FINNEGAN & SCHULTE.

Pressure Gage.

No. 32,514. Patented June 11, 1861.

Fig. 1.

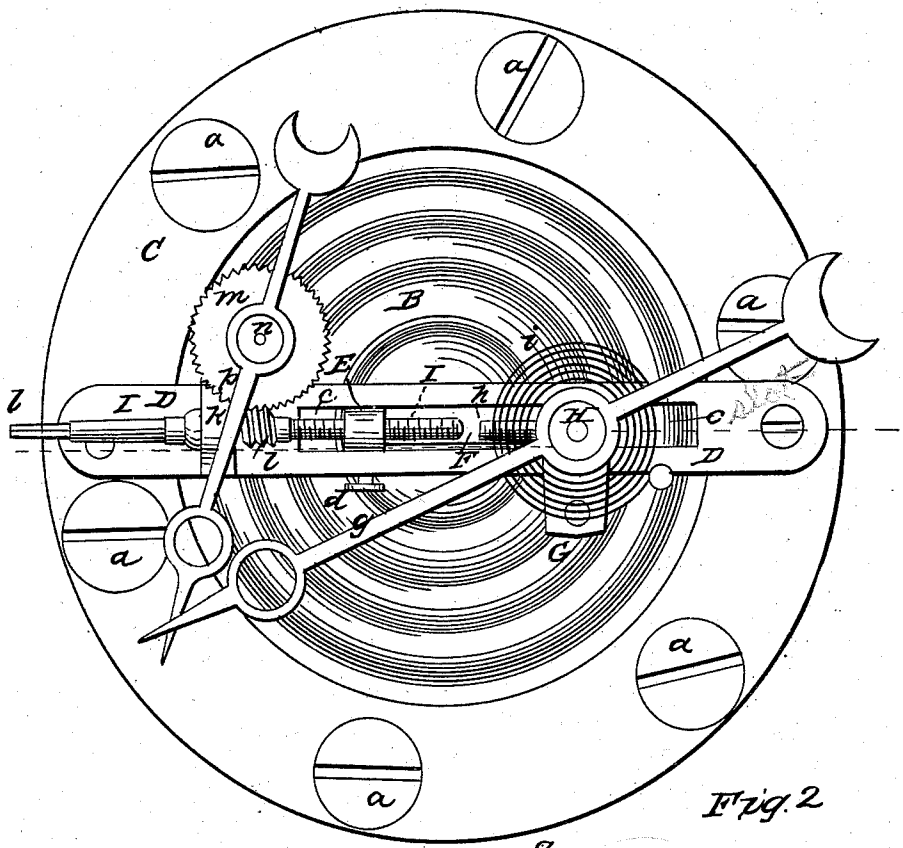
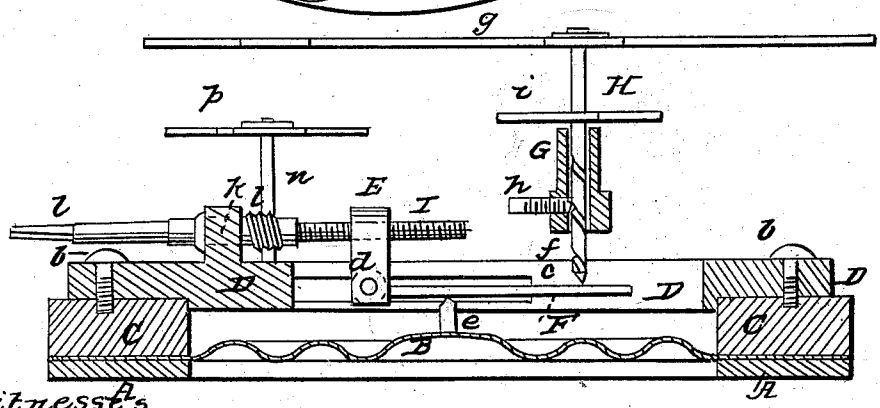


Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

R. FINNEGAN AND A. F. W. SCHULTE, OF NEW YORK, N. Y.

PRESSURE-GAGE.

Specification of Letters Patent No. 32,514, dated June 11, 1861.

To all whom it may concern:

Be it known that we, R. FINNEGAN and A. F. W. SCHULTE, of the city, county, and State of New York, have invented certain new and useful Improvements in Pressure-Gages; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a front view of the working parts of a gage with our improvements. Fig. 2, is a section of the same in the plane indicated by the red line in Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

Our invention relates to that class of pressure gages in which the pressure of the steam or other fluid is received on a flexible plate.

It consists in the combination for the purpose of transmitting the movements of the plate to the index of a lever and a screwed or spirally grooved spindle applied as hereinafter specified.

It also consists in a certain mode of providing for the movement of the lever to adjust or correct the gage.

To enable others skilled in the art to make and use our invention we will proceed to describe its construction and operation.

A, represents a portion of the back of the box or case of the gage to which the flexible plate B, is secured by a ring C, and screws *a*, *a*.

D, is a straight slotted bar placed across the front of the ring C, and secured firmly thereto by screws *b*, *b*.

E, is a block fitted to the slot *c*, of the bar D, and having pivoted to it by a fulcrum pin *d*, the lever F, which extends across the center of the plate B, and bears against a small stud *e*, secured to the center of the said plate.

G, is a socket secured to the bar D, and standing at right angles thereto, and to the plate B, and constituting the bearing for the spindle H, of the index *g*. This spindle has in it a spiral groove *f*, which receives the point of a screw or pin *h*, inserted through one side of the socket G. The effect of this pin *h*, is to cause the spindle to receive a rotary motion by the application of pressure in an endwise direction, and to receive a longitudinal motion when any force is applied to turn it. The said spindle has also applied to it a volute coiled spring *i*, which tends to turn it in such a direction as to make it move endwise toward the plate B, and keep its rear end always in contact with the lever F. When the pressure on the back and front of the plate B, is uniform, the spring *i*, by its action on the spindle H, keeps the index at the zero point on the scale of the gage, which is not represented in the drawing, but when the pressure on the back exceeds more or less that in front, the plate B, is pressed forward more or less and by the consequent pressure of the stud *e*, against the lever, the lever is made to press against the spindle H, and so to turn the said spindle and the index and the latter indicates the degree of excess of pressure upon the scale of the gage. By the combination of the spirally grooved spindle H, and lever F, a greater movement of the index is obtained with a given movement of the flexible plate than can be obtained when the spirally grooved spindle is in immediate contact with the flexible plate, as it is in some gages, and the said spindle constitutes a more simple mode of combining a lever with the index than is employed in other gages in which the flexible plate acts upon the index through the medium of a lever.

I, is a screw arranged parallel with the bar D, and screwing through the block E. This screw has its shank fitted to turn in a fixed bearing *k*, attached to or formed upon the bar D, and provided with shoulders which prevent its moving longitudinally in the said bearing. By turning the said screw by a key applied to a square *l*, on its outer end it is made to move the block E, in the slot *c*, of the bar D, and so to vary the distance between the fulcrum *d*, of the lever F, and the stud *e*, and hence to make the flexure of the plate B, act with greater or less effect upon the index. The said screw I, thus constitutes a means of adjustment or correction of the gage. In order to facilitate the accurate adjustment or correction, the spindle of the said screw I, has formed upon it a worm *l*, which gears with a wheel *m*, on a spindle *n*, which works in a fixed bearing carried by the bar D, and on this spindle there is an index *p*, to indicate on a fixed scale (not shown) the amount of movement given to the screw.

The gage constructed as herein specified is applicable for steam, hydrostatic or any other fluid pressure, or for vacuum.

What we claim as our invention, and desire to secure by Letters Patent; is—

1. The employment for transmitting the movements of the flexible plate B, to the index *g*, of a lever F, and spirally grooved spindle H, combined and applied substantially as herein specified.

2. The movable block E, carrying the fulcrum of the lever F, and the screw I, applied in combination with the slotted bar D, or its equivalent and operating substantially as herein specified for the adjustment or correction of the gage.

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