April 12, 1932. J. L. THOMAS 1,853,586

PRESSURE GAUGE AND POP VALVE

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Fig. 1.

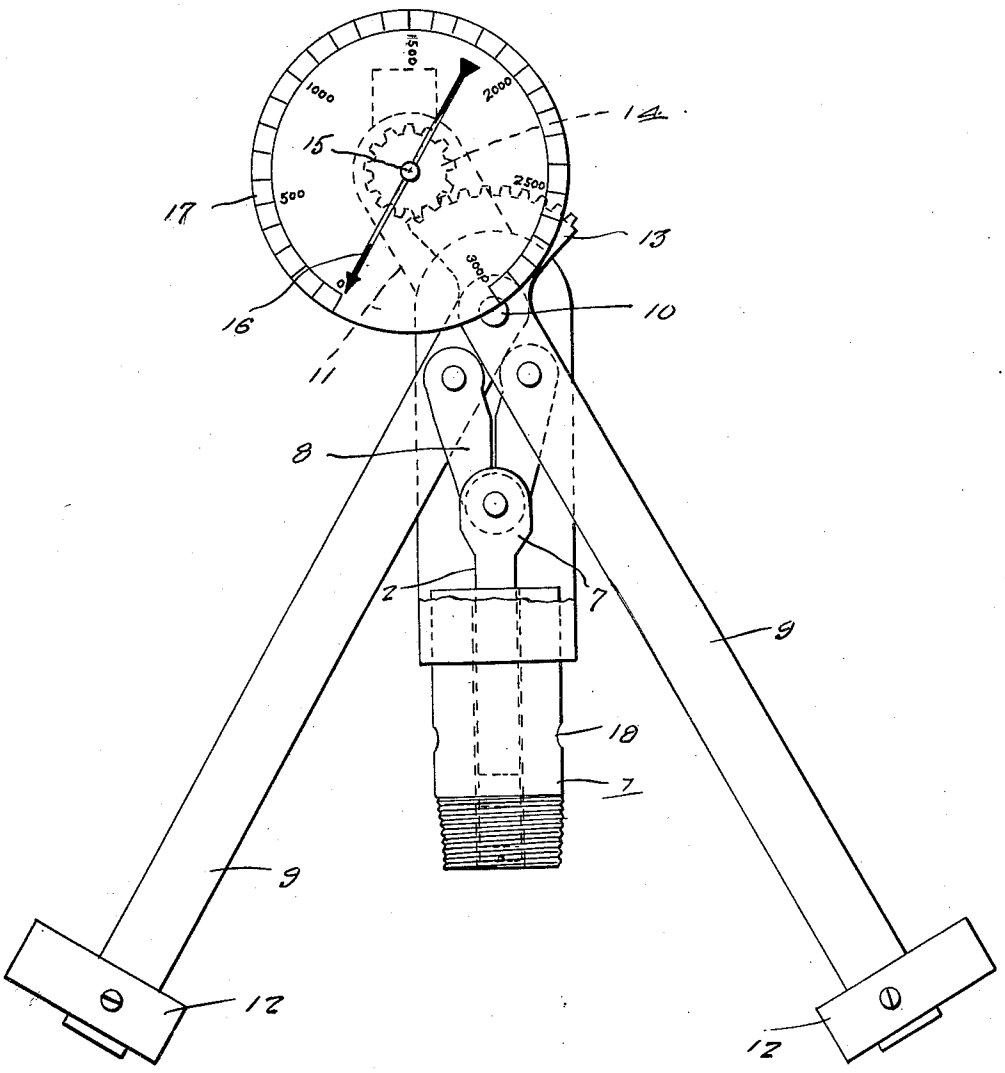

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Fig. 2.

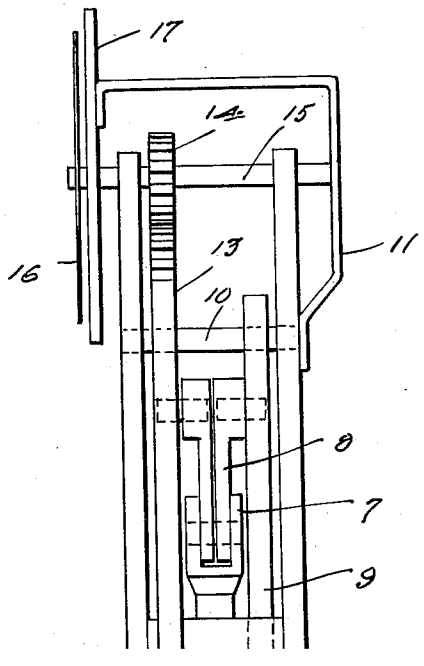
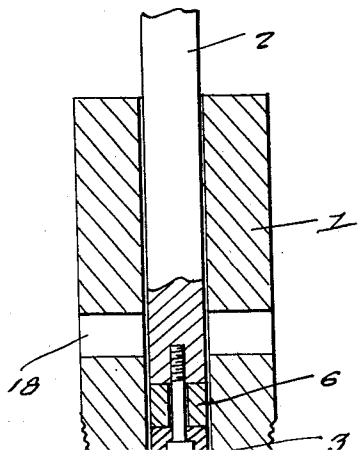


Fig. 3.



Patented Apr. 12, 1932 1,853,586

UNITED STATES PATENT OFFICE

JACK LEE THOMAS, OF OKLAHOMA CITY, OKLAHOMA, ASSIGNOR OF ONE-FOURTH TO EMMETT T. BRUCE, ONE-FOURTH TO WILLIAM D. FAWCETT, AND ONE-FOURTH TO ELMER F. ROSS, ALL OF OKLAHOMA CITY, OKLAHOMA

PRESSURE GAUGE AND POP VALVE

Application filed December 27, 1930. Serial No. 505,182.

This invention relates to a pressure gauge and pop valve, the general object of the invention being to operate the movable parts of a gauge by a direct thrust of pressure in a conduit on a piston, the movement of the piston being governed by weights.

Another object of the invention is to provide a port in the cylinder which contains the piston, said port being opened when the piston is raised to an excessive amount by the pressure so that the pressure will pass through the port and not raise the piston any farther, thus preventing damage to the parts. This port also acts as a safety means for permitting the pressure to escape when it becomes excessive.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is an elevation of the device.

Figure 2 is a side view thereof.

Figure 3 is a sectional view through the cylinder to show the construction of the piston.

In the drawings the numeral 1 indicates a barrel or cylinder having its lower end tapered and threaded so that it can be screwed in the pressure line or conduit and the numeral 2 indicates the piston extending into the bore of the barrel or cylinder. A cup 3 is fastened to the lower end of the piston by a screw 4, said screw being provided with an enlarged part 5 which forms an expander for the cup and a guide 6 is placed between the cup and the end of the piston and has a hold therein through which the screw passes.

The upper end of the piston 2 is formed with a forked end 7 to which is pivoted a pair of links 8. The upper ends of these links are pivoted to the pair of levers 9. The upper ends of these levers are pivoted on a rod 10 forming part of a frame 11 and the links 8 are pivoted to the levers adjacent the pivoted points. A weight 12 is adjustably connected to the lower end of each lever and one of the levers has at its upper end a toothed segment 13 which meshes with the gear 14 on a shaft 15 journalled in the frame 11 and having a finger 16 connected with its outer end.

A dial carrying member 17 is carried by the frame 11 and the finger 16 is designed to pass over the dial as shown in Figure 1.

From the foregoing it will be seen that when the cylinder is placed on a pressure line or conduit the lower part of the piston will be exposed to the pressure in said line so that the piston will be raised by the pressure and the upward movement of the piston will swing the weighted levers 9 upwardly thus causing the gears to operate the finger 16 over the dial to indicate the degree of pressure in the conduit or pressure line.

The cylinder 1 is formed with the ports 18 and when the pressure is excessive the piston will be raised above said ports which will stop further movement of the piston and cause the pressure to escape through the ports. This will prevent damage to the parts. The ports are so arranged that they will be uncovered when the levers 9 reach a horizontal position.

From the foregoing it will be seen that I have provided a simple means for ascertaining the degree of pressure in a pressure line.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

Having thus described my invention, what I claim as new is:

1. A pressure gauge comprising a cylinder adapted to have one end inserted in a conduit, a piston in the cylinder adapted to be acted upon by the pressure in the conduit, a pair of pivoted levers, a frame connected with the cylinder to which the upper end of the levers are pivoted, links connecting the upper end of the pistons to the levers adjacent their pivotal points, weights on the lower end of

said levers, indicator means supported by the frame and including a scale and a finger, and means connecting the upper end of one of the levers with the finger whereby said finger will be moved by the movement of said levers.

2. A pressure gauge comprising a cylinder adapted to have one end placed in a conduit, a piston in said cylinder adapted to be acted on by the pressure in the conduit, a frame connected with the cylinder, a pair of weighted levers pivoted in the frame, links connecting the levers adjacent their pivotal points with the upper end of the piston, a segment connected with an extended upper end of one of the levers, a shaft journalled in the frame, a gear on the shaft meshing with the segment, a finger carried by the shaft and a dial member carried by the frame and over the dial of which the finger moves.

In testimony whereof I affix my signature.

JACK LEE THOMAS.