

C. O. EVERHART.
PRESSURE GAGE.
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1,022,310.

Patented Apr. 2, 1912.

Fig. 1.

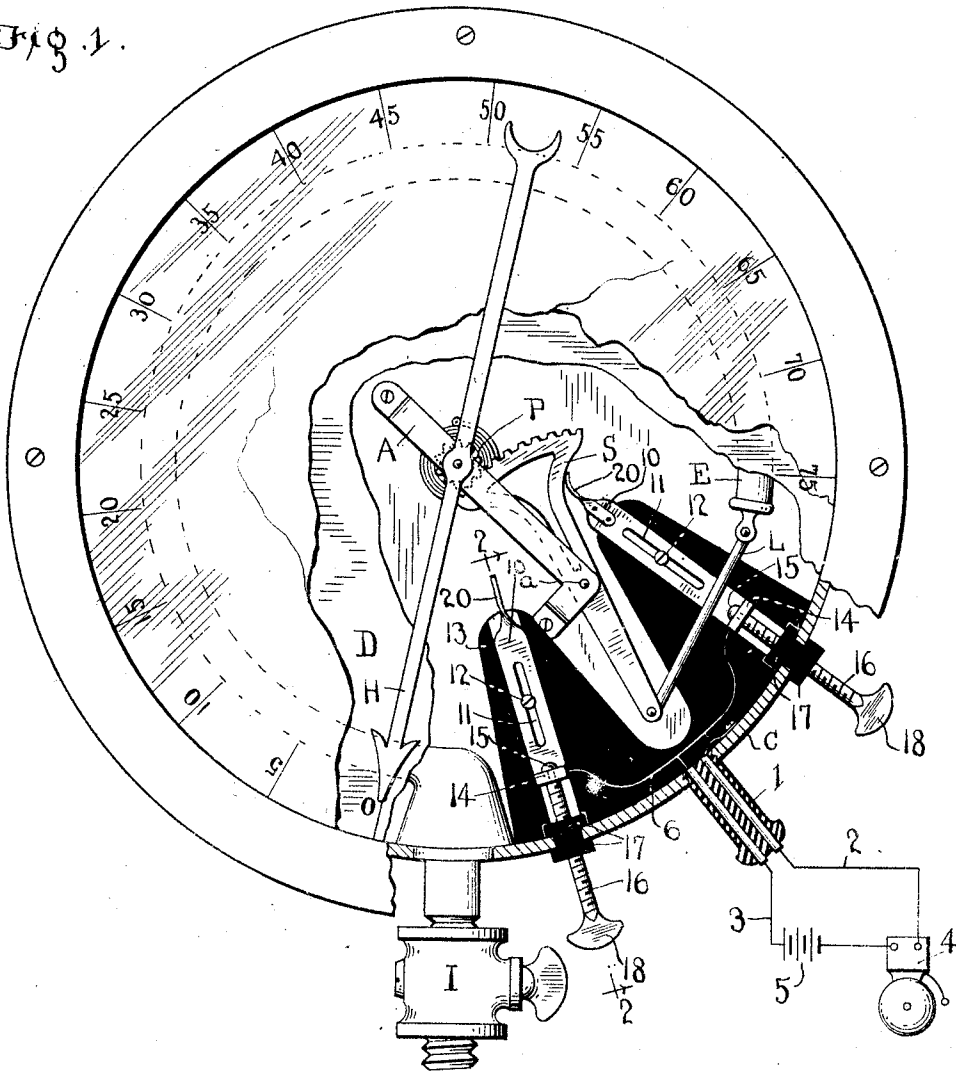
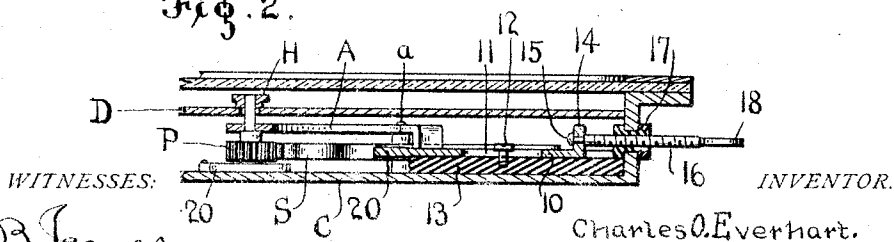


Fig. 2.



WITNESSES:
L. B. James
N. L. Colman

INVENTOR.
Charles O. Everhart.
by *A. B. Willeson & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES O. EVERHART, OF WARREN, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO
AQUILLA MILES, OF WARREN, PENNSYLVANIA.

PRESSURE-GAGE.

1,022,310.

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To all whom it may concern:

Be it known that I, CHARLES O. EVERHART, a citizen of the United States, residing at Warren, in the county of Warren and State of Pennsylvania, have invented certain new and useful Improvements in Pressure-Gages; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to measuring instruments, and more especially to pressure gages; and the object of the same is to provide a gage of this kind with an alarm which will be sounded when the pressure reaches either a high or low extreme, within certain limits which may be determined by setting the mechanism, and yet of such character that there will be no interruption to the continued movement of the hand above or below the points where the sounding of the alarm commences at either extreme.

The objects of this invention are carried out by the construction hereinafter more fully described and claimed, and as shown in the drawings wherein—

Figure 1 is a plan view of this improved gage with the face plate removed so as to show the internal mechanism; Fig. 2 is a section on the line 2—2 of Fig. 1.

In the drawings the letter C designates the casing whereon is inscribed or may be supported a dial D having a scale on its face over which moves the tip of the hand H which is centrally pivoted in the casing and restored to its normal position at zero on the dial by means of a hair spring H. On the arbor of this dial is a pinion P meshing with a toothed sector S which is pivoted at a in an arm A and whose outer end is connected by a link L with an expansive element E which is usually a piece of copper tubing.

The letter I designates an inlet valve by means of which the fluid pressure is admitted to the interior of the expansive element, and the construction—which is usual in gages of this character—is such that when the pressure increases the expansive element E straightens out slightly so that the link L draws on the toothed segment and

the teeth thereon intermeshing with pinion P cause the hand to turn over the scale on the dial.

Coming now more particularly to the present invention, the numeral 1 designates an insulated plug passing through the casing C, and through this plug are led the two wires 2 and 3 of a circuit which passes through a bell 4 or other signal and a battery 5, the inner end of one wire 2 being connected with the casing C, and the inner end of the other wire being braced as at 6 and led to two contact points whose specific construction forms the gist of the present invention.

Referring now particularly to Fig. 2, each point comprises a metallic terminal 10 having a longitudinal slot 11 in its body which engages loosely beneath the head of a screw 12 which is seated in an insulating block 13 mounted suitably within the casing C; and the outer end of this terminal is turned up into an ear 14 in which is swiveled the head 15 of a screw 16 which is threaded through an insulating nut 17 mounted in the casing C and whose thumbpiece 18 stands on the exterior thereof. The construction is such that by manipulating this screw through thumb piece 18 its shank may be adjusted in or out through the nut 17 and its swiveled head 15 which loosely engages the ear 14 will cause the slotted terminal plate 10 to move longitudinally over the screw 12 and upon the surface of the insulating block 13. The inner extremity of said plate 10 is twisted and formed into a finely tempered contact spring 20 (or this spring may be a separate member attached to the plate 10) whose position is such that when the toothed sector swings to a proper degree its edge will make contact with the extremity of this spring but the latter will yield easily when the sector swings farther in the same direction. As shown in Fig. 2, there are two of these terminals, each independently adjustable by means of its set screw, and they are directed inward on substantially radial lines toward the center of the casing and stand at opposite sides of the sector S and sufficiently remote therefrom to permit it to have all the usual movements to and fro without coming in contact with either of the springs 20. Yet the flaring

shape of the sector S is such that when these terminals are adjusted inward their springs approach nearer and nearer to the edges of said sector and the possible field of movement of the latter is restricted; and the adjustment of the terminals in the opposite direction amplifies its field of movement as will be clear.

10 The use of this device as a pressure gage is that which such instruments ordinarily have, and obviously it can be employed to measure the pressure of any fluid desired.

The setting of the adjustable terminals will be clear from the above description.
15 When the pressure swings the sector in either direction, a circuit is closed from the battery through the bell or other alarm, the wire 2, casing C, pivot a, and sector S; to the tip of one spring 20 and thence along
20 its terminal plate 10 to the branch wire 6 and by the other wire 3 back to the battery. Hence it will be seen that the device may be set to sound an alarm whenever the pressure reaches any desired extreme, either high or
25 low; but the contact springs 20 are so light and flexible that when the sector touches them and the alarm commences, its further movement is not impeded to any appreciable extent. I consider it advisable and advantageous to have the terminals 10 adjustable
30 radially inward (or practically so) rather than on lines substantially at right angles to the length of the sector, because the construction illustrated and described permits
35 an extremely fine adjustment of such terminals without necessitating the use of

screws whose threads are so fine that they would be difficult to manufacture.

The parts are obviously of the desired materials and proportions, and considerable change in details may be made without departing from the principle of my invention.

What is claimed as new is:

In a pressure gage, the combination with the casing having a dial, a hand moving
45 thereover and having a pinion on its arbor, a toothed sector engaging said pinion and pivoted in the casing, and an expansible element controlling the movement of said sector; of an insulating block within the casing,
50 screws therein at either side of said sector, two adjustable terminals, each comprising a body having a longitudinal slot loosely engaging one of said screws, an upturned ear at its outer end, and a contact spring at its
5 inner end standing in the path of said sector, insulating nuts carried by said casing, set screws engaging said nuts and having heads at their inner ends swiveled in said
60 ears, said screws and terminals being directed substantially inward toward the center of the casing, and an alarm circuit whereof one terminal is connected with both said terminals and the other with the sector.

In testimony whereof I have hereunto set
65 my hand in presence of two subscribing witnesses.

CHARLES O. EVERHART.

Witnesses:

AQUILLA MILES,
JOHN KOEBLEY.