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A. L. NICLA, J. H. OPTENBERG & E. H. SONNEMAN.

PRESSURE GAGE.

(Application filed May 20, 1899.)

(No Model.)

Fig. 1.

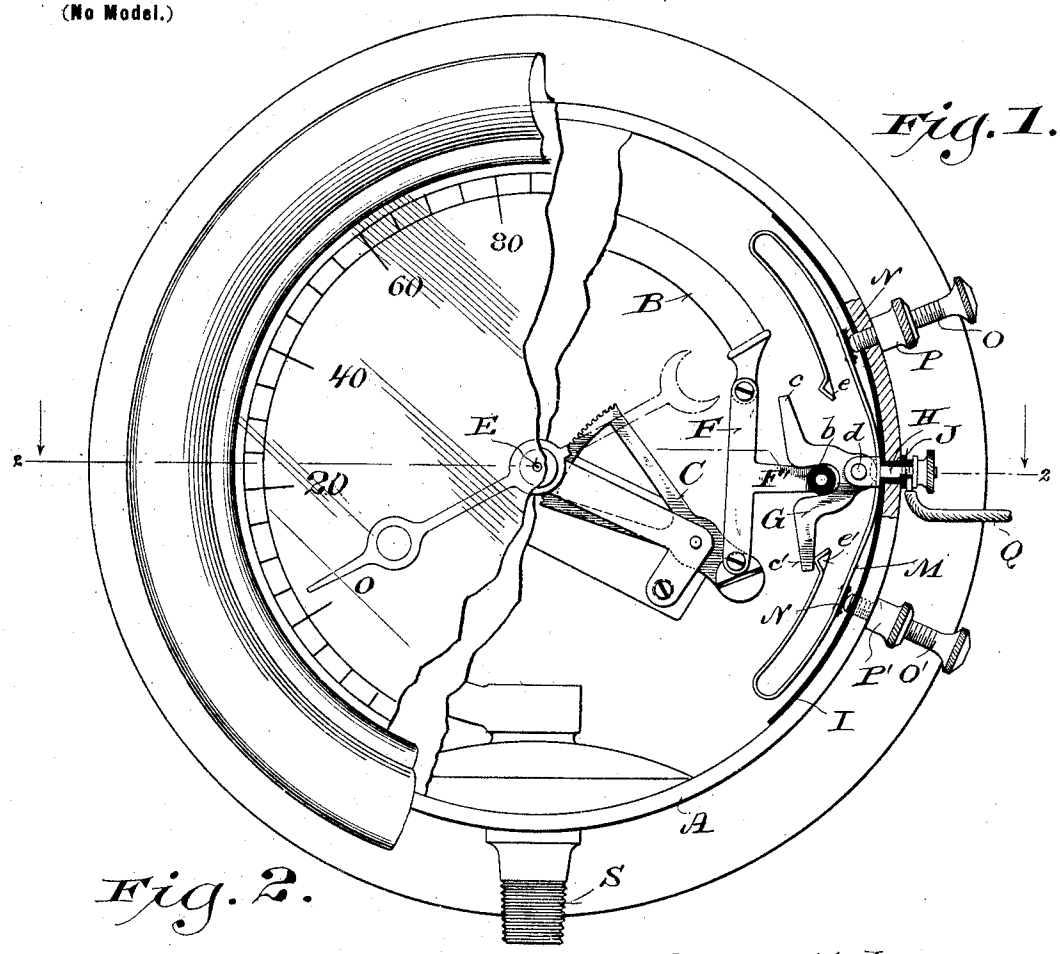
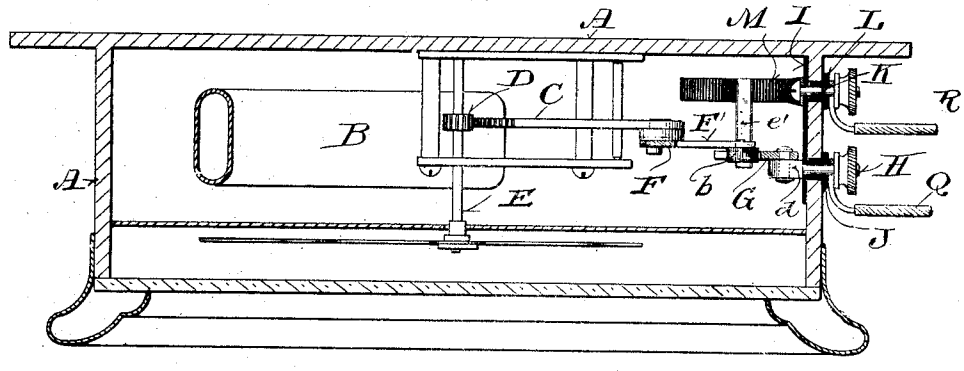


Fig. 2.



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UNITED STATES PATENT OFFICE.

ALBERT L. NICLA, JOHN H. OPTENBERG, AND EMIL H. SONNEMAN, OF SHEBOYGAN, WISCONSIN.

PRESSURE-GAGE.

SPECIFICATION forming part of Letters Patent No. 631,809, dated August 29, 1899.

Application filed May 20, 1899. Serial No. 717,597. (No model.)

To all whom it may concern:

Be it known that we, ALBERT L. NICLA, JOHN H. OPTENBERG, and EMIL H. SONNEMAN, citizens of the United States, and residents of Sheboygan, in the county of Sheboygan and State of Wisconsin, have invented certain new and useful Improvements in Pressure-Gages; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention has for its especial object to provide for an automatic alarm when fluid under pressure attains a predetermined degree of rise or fall; and it consists in combining an automatic signal-actuating mechanism with an ordinary pressure-gage, as hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

Figure 1 of the drawings represents a front elevation of one type of pressure-gage partly broken and combined with a signal-actuating mechanism, the organization being such that said mechanism is automatically operative at any predetermined degree of pressure, either high or low; and Fig. 2 represents a plan view, in horizontal section, indicated by line 2 2 in the preceding figure.

Referring by letter to the drawings, A indicates the casing of a well-known form of Bourdon-type pressure-gage, B the tubular spring of same, and C the toothed segment-lever in mesh with the pinion D on the indicator-spindle E of the gage. In the present showing the link F in eccentrically-adjustable connection with spring B and lever C is provided with a central right-angle branch F′, and an insulating-boss *b* on the outer end of the arm engagesa yoke G, having lateral arms *c c′* extending in opposite directions therefrom. The yoke is in pivotal connection with a head *d* of a binding-post H, this post and its head being separated from the gage-casing by a strip I and sleeve J of insulating material. Another binding-post K, separated from the gage-casing by the strip I of insulating material and a sleeve L of similar material, supports a metal spring-plate M, having recurved ends provided with right-angle extensions *e e′* in opposition to the arms *c c′* of yoke G aforesaid.

Extending through the gage-casing to bear upon insulating material N on the spring-plate M are adjusting-screws O O′, and lock-nuts P P′ are arranged on the screws outside of said casing.

By means of wires Q R the binding-posts H K are placed in circuit with an electric bell or buzzer and battery (not shown) of common knowledge more or less remote from the pressure-gage.

In practice the gage-nipple S is connected to an apparatus containing pressure and the screws O O′ are adjusted to cause a contact of a yoke-arm with an extension of the recurved spring-plate M when said pressure rises above or falls below predetermined degrees, whereby the electric circuit is closed and the alarm actuated. For instance, if it be desirable to sound an alarm when pressure has decreased to twenty pounds, the low-pressure adjusting-screw O′ is operated to push in on spring-plate M until the right-angle extension *e′* of same will have contact with yoke-arm *c′* when the gage indicates the said number of pounds. If an alarm is wanted when the pressure reaches say, one hundred pounds, the high-pressure adjusting-screw O is operated to push in on the spring-plate M until the right-angle extension *e* of same will have contact with yoke-arm *c* when the gage-indicator marks "100." From the foregoing it will be understood that when the pressure ranges between predetermined low and high degrees the alarm is idle; but when once set in operation it will continue until said pressure is either raised or lowered to come within the the predetermined limits.

While we show the apparatus organized to sound an alarm when the pressure rises or falls beyond predetermined limits, it is practical, and in some instances desirable, to organize said apparatus so as to only give an alarm at one predetermined degree of pressure, either high or low. It is also to be understood that while we particularly describe the mechanism auxiliary to the gage as designed to operate an audible signal, it may be utilized in connection with a visible signal located more or less remote from said gage.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A pressure-gage of the organization herein set forth having the link connecting its Bourdon spring and toothed segment provided with a central right-angle arm, a binding-post, a yoke in pivotal connection with the binding-post, an insulating-boss on the link-arm engaging the yoke, a spring-plate having at least one recurved end provided with an extension in opposition to an arm of said yoke, another binding-post in connection with the spring-plate, means for insulating the binding-posts and said spring-plate from the gage-casing, and an adjusting-screw in insulated contact with the aforesaid spring-plate, said binding-posts being for wire connection with an electric signal.

2. A pressure-gage of the organization herein set forth having the link connecting its Bourdon spring and toothed segment provided with a central right-angle arm, a binding-post, a yoke in pivotal connection with the binding-post and provided with lateral arms extending in opposite directions, an insulating-boss on the link-arm engaging the yoke, a spring-plate having recurved ends provided with extensions in opposition to the yoke-arms, another binding-post in connection with the spring-plate, means for insulating the binding-posts and said spring-plate from the gage-casing, and adjusting-screws in insulated contact with the aforesaid spring-plate in opposite directions from the binding-posts, the latter being for wire connection with an electric signal.

In testimony that we claim the foregoing we have hereunto set our hands, at Sheboygan, in the county of Sheboygan and State of Wisconsin, in the presence of two witnesses.

ALBERT L. NICLA.
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Witnesses:
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