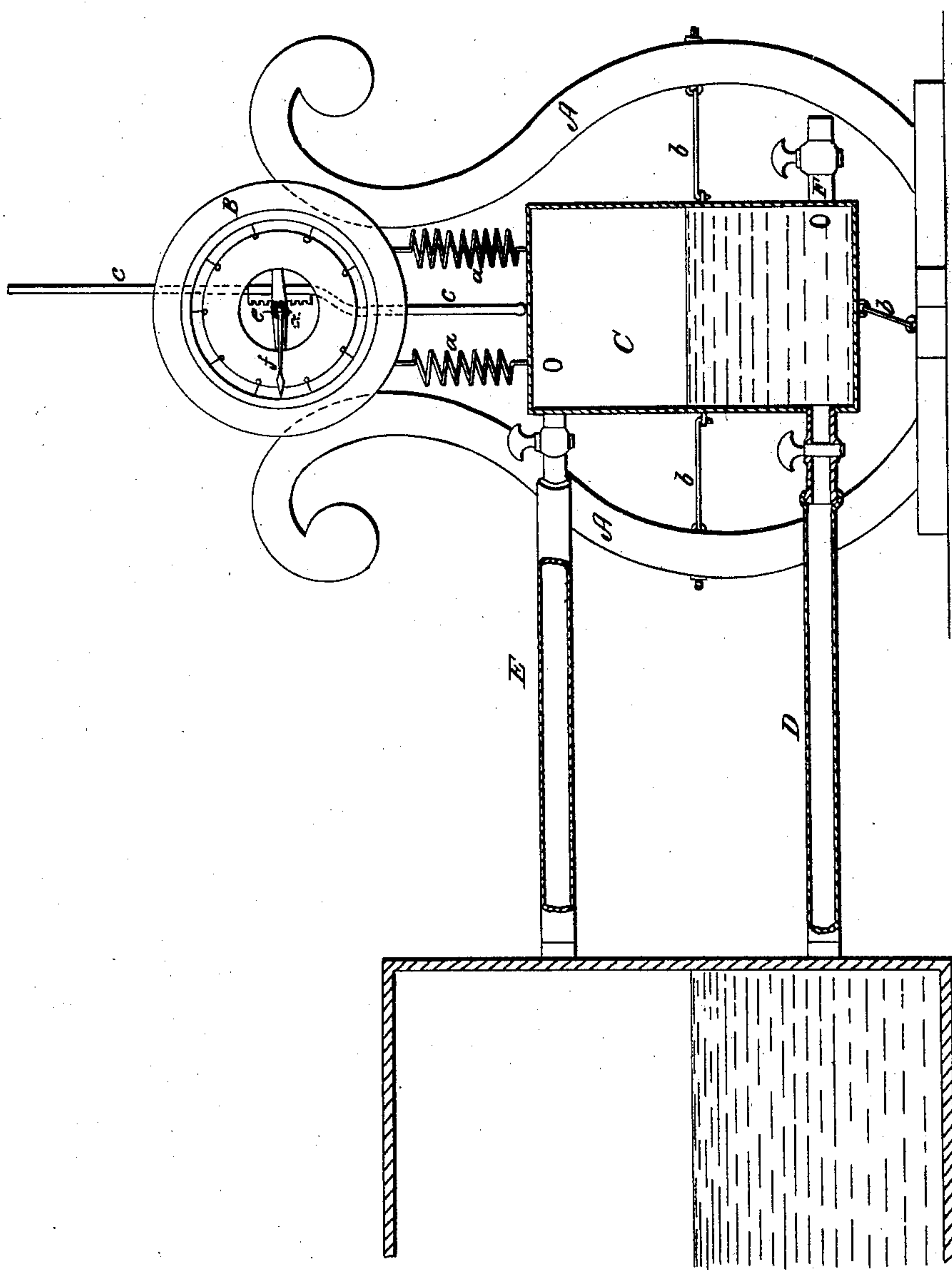


R. & G. E. TOWER.

Water Gage.

No. 26,937.

Patented Jan'y 24, 1860.



Witnesses:

Henry Saffett  
Henry Hubbard.

Inventor:

Reuben Tower  
George E. Tower.

# UNITED STATES PATENT OFFICE.

REUBEN TOWER AND GEO. E. TOWER, OF ASHTABULA, OHIO.

## WATER-GAGE.

Specification of Letters Patent No. 26,937, dated January 24, 1860.

*To all whom it may concern:*

Be it known that we, R. TOWER and GEORGE E. TOWER, of Ashtabula, in the county of Ashtabula and State of Ohio, have invented a new and Improved Water-Gage for Steam-Boilers; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, said drawing representing an elevation of the gage, partly in section.

Our invention consists in a closed vessel suspended by springs, and connected with the boiler, above and below the proper water level, by flexible pipes, and connected by a rack and pinion, or other equivalent means, with a suitable index. The water in this vessel being always on a level with that in the boiler, causes the vessel to fall and rise by the increase and diminution of its quantity as the water rises and falls in the boiler, and so as to operate the index, and so show the quantity of water in the boiler.

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

A, is a stand supporting a circular box B, one of whose heads constitutes a dial.

C, is the water vessel constituting the principal part of the water-gage. This vessel is represented of upright cylindrical form, but may be of any other convenient form, and is suspended by two springs *a, a*, from the box B. These springs are represented of metal of spiral construction but may be of other construction, or of india-rubber, or other elastic material.

D, is a pipe connecting the lower part of the vessel C, with the boiler at a point below the lowest safe water level; and E, a pipe connecting the upper part of the vessel C, with the boiler, above the highest point to which the water is liable to rise. The said pipes may be made wholly, or in part of india-rubber steam-hose, or may be made of metal with working joints, and they should be furnished with cocks.

*b, b*, are small rods connecting the vessel C, with the stand A, in such a manner as to prevent the said vessel swinging about, but not to interfere with its rise and fall as far

as necessary. To the top of the vessel C, is attached a rod *c*, on which is formed a toothed rack, which enters or passes through the box B, and gears with a pinion *d*, on the horizontal spindle *e*, of the index *f*, said shaft working in bearings in the box B, and the index *f*, working outside of the dial.

F, is a cock close to the bottom of the vessel C, for drawing off water, or blowing it out to clean it.

The apparatus is placed on a suitable stand or support near the boiler at such a height that when empty its bottom is just level with the top of the flues or tubes, or with the lowest safe water level of the boiler. When the connection is made with the boiler by means of the pipes D, and E, water enters the vessel C, by the said pipes, and reaches the same level in the said vessel as in the boiler, and so causes the said vessel to descend more or less as the water in the boiler rises. The rise or fall of the said vessel causes the rack on the rod *c*, to move the pinion *d*, and so to move the index *f*, which is thus made to show upon the dial the height of the water in the boiler.

Instead of the rack and pinion some other device, as a crank connection, may be used between the vessel C, and the index spindle *c*, to cause the index to show the condition of the water in the boiler.

The rod *c*, passing through the top of the box B, may be connected by levers, gearing, or other means with an index suitably arranged at any place distant from the boiler for the purpose of showing the condition of the level of the water in the boiler.

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

The gage composed of a vessel C, suspended on springs and connected with a boiler by flexible pipes D, E, and with an index by a rack and pinion, or their equivalent, and operating substantially as described to show the condition of the water level in the boiler.

REUBEN TOWER.  
GEORGE E. TOWER.

Witnesses:

H. FAPETT,  
N. V. HUBBARD.