

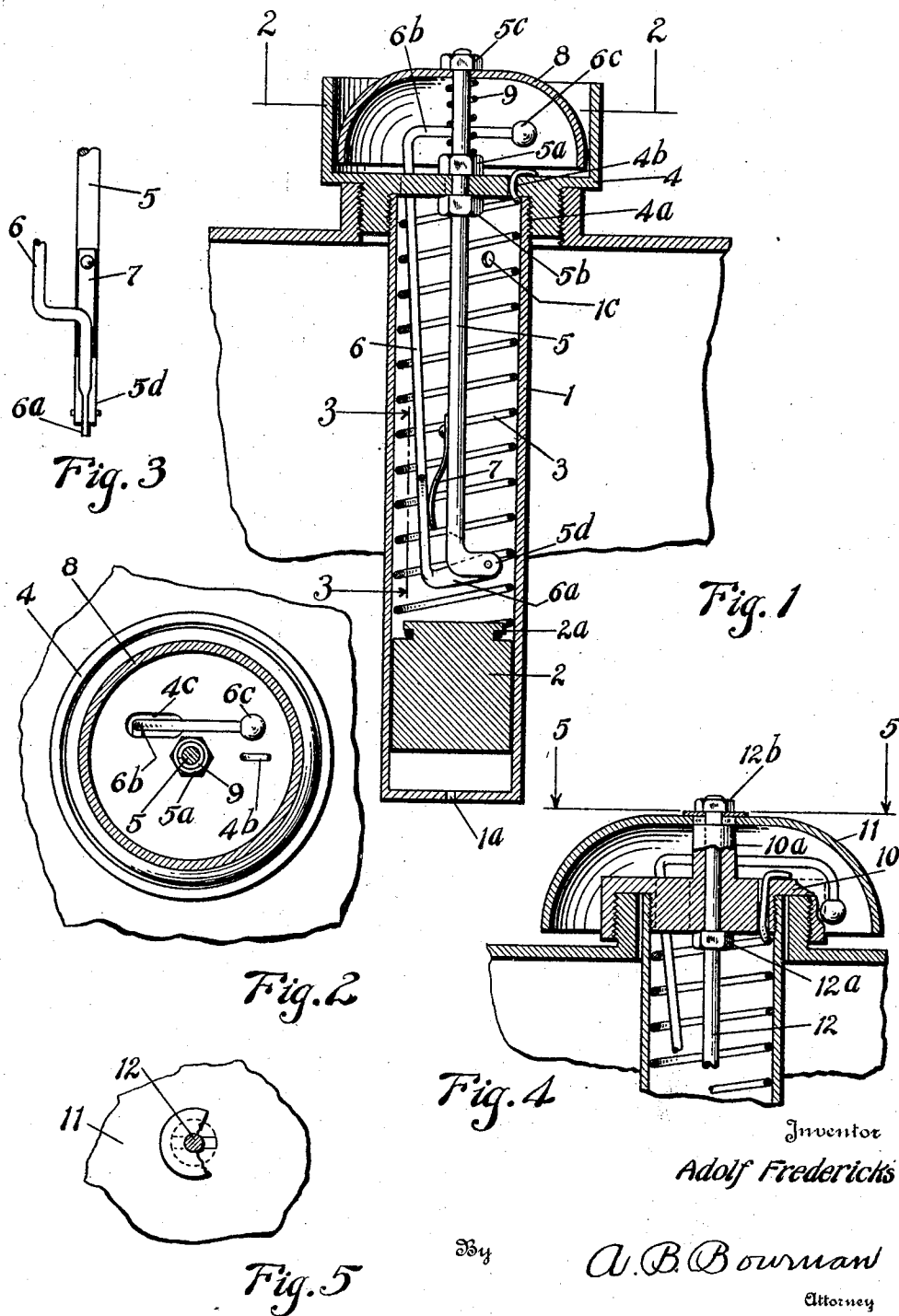
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LOW LEVEL ALARM FOR GASOLINE TANKS

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LOW-LEVEL ALARM FOR GASOLINE TANKS.

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My invention relates to a low level alarm for gasoline tanks, more particularly to a device for producing an alarm when the gasoline reaches a pre-determined low level in an automobile tank, and the objects of invention are: first, to provide an alarm of this class in which a distinct, audible sound will be made as soon as the level in the tank reaches a pre-determined point, and in which no sound is produced as long as the level is higher than this pre-determined point; second, to provide a device of this class with a plunger operating in a cylinder and suspended on a spring so that when the gasoline in the tank, and therefore in the cylinder, does not hold the plunger, it acts and reacts upon the spring, ringing a bell positioned outside of the tank; third, to provide an alarm device of this class which may be positioned in the ordinary filling hole cap of the gasoline tank, or otherwise if desired; fourth, to provide a device of this class in which the operation of the bell is stopped when the gasoline level is high, because the gasoline cannot quickly escape from the cylinder, therefore the plunger cannot readily reciprocate in the cylinder; and fifth, to provide a device of this class which is very simple and economical of construction, durable, efficient, easy to apply to the different makes of gasoline tanks, and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail, and particularly set forth in the appended claims, reference being had to the accompanying drawings and to the characters of reference thereon, which form a part of this application, in which:

Figure 1 is a longitudinal sectional view of the device in one form shown mounted in a tank ready for use; Fig. 2 is a sectional view through 2—2 of Fig. 1; Fig. 3 is a side view showing the operating lever and support from the line 3—3 of Fig. 1; Fig. 4 is a fragmentary sectional view of the bell and cap in a slightly modified form from that of the Figs. 1 to 3; and Fig. 5 is a fragmentary top view of the same from the line 5—5 of Fig. 4.

Similar characters of reference refer to

similar parts and portions throughout the several views of the drawings.

The cylinder 1, plunger 2, spring 3, filler cap 4, support 5, lever 6, spring 7, bell member 8 and spring 9 constitute the principal parts and portions of my alarm device in one form.

The filler cap 4 as shown in Fig. 1 is the ordinary type used in Ford automobile gasoline tanks. It is however, internally threaded at 4^a and into which is screwed the open end of the cylinder member 1, said cylinder member being threaded to fit therein. This cylinder member is closed at its opposite end and is provided with a small orifice 1^a, which is adapted to permit the slow entrance and exit of gasoline to the cylinder. This cap 4 is also provided with a hole 4^b therein, in which is supported the one end of the spring 3, which is an ordinary coil spring which fits inside of the cylinder 1 and extends to near the end thereof. Upon this spring 3 is suspended the plunger member 2 which is preferably solid metal to provide sufficient weight to cause movement up and down in the cylinder with the vibration of the automobile when traveling on the roadway. The plunger 2 is provided with an annular groove 2^a in its upper end in which the lower end of the spring 3 is fitted as shown best in Fig. 1 of the drawings.

It will be here noted that this plunger fits the cylinder close enough so that when there is gasoline between the inside end of the cylinder 1 and the plunger 2, it will prevent the downward movement of the plunger because the gasoline cannot escape fast enough to permit the movement of the plunger. The cap 4 is provided centrally with a hole in which is rigidly mounted the support 5 and held rigidly in position by means of the nuts 5^a and 5^b. This support extends upwardly from the cap some distance, and positioned on the same is a bell member 8, which is supported by means of a compression spring 9 interposed between the nut 5^a and the inner side of the bell member 8, and the bell member 8 is held in position against the spring by means of the nut 5^b. The lower end of the support 5 is provided with a right angle turn 5^c upon which is pivotally mounted the one end of the lever 6, which is also provided with an approximate right angle turn 6^a. This lever 6 extends upwardly through a slot 4^c in the cap 4 and is pro-

vided at its upper end with a right angle turn 6^b, and on its extended end with a clapper member 6^c, which is adapted to engage the interior of the bell member 8 and cause the bell member 8 to vibrate, it being noted that the plunger 2 engages the portion 6^a of the lever 6 with its reciprocation in the cylinder 1 caused by its suspension on the spring 3 when there is no gasoline in the lower end of the cylinder to prevent the reciprocation of the plunger. The cylinder 1 is also provided with an air hole 1^c for relief of the air pressure and interposed between the support 5 and the lever 6 is a spring 7 which tends to shift the lever away from the support as soon as the plunger is not in engagement with said lever 6.

In the modified form of construction shown in Figs. 4 and 5 of the drawings, the cap 10 is the conventional form of cap for screwing on the outside of the gasoline filling opening of the tank, and in this case it is necessary to secure the bell member 11 rigidly to the cap so that the bell member 11 may be used for turning the cap tightly in position, in which case the cap is provided with an upwardly extending portion 10^a which extends upwardly and against which the inner face of the bell 11 rests. This portion 10^a being provided with an extended portion which interlocks with the bell member 11 to prevent the bell member 11 from turning relatively to the lug 10^a. Mounted centrally in the cap 10 is the support 12, the lower end of which is the same as the support 5 shown in Fig. 1 of the drawings, and the upper end is provided with nuts 12^a and 12^b, which clamp the bell member and cap rigidly together as shown best in Figs. 4 and 5 of the drawings. It will be noted that the cylinder is supported by an externally threaded portion of the cap 10 instead of an internally threaded portion as shown in Fig. 1 of the drawings. Otherwise the construction of the alarm device is the same as shown in Figs. 1 to 3 inclusive.

Although I have shown and described a particular construction, combination and arrangement of parts and portions, and a certain modification thereof, I do not wish to be limited to this particular construction, combination and arrangement nor to the modification, but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claims.

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

1. In an alarm device for a gasoline level indicator, a cylinder supported vertically in the upper portion of the tank, provided with a small orifice in the lower end thereof, a plunger reciprocally mounted in said cylinder, a spring upon which said plunger is

suspended, a lever positioned in said cylinder normally free from but adapted to be engaged by said plunger with the reciprocation of said plunger, and extending out of said tank, and a bell member adapted to be engaged by said lever.

2. In an alarm device for a gasoline level indicator, a cylinder supported vertically in the upper portion of the tank, provided with a small orifice in the lower end thereof, a plunger reciprocally mounted in said cylinder, a spring upon which said plunger is suspended, a lever positioned in said cylinder adapted to be engaged by said plunger with the reciprocation of said plunger, and extending out of said tank, a bell member adapted to be engaged by said lever, and means for shifting said lever in a disengaged position relative to said bell and in opposition to the bell-ringing action of said plunger.

3. In a device of the class described, a perpendicular cylinder member provided with a small orifice in its lower end communicating with the gasoline in the tank, a plunger reciprocally mounted in said cylinder and suspended on a spring, a bell member, and means normally free from but adapted to be engaged by said plunger for ringing said bell member.

4. In a device of the class described, a perpendicular cylinder member provided with a small orifice in its lower end communicating with the gasoline in the tank, a plunger reciprocally mounted in said cylinder and suspended on a spring, a bell member, and means for ringing said bell member, said means including a support, a lever pivotally mounted on said support, and adapted to be engaged by said plunger and a spring tending to separate said lever from said support.

5. In a device of the class described, a vertical casing provided with an orifice at its lower end adapted to communicate with liquid in a tank, a plunger reciprocally mounted in said casing, resilient means for suspending said plunger in said casing, a bell mounted at the upper end of said casing, and a lever pivotally mounted at its one end within said casing adjacent said plunger and extending with its opposite end beyond said casing and adapted to engage said bell, said lever being adapted to be struck by said plunger a short distance from its pivotal axis and impart considerable movement to its free end.

6. In a device of the class described, a vertical casing provided with an orifice at its lower end adapted to communicate with liquid in a tank, a plunger reciprocally mounted in said casing, resilient means for suspending said plunger in said casing, a bell mounted at the upper end of said casing, a lever pivotally mounted at its one

end within said casing adjacent said plunger and extending with its opposite end beyond said casing and adapted to engage said bell, said lever being adapted to be struck by
5 said plunger a short distance from its pivotal axis and impart considerable movement to its free end, and spring means for normally shifting the free end of said lever in disengaged relation with said bell.

In testimony whereof, I have hereunto set
my hand at Los Angeles, California, this
10 1st day of July, 1925.

ADOLF FREDERICKS.