June 3, 1952 J. BROWN 2,599,162

COMBINATION VENTING, FILLING, AND GAUGING DEVICE FOR FUEL OIL TANKS

Filed April 8, 1947 2 SHEETS—SHEET 1

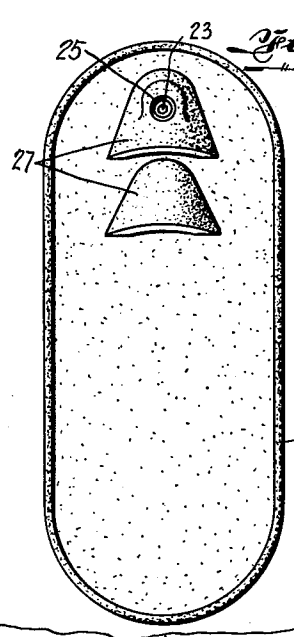


Fig. 1.

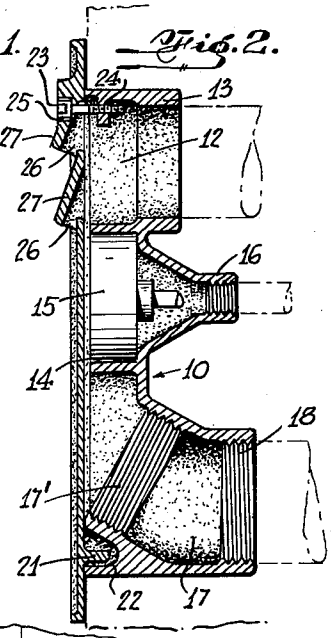


Fig. 2.

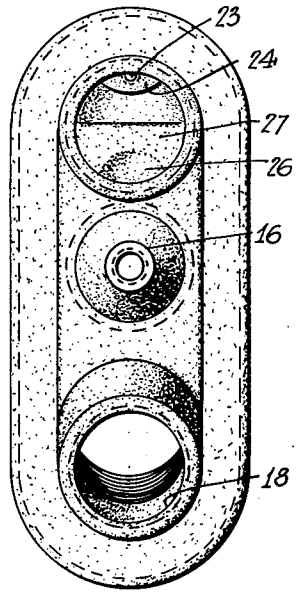


Fig. 3.

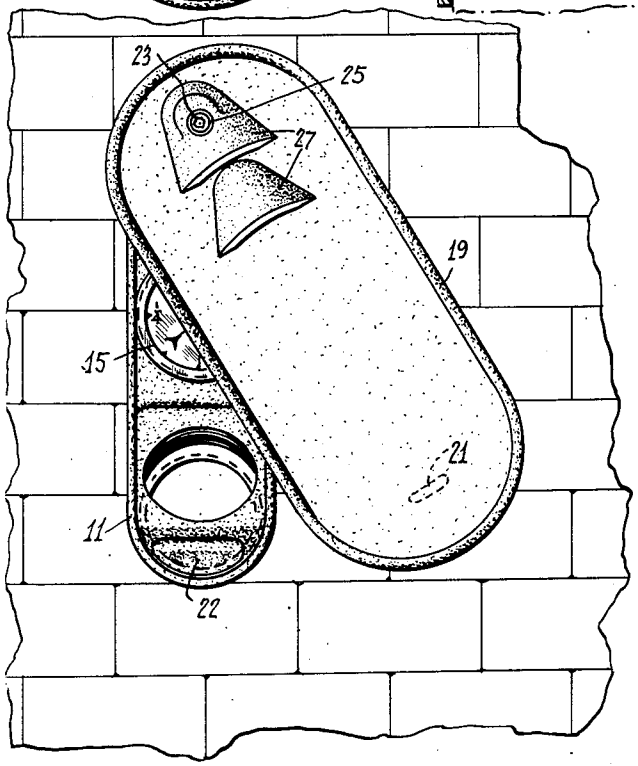


Fig. 5.

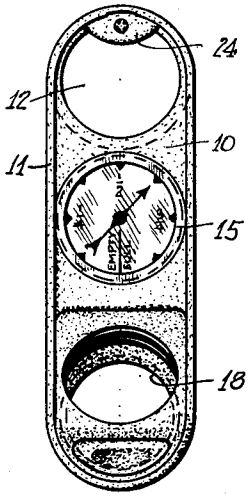


Fig. 4.

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Fig. 6.

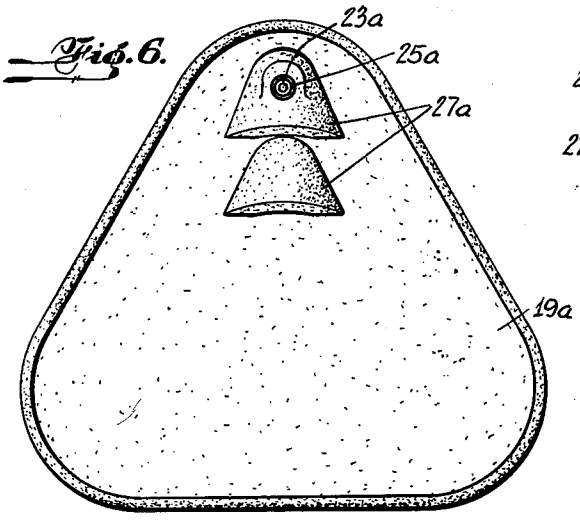


Fig. 7.

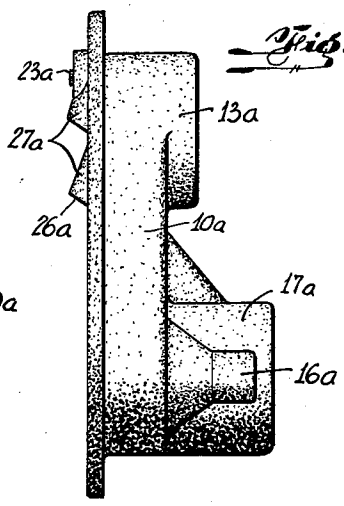


Fig. 8.

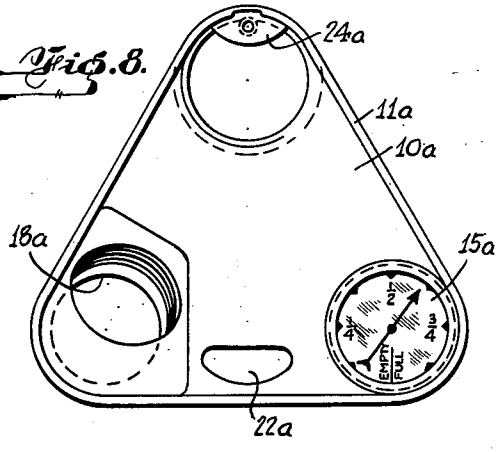
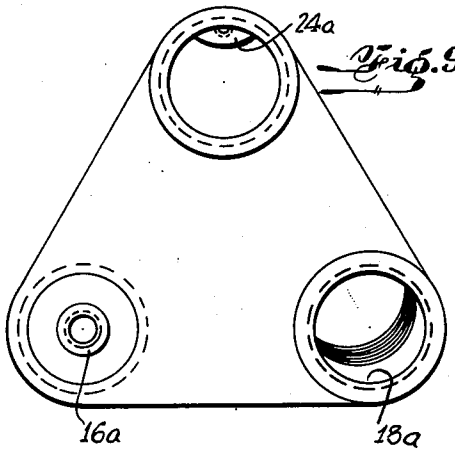


Fig. 9.



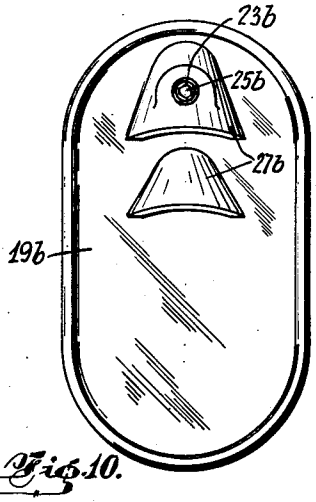


Fig. 10.

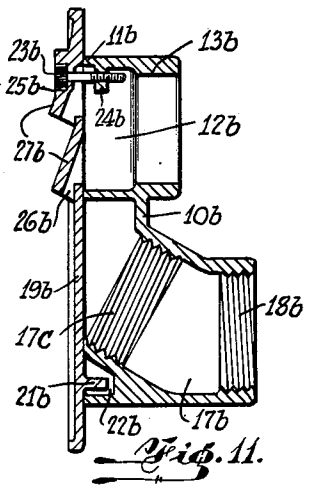


Fig. 11.

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UNITED STATES PATENT OFFICE

2,599,162

COMBINATION VENTING, FILLING, AND GAUGING DEVICE FOR FUEL OIL TANKS

Joseph Brown, Drexel, Pa.

Application April 8, 1947, Serial No. 740,212

1 Claim. (Cl. 220—3.8)

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This invention relates to new and useful improvements in devices for filling and venting fuel tanks and to be disposed distant from the tank and embedded in the wall of a house or building and available to the fuel distributor from the outside of the building.

An object of the invention is to provide a simple, durable device composed of a minimum number of parts which are rugged and can be easily assembled in position and can be as easily and quickly operated to fill and vent the tank.

A further object is to provide a receptacle having parts to receive fill and vent pipes, said receptacle including a louvered lid pivotally secured to the receptacle in such manner that it may be swung to one side to make the fill pipe accessible while being retained on the receptacle.

A further object is to provide a device in which the parts are so related that when the attendant leaves the spot he can lock up the parts so that tampering is prevented while permitting free venting and protection of the connections to the tank from inclement weather and other factors.

Still further, it is an object to provide a device which can be made by simple casting operations and assembled with equal economy to be locked against opening except by one with authority so to do.

Another object is to provide in such a receptacle, an indicator or guage that can be read at the fuel filling position to indicate the level of the fuel in the tank so as to eliminate overflowing of the tank and thus prevent loss of fuel oil and lessen the fire hazard, and at the same time to permit of delivery of the fuel without regard to the presence or absence of the home owner or building superintendent.

A further object is to provide a receptacle and closure for the outer ends of a fill and a vent pipe of oil storage tanks which hold the fuel oil of oil burners to make the inlet end of the fuel pipe accessible to the attendant on fuel oil delivery trucks at the street level without requiring anyone's presence at the tank to determine the level of the fuel in the tank. The attendant can tell by reading the indicator outside the building whether or not fuel oil is required.

Further and more specific objects, features and advantages will more clearly appear from the detailed specification hereinafter set forth especially when taken in connection with the accompanying drawings which illustrate present preferred forms which the invention may assume and which form part of the specification.

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Briefly and in general terms, the invention comprises a simple box casting having venting and filling openings, and in some cases a recess for an indicator, with sockets at the rear in line to receive connections from the tank, for venting, filling, and for indicating liquid level. The filling opening walls are preferably sloped with the threads therein to receive a cap sloped at an angle preferably of sixty degrees to the horizontal, which has been found the most convenient angle for such use. The casting is related to a cover pivoted thereon and simple fastening means is provided which also acts as a pivot means. The cover and casting have related projections which prevent swinging of the cover when the fastening device is effective so that the door, when in closed position, may be drawn tightly against the casting and held there securely.

The present preferred form which the invention may assume is illustrated in the drawings, of which:

Fig. 1 is a front elevation of the device with the cover plate in closed position.

Fig. 2 is a vertical central longitudinal section through the device shown in Fig. 1.

Fig. 3 is a rear elevation of the device.

Fig. 4 is a front elevation of the device with the cover removed.

Fig. 5 is a front elevation of the device in situ with the cover swung aside for filling.

Fig. 6 is a front elevation of a modified form of the device with the cover plate in closed position.

Fig. 7 is a side elevation thereof.

Fig. 8 is a front elevation of the device shown in Fig. 6 with the cover removed.

Fig. 9 is a rear elevation of the device shown in Figs. 6, 7, and 8.

Fig. 10 is a front elevation of another modified form of the device with the cover plate in closed position.

Fig. 11 is a central vertical longitudinal section through the device shown in Fig. 10.

Referring now merely to the preferred specific forms shown in the drawings, it is seen that, with reference to Figs. 1 to 5, inclusive, the device comprises a casting 10 having a peripheral flange 11 and three openings therein; a vent passage 12 at the rear of which is a socket 13 for the reception of a vent pipe, shown in dotted lines (Fig. 2), from the fuel tank; a recess 14 to receive a fuel indicator 15 of any desired type, at the rear of which there is a threaded socket 16 to receive a cable, shown in dotted lines (Fig. 2), or other transmission means from the level gauge

in the fuel tank; and a lower opening 17 for filling purposes, having front threads 17' to engage a threaded nipple on the filling pipe from the fuel supply tank truck. The slope of this threaded bore is preferably about 60° to the horizontal, which has been found to be the best angle for the proper engagement with the filling nozzle when it is inserted into said opening 17. At the rear of the opening or passage 17 is a threaded socket 18 to receive a pipe, shown in dotted lines (Fig. 2), extending from the fuel tank.

The front of the casting, which is to be embedded in a well, as shown in Fig. 5, is to be normally covered by a plate 19, which is provided with a rearwardly extending projection or finger 21 which, when the cover is in closed position, projects into a recess 22 formed at the lower portion of the front face of the casting. The cover is supported on the front face of the casting 10 by means of a key-operated screw 23 which threadably engages a lip 24 dependent from the top wall of the casting 10 and its head is housed in a recess in the front face of the cover 19. By tightening up on the screw 23, the cover is held rigidly in closed position against the face of the casting 10 with the finger 21 projecting into the recess 22 to prevent force being used to swing the cover plate around the pivot without using the key to loosen the screw 23. When the fuel attendant operates his key to release the screw 23, the cover is loosened enough to swing it aside, as shown in Fig. 5, sufficiently to insert a filling nozzle into the filling opening and also to view the indicator.

In line with filling passage 12, the front cover 19 is provided with vent apertures 26 protected by downwardly sloping lips 27 so that the venting of the tank is always operative although the passage is inaccessible when the cover is closed and rain, snow, etc., cannot reach the inside.

In the form of the invention shown in Figs. 6 to 9, inclusive, the shape of the casting is triangular and resembles somewhat the instrument board of an automobile. In this form, the casting is 10*a*, the cover 19*a*, with the venting passage 13*a*, the filling passage 17*a* and the socket for the indicator connection at 16*a*. The indicator casing 15*a* is disposed in the lower right corner of the casting and the filling passage and socket 18*a* in the lower left hand corner. The venting passage is disposed at the apex of the casting on a median vertical line. The recess 22*a* is disposed on this line at the bottom of the casting. The slope of the filling passage is as before. The screw 23*a* is housed in recess 25*a* and the vent openings 26*a* and protecting lips 27*a* provided on the cover 19*a*.

In the form of the invention shown in Figs. 10 and 11, the shape of the casting and the cover is substantially the same as in Figs. 1 to 5, inclusive, but in this form, the indicator is omitted. In this form are shown the casting 10*b* with the peripheral flange 11*b*, with the vent passage 12*b* and its associated pipe socket 13*b* at the rear. There is also the filling passage 17*b* with the threads 17*c* sloped at 60°, as before, and the threaded socket 18*b* at the rear thereof. The cover 19*b*, as before, is pivoted on a screw 23*b* engaging the dependent lip 24*b*, the head of the screw lying in a recess 25*b* in the face of the cover. The cover is also provided with a finger 21*b* projecting into a recess 22*b* in the face of the casting and acting as before described.

In the operation of the device, and considering the parts in closed position shown in Fig. 2, it will be obvious that as the driver of the fuel truck wishes to fill the tank, he inserts his key into engagement with the head of the screw 23 and turns it until the cover is withdrawn an amount sufficient for the projection or finger 21 to be clear of the recess 22 whereupon he can swing the cover to one side, as shown in Fig. 5, so that he may inspect the indicator and thereupon insert his filling nozzle into the filling passage 17. When a sufficient supply of fuel is passed into the tank, he withdraws the nozzle, swings the cover back into the proper position, and then tightens up on the screw 23 thereby locking the cover into place. All the time, whether the cover is opened or closed, the venting operation is not obstructed in any way, and when the parts are locked closed, the venting action will continue but access to the interior is prevented and rain and other elements cannot reach the venting passage and therefore get into the tank.

While the invention has been described in detail, and with respect to present preferred forms which the invention may assume, it is not to be limited to such forms and details since many changes and modifications may be made in the invention without departing from the spirit and scope of the invention in its broadest aspects. Hence, it is desired to cover any and all forms and modifications of the invention which may come within the language or scope of the appended claim.

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

A venting and filling device which comprises a casting having a front face with an extending peripheral flange therearound and having venting and filling passages and a first recess, an indicator in said first recess, sockets on the rear of the casting and in line with said passages and first recess to receive connections from a remote tank and from a liquid level responsive device in said tank, a cover pivoted to the casting, means acting as a fastening means and a pivot means to hold the cover tight against the casting and to loosen the same therefrom, said casting having a second recess remote from the pivot axis of the cover and a finger on the cover extending into said second recess when the fastening means is tightened, to abut the walls of said recess to prevent the cover from swinging from its closed position.

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