

R. C. BLAKE.

Steam Gage.

No. 56,694.

Patented July 31, 1866.

FIG. 1.

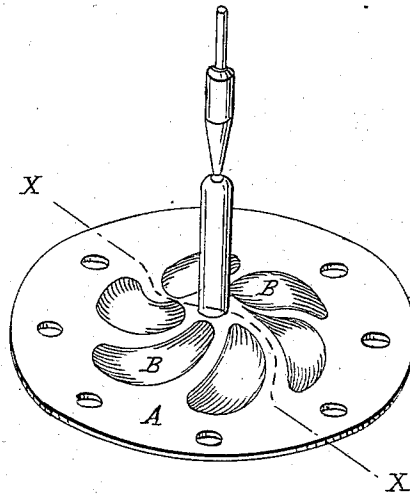
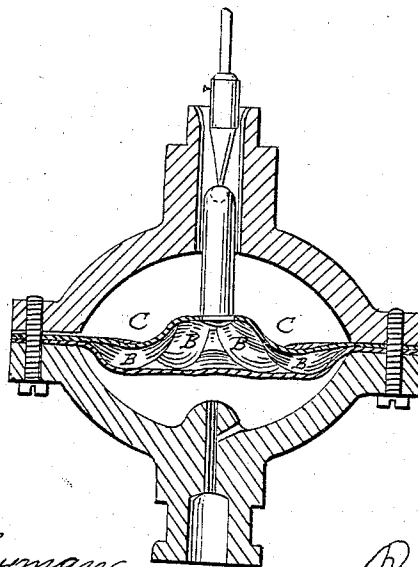


FIG. 2.



WITNESSES:

James H. Layman

INVENTOR.

R. C. Blake

*By Knight Bros
attys*

UNITED STATES PATENT OFFICE.

RICHARD C. BLAKE, OF CINCINNATI, OHIO.

IMPROVEMENT IN STEAM-GAGES.

Specification forming part of Letters Patent No. 56,694, dated July 31, 1866.

To all whom it may concern:

Be it known that I, RICHARD C. BLAKE, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Steam-Gages, of which the following is a specification.

My invention refers to the class of steam gages which comprises a disk or diaphragm of steel plate stamped into a convoluted or corrugated form.

The object of my improvement is to stiffen the diaphragm-spring, or to lessen its sensitiveness under slight pressure, and thus give a greater range of sensitiveness under higher pressure, in order to prevent the steam-pressure from soon exhausting the motion of the spring, thus overcoming, in some degree, the well-known defects of the concentrically-corrugated springs of steam-gages. At the same time I secure a slightly-rotary motion of the center of the spring, which is a valuable motion in operating the index.

My invention consists in spiral corrugations in a diaphragm spring-plate for steam-gages, for the purpose of giving the spring a wider range of sensitiveness and more uniform action under different degrees of steam-pressure.

Figure 1 is a top view of a diaphragm embodying my invention. Fig. 2 is an axial section of the diaphragm and inclosing-chamber, taken at the line *x x* of Fig. 1.

The diaphragm itself, being the only feature on which I claim any patentable novelty, need alone be described. The said diaphragm consists of a circular plate or disk, A, of steel, which I stamp between suitable dies into the form represented—to wit, a series of spiral or involute corrugations, B, which themselves form part of and intersect an annular depres-

sion or corrugation, C. This arrangement combines with the radial relief or elasticity afforded by the annular depression C a latitudinal or circular relief or elasticity due to the spiral or involuted corrugations B, whose greater length and pliability than a mere radial corrugation manifestly give a higher, wider, and greater scope or range of elasticity, and therefore can be made to traverse the desired or necessary range of indications with a less close approximation to the maximum limit of its endurance, and consequently with less danger of destruction of the diaphragm at the high pressures, at which pressures it will also be more sensitive and conspicuous in its indications.

The spiral corrugations not only stiffen the diaphragm-spring, but also give a slight rotary motion to the center of the spring as the latter expands and contracts. The form of these corrugations may be varied, and also their number and extent, so long as spiral curves instead of direct radial corrugations are employed.

I do not claim radial corrugations in a diaphragm-spring.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

Spiral corrugations in diaphragm-spring of a steam-gage, substantially in the manner and for the purposes set forth.

In testimony of which invention I hereunto set my hand.

RICHARD C. BLAKE.

Witnesses:

GEO. H. KNIGHT,
JAMES H. LAYMAN.