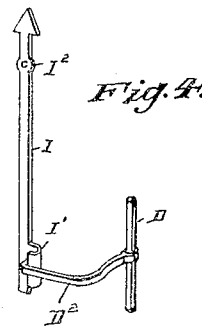
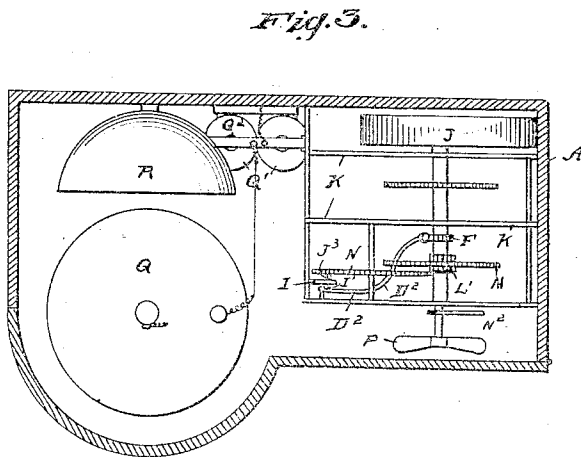
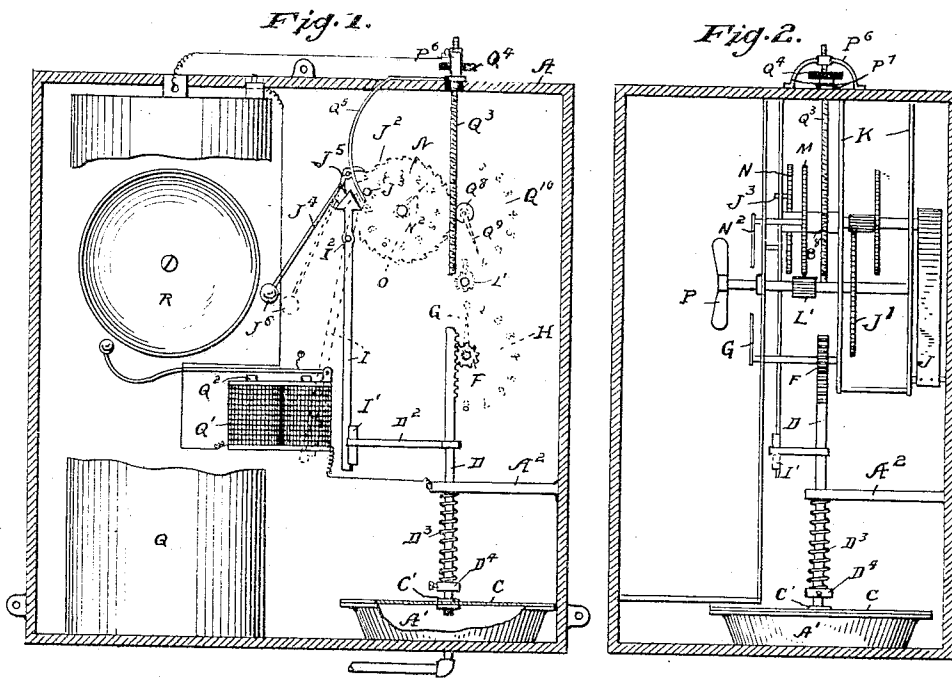


J. H. DIXON.
PRESSURE INDICATING DEVICE AND ALARM SIGNAL.
APPLICATION FILED APR. 7, 1906.



witnesses:
J. C. Hoffman,
Emily Roseburgh.

inventor
John H. Dixon

UNITED STATES PATENT OFFICE.

JOHN H. DIXON, OF PITTSBURG, PENNSYLVANIA.

PRESSURE-INDICATING DEVICE AND ALARM-SIGNAL.

No. 879,039.

Specification of Letters Patent.

Patented Feb. 11, 1908.

Application filed April 7, 1906. Serial No. 310,565.

To all whom it may concern:

Be it known that I, JOHN H. DIXON, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Pressure-Indicating Devices and Alarm-Signals, of which the following is a description and which is illustrated in the accompanying drawings, that form part of this specification, and in which like symbols indicate like parts throughout the views.

The object of my invention is to provide a simple mechanical alarm in connection with a pressure indicator and to provide an auxiliary electrical alarm that can be readily adjusted to noise at a predetermined pressure, and to also noise if the mechanical alarm is not in an intact condition.

For the convenience of brevity in illustrating, I confine my description of the device to its one use in natural gas service; where gas issues from wells, often at several hundred pounds pressure and is reduced through regulators for domestic consumption to ounces pressure. These regulators frequently go wrong and sometimes permit the gas pressure to become abnormally strong, which blows out the burning flame so that rooms fill with unburned gas; and, at other times permit the pressure to go off entirely, when lights will go out. As this will leave jets open; so if the pressure returns, rooms will be filled with gas, as in the first case. This device is calculated to meet these contingencies in giving an alarm in either case; that people may look to the valves &c.

Referring to the drawings: Figure 1 is a front sectional view, Fig. 2 a side sectional view, Fig. 3 a top sectional view and Fig. 4 a detail view of the latch and cleat construction, between diaphragm stem and the tilting lever, that locks the clock movement.

The device consists in a frame A having a gas chamber A¹ and a pressure supply tube passing into the chamber under a collapsible diaphragm C, which is sealed with the top rim of said chamber, to form a bellows-like compartment. This combination will be, hereinafter, referred to as: "bellows."

The diaphragm has a rigid center piece C¹, through which is screwed a stem D, that has a toothed section on its upper side, enmesh with the pinion wheel F—from which is ex-

tended a dial pointer G, across the face of the dial H—to show on the dial the exact pressure within the system.

The spring latch D², is extended laterally from the stem D, to normally restrain the tilting lever I, having a cleat I¹, and loosely pivoted at I² from tilting out of the sweep of the hammer arm J¹ that rests against it, enforced by the energy of the wound clock-spring J, through the main wheel J¹, the escape wheel J² and its verge J³, until the latch may have been carried over or under the said cleat, when the lever will tilt into the position shown in dotted lines, by the inertia of bell-hammer J⁶ and the energy of spring J. The lever I will remain in this position until the pin J³ of the time-dial wheel N, has thrust it back into position to have its cleat hook the latch of the stem D, and which the said pin will do when the clock spring is nearly run down and the pressure has carried the said latch to a normal position, which will be seen on the dial H; when the mechanism may be again wound by turning the key P. Outside the partition K, and on the end of the shaft of the main wheel J¹, is carried a pinion wheel L¹ of an intermediate gear wheel M, that is enmesh with time wheel N, that carries the stop pin J³; that projects through the dial O and serves as an indicator to show the state of the winding, together with the index hand N².

Around the stem D is a compression coil spring D³ fastened to the said stem by the collar and screw D⁴, near its bottom; and rests against the bracket A², through which the stem D passes: this spring tends to collapse the bellows.

The auxiliary alarm consists in a battery cell Q, magnets Q¹, armature Q² and bell R—the same bell that serves in the mechanical service, heretofore, described. The armature carries a spring circuit controller, (not shown) common in annunciator bells, for the purpose of keeping the bell hammer acting continuously.

A circuit is formed through the battery magnets frame and stem and the threaded rod Q³, or will be made, when the said rod is made to contact with the stem D; or its companion spring Q⁵ is made to contact with the pin J³—they are both insulated from the frame A or other metallic parts which are normally separated from said rod. The said rod Q³ is threaded and flattened and held

from turning, with the wheel Q^4 , that rides through square slotted insulation P^6 and P^7 , so that the rod will move vertically only, and rotate the worm wheel Q^8 ; that in turn, moves the index pointer Q^9 around the setting index dial Q^{10} .

Now if it is desired to have an alarm signal in case the pressure within the system gets to 3 ounces—the normal pressure being but two ounces—it will only be necessary to manipulate the wheel Q^4 until the index Q^9 stands at the 3 ounce scale on the dial, and at this pressure the stem D will be forced against the rod Q^3 , which will form a circuit and set the electrical alarm bell to working, and will so continue, until the rod has been withdrawn. If, on the other hand; the pressure goes off entirely, the latch D^2 will have passed below the cleat I^1 , of the lever I ; when the said lever will be tilted into its dotted lines position, and allow the mechanical mechanism to actuate its hammer against the bell; until the clock work is so far run down as to bring the pin J^3 into contact with the spring J^5 and thus, cause the electrical bell hammer, instead of the mechanical hammer, to operate.

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

1 In pressure alarm signals having a bellows and a member involved with said bellows and having a spring wound alarm mechanism normally restrained by said member and having an electrical adjustable contact mounted within the reach of said member and an electrical alarm connected

between said member and said contact, substantially as described.

2. In pressure alarm signals having a bellows propelled member and having a spring wound alarm mechanism and having means of restraining said mechanism arranged between said member and said mechanism and having a time indicating wheel driven by said mechanism and having a stop pin carried on said wheel, substantially as described.

3. In a pressure gage and alarm signals having a bellows and a bellows controlled member and having an indicator co-acting with said member and having an adjustable contact extendible within the reach of said member and having a normally inactive electrical circuit connected between said contact and said member, substantially as described.

4. In pressure alarm signals having a bellows propelled member and having a spring wound alarm mechanism normally held in restraint by attachments integral of said member and having an electrical alarm mechanism arranged to close when said spring wound mechanism is in an unwound condition or to close when said member is contacted with a separate adjustable contact member, substantially as described.

In testimony whereof I have hereunto set my hand, this 5th day of April, 1906, in the presence of two witnesses.

JOHN H. DIXON.

Witnesses:

C. W. BAKER,
D. S. ORCUTT.