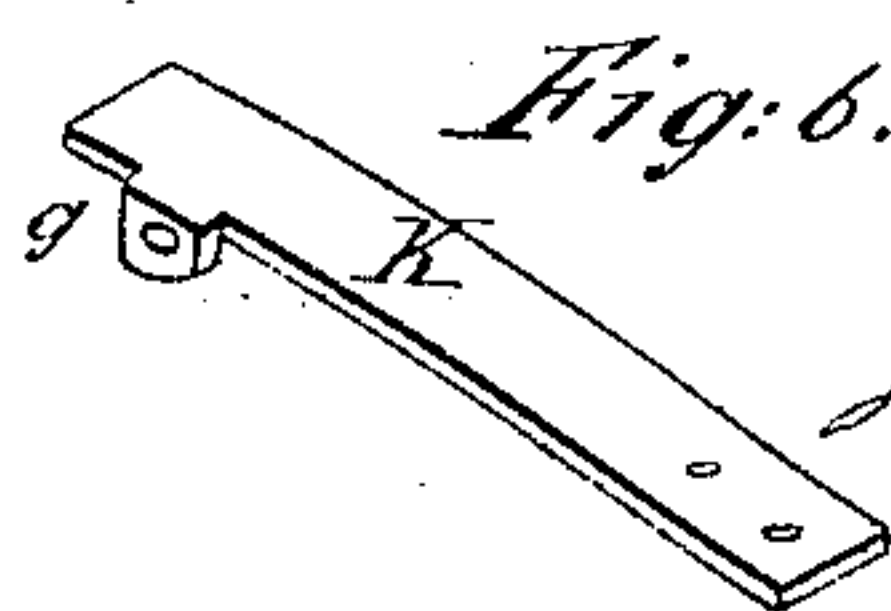
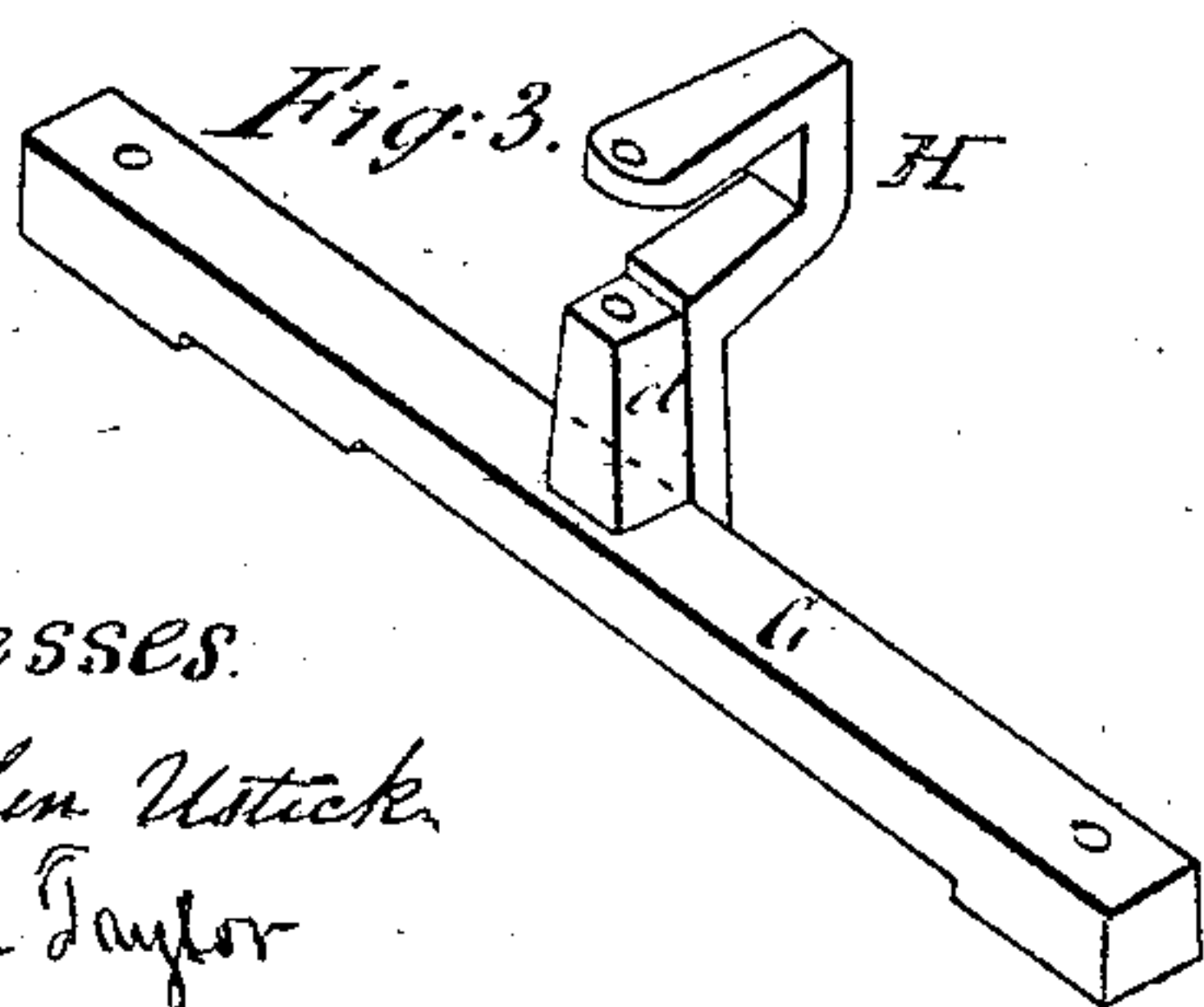
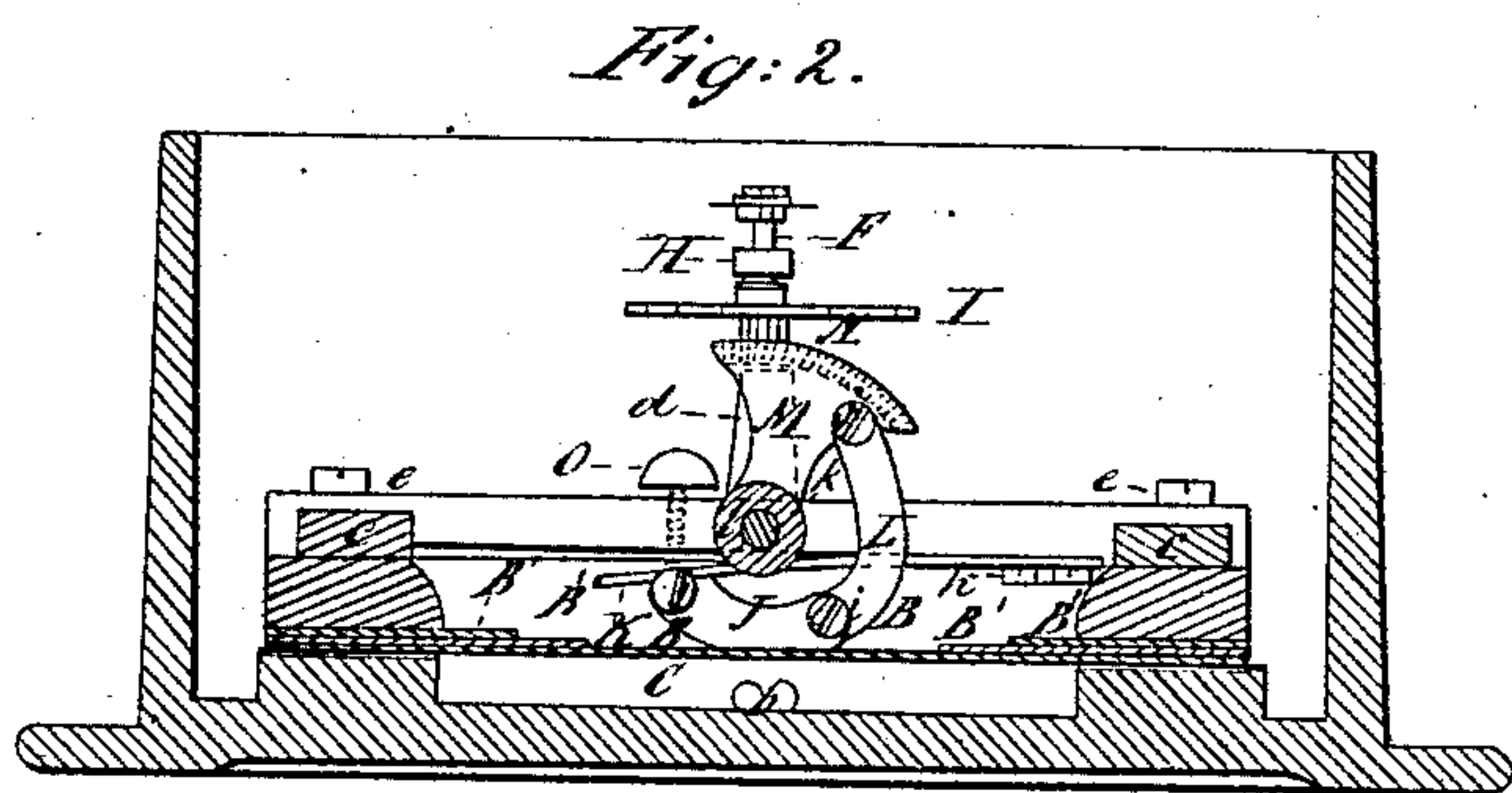
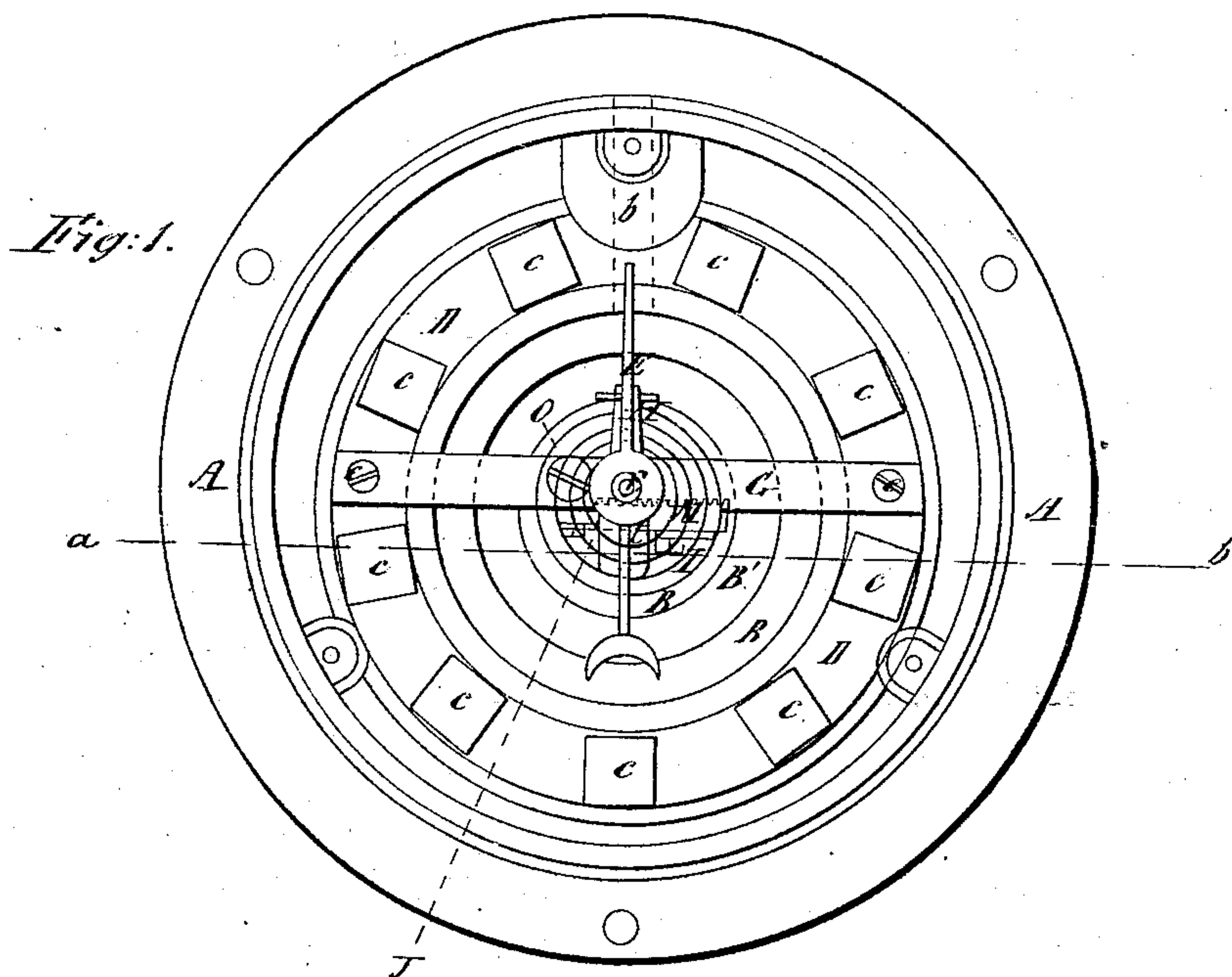


# H. W. Evans.

## Steam Gauge.

N<sup>o</sup> 50,107.

Patented Sept. 26, 1865.



Witnesses.

Stephen Vstick,  
Alfred Taylor

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 *ab* 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 elliptical 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.