July 12, 1932. J. SCHEMINGER, JR 1,867,104

FUEL FEEDING TANK

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Fig.1.

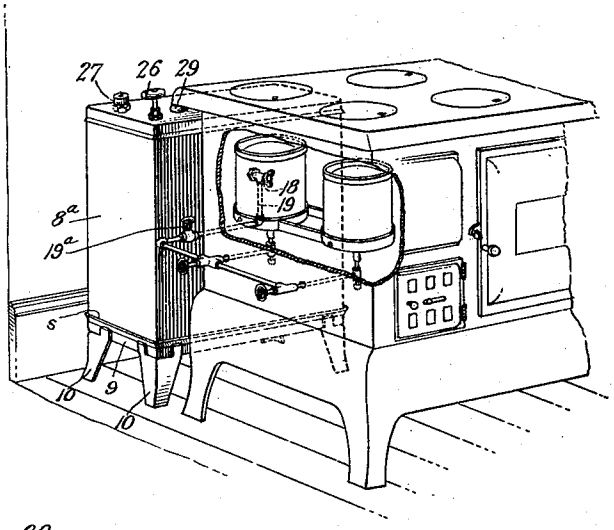


Fig.6.

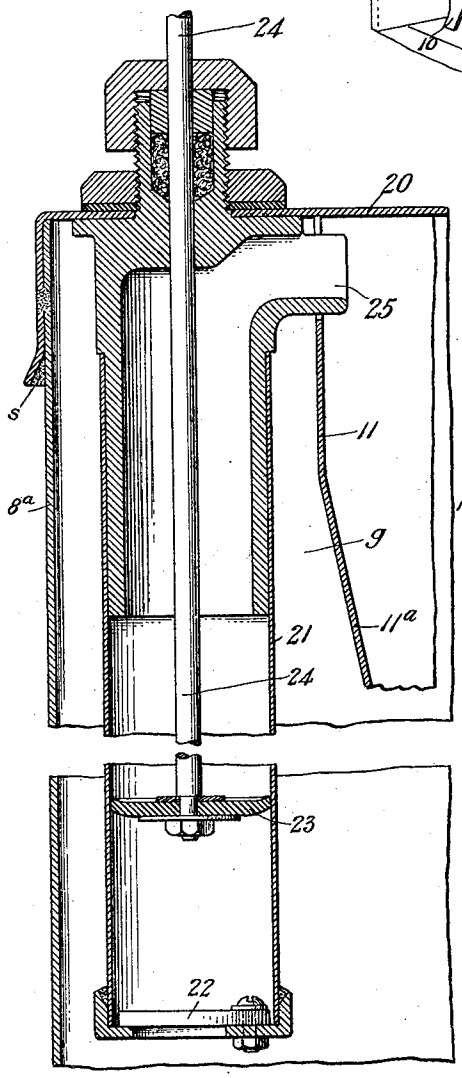
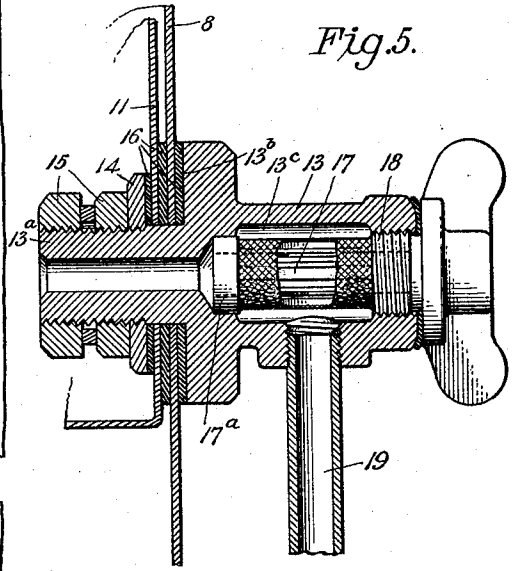


Fig.5.



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Fig. 2.

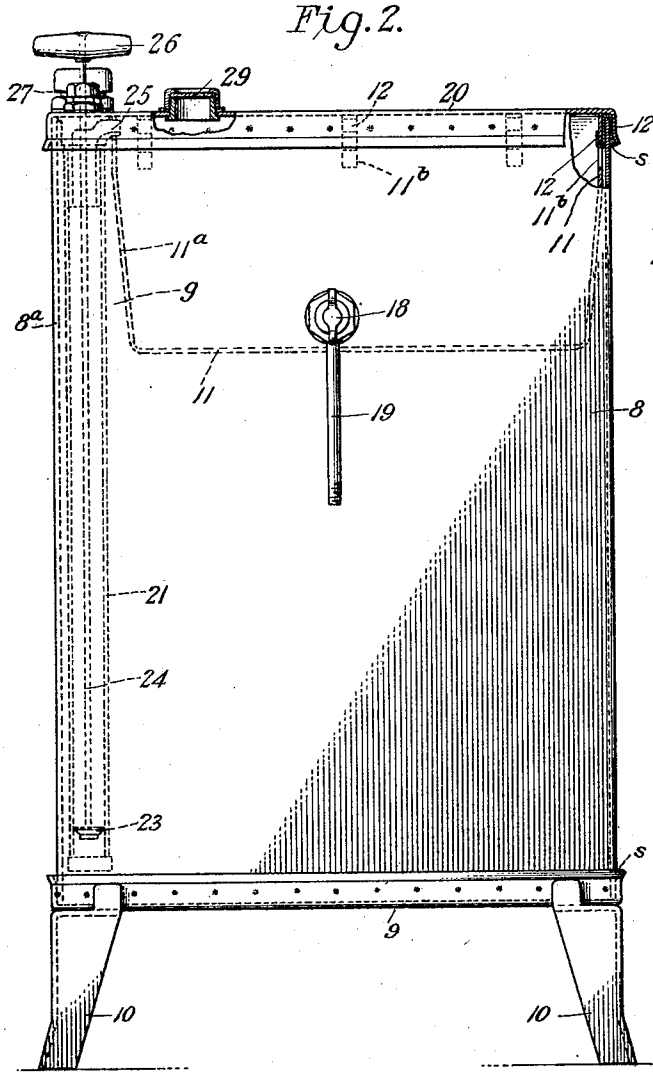
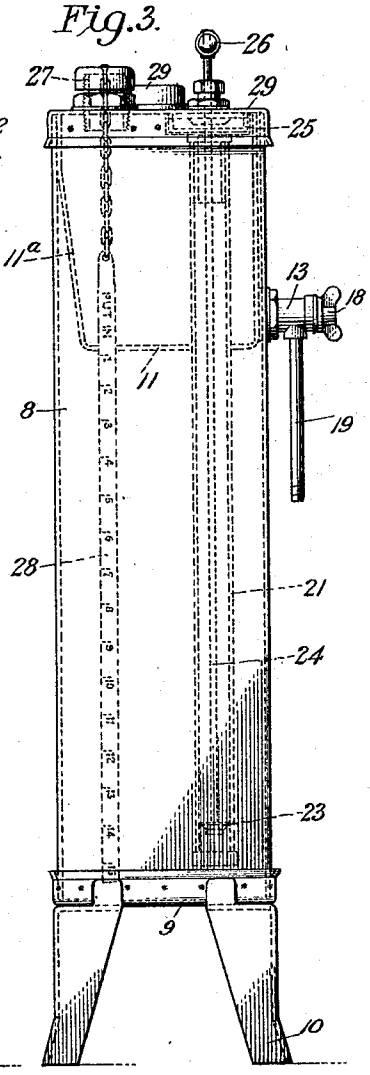


Fig. 3.



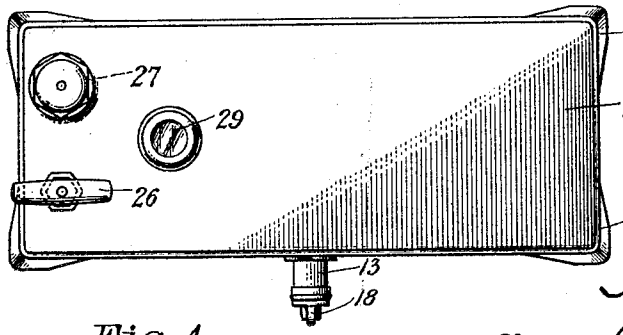


Fig. 4.

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UNITED STATES PATENT OFFICE

JOHN SCHEMINGER, JR., OF PROVIDENCE, RHODE ISLAND

FUEL FEEDING TANK

Application filed March 18, 1930. Serial No. 436,851.

This invention relates to fuel supply containers for liquid-burning heaters and cooking-stoves such as used particularly in rural districts and homes without piped gas supply, and aims to provide an improved fireproof feeding means or reservoir tank of liberal capacity which will have the approval of fire inspectors and insurance underwriters.

The invention will be best understood and its several objects readily appreciated from description with reference to the attached drawings illustrating one practicable embodiment thereof in an easily portable construction.

In said drawings:

Fig. 1 is a perspective view of said embodiment as applied to a conventional type of oil-burning range shown fragmentarily;

Fig. 2 is a front elevation of the same with parts broken away;

Fig. 3 is a side (or end) elevation thereof;

Fig. 4 is a top plan view;

Fig. 5 sectionally shows a detail of assembly and strainer connection on enlarged scale; and

Fig. 6 is an enlarged detailed view of associated pump construction.

In the illustrative embodiment, an outer main container 8 provides the reservoir space of a strong and fire-proof tank construction. This container formed on rectangular lines with rounded corners is characterized by its narrow width in proportion to greater length and depth (or height) adapting it to fit into narrow corners or spaces behind stoves as shown in Fig. 1, and yet to hold a substantial amount of liquid. It is advantageously made from a thin sheet material bent or rolled into shape and welded at joint points to eliminate seams and possibility of leakage.

The tank bottom is formed by a marginally flanged plate 9 fitting closely over the lower end of said container and welded permanently thereto as an integral part. This plate may be of the same material as the container and reinforces the latter's walls besides adding rigidity to the entire construction. To positively assure against bottom leakage, the crevice between the container wall and plate flange is filled entirely around with a molten substance such as solder, as indicated at *s*, which hardens on cooling, with the effect of fusing into the metal of the two.

Rest-pieces on which the tank stands above the floor are provided by legs 10 affixed rigidly to the bottom plate by interfitting lug-engagement therewith, as represented, or by bolting or welding thereonto.

At the upper end of the aforesaid container is an inner and relatively small auxiliary container 11 providing the supply space of the tank. This auxiliary container formed also on rectangular lines is longer than wide or deep and fits lengthwise and edge-to-edge within the first one by a three-sided contact therewith, leaving a gap *g* between the walls of the two at the fourth side (or end) for a reason to presently appear.

Said inner container which is desirably of the same material as the outer one has its walls 11^a formed to recede gradually from the oppositive or surrounding walls 8^a of said outer container at three sides (or at one side and both ends in this instance) as shown in Figs. 2 and 3, but to lie closely against or parallel with the opposite wall thereof at the fourth side as seen from Fig. 3. It is welded to the outer container along the three sides of contact therewith so as to make the two substantially integral structures, while its suspension within the outer one is advantageously strengthened by hook-straps 12 (see Fig. 2) engaged under edges of punch-outs 11^b therein and over the top edge of said outer one at their contacting sides. These punch-outs in said inner container provide openings for air-relief and overflow back into the outer container if the liquid is pumped thereinto above a predetermined level.

At the side where the walls of the two containers lie together or parallel, is an outlet connection embodying a strainer through which liquid may flow by gravity from the inner container. This connection comprises a hollow casting or body 13 (see Fig. 5) having a threaded nipple 13^a extending into the inner container through alined holes in the walls of the two at the aforesaid side. These

walls are clamped tightly between a peripheral shoulder 13[b] and a collar member or washer 14 on the aforesaid nipple of the casting when the latter is drawn up by nuts 15 screwed onto the nipple. One of said nuts with underlying lock-washer serves to prevent loosening of the other and gasket washers 16 between and at opposite sides of the container walls effectually seal the joint against leakage and also relieve strain of the connection. This connection not only binds the two containers rigidly together but strengthens the union between the two.

The central portion of the aforesaid casting (13) has an enlarged bore providing a chamber 13[c] into which the nipple at one end opens. Through an enlarged opening at the other end is extended a perforate tubular member or spider 17 carried as the shank of a plug 18 screwed into said opening and formed with a winged head for greater ease in turning. This perforate member or spider has a strainer screen covering as represented, and is supported at its inner end by a head 17[a] seated in a recess coaxially with the bore through the nipple, so that liquid draining through the latter must pass into the member and through the strainer screen before entering the aforesaid chamber 13[c]. A pipe 19 leading from said chamber connects directly or indirectly with the burners of the stove, or more specifically with the wells of the burners for keeping their wicks saturated by continuous drainage from the inner container of the tank. A valve-cock 19[a] in said pipe serves to cut off the supply when desired. In conjunction with or in lieu of said valve-cock, a float chamber (not shown) of ordinary construction may be employed in said pipe for controlling the feed flow to the burners as common to devices of this kind. The float chamber moreover may be made adjustable up and down in a bracket on the tank according to the level of the burners or their wells. In such case the pipe 19 should of course be flexible from its connection with the float chamber to its connection at 18 with the tank.

The tank top is provided by a marginally flanged top-plate 20 corresponding with the aforementioned bottom plate, which is fitted over the upper end of the outer container and similarly welded thereto. Like said bottom plate, it is sealed by a molten substance *s* filling the crevice of its flange engagement over the outer container all the way around and reinforces the walls of the container besides adding rigidity to the entire construction.

Through the gap *g* between the inner and outer containers, a pump barrel 21 extends down into the latter. The lower end of this barrel is normally closed by a common trap-valve 22 in this instance comprising a flexible disk secured by bolt on the bottom ring cap. A suction plunger 23 carried by pump rod 24 operates in the barrel to draw liquid upwardly therethrough to discharge into the inner container, for which purpose a spout 25 is applied to the upper end of the barrel. The pump rod extending through the top-plate is provided with a handle 26 for working it up and down.

Adjacent said pump, a filler-opening 27 with closure cap is provided for filling the outer tank. A measure-stick 28 attached to said closure cap affords easy means of determining the amount of liquid in or necessary to fill said outer container, while a sealed sight-gauge 29 in the aforesaid top plate enables the liquid depth in the inner container to be ascertained at a glance.

In this instance the inner or supply container holds approximately four gallons of fuel up to its overflow level, while the outer and reserve container holds sixteen gallons, so that the tank has a total capacity of twenty gallons. It will be noted that the inner container is partly submerged in the liquid of the outer one when the latter is full, leaving an air space above and thereby utilizing the cubical capacity of the combined containers to the best possible advantage.

A novel and improved fuel supply tank of unusually strong and absolutely fire-proof construction is thus provided with distinct advantages over the various kinds of containers now in general use. As distinguished from the ordinary supply container, its solid and leak-proof construction enables it to be placed with perfect safety behind or close to a heated stove without incurring a fire hazard. Its distinctions and other advantages over related devices will be readily appreciated by comparison.

As various modifications with minor changes in details of construction and arrangement of parts may be made without departing from the spirit and scope of the invention, the appended claims are not intended to limit the same to the specific construction shown.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A fuel tank embodying a main rectangular container of substantially greater depth and length than breadth providing a reservoir space and a relatively small also rectangular container in the upper end thereof providing a supply space, said small or inner container fitting in the main container with a three-side contact and having walls receding from the surrounding walls of the latter at the three sides while lying flush therewith at the fourth side; said two containers being formed of sheet metal and secured together along their top edges, and having a common top closure plate overextending their upper ends and secured to the main or outer one thereof in a sealed union, a gauge

for determining the liquid level in the small tank; a pump for filling said small container from the larger main one, an opening for filling said main container, a gravity-feed connection with the inner container passing through the outer container and having means therein for straining the fuel in feed flow; and a cut-off valve in said feed connection.

2. A fuel tank comprising an outer open-ended rectangular container having rest members, a relatively small inner and likewise open-ended container fitting within said outer container with its walls receding gradually from the walls of the other at three sides but lying thereagainst at the fourth side and in effect providing a substantial closure therefor, the two containers being secured together as integral structures; a cover plate fitting over the open ends of both containers and sealed to the outer thereof; a sight-gauge in said cover plate; a gravity-feed connection with the inner container passing through the outer container at the side where walls of the two lie together and having a strainer element therein; a pump extending through said cover plate into the outer container and discharging into the inner container for filling the latter from the former; an opening through said plate for filling the outer container; and a depth-gauge suspended from a closure cap for said opening.

3. A fuel tank comprising a main rectangular container of substantially greater depth and length than breadth having a bottom overengaging and reinforcing its walls with rest-members affixed thereto; a relatively small container fitted in the open upper end of said main container with its edges flush with those of the latter and substantially closing said end thereof, said small container having its walls receding gradually from the surrounding walls of the main container at three sides but lying thereagainst at the fourth side and the two containers formed of sheet metal being joined together as integral structures; a cover-plate fitting over the upper end of the main container and joined thereto with reinforcing effect; a sight-gauge in said cover-plate for determining the liquid content of the inner container; a combined gravity-feed outlet and strainer connection with the inner container passing through the main container at the side where walls of the two lie together; a pump extending through said cover-plate down into the main container and discharging into the inner container; an opening through said cover-plate for filling the main container; and a depth-gauge secured to a closure cap for said opening for determining the liquid depth in the main container.

4. A fuel tank according to claim 1 wherein the two containers and the top cover therefor are joined together as integral structures with a hardened molten substance filling and sealing all crevices at meeting or overlapping points.

5. A fuel tank comprising an outer main rectangular container having a bottom formed by a plate with marginal flange fitting thereover and sealed against leakage by a hardened molten substance filling the crevice therearound; a relatively small and likewise rectangular container of sheet metal supported therewithin at the upper end in a three-sided fit with edges flush to the edges thereof and leaving a gap between walls of the two at one side, said small or inner container having its walls gradually receding from the surrounding walls of the main container at three sides but lying thereagainst at the fourth side and the two containers being welded together as integral structures, a top-plate having a marginal flange engaging over the upper end of the main container and sealed against leakage by a hardened molten substance filling the crevice therearound; a sight-gauge in said top-plate for determining liquid level within the inner container; a force pump extending downwardly into the main container through the aforesaid gap between it and the inner container for filling the latter therefrom; a capped filler-opening adjacent said pump for refilling the main container; and an outlet connection with said inner container passing through the wall of the main container at the side where the walls of the two lie together, said connection serving to rigidly bind the two containers and to strengthen their union with each other.

6. In a fuel tank embodying an outer reserve container and an inner supply container and having hand-operable means for filling the latter from the former; a combined drain outlet and strainer connection comprising a hollow casing extending into said inner container through the wall of the outer one with the walls of the two clamped between a peripheral shoulder thereof and a collar member on one end, a perforate hollow member extending through an enlarged central chamber of said casing in alinement with the opening therethrough and having a strainer-screen covering through which liquid flowing from the inner container must pass before entering said chamber, a feed pipe leading from said chamber, and a plug closing the outer end of said casing and carrying said perforate hollow member.

7. A fuel tank comprising an outer main rectangular container having a bottom formed by a plate with marginal flange fitting thereover and sealed against leakage by a hardened molten substance filling the crevice therearound; a relatively small and likewise rectangular container of sheet metal supported therewithin at the upper end in a three-sided fit with edges flush to the edges

thereof and leaving a gap between walls of the two at one side, said small or inner container having its walls gradually receding from the surrounding walls of the main container at three sides but lying thereagainst at the fourth side and the two containers being welded together as integral structures, and a top-plate having a marginal flange engaging over the upper end of the main container and sealed against leakage by a hardened molten substance filling the crevice therearound.

In testimony whereof I affix my signature.

JOHN SCHEMINGER, JR.