H. W. Evans.

Steam Gauge.

No. 50,107. Patented Sept. 26, 1865.

Fig: 1.

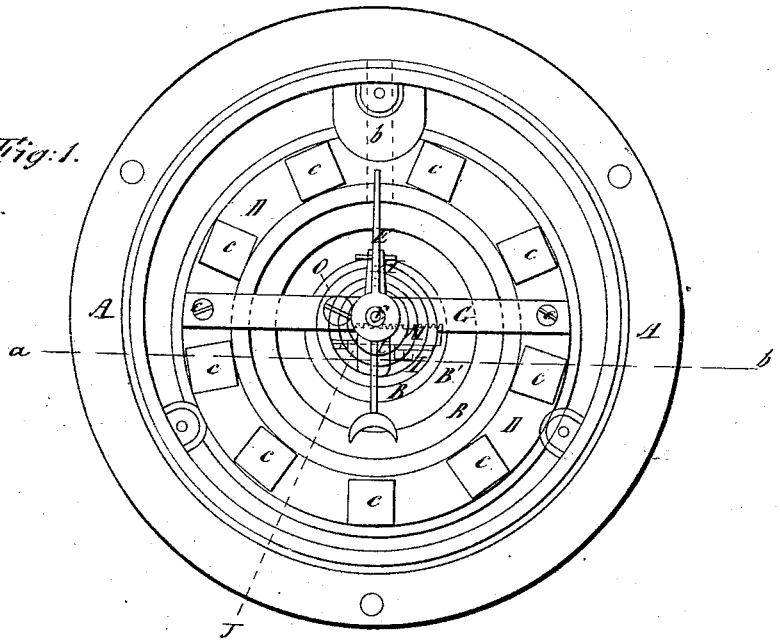


Fig: 2.

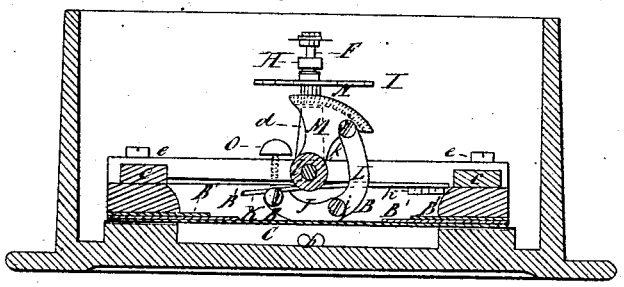


Fig: 3.

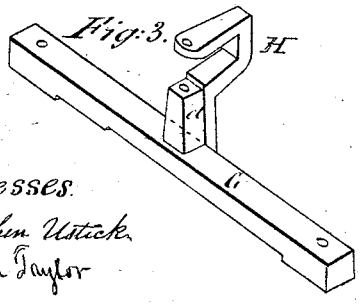
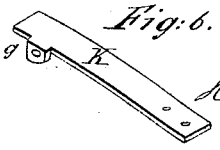


Fig: 4.

Fig: 5.

Witnesses.
Stephen Ustick.
Alfred Taylor

Fig: 6.



Inventor.
Hampton W Evans.

UNITED STATES PATENT OFFICE.

HAMPTON W. EVANS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN STEAM-GAGES.

Specification forming part of Letters Patent No. **50,107**, dated September 26, 1865.

To all whom it may concern:

Be it known that I, HAMPTON W. EVANS, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Steam-Gages; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, in which—

Figure 1 is a top view of the gage with the dial-plate removed therefrom. Fig. 2 is a vertical section through the red line *a b* of Fig. 1. Fig 3 is a perspective view of the cross-bar G and bracket H combined. Fig. 4 is a perspective view of the foot-piece J. Fig. 5 is a perspective view of the link L. Fig. 6 is a perspective view of the spring K.

Like letters in all the figures indicate the same parts.

The nature of my invention consists in combining, with a spring-plate which operates the index, one or more plate-rings at its periphery, in such a manner as to increase the strength and elasticity of the spring, and other improvements, which will be understood by the following description.

A is a box or case which contains the several parts of the gage.

B is a metallic diaphragm spring-plate, which I usually construct of brass to prevent oxidation. It is situated on the circular seat *a*, which forms the wall of the chamber C, into which the steam is admitted by means of the opening *b* to actuate said spring.

B′ B′ are metallic rings of different internal diameters, as represented in the drawings. They are combined with the spring-plate B at its periphery, to increase the strength and elasticity of the plate, the whole being confined on the seat *a* by means of the clamp-ring D and bolts *c*.

E is an index on the shaft F, the lower journal of which turns in the upright *d* of the cross-bar G, which is confined to the clamp-ring D by means of screws *e e*, and the upper journal turns in the bracket H, which is secured by means of screws to the upright *d*.

I is a hair-spring for taking up the backlash of gearing hereinafter described. The inner end of the coil is confined to the shaft F, and the outer end to the bracket H. There is an elliptical foot-piece, J, supported at one end, by the screw-pivot *f* in the lug *g*, of the spring K, whose permanent end is confined to the lower side of the cross-bar G by means of screws *h h*. The other end of the foot-piece is connected to the lower end of the link L by means of the screw-pivot *i*. The said link is connected at its upper end, by means of the screw-pivot *j*, to the quadrant M, which gears into the pinion N on the shaft F, the quadrant turning freely on the pivot *k*, which projects from the cross-bar G, the said pivot being screwed therein and having a head, *k′*, which comes against the outer end of the boss *l* of the quadrant. The foot-piece J bears on the spring-plate B, as represented in Fig. 2, being regulated by the vertical adjusting-screw O in the bar G, the point of the screw bearing on the resilient end of the spring K.

It will readily appear that by the use of the spring K the very essential point of bringing the foot-piece J under the control of the operator is completely attained without taking any part of the gage apart.

The operation is as follows: The different parts of the gage being constructed and arranged in the manner described, the elliptical foot-piece J can then be adjusted by the screw O, through the medium of the spring K, so that the index E may be made to traverse the dial, so as to adapt the gage to high or low pressure, as circumstances may require.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Combining one or more spring-rings, B′, with the diaphragm spring-plate B, for increasing its strength and elasticity, substantially as herein set forth.

2. The combination of the link L with the eliptical foot-piece J and toothed quadrant M, substantially as and for the purpose above described.

3. The combination of the spring K with the elliptical foot-piece J, substantially as described, and for the purpose above set forth.

In testimony that the above is my invention I have hereunto set my hand and affixed my seal this 27th day of July, 1865.

HAMPTON W. EVANS. [L. S.]

Witnesses:
STEPHEN USTICK,
JOHN WHITE.