Aug. 13, 1935. W. WAGNER 2,011,264

PRESSURE GAUGE

Filed Dec. 12, 1933

Fig. 1.

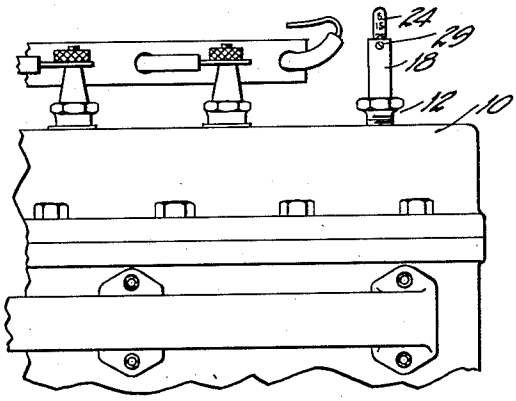


Fig. 2.

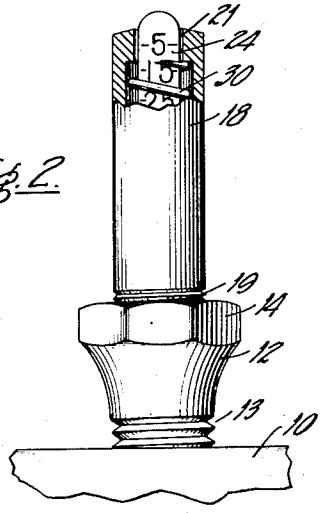


Fig. 3.

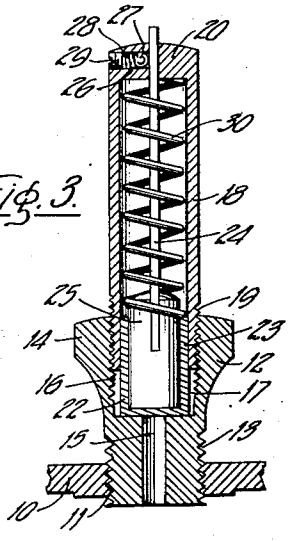
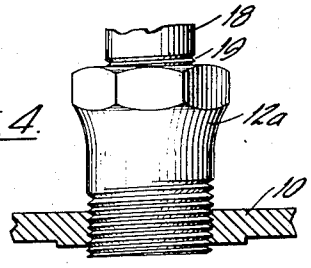


Fig. 4.



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PRESSURE GAUGE

William Wagner, Canajoharie, N. Y.

Application December 12, 1933, Serial No. 701,986

4 Claims. (Cl. 73—111)

My invention more particularly relates to a pressure gauge which may conveniently be attached to a cylinder and indicates the working pressure therein, although it will of course, be understood that my invention is not limited to this particular application.

One of the objects of my invention is the provision of a convenient plug which is readily attachable to and detachable from the pressure gauge proper which may thus readily be changed in order that plugs of different sizes may be attached thereto for attachment to cylinders having openings of different sizes or character.

Another object of my invention is the provision of novel means for retaining the indicating member in the position to which it is moved by the pressure responsive means.

A further object of my invention is the provision of novel pressure responsive means which coact with the indicating member.

Other objects of my invention will appear in the specification and the novel features thereof will be particularly pointed out in the claims.

My invention will best be understood by reference to the accompanying drawing in which I have illustrated a preferred embodiment thereof and in which—

Fig. 1 is a side view of an engine illustrating a cylinder head to which my pressure gauge is applied;

Fig. 2 is a side view, partially broken away, of the indicator and illustrating it in position in the cylinder head;

Fig. 3 is a vertical section of Fig. 2 but showing the indicating member in side elevation; and

Fig. 4 is a side view illustrating the indicating member attached to a plug of different size and form.

Like reference characters indicate like parts throughout the drawing.

Referring to the drawing 10 is a cylinder head provided with a threaded opening 11 to which is attached a plug 12 provided with a threaded portion 13 receivable in said opening. The plug is provided with a hexagonal portion 14 to permit the plug to be forcibly inserted by means of a wrench in its opening to prevent leakage. The plug is provided with a longitudinally extending opening 15 the walls surrounding the upper portion of which are counterbored and threaded as at 16 thereby providing a recess 17.

The indicating device comprises a cylindrical member 18, the lower end of which is threaded as at 19 and receivable in the counterbored portion 16 of the plug 12. The outer end of the cylindrical member 18 is provided with a head 20 formed with a hole 21 preferably rectangular in cross section.

A piston 22 is provided with a forwardly extending annular flange 23 fitted in the cylinder 18. An indicating member 24 is provided at its inner end with an enlarged portion 25 preferably cylindrical in cross section which is received within the flange 23 while the outer portion thereof is receivable in and movable through said hole 21.

The cylindrical member 18 and preferably the head thereof is provided with a transverse opening 26 in which is mounted a movable member 27, said member 27 being forced into engagement with the indicating member by a spring 28 which is interposed between the member 27 and a screw 29 which closes the outer end of the opening 26.

In Fig. 4 I have illustrated a plug 12a of larger size and the threads of which are a different pitch to accommodate the same to a different cylinder head having a different sized spark plug opening and provided with threads of a different pitch from that of the threads shown in Fig. 3. By the provision of an indicating member which is readily attached to and detachable from the plug, the plug may readily be changed and a plug having appropriate threads and of an appropriate size may be provided. The piston is normally forced into its retracted position by a coil spring 30 the outer end of which is seated against the head 20 while the inner end thereof is seated against the annular flange.

When the plug 12 is attached to the gauge device the bottom portion of the piston 22 occupies the position indicated in Fig. 3 in the bottom of the recess 17 in the plug. Then when the plug 12 of the indicating member is inserted in the spark plug opening of a cylinder head, the pressure developed within the cylinder forces the piston 22 and the indicating member 24 outwardly. As soon as the pressure in the cylinder is relieved, the spring 30 forces the piston 22 inwardly independently of the indicating member 24 which is retained in the position to which it is moved by the movable member 27.

By forming the inner end of the indicating member 24 with an enlarged cylindrical portion which is received in the annular flange 23, the latter serves as a guide for the indicating member in its outward movement and prevents any tendency to bind between the outer end of the indicating member and the walls surrounding the hole 21 through which it passes. The indicating member may readily be forced manually

past the member 27 which engages the indicating member rather lightly.

While I have described my invention in its preferred embodiment, it is to be understood that the words which I have used are words of description and not of limitation. Hence, changes within the purview of the appended claims may be made without departing from the true scope and spirit of my invention in its broader aspects.

What I claim is:

1. In a pressure gauge, a cylinder provided at its outer end with a head formed with a hole, a piston provided with an outwardly extending annular flange fitted in said cylinder, an indicating member the inner end of which is received within said flange and the outer end of which passes through said hole, means whereby said cylinder may be connected to a receptacle containing fluid under pressure which is transmitted to said piston, said head being provided with a transverse opening, a member movably mounted in said opening and engageable with said indicating member, means for forcing the movable member into engagement with said indicating member to retain the same in the position to which it is moved, and means for retracting said piston independently of said indicating member.

2. In a pressure gauge, a cylinder provided at its outer end with a head formed with a hole, a piston provided with an outwardly extending annular flange fitted in said cylinder, an indicating member the inner end of which is received within said flange and the outer end of which passes through said hole, means whereby said cylinder may be connected to a receptacle containing fluid under pressure which is transmitted to said piston, said head being provided with a transverse opening communicating with said hole, a member movably mounted in said opening and engageable with said indicating member, means for forcing the movable member into engagement with said indicating member, and means for retracting said piston independently of said indicating member.

3. In a pressure gauge, a cylinder provided at its outer end with a head formed with a hole, a piston provided with an outwardly extending annular flange fitted in said cylinder, an indicating member one end of which is approximately cylindrical in cross section and receivable in said flange and the other end of which is receivable in and movable through said hole, means whereby said cylinder may be connected to a receptacle containing fluid under pressure which is transmitted to said piston, the head of said cylinder being provided with a transverse opening communicating with said hole, a member movably mounted in said opening and engageable with said indicating member, means for forcing the movable member into engagement with said indicating member, and means for retracting said piston independently of said indicating member.

4. In a pressure gauge, a cylinder provided at its outer end with a head formed with a hole rectangular in cross section, a piston provided with an outwardly extending annular flange fitted in said cylinder, an indicating member one end of which is approximately cylindrical in cross section and receivable in said flange and the other end of which is receivable within and movable through said hole, means whereby said cylinder may be connected to a receptacle containing fluid under pressure which is communicated to said piston, the head of said cylinder being provided with a transverse opening communicating with said hole, a member movably mounted in said opening and engageable with said indicating member, means for forcing the movable member into engagement with said indicating member and means for retracting said piston independently of said indicating member.

WILLIAM WAGNER.