming in contact with the seat before the cap is in its secured position and movement of the cap to a completely closed position compressing a spring engaging the valve element to compress the spring and place the same under extra tension.

Another object of the invention is to so construct this closure that the valve element or neck closure carried by the cap may be easily put in place or removed and at the same time limited in its outward movement when in place.

Another object of the invention is to so construct this device that it may be easily operated and to further so construct it that it will comprise a comparatively few number of parts simple in construction and cheap to produce.

This invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of the improved tank closure.

Figure 2 is a view taken along the line 2—2 of Fig. 1, and showing the tank closure principally in elevation.

Figure 3 is a longitudinal sectional view

through the closure taken along the line 3—3 of Fig. 1.

Figure 4 is a sectional view taken along the line 4—4 of Fig. 3.

Figure 5 is a sectional view through the closure with the cap in a raised position.

Figure 6 is a view taken along the line 6—6 of Fig. 5 showing the closure in bottom plan.

This improved closure is provided with a neck 1 which is externally threaded so that it can be screwed down into the internally threaded boss or collar 2 of the tank indicated by the numeral 3. This may be a portion of a gasoline storage tank or any other suitable receptacle. The neck 1 is provided at its upper end with an outstanding collar 4 and a valve seat 5 is provided at the outer end of the neck by cutting away the neck from its inner face as shown in Figs. 3, 4 and 5. When the closure is put in place, a gasket 6 is placed upon the neck 1 and when the neck is screwed tightly down into the collar 2, this gasket will be clamped between the collar 2 and the collar 4 and will thus provide a tight joint between the two collars 2 and 4.

The cap 7 fits about the collar at the outer end of the neck and is provided with a depending wall or flange 8 offset at its forward and rear sides as shown at 9 and 10, the offset 9 forming a solid portion having a bayonet slot 11 formed therein to receive a latching pin or key 12 which key is pivotally connected with the outstanding collar 4 of the neck as shown at 13. The offset 10 provides a hinge housing having a hinge ear 13 formed therein which will fit between hinge ears 14 of the collar 4 to pivotally mount the cap when the pivot pin 15 is in place. By having this cap hingedly connected with the neck, it can be swung upwardly to the position of Fig. 5 and after the tank has been filled, the cap can be swung downwardly and latched in the position of Fig. 3 thus securely but releasably holding the cap in the closed position.

As previously stated, it is desired to provide a tight closure for the neck 1 and therefore there has been provided a closure 16 in the form of a plate which is cup-shaped and provided with an outstanding flange or rim portion 17 which will extend over the collar 4 when the closure is seated upon the seat

5. This outstanding flange 17 is provided with extensions or fingers 18 which will be positioned beneath the inwardly extending flange or abutment 19 when the outstanding
5 fingers are passed through the cutouts or slots 20 of this flange 19 and the closure 16 turns to the position shown in Fig. 6. A spring 21 is placed in the cap and engages the closure so that when the closure is in
10 the raised position of Fig. 5, the spring will hold the closure in the extended position with the abutment fingers engaging the inwardly extending flange. When the closure is moved to the closed position of Fig. 3,
15 the closure plate 16 will first engage the neck and continued movement of the cap toward the closed position will cause the closure plate to be pressed inwardly against the action of the spring. When the cap is se-
20 cured by the latch 12, the spring will be compressed and the closure will thus be held tightly in engagement with the seat 5 to tightly seal the neck. It will thus be seen that a very efficient device has been provided
25 which is easy to operate and will provide a very tight closure.

I claim:

1. A device of the character described comprising a neck having a valve seat, a cap
30 for fitting upon the outer end of said neck, a valve loosely fitting in said cap, abutment means carried by the cap for limiting outward movement of the valve, and a spring

in the cap engaging the valve to hold the valve plate in tight engagement with the
35 valve seat, when the cap is secured upon the neck.

2. A device of the character described comprising a neck having a valve seat at its outer end, a cap for the neck and having an
40 inwardly extending abutment flange, a valve plate loosely mounted in said cap and limited in its outward movement by said flange, and a spring in said cap engaging
45 said valve plate to hold the same in tight engagement with the valve seat when the cap is secured in a closed position upon said neck.

3. A device of the character described comprising a neck having an outstanding
50 collar and an internal valve seat at its outer end, a cap for the collar and fitting about the same and provided with an inwardly extending notched flange, a valve plate fitting
55 loosely in the cap and provided with lugs for passing through the notches and extending behind the flange, the plate having an extended central portion for fitting upon the valve seat of the neck, and a spring in the
60 cap engaging the plate to yieldably hold the plate extended for tight engagement with the valve seat when the cap is closed.

In testimony whereof I have hereunto set my hand.

JOSEPH A. WARREN.