July 24, 1923. 1,462,570

P. M. GELATT

PRESSURE GAUGE

Filed Oct. 8, 1917

Fig. 1.

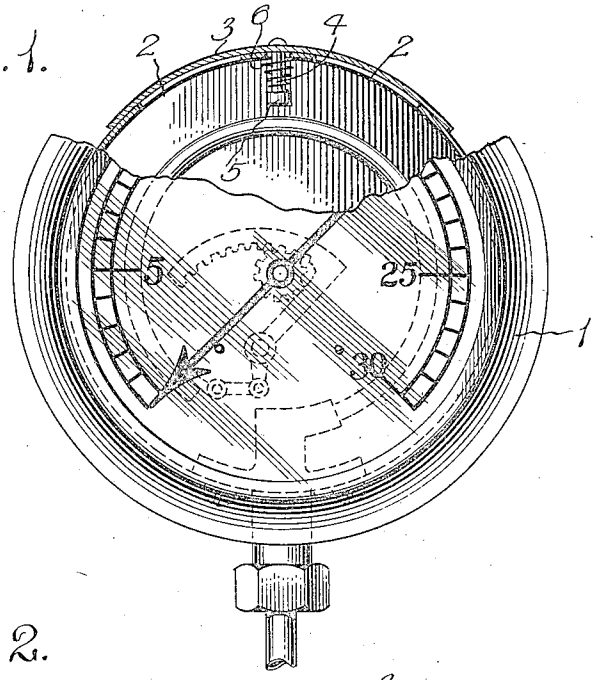


Fig. 2.

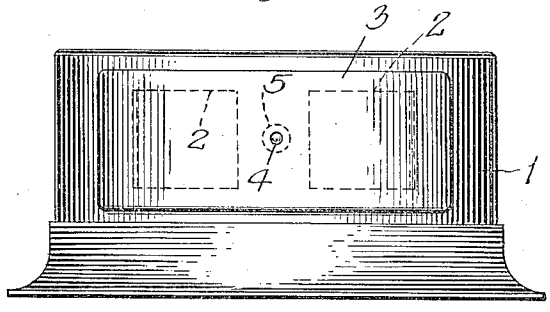
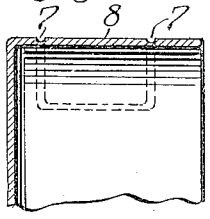


Fig. 3.



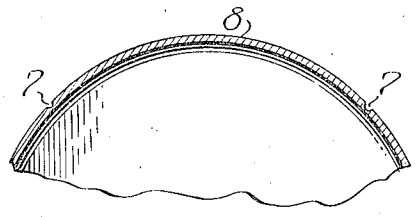


Fig. 4.

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UNITED STATES PATENT OFFICE.

PHILO M. GELATT, OF LA CROSSE, WISCONSIN.

PRESSURE GAUGE.

Application filed October 8, 1917. Serial No. 195,255.

To all whom it may concern:

Be it known that I, PHILO M. GELATT, a citizen of the United States of America, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain new and useful Improvements in Pressure Gauges, of which the following is a specification, reference being had therein to the accompanying drawings.

When steam pressure gauges and like recording instruments are connected to high pressure tanks, boilers, oxo-hydrogen apparatus and like places, where they are subjected to very high pressure, have the expansion members, that is, the Bourdon tube or corresponding drum, disrupted by an excessive or abnormal internal stress, the cylindrical shape of the casing which is the usual form of such devices, causes the explosion to force out either the dial plate side or the other side or head of the shell. These instruments are usually set in a vertical position and an observer or user of any apparatus to which one is applied, is frequently and usually in range or in front of or behind the gauge. Consequently, disruption of the casing at either of the places indicated, is liable to injure the user, and even if one of the heads is arranged to give way as a relief valve, that is, to open as on a hinge, the blast of steam or gas or other contained fluid is projected in the general direction of the usual position of the user of the apparatus and is liable to cause injury to the latter.

This invention relates to a pressure gauge provided with a safety device which instantly relieves any undue pressure in the casing without any liability of injury to the bystanders.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings,

Figure 1 is a view in front elevation, partially broken away and partially in section, of a gauge equipped with a safety device embodying the invention;

Fig. 2 is a plan view thereof,

Fig. 3 is a view of a modification, and

Fig. 4 is a section thereof.

As herein indicated, a pressure gauge 1 of usual type with any preferred form of Bourdon-tube-actuated or expansion-drum-operated indicating mechanism, not shown, has one or more relief openings 2 in the upper portion of the peripheral wall of the casing. An outwardly opening closure 3 is seated on these openings so as to normally prevent the ingress of dust and dirt to the interior. As one form the closure may be a sheet metal plate bent to conform to the wall and having a slight stem 4 extending inwardly with a small head 5 thereon and a spiral spring 6 in compression between the head and the wall. The head under normal conditions holds the closure in position. When any explosion in the Bourdon tube or expansion chamber occurs, the closure is forced outwardly and may even be driven clear away from the gauge, the proportions of the stem, spring and retaining head being such, preferably, as to permit this.

Or the wall may have a weakened line 7 (see Fig. 3) of cleavage encircling a portion of the wall material as indicated at 8, whereby when the expansion tube or drum gives way, disruption along the weakened zone permits the ready escape of the liberated fluid.

As a result of this construction any explosion that occurs, drives the gas or other fluid, and the closure, if that is blown off, in a vertical direction and out of the plane of observation of the user. This minimizes any likelihood of injury of persons standing in front, behind, or at one side of the apparatus.

Obviously, changes in the details of construction may be made without departing from the spirit of my invention and I do not care to limit myself to any particular form or arrangement of parts.

What I claim is:—

In pressure gauge construction wherein the gauge housing includes a peripheral wall having openings at its top separated by a bridge, means for maintaining the openings

closed in the presence of pressure in the housing, said means being operative to open the housing upon excessive pressure therein, said means including a plate external of and overlying said openings, said plate having dimensions greater than the area of the openings and bridge, said plate having a stem extending through said bridge and having an internal head, and a spring carried by the stem and abutting said bridge and head.

In testimony whereof I affix my signature in the presence of two witnesses.

PHILO M. GELATT.

Witnesses:
J. M. LaVaque,
N. H. Ghoolens.