W. W. BRISSENDEN.

PRESSURE INDICATOR.

APPLICATION FILED MAY 17, 1907.

916,261. Patented Mar. 23, 1909.

Fig. 1.

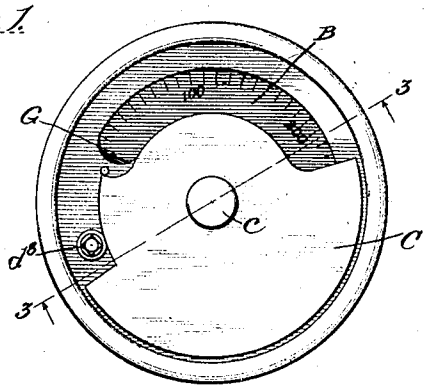


Fig. 2.

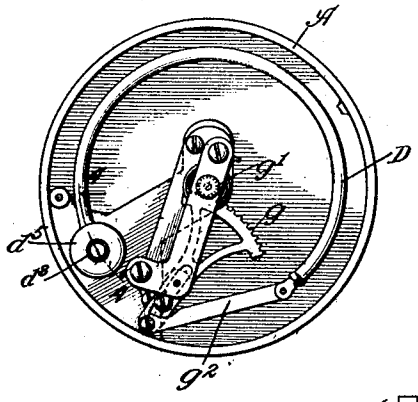


Fig. 3.

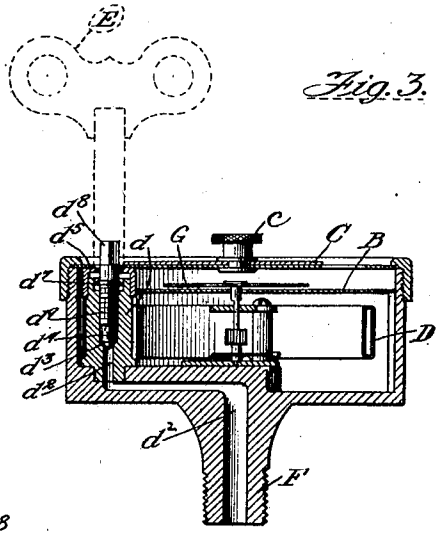
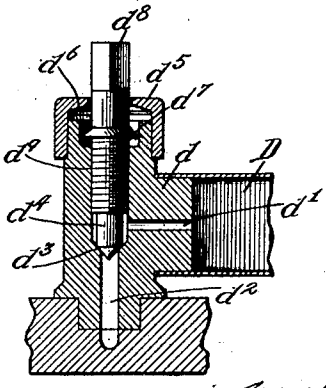


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

WALTER W. BRISSENDEN, OF CHICAGO, ILLINOIS, ASSIGNOR TO NATIONAL STEAM SPECIALTY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PRESSURE-INDICATOR.

No. 916,261. Specification of Letters Patent. Patented March 23, 1909.

Application filed May 17, 1907. Serial No. 374,292.

To all whom it may concern:

Be it known that I, WALTER W. BRISSENDEN, a citizen of the United States of America, and resident of Chicago, Illinois, have invented a certain new and useful Improvement in Pressure-Indicators, of which the following is a specification.

My invention relates to pressure indicators.

It relates more particularly to pressure indicators in which hollow springs are employed for operating the indicating mechanism. Prior to my invention, these hollow springs have been subject to the pressure at all times, unless some sort of a cut-off valve was provided at the back of the indicator, which is ordinarily inconvenient and undesirable. In any event, with the spring always subject to pressure, it is obvious that the tension of the spring will soon become weakened or impaired, and consequently the true pressure will not be indicated. With my improved construction, however, the indicator is adapted to be screwed directly into the tank or receptacle, or into a pipe or other coupling, and means were provided inside of the indicator for cutting off the pressure from the hollow spring, at the same time venting the latter to the atmosphere. In this way, the indicator and its cut-off valve are of a unitary and compact form, and can be readily attached to a tank or other source of pressure in the ordinary and usual manner. At different times, the pressure can be cut off from the indicator, and when this is done the interior of the hollow spring is vented to the atmosphere, and thus the spring is permitted to relax its tension and move the indicating mechanism to normal condition, or the zero mark on the dial.

When it is desired to ascertain the pressure, a key can be inserted in the face of the indicator, so as to open communication between the pressure and the spring, and at the same time close the vent. After the pressure has been observed or determined, it can then be cut off again, and thus considerable wear and tear on the spring is avoided, and the mechanism adapted to be used for a longer time without injury or deterioration.

To the foregoing and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawing, Figure 1 shows the face of the indicator, with the shutter open to expose the dial thereof. Fig. 2 shows the mechanism with the dial removed. Fig. 3 is a cross-section on the line 3—3 of Fig. 1. Fig. 4 is an enlarged sectional view of the combined cut-off valve and vent for the hollow spring.

As thus illustrated, my improved pressure indicator comprises a casing A provided with a dial B and rotatable shutter C. Said shutter can be operated by the central handle or loop portion c, so that the dial can be covered when not in use. Within the interior of said casing there is a curved hollow spring D having the inlet end thereof joined to the boss or solid portion d. This boss or solid portion has an inlet opening d^1 communicating with an inlet passage d^2, which latter has a valve-seat d^3 at its upper end. A screw-threaded valve d^4 has its lower end adapted to engage the said valve-seat to close communication between the passage d^2 and the interior of the hollow spring. The cap d^5 has an upper valve-seat d^6, which latter is adapted to be engaged by the beveled flange d^7 carried by the said screw-threaded valve. The upper end portion d^8 of the said screw-threaded valve is squared, and adapted to receive a key, such as the key E shown in dotted lines in Fig. 3. When the valve is down, as shown in Fig. 4, communication between the interior of the hollow spring and the source of pressure is cut off, and a leakage provided from the interior of the spring past the threads d^9 of the said valve, thus venting the interior of the spring to the atmosphere. When the valve is opened, so that the flange d^7 engages the seat d^6, then communication is established between the source of communication and the interior of the spring, and the vent passage is closed. In this way, the indicator and its cut-off valve are combined in a unitary structure, and the device as a whole has a rear boss or threaded portion F adapted to be screwed into a tank or pipe or other source of pressure. When it is desired to ascertain the pressure, the valve d^4 can be turned so as to move it upwardly, thus throwing pressure into the spring and closing the vent passage around the screw threads and upwardly through the cap d^5. After ascertaining the pressure, the valve can then be closed, and in so doing, pressure is not only cut off from the spring, but the contents of the spring—that is to say, the gas under pressure in the spring—is vented to the

atmosphere. This permits the spring to relax its tension, and to return the indicating mechanism to normal condition. It will be readily understood that the pointer G can be operated by the said spring through the medium of any suitable connection, such, for example, as the rack g and pinion g^1, said rack being operated by an arm g^2 connected with the free end of said spring. Any other suitable indicating arrangement can be employed without departing from the spirit of my invention.

I claim:

1. In a pressure indicator, a casing, a hollow spring, and a valve located within said casing and adapted when closed to cut off the pressure from said spring and vent the interior of the latter to the atmosphere, said valve provided with a turning portion disposed on the front or face of the indicator.

2. In a pressure indicator, a casing, a hollow spring, a dial, a valve extending through the dial and seated within said casing and adapted to cut off the pressure from said spring, said valve provided with a polygonal end portion disposed on the front or face of the indicator, adapted to be engaged by a key or other instrument.

3. In a pressure indicator, a casing containing a hollow spring, a threaded attaching boss on the back of said casing, indicating mechanism operated by said spring; a dial, and a valve inserted through said dial and seated within the said casing and controlling the communication between the source of pressure and the hollow spring, said valve provided with a turning portion disposed on the front or face of the indicator.

4. In a pressure indicator, a casing, a hollow spring, a threaded valve having one portion for cutting off communication between the source of pressure and the interior of said spring, and another portion for closing a leakage or venting passage around the threads thereof whereby the closing of the valve cuts off the pressure and vents the interior of the spring to the atmosphere, both spring and valve being seated within said casing.

5. A pressure indicator provided with a dial, a rotatable shutter adapted to be rotated to expose the dial, a hollow spring beneath the dial, and a valve inserted through the dial and controlling the communication between the source of pressure and the interior of the hollow spring.

6. A pressure indicator comprising a casing provided with a threaded boss at the back thereof, a dial at the front thereof, a shutter for covering the dial, and a pressure controlling valve inserted through the dial and seated within said casing, said valve provided with a polygonal outer portion extending from the front or face of the indicator, adapted to be engaged by a key or other instrument.

7. In a pressure indicator, a casing, a hollow spring, a dial, a valve extending through said dial and seated within said casing, and a rotatable shutter adapted to be rotated to expose the dial, said valve provided with an operating portion disposed on the front or face of the indicator.

Signed by me at Chicago, Illinois, this 17th day of April, 1907.

WALTER W. BRISSENDEN.

Witnesses:

SARAH LEWIS,

ALBERT JOHN SAUSER.