Dec. 25, 1934. H. V. LE BOURVEAU 1,985,787

FILL PIPE LOCKING DEVICE

Filed July 12, 1933

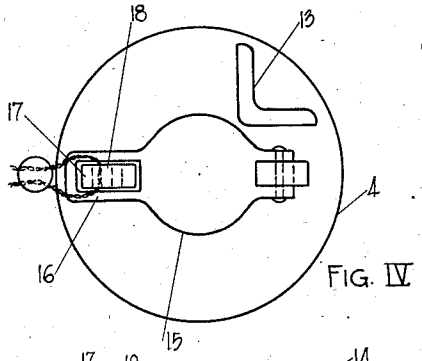


FIG. IV

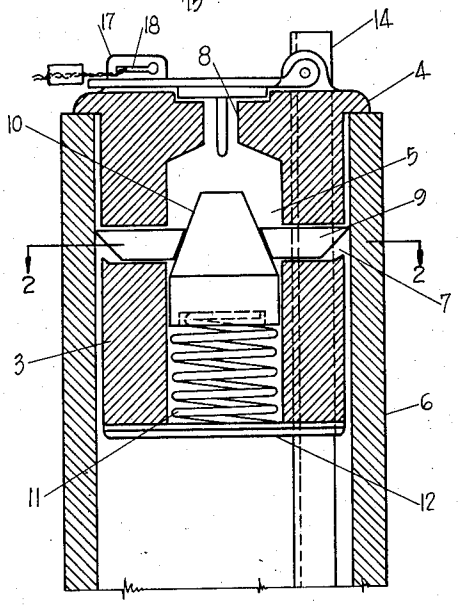


FIG. I

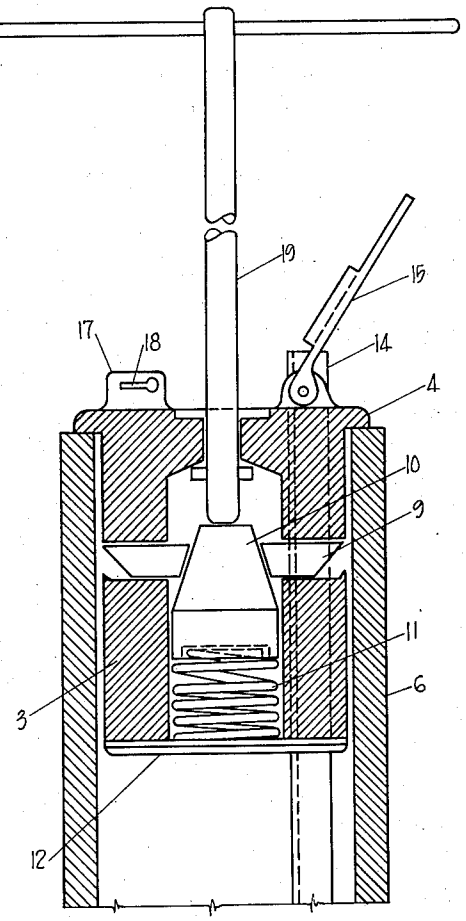


FIG. III

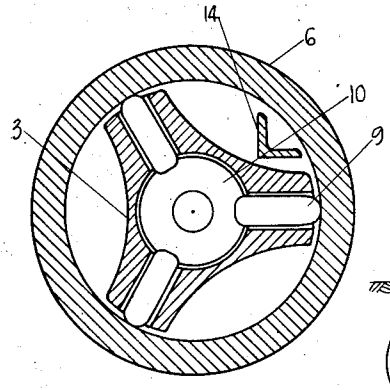


FIG. II

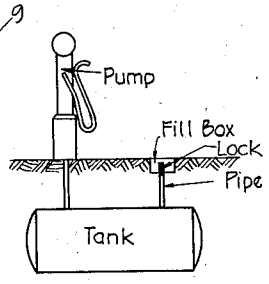


FIG. VI

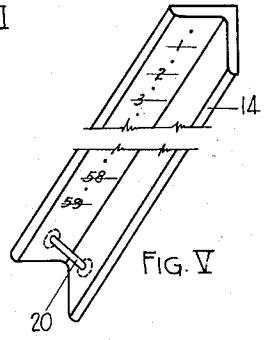


FIG. V

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By his Attorney

Patented Dec. 25, 1934 1,985,787

UNITED STATES PATENT OFFICE

1,985,787

FILL PIPE LOCKING DEVICE

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Application July 12, 1933, Serial No. 680,159

2 Claims. (Cl. 220—55)

This invention relates to plug locks and is more particularly concerned with a combined closure and lock for insertion in a pipe having a smooth inside surface.

It is a usual practice to store gasoline and other liquids in underground tanks, provided with a fill pipe extending from the tank to a suitable fill box. Several such fill pipes may terminate in one fill box. In the past it has been the practice to provide the top of the fill pipes with a screw cap which can readily be removed. The underground tank is usually filled from a tank truck by removing the screw cap from the fill pipe and inserting the nozzle of a hose connected to the tank truck into the fill pipe. The fill pipe cap has also to be removed by the service station operator to gauge the contents of the tank.

Gasoline in the underground tanks is dispensed through metering pumps connected to the tanks. In some cases service station operators have added or substituted an inferior product to the tanks through the fill pipes and have thus defrauded the public who rely upon the brand name usually attached to the metering pump and who are entitled to receive a genuine product. Furthermore, such substitution and adulteration has resulted in harm to the goodwill of the owner of such a brand name.

It is an object of this invention to provide an improved means for locking and sealing the tops of the fill pipes and similar pipes leading to liquid storage tanks against removal by unauthorized persons.

Another object of this invention is to provide for the gauging of the tanks to which the fill pipe leads, without the removal of the locked cap.

The further objects of my invention will be apparent from the following description throughout which reference is made to the accompanying drawing in which:

Figure I is a sectional elevation of the fill pipe lock in a locked position.

Figure II is a part sectional plan view taken on the line 2—2 of Figure I.

Figure III is a sectional elevation of the fill pipe in unlocked position.

Figure IV is a top view of the assembly shown in Figure I but with gauge stick removed.

Figure V is a perspective view of the gauge stick for use with the lock.

Figure VI is a small scale diagrammatical view showing a use of the invention.

Referring to Figure I, numeral (3) represents the body of the lock having a top flange (4). The body of the lock is provided with a central opening (5) extending throughout the major portion of its length. The top flange (4) of the body is preferably either less than or of the same diameter as that of the outside of the fill pipe (6) into which the lock fits. Radial passages (7) extend from the upper portion of central opening (5) through the wall of the lock body. A keyway (8) extends vertically from opening (5) through the top flange (3). Slidably fitted in the radial passages (7) are bolts (9) having their inner and outer ends chamfered. A truncated cone (10) is fitted in the opening (5) with the conical face pointed upward. Below the member (10) is a coil spring (11) held in place under tension by a plate (12).

As will be seen from Figure IV a slot (13) is cut in the top flange (4) of the lock for the insertion of a gauge stick (14) illustrated in Figure V. The top flange (4) is fitted with a cover (15) attached at one end to the flange by a hinge pin. A slot (16) is provided in the other end of the cover (15) so that when the cover is in a closed position a lug (17) attached to the top flange may protrude therethrough. The lug (17) is in turn provided with a slot (18) through which a wire may be passed and sealed. A key (19) illustrated in Figure III is used to unlock and remove the plug from the fill pipe (6). The lock operates as follows:

By the pressure of the spring (11) upon the bottom of the conical member (10), which in turn presses upon the inner ends of the bolts (9), the outer ends of the bolts are forced slightly into the metal of the fill pipe, thus holding the plug lock tightly in place. The hinged cover (15) is sealed in closed position over the keyway to prevent access to the keyway without first removing the seal. To remove the plug lock from the fill pipe, the seal is first broken and the cover (15) turned back upon its hinge. The key (19) is then inserted in the keyway (8) and pressed down and turned so that it is held in the position shown in Figure III. By the pressure of the key upon the top of the truncated cone (10) the spring pressure is released from the bolts (9) so that the plug can be readily lifted out of the fill pipe.

The gauge stick (14) shown in Figure V may normally be kept attached at its lower end to the lock by means of a cotter pin (20) so that it cannot be entirely removed except at such times as authorized deliveries into the storage tank are made. The gauge stick will normally be of a length equal to that of the distance from the bottom of the tank to the top of the lock.

The invention has been disclosed herein in an embodiment at present preferred for illustrative purposes, but the scope of the invention is defined by the appended claims rather than by the foregoing description.

I claim as my invention:

1. In a fill pipe locking device a body adapted to fit the inside wall of a fill pipe, radial bolts provided with sharpened outer ends extending from said body and adapted to contact the inside wall of the fill pipe with said outer sharpened ends, a coned member in contact with the inner ends of said bolts and slidably mounted in the body at right angles to said bolts, a spring pressing upward on the base of said coned member, a keyway in the top wall of said body extending to the top surface of said coned member, a key adapted to fit said keyway by which pressure may be applied to the said coned member to release said radial bolts from contact with the inside wall of said fill pipe.

2. In a fill pipe locking device, a body adapted to fit the inside wall of a fill pipe, radial bolts provided with sharpened outer ends extending from said body and adapted to contact the inside wall of the fill pipe with said outer sharpened ends, a coned member in contact with the inner ends of said bolts and slidably mounted in the body at right angles to said bolts, a spring pressing on the base of said coned member, a keyway in the top wall of said body extending to the top surface of said coned member, a key adapted to fit said keyway, a projection from the side of said key whereby the said radial arms may be kept in released position by turning said key, substantially as described.

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