

E. J. HAVERLY.
PRESSURE GAGE,
APPLICATION FILED SEPT. 7, 1911.

1,043,591.

Patented Nov. 5, 1912.

Fig. 1,

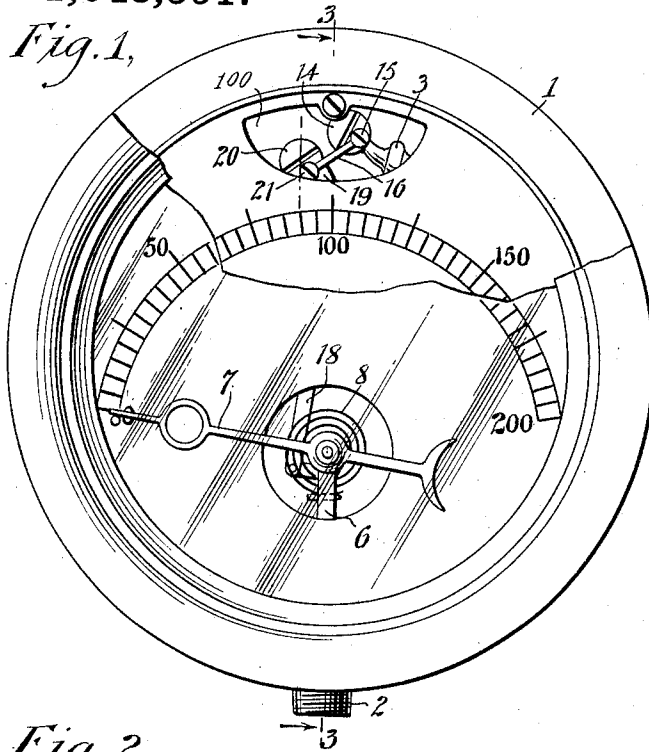


Fig. 2,

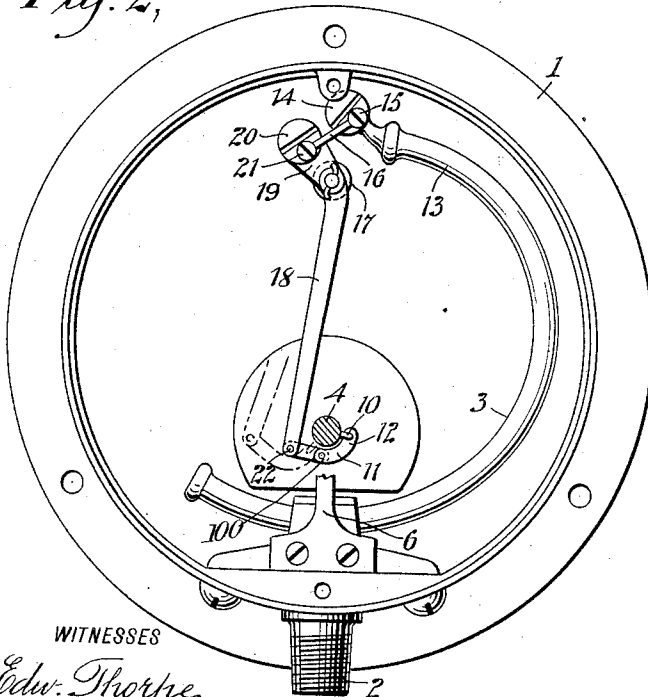


Fig. 3,

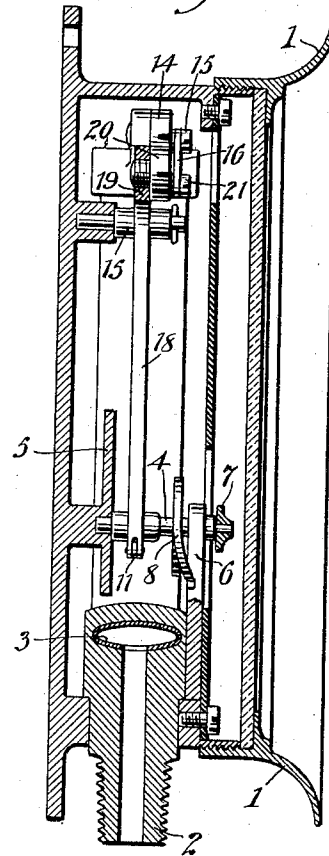
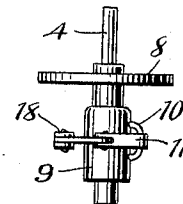


Fig. 4.



WITNESSES

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ELMER J. HAVERLY, OF SAYRE, PENNSYLVANIA.

PRESSURE-GAGE.

1,043,591.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed September 7, 1911. Serial No. 648,114.

To all whom it may concern:

Be it known that I, ELMER J. HAVERLY, a citizen of the United States, and a resident of Sayre, in the county of Bradford and State of Pennsylvania, have invented a new and Improved Pressure-Gage, of which the following is a full, clear, and exact description.

My invention relates generally to pressure gages and more particularly to an adjustable means of connection between the expansible element and the intermediate actuating devices for the pointer.

A further object of my invention is to provide such a means of adjustment which will be simple in construction and efficient in operation, the construction and arrangement of the parts being such that adjustments may be made without dismantling the gage.

Other objects and advantages of the invention will appear as the description thereof proceeds, the new and useful construction being set forth in the appended claim.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a front view of a gage equipped with my invention; Fig. 2 is a front view with the index and scale removed; Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1; Fig. 4 is a bottom plan view of the connection by itself.

My invention is adapted for use in any gage wherein it is desired to impart motion to a spindle carrying a pointer, the device shown in the drawings being a steam gage embodying a casing 1 having the outlet 2 thereon for connection to the steam pipe, the interior of the casing being provided with the usual hollow expansible element 3, straightening of which, due to the pressure or the steam, imparts movement to the other elements to be now described.

A spindle 4 is suitably positioned within the casing, preferably in suitable brackets 5, 6, the outer end of this spindle having an index or pointer 7 thereon, together with the usual hair spring 8 for returning the index to zero position. The intermediate portion of the spindle may be of the same diameter as the end portions or it may be

greater, as shown at 9 in Fig. 4, there being a suitable securing means, such as a hook, positioned on this portion of the spindle which is in pivotal engagement with a short link 11 having a curved end portion 12 whereby when the parts are in the position shown in Figs. 1 and 2 the end of the link may extend as far as possible around the spindle, thereby providing for a greater range of movement of the spindle. The link 11 may be made in a plurality of pieces if so desired, the pieces being in pivotal engagement as at 100.

The free end 13 of the movable or expansible element 3 is provided with a screw 14 which is adjustable therein, the head of the screw being provided with a suitable opening into which a similar element, such as a machine screw 15, engages, the short link 16 being pivotally connected to this screw 15; pivotally mounted on a support 17 carried by the casing 1 is a bell crank lever having a long arm 18 and a shorter arm 19, the shorter arm being provided with an adjustable screw 20, which is provided with a smaller screw 21 engaging the other end of the link 16, the outer end of the longer arm 18 being in pivotal engagement at 22 with the end of the link 11. It is to be noted that the points of pivotal engagement of the screws 15, 21, with the larger screws 14, 20, is eccentric of these screws, that is, is a suitable distance from the center thereof. It is obvious that if pressure is applied internally to the movable element 3 that the tendency of this element to straighten itself will turn the spindle 4 through the medium of the bell crank lever and the links 16 and 11 secured to the ends thereof, the link 12 being also secured to the spindle 4.

The adjustment of the index 7 may be positioned at zero, by movement of the adjustable screws 14 and 20 with the consequent movement of the link 16 connecting them whereby the spindle may be brought into the position shown in Fig. 2. The spindle 4 is actuated against the torsion of the spring 8 so that when the pressure within the element 3 is removed the index will come back to adjusted position. The screw 14 engages the end 13 of the expansible element 3 merely by reason of the screw threads thereon in the threaded opening on the end of this member, the same arrangement being

used in determining the position of the screw 20 in the shorter arm 19 of the bell crank; the engagement may be termed frictional, the friction between the parts being
5 sufficient to permit movement thereof when the member 3 tends to straighten without turning the screws themselves on their supports, the dial of the gage being provided with an opening 100 adjacent its top where-
10 by the screws 14 and 20 are accessible by merely removing the glass front of the gage. Of course the length of the link 11 and the particular shape thereof may be varied in order to adapt it to different gages hav-
15 ing spindles of different diameters and having indexes thereon of different lengths; such changes are embodied within the scope of my invention and are included within the appended claim.

20 Having thus described my invention, I

claim as new, and desire to secure by Letters Patent:—

A pressure gage comprising the combination of an expansible tube, a screw in threaded engagement with the free end of
25 the tube, a lever movably mounted in the gage, the lever being adapted to actuate the index of the gage, a screw in threaded engagement with the end of the lever, and a
link extending between the said screws, the
30 ends of the link being secured to the screws by means of threaded members engaging the said screws in eccentric positions.

In testimony whereof I have signed my name to this specification in the presence of
35 two subscribing witnesses.

ELMER J. HAVERLY.

Witnesses:

E. M. DUNHAM,
H. C. SAMUELS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."