

C. C. SCHMIDT.

Steam Gage.

No. 50,991.

Patented Nov. 14, 1865.

Fig. 2.

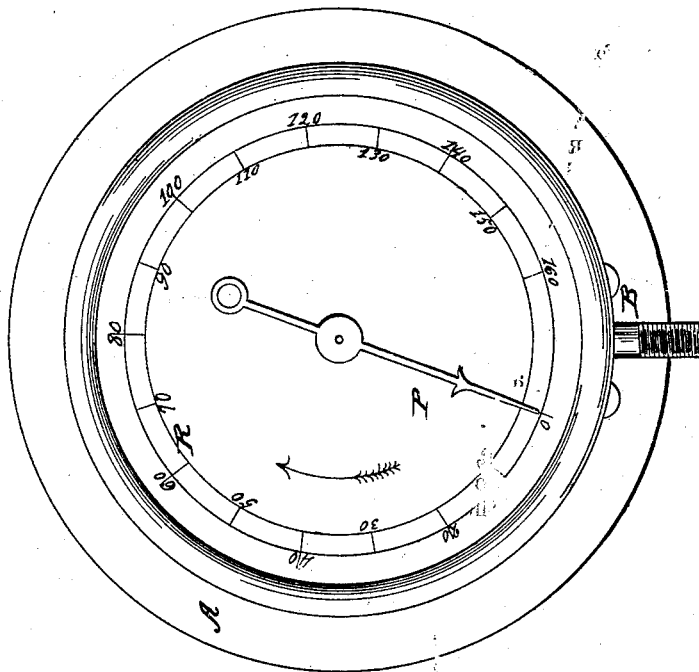
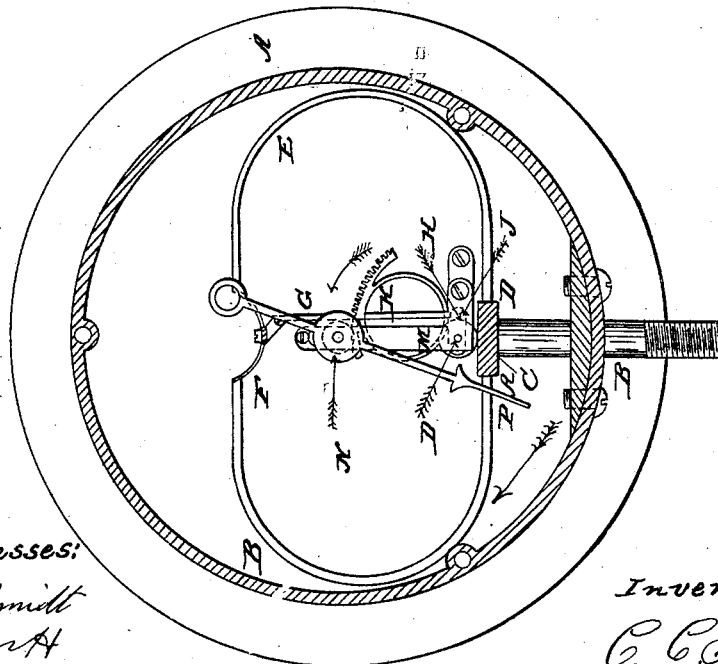


Fig. 1.



Witnesses:  
Edw. Schmidt  
Ch. Barnett

Inventor:  
C. C. Schmidt

# UNITED STATES PATENT OFFICE.

CHRISTIAN C. SCHMIDT, OF NEW YORK, N. Y., ASSIGNOR TO A. SCHMIDT  
& BROTHERS, OF SAME PLACE.

## IMPROVEMENT IN STEAM-GAGES.

Specification forming part of Letters Patent No. 50,991, dated November 14, 1865.

*To all whom it may concern:*

Be it known that I, CHRISTIAN C. SCHMIDT, of the city, county and State of New York, have invented certain new and useful Improvements in Steam-Pressure Gages; and I do hereby declare the following to be a full description of the same.

The object of my invention is to obtain more sensitiveness in the pressure of the steam in the metal gage than can be obtained in the metal gages ordinarily used, and thus adapt it for use as a low-pressure steam-gage as well as a high-pressure steam-gage; and the nature of my invention consists in making an oval hollow metal spring in two parts, and joined together at the middle of the upper half of it by a solid thin steel or other tempered metal spring of about an inch and one-quarter of an inch in length, (more or less, according to the size of the gage,) so as to make a complete oval, and thus, by the length of the upper and lower sides over the short curves of the ends of the oval, adapt it to the slightest pressure of the steam.

To describe my invention more particularly I will refer to the accompanying drawings, forming a part of this specification, the same letters of reference, wherever they occur, referring to like parts.

Figure 1 is a plan view of the gage, having the dial removed. Fig. 2 is a face view of the gage, having the dial on.

Letter A is the metal case; and B, an ordinary steam coupling-pipe, having a square head, C. In the sides of this head are secured the lower ends, D, of the two halves of the oval hollow metal spring E. These metal springs are curved so as to form an oval whose longest sides are about twice the diameter of the shortest sides. Though this precise curvature is not absolutely necessary for the development of the pressure of the steam at low temperatures, yet it is believed to be the best form, when made in two parts and joined together by means of an intervening piece of thin solid steel or other tempered-metal spring F, so as

to preserve the continuity of the entire spring as a complete or continuous oval spring. This thin metal spring is curved in toward the center of the oval. The object of this is to allow the hollow spring to expand outward more readily under the pressure of the steam than if curved in an opposite direction. A straight spring answers the purpose in a high-pressure gage very well; but for low pressure, as well as high-pressure, I deem the curved spring preferable, though do not wish to be confined to any particular curve or form of the uniting-spring, as my invention is not for the shape of the uniting-spring, but its combination with an oval metal spring.

To the lower side of the uniting-spring is secured a connecting-rod, G, by a center pin, having its lower end connected by another center pin, H, to an arm, J, at the lower part of the segment-rack K, (working on a center pin, L, in the indicator movement-frame M,) for the purpose of vibrating the said rack, and thus rotating the indicator-pinion N and indicator-P, to register the pressure of steam on the dial-plate R. This arrangement of the indicator movements I make no claim to, except as connected with the movement of my oval pressure-spring. In this spring it will be perceived that the pressure opens it, and therefore requires only the direct action of the connecting-rod on the quadrated rack, consequently is not only a very permanent, but also a very cheap device.

Having now described my invention, I will proceed to set forth what I claim and desire to secure by Letters Patent of the United States:

The combination and arrangement of the spring E with the intervening spring F, connecting-rod G, and segment-rack K, substantially upon the principle and in the manner as hereinbefore set forth.

C. C. SCHMIDT.

Witnesses:

EDW. SCHMIDT,  
CHARLES L. BARRITT.