

Aug. 20, 1935.

F. COSSOR

2,011,928

MERCURIAL PRESSURE GAUGE

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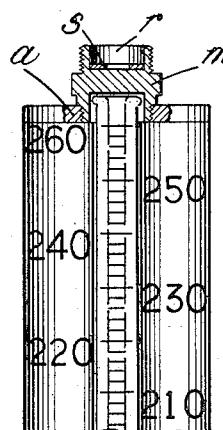


Fig. 1.

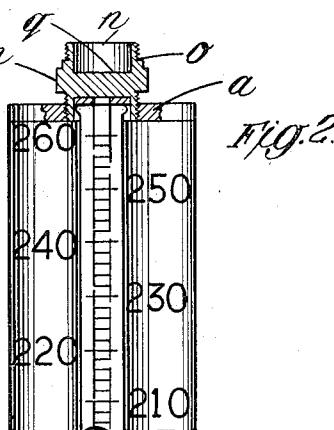


Fig. 2.

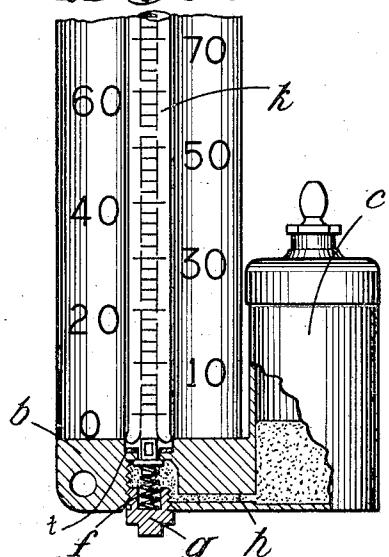


Fig. 3.

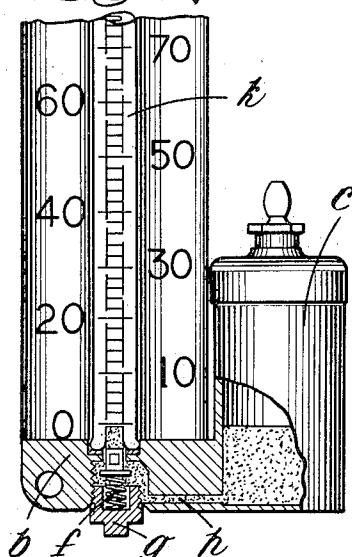
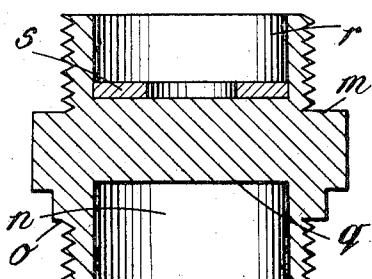
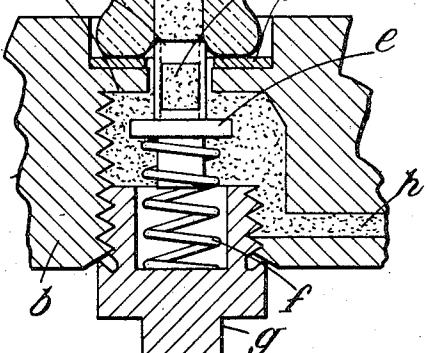


Fig. 4.



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MERCURIAL PRESSURE GAUGE

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2 Claims. (Cl. 73—31)

In the specification of my Letters Patent No. 395,153 is described a mercurial pressure gauge in the form of a U-tube or the like, one limb of which is formed as a cistern and the other limb as a pressure tube, whilst a valve is provided between the cistern and the pressure tube, said valve being operable manually or automatically as the device is opened or closed. The object of the present invention is to provide improved means for manual operation of the valve.

To this end and in accordance with the present invention the valve provided between the cistern and the pressure tube of such a gauge is adapted to be opened by longitudinal movement of the pressure tube brought about by means of a screw cap which is adapted to close that end of the tube remote from the cistern.

Preferably the screw cap is formed differentially at its opposite ends so that when one end is screwed on to the casing of the gauge, it will bear against the adjacent end of the pressure tube, and move said tube longitudinally to open the valve, whilst when the other end of the cap is screwed on to the casing as far as possible, a part of it is brought close enough to the adjacent end of the pressure tube to prevent undue movement of the tube, but without bringing about longitudinal movement of the tube to open said valve.

The accompanying drawing illustrates one form of mercurial pressure gauge made in accordance with this invention, Figure 1 showing the valve closed and Figure 2 showing the valve open, whilst Figures 3 and 4 are sectional views of the valve and screw cap, respectively, on a larger scale.

a is the top of the casing of the instrument, and *b* is the base thereof which has integral therewith a cistern *c*. The base *b* is formed with a seat *d* for a valve *e* which is urged thereagainst by a spring *f* which abuts against a plug *g* screwed into the base *b*.

The cistern *c* leads by a passage *h* to the valve chamber and the valve *e* has at its upper side a tubular projection *i* laterally apertured as at *j* and adapted to be engaged by the adjacent end of the pressure tube *k* of the instrument, so that when said tube *k* is forced downwards the valve *e* is opened to establish connection between the cistern *c* and the pressure tube *k* as shown in Figure 2, whilst when said pressure tube is permitted to move upwards the valve *e* closes against its seat *d* as shown in Figure 1.

Such movement of the pressure tube *k* is effected by means of a cap *m* either end of which may

be screwed into the top *a* of the casing. At one end this cap *m* is formed with an internal recess *n* and an external shoulder *o* said shoulder *o* and the bottom *q* of said recess *n* being so situated relatively to one another and to the associated parts that when that end of the cap *m* is screwed into the top *a* of the casing of the instrument until the shoulder *o* abuts against said top *a*, as indicated in Figure 1, the end wall *q* of the recess *n* will not bear against the adjacent end of the pressure tube *k*, but will be so close thereto as to prevent undue endwise movement of said tube in the instrument.

At its other end, the cap *m* is formed with an internal recess *r* at the bottom of which is a washer *s* the face of which is so situated relatively to the external screw threading that said end of the cap *m* may be screwed into the top *a* of the instrument until the pressure tube *k* is forced downwards, thus forcing down and opening the valve *e* as indicated in Figures 2 and 3 which show that the lateral aperture *j* of the tubular projection *i* is brought below the level of the valve seat *d* thus enabling connection to be established between the cistern *c* and the pressure tube *k*, whereupon mercury flows from said cistern into said tube to a common level as indicated in Figure 2.

After use, or when it is desired to clean the pressure tube *k*, the instrument is tilted over to the right, Figure 2, preferably until it is horizontal, so as to cause the mercury to flow back from the pressure tube *k* into the cistern *c*, the cap *m* is then unscrewed, thus allowing the pressure tube *k* to move longitudinally and the valve *e* to close on the seat *d*, after which said cap is reversed and screwed into the position shown in Figure 1 to enable the instrument to be transported without loss of mercury and without undue rattling of the pressure tube *k*.

It is desirable that a cork or similar washer *t* should be arranged in the base *b* of the casing to provide a resilient pad against which the adjacent end of the pressure tube *k* may bear when the valve *e* has been opened fully.

I claim:

1. A U-tube gauge comprising a casing, a reservoir forming one leg and an indicating tube forming the other leg with the base portion of the casing having a passage interconnecting the two legs, said passage having a valve seat, a spring pressed valve urged against said valve seat to close said passage, the indicating tube being longitudinally movable in said casing with its lower end adapted to bear against said valve, a

cap adapted to threadedly engage the top of the casing to force the indicating tube against the valve to unseat the same and place the tube in sealing communication with the passage in the base portion of the casing.

2. A U-tube gauge comprising a casing, a reservoir forming one leg and an indicating tube forming the other leg with the base portion of the casing having a passage interconnecting two legs, said passage having a valve seat, a spring pressed valve urged against said valve seat to close said passage, the indicating tube being longitudinally movable in said casing with its lower end adapted to bear against said valve, a cap

formed differentially at its opposite ends adapted to threadedly engage the top of the casing, one end of said cap being adapted to force the indicating tube against the valve to unseat the same and place the tube in sealing communication with the passage in the base portion of the casing, whilst the other end of said cap is adapted, when screwed on to the top of the casing as far as possible, to bear on the adjacent end of the indicating tube and prevent undue movement of the tube but without forcing said tube against the valve to unseat the same.

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