

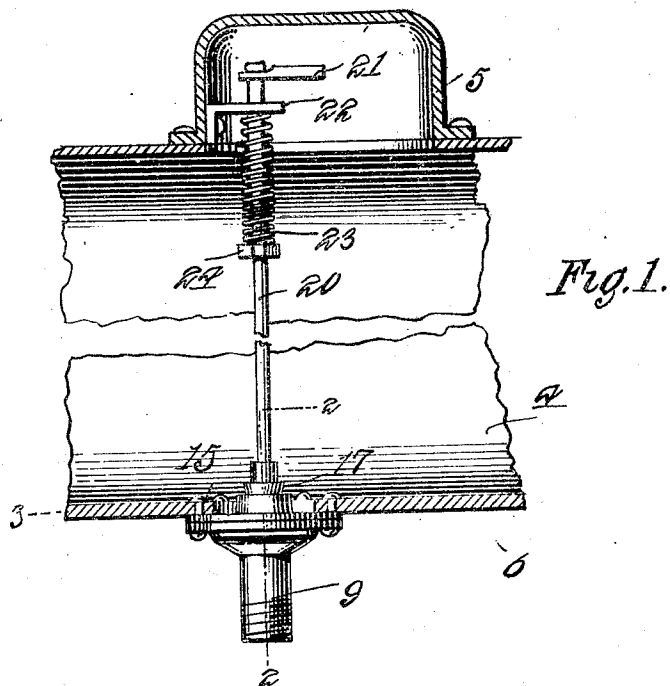
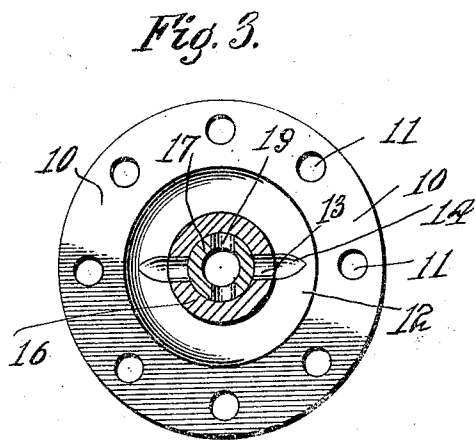
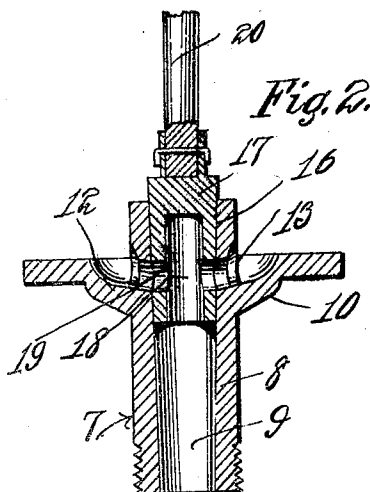
May 11, 1926.

1,584,548

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OIL TANK VALVE

Filed August 21, 1922



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UNITED STATES PATENT OFFICE.

THEODORE E. KARPE, OF EAST ENID, OKLAHOMA.

OIL-TANK VALVE.

Application filed August 21, 1922. Serial No. 583,324.

This invention relates to new and useful improvements in outlet devices for oil tank cars, the primary object of the present invention being to provide a device of this character including an outlet leg arranged at the bottom of the tank and only operable from the dome of the tank car, means being provided to prevent unauthorized opening of the valve associated with the outlet leg.

Another important object of the invention resides in the provision of a valve for the outlet leg of an oil tank car, the valve having means associated therewith for normally urging the same to its seat to prevent leakage and tampering.

A further object of the invention is to provide a novel valve seat having lateral outlet ports to co-operate with corresponding ports of the valve so that a simple and durable outlet device is provided which can be easily and conveniently operated by those authorized to do so.

Other objects and advantages of the invention will become apparent during the course of the following description.

In the accompanying drawings forming a part of the description and wherein like numerals are employed to designate like parts throughout the several views,

Figure 1 is a vertical longitudinal section of an oil tank car, showing the invention applied thereto,

Figure 2 is an enlarged vertical section of the valve and valve seat, and

Figure 3 is a transverse section through the valve seat and valve taken on the line 3—3 of Fig. 1.

Referring to the drawing wherein for the purpose of illustration, I have shown the embodiment of the invention which is at present preferred, the numeral 4 designates the ordinary form of tank for oil tank cars and has its top provided with a conventional type of dome 5. The bottom 6 of the tank is provided with an enlarged opening adapted to receive an outlet leg and valve seat combined indicated in its entirety by the numeral 7. This combined outlet leg and valve seat comprises a vertically disposed tubular element 8 having a bore 9 therethrough, the bore at the upper end of the element being tapered from its larger upper end toward the center thereof. This element adjacent its upper end is provided with an outstanding annular flange 10 the outer

edge of which is equipped with a plurality of bolt apertures 11 whereby the element can be bolted to the bottom 6 of the tank 4. This flange is provided with an annular depression or groove 12 which is arranged next to the upper end of the outlet leg 8. It will be noted that the flange 10 is spaced a distance below the upper end of the outlet leg as clearly shown in Fig. 2. This upper end of the outlet leg which is arranged above the flange 10 is provided with a pair of diametrically disposed outlet openings 13 which incline downwardly, the lower edges of the openings being flush with the bottom of the groove 12 or with diametrically disposed grooves 14 provided in the bottom of the annular groove 12. As seen in Fig. 1 the upper end of the tubular member 8 is adapted to project through the opening in the bottom of the tank 4 and the flange 10 is bolted in position by bolts or rivets 15 passing through the apertures 11 in the flange 10 and through the bottom of the oil tank.

The upper end of the outlet leg having its bore tapered as set forth above, provides the same with a valve seat 16 adapted to snugly receive therein a tapered valve 17 with its smaller inner end arranged furthest in the outlet leg 8. This valve is provided with an axially extending cavity 18 and a pair of diametrically disposed ports 19 provided in the walls of the valve communicate with the cavity and when aligned with the openings 13 in the outlet leg, permit oil or other fluid in the tank 4 to pass therefrom out through the outlet leg 8. Of course, the normal position of the valve 17 when the tank is filled is such that its ports 19 are misaligned with the openings 13 in the valve seat. The lower end of the tubular element 8 is threaded for connection with a pipe or any other suitable device for conveying the contents of the tank to any suitable place.

In order to retain the valve 17 firmly within its seat 16, an operating rod 20 is fastened to the relative top of the valve 17 and extends vertically through the tank 4 so that its upper end is arranged within the dome 5 of the tank. The upper end of the operating rod is provided with a laterally extending handle 21 by which the rod can be easily rotated to align or misalign the ports in the valve with the openings 13 in the valve seat. In order to support the operating rod 20 in axial alignment with the axis

of the valve 17, an L-shaped bracket 22 has one arm fastened to the side of the dome 5 and its other arm extending inwardly of the dome and apertured for passage of the operating rod.

In order that a continual downward force can be exerted on the valve 17 to securely hold the same in its seat, a coil spring 23 is mounted on the rod with one end abutting a nut 24 positioned between the ends of the operating rod, while the opposite end of the spring is adapted to abut the rod engaging arm of the L-shaped bracket 22. From this arrangement it will be seen that opening of the valve 17 from the exterior or under side of the tank 4 is impossible when the tension of the coil spring is made sufficiently strong so as not to yield against manual pressure. However, authorized persons having access to the dome 5 can easily turn the operating rod 20 by means of the handle 21 to align the ports 19 in the valve with those in the valve seat so that the contents of the tank car can be dispensed as desired.

The foregoing description and accompanying drawings have reference to what

might be considered to be the approved or preferred form of my invention. I desire it to be understood that I may make such changes in the construction, combination and arrangement of parts, materials, dimensions, et cetera, as may prove expedient and fall within the scope of the following claim.

Having thus fully described my invention what I claim is:—

An outlet leg for tank cars having a longitudinal bore tapering downwardly from its larger upper head, a tapered plug valve seated therein and having a longitudinal cavity to communicate with the bore in said leg and having openings in its side walls communicating with said cavity, an annular flange extending outwardly from the leg between its ends, said flange in its upper face having an annular groove surrounding said leg, said annular groove having diametrically extending grooves, and said leg being provided with openings in alignment with said diametrically arranged grooves.

In testimony whereof I affix my signature.

THEODORE E. KARPE.