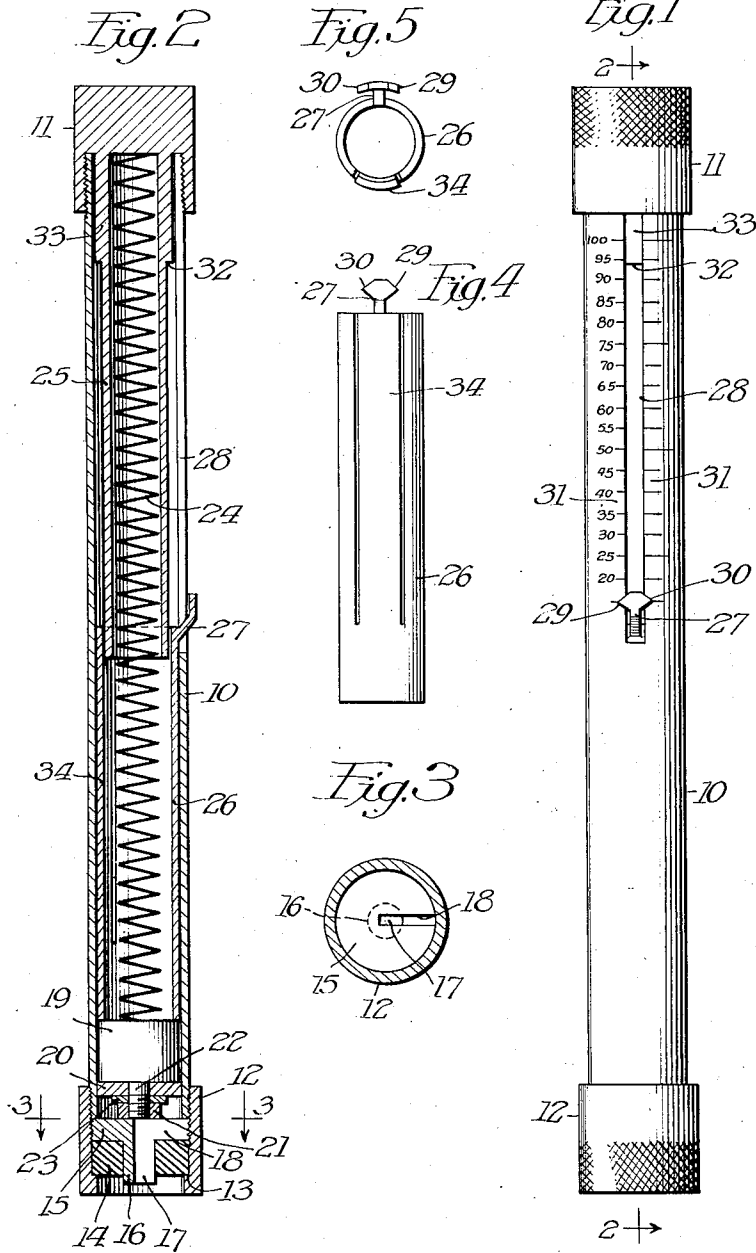


A. E. POLLOCK.
PRESSURE GAGE.
APPLICATION FILED OCT. 2, 1916.

1,220,272.

Patented Mar. 27, 1917.



Witness:
Leonard W. Novander.
Raymond B. Carver, Secy

By

Inventor
Albert E. Pollock
Geo. S. Smith
Atty

UNITED STATES PATENT OFFICE.

ALBERT E. POLLOCK, OF CHICAGO, ILLINOIS, ASSIGNOR TO FIREX MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PRESSURE-GAGE.

1,220,272.

Specification of Letters Patent.

Patented Mar. 27, 1917.

Application filed October 2, 1916. Serial No. 123,215.

To all whom it may concern:

Be it known that I, ALBERT E. POLLOCK, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pressure-Gages, of which the following is a specification.

My invention relates to pressure gages adapted particularly for use in connection with vehicle tires to measure the air pressure therein.

My invention relates to that class of gages in which a plunger is shifted by air pressure in a barrel against the force of a spring, and an indicating member shifted therewith to cooperate with a scale to indicate the pressure. Among the important objects of my invention are to produce a simple and inexpensive device of this kind which comprises a minimum number of simple parts easily fitted together and easily separated for inspection or repair; to produce a structure having a wide range of indication, and to produce a construction which will prevent sudden and jerky movement thereby to insure regular and accurate movement of the indicating member and to prevent overthrow and false indication thereof.

A device embodying the various features of the invention is illustrated on the accompanying drawing in which—

Figure 1 is a front elevational view of the device,

Fig. 2 is a sectional view on plane 2—2, Fig. 1,

Fig. 3 is a sectional view on plane 3—3, Fig. 2,

Fig. 4 is a side elevational view of the indicating member, and

Fig. 5 is a top end view thereof.

The body of the device comprises a metal tube or barrel 10, a cap 11 having screw threaded engagement with the upper end of the tube and a sleeve 12 having screw threaded engagement with the lower end of the tube. The sleeve at its lower end has the internal annular shoulder 13 for supporting a plug 14 preferably of rubber. This plug is backed by a metal disk 15 which has the stem 16 extending centrally through the plug, the stem having the longitudinal passageway 17 communicating with the radial passageway 18 through the plate. The plug is securely seated against the shoulder by the engagement of the plate

with the lower end of the barrel 10 when the sleeve is threaded to the barrel, or, the plate itself may have threaded engagement in the sleeve as shown in Fig. 2. The rubber plug serves to receive the air valve nipple of a tire, the air then flowing through the passageways 17 and 18 into the barrel 10.

Within the barrel is the piston 19 to whose lower end is secured the leather washer 20 by the nut 21 which engages the stem 22 of the piston, a metallic washer 23 being preferably interposed between the leather washer and the nut. When the gage is applied to a tire nipple the air entering the barrel 10 will force the piston 19 upwardly, and such upward movement is resisted by a compression spring 24 abutting at its lower end against the plunger and at its upper end against the cap 11. To hold the spring in vertical alinement and to prevent buckling thereof its upper end is surrounded by the tubular extension 25 extending downwardly into the barrel from the cap 11.

The indicating member 26 is in the form of a tube of substantially the same external diameter as the internal diameter of the barrel and it receives the lower end of the spring and when shifted upwardly with the piston it passes freely between the barrel and the tube 25. The indicating arm 27 extends outwardly from the upper end of the indicating member through the longitudinal slot 28 in the barrel and the laterally extending points 29 and 30 at the end of the arm cooperate with scale indications 31 to indicate the pressure. When the piston 19 is at the lower end of the barrel the upper end of the tubular indicating member receives the lower end of the tube 25, and the upward movement of the indicating member is limited by its engagement with the shoulder 32 at the lower end of the section 33 of increased diameter at the base of the tube 25. The slot 28 extends to and is open at the upper end of the barrel so that when the cap 11 is removed and the tubular extension 25 withdrawn the indicating member can be removed from the barrel.

When the gage is applied to receive air flow the piston is shifted upwardly against the spring and the indicating member is carried upwardly and the points 29 and 30 indicate the pressure on the scale 31. When the air gage is removed from the air flow,

the spring returns the piston to the lower end of the gage but provision is made to keep the indicating member at its upper position so that the pressure may be read on the scale after the gage has been removed from the source of pressure. To this end the indicating member is slit longitudinally to provide a spring tongue 34 which is bent outwardly a distance so that when the indicating member is inserted in the barrel the tongue will exert pressure against the barrel to cause frictional engagement between the barrel and the indicating member, and this friction is sufficient to hold the indicating member in any position into which it has been shifted by the piston, but is not sufficient to interfere with the proper movement of the piston to shift the indicating member to accurately indicate the pressure. Before the gage is again used the indicating member is shifted to its lower position, this being readily accomplished by pushing downwardly on the indicating arm 27.

The gage shown and described is of very simple and inexpensive construction while at the same time it is of neat appearance and very accurate in its measurements. By unscrewing the caps all the other parts can be readily removed from the barrel and all the parts can be quickly put together. There is nothing which can get out of order, the spring being fully protected at all times by being inclosed within the tubular parts. Such inclosures also serve to accurately guide the spring while it is being compressed and to prevent bending or buckling thereof, thus insuring accurate measuring.

I do not, of course, desire to be limited to the exact construction and arrangement shown and described as changes and modifications are no doubt possible which would still come within the scope of the invention.

I claim as follows:

1. In a tire gage, the combination of a barrel, a cap at the upper end of said barrel, the lower end of the barrel having an opening for the inlet of air to be measured, a piston within the barrel, a compression spring between said piston and cap, a tube extending downwardly from said cap into the barrel and receiving the upper end of the spring, a tubular indicating member within the barrel adapted to be shifted upwardly by the piston to move between the barrel and said tube, said barrel having a longitudinal slot and scale indications adjacent thereto, and an indicating arm or point extending from said indicating member into said slot to cooperate with said scale.

2. In a tire gage, the combination of a tubular barrel having an air inlet opening at its lower end, a detachable cap at the upper end of said barrel, a piston slidable within the barrel, a spring interposed between the piston and the cap, a tubular

indicating member slidable in said barrel, said barrel having a slot extending downwardly from the upper end thereof and a scale on the barrel adjacent said slot, a tubular indicator slidable in said barrel with said piston, and an indicating arm projecting from said indicating member through said slot to cooperate with said scale to indicate pressure, said indicating member being removable from the top of the barrel when said cap is removed.

3. In a tire gage, the combination of a tubular barrel having an air inlet at its lower end, a cap at the upper end of said barrel, a piston within the barrel, a compression spring interposed between the piston and said cap, a tubular extension in the barrel from said cap receiving the upper part of the spring, a tubular indicating member receiving the lower part of the spring and shifted by the piston between the barrel and said tubular extension when the piston is shifted upwardly by air pressure, said barrel having a longitudinal slot and a scale adjacent thereto, and an indicating arm extending from said indicating member through the slot to cooperate with the scale to indicate pressure.

4. In a tire gage, the combination of a tubular barrel having an air inlet at its lower end, a cap at the upper end of said barrel, a piston within the barrel, a compression spring interposed between the piston and said cap, a tubular extension in the barrel from said cap receiving the upper part of the spring, a tubular indicating member receiving the lower part of the spring and shifted by the piston between the barrel and said tubular extension when the piston is shifted upwardly by air pressure, said barrel having a longitudinal slot and a scale adjacent thereto, an indicating arm extending from said indicating member through the slot to cooperate with the scale to indicate pressure, and an abutment at the upper end of said tubular extension for limiting the upward movement of said indicating member.

5. In a tire gage, the combination of a tubular barrel closed at its upper end and having an air inlet at its lower end, a piston reciprocable within the barrel, a spring interposed between said piston and the upper end of the barrel, a tubular indicating member within the barrel to be engaged by and shifted upwardly with the piston, said barrel having a longitudinal slot and scale markings thereon with which said indicator cooperates to indicate pressure, and a spring tongue causing frictional engagement between the indicating member and barrel to hold the indicating member in its shifted position independently of said piston.

6. In a tire gage, the combination of a tubular barrel closed at its upper end and

having an air inlet at its lower end, a piston reciprocable within the barrel, a spring interposed between said piston and the upper end of the barrel, a tubular indicating member within the barrel to be engaged by and shifted upwardly with the piston, said barrel having a longitudinal slot and scale markings thereon with which said indicator coöperates to indicate pressure, a section of said indicating member being deflected to form a spring tongue for pressing against the barrel and for frictionally holding the indicating member in shifted position independently of the piston.

7. In a tire gage, the combination of a tubular barrel closed at its upper end, a sleeve having threaded engagement with the lower end of said barrel, a soft seating plug clamped to the barrel end by said sleeve and having an air inlet therethrough, a piston within the barrel, a spring interposed between the piston and the upper end of the barrel, an indicating member shiftable in said barrel with the piston, and said barrel having a longitudinal slot and a scale with which the indicating member coöperates to indicate pressure.

8. In a tire gage, the combination of a tubular barrel closed at its upper end, a sleeve having threaded engagement with the lower end of said barrel, an annular internal shoulder at the lower end of said sleeve, a rubber seating plug engaging with said shoulder, a backing disk for said plug, a stem extending from said plate through the plug, said stem and plate having a passageway therethrough for air, a piston within the barrel, a spring interposed between the piston and upper end of the barrel, a tubular indicator member slidable in the barrel with said piston, said barrel having a slot and a scale adjacent thereto, an indicating arm extending from the indicating member through the slot to coöperate with the scale, said indicating member having sufficient frictional engagement with the barrel to be held independently of the piston into any position into which it has been shifted by the piston.

In witness whereof I hereunto subscribe my name this 18th day of September, A. D., 1916.

ALBERT E. POLLOCK.