

No. 871,813.

PATENTED NOV. 26, 1907.

W. H. McNUTT.
TANK.

APPLICATION FILED DEC. 12, 1906.

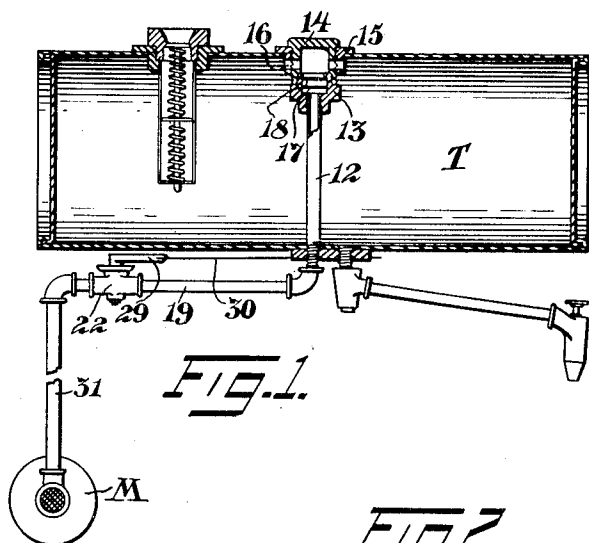


FIG. 1.

FIG. 7.

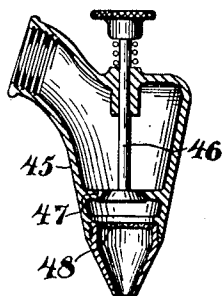


FIG. 2.

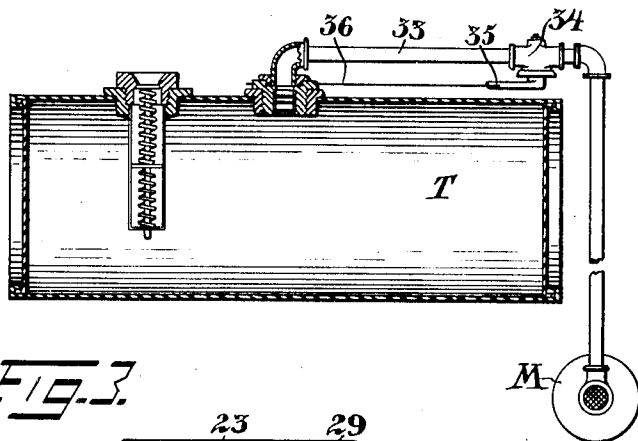


FIG. 6.

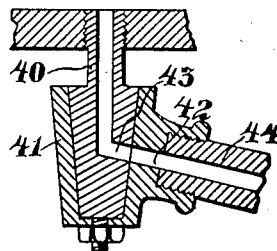


FIG. 3.

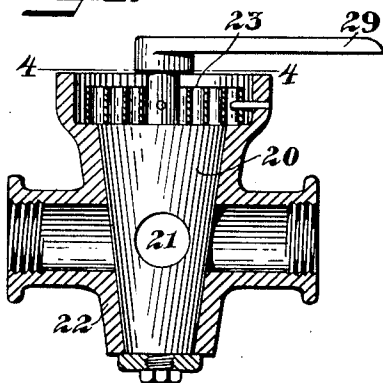


FIG. 5.

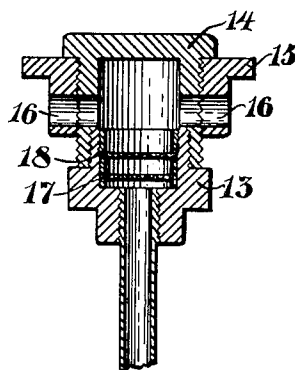
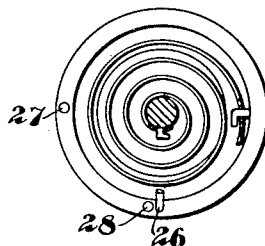


FIG. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM H. McNUTT, OF NEW YORK, N. Y., ASSIGNOR TO THE NON-EXPLOSIVE SAFETY NAPHTHA CONTAINER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF SOUTH DAKOTA.

TANK.

No. 871,813.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed December 12, 1906, Serial No. 347,399.

To all whom it may concern:

Be it known that I, WILLIAM H. McNUTT, a citizen of the United States, residing in the borough of Manhattan, city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Tanks, of which the following is a specification.

This invention relates to tanks or vessels for containing highly explosive fluids such as gasoline, naphtha or the like; and has for its object to provide an improved safety device whereby upon abnormal heat of a dangerous character generated in the vicinity of the vessel, the vapors generated in the tank, or the liquid itself, to a certain extent are permitted to escape, yet flame will not be permitted to reach the liquid or vapor in the tank itself by back firing.

A further object of the invention is to provide an improved means for drawing off the contents of the tank without permitting ignited vapor to return into the tank.

In the accompanying drawing illustrating embodiments of the present invention, Figure 1 is a vertical longitudinal section through the apparatus, certain parts being shown in elevation. Fig. 2 is a similar view of a modification. Fig. 3 shows the spring safety valve in vertical section. Fig. 4 is a section on the line 4-4 indicated in Fig. 3. Fig. 5 shows in section the escape opening with the apertured members. Fig. 6 is a section through the outlet valve member; and Fig. 7 shows a spring valve at the end of the outlet tube.

The tank or vessel T in the present instance is shown as of cylindrical shape such as the tank used on motor vehicles or boats for carrying a supply of gasoline or naphtha for the engine. A suitable outlet pipe is provided communicating with the upper portion of the tank, and a valve is arranged in the outlet pipe that is normally retained closed by a member that is either inflammable or otherwise weakened or disrupted by heat. Means are provided for operating this valve upon release of the said retaining means whereby the outlet will be automatically opened as soon as there is sufficient heat to operate the said means. Thereupon the vapor in the tank can escape as fast as generated and even the liquid contents may flow out.

In the construction shown in Fig. 1 an outlet pipe 12 extends into the tank at the bottom and upward and connects with a socket member 13. This member is threaded externally at its upper part and is engaged by a hollow plug 14 screwing in an internally threaded sleeve 15 that is inserted in a bore in the top of the tank. Suitable registering bores 16 in the members 14 and 15 gives access from the tank into the interior of the sleeve 13. One or more apertured plates or disks are placed in the sleeve 13, such as wire gauze disks 17 and 18 which will prevent any flame that might pass back through the tube 12 from igniting the vapor in the tank. In a horizontal extension 19 of the outlet 12 is a shut-off cock having a plug 20 with a single transverse bore 21 rotatable in the cock frame 22. A spring 23 between the frame and the plug tends to shift the plug to bring its bore 21 in alinement with the outlet pipe and open the passage, the movement of the plug being limited by pin 26 engaging abutments 27 and 28 in the frame. A coil spring may be used as shown. To retain the plug normally closed, its handle 29 is connected with a suitable portion of the tank by a suitable inflammable or heat controlled device, such as a textile cord 30. Upon a large amount of heat occurring in the vicinity of the tank, this string will ignite and burn off, thereby releasing the handle 29. The coil spring 23 will therefore at once turn the plug to the open position, giving an outlet to the tank through the pipes 12 and 19. In the case of a motor car, the outlet pipe may connect with the muffler M by a pipe 31.

In the construction illustrated in Fig. 2, the outlet pipe 33 connects with the top of the tank instead of passing up through the tank from the bottom. But the construction and operation of the device is substantially the same. The cock 34 has its handle 35 held in the open position by cord 36 of inflammable material. A high degree of heat will ignite this cord releasing the handle of the cock, whose construction being the same as shown in Fig. 3 will at once open and permit the contents of the tank to escape.

When it is desired to draw off the contents of the tank, an outlet member in the form of a cock is provided in which the plug 40 is secured in the bottom of the tank, and the

frame 41 is made rotatable on the plug so that the passage 42 in the frame can be brought to register with the transverse part of the passage 43 in the plug, as indicated in 5 Fig. 6. An outlet pipe 44 leads from the frame 41 of the cock, and at its lower end is a valve member 45 in which operates a spring valve 46 normally closing the opening in the valve seat wall 47 therein. If de- 10 sired, a wire gauze disk 48 may be placed in the bottom portion of this outlet, to prevent any flame or ignited gas passing back into the tank and insure against explosion.

The safety valve device obviously can be 15 used to control the outlet for the gasoline or other liquid in the vessel, in which case, its construction would be identically the same except that the bore 12 in the plug would be shifted ninety degrees, and the valve would 20 be held in operative position, that is would be held open by the inflammable cord; upon rupture of the cord by heat, the spring would shift the valve to its safety position in which the flow of the gasoline from the tank 25 to any suitable member, such as a carbureter, would be arrested.

Having thus described my invention, I claim:

1. A safety device for tanks comprising an

outlet member leading from the top portion 30 of the tank, a cock in said outlet member having a rotary plug with a transverse bore, a coil spring between said plug and the cock frame tending to move the plug to the open position, an arm on said plug, and an in- 35 flammable cord between said plug arm and the tank retaining the plug in the closed position, whereby rupture of the cord from ignition thereof will permit the spring to swing the plug to open position. 40

2. A safety device for tanks comprising an outlet member leading from the tank, a cock in the outlet member having a rotary plug, a coil spring connected between the plug and the cock frame tending to move the plug to 45 safety position, and an inflammable cord connected with the plug to retain it in operative position, whereby rupture of the cord from ignition will permit the spring to swing the plug to open position. 50

Signed at Nos. 9 to 15 Murray street, New York, N. Y., this 10th day of December, 1906.

WILLIAM H. McNUTT.

Witnesses:

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