

(No Model.)

K. A. KLOSE.

UPRIGHT DOUBLE WATER GAGE BOILER.

No. 354,710.

Patented Dec. 21, 1886.

Fig. 1.

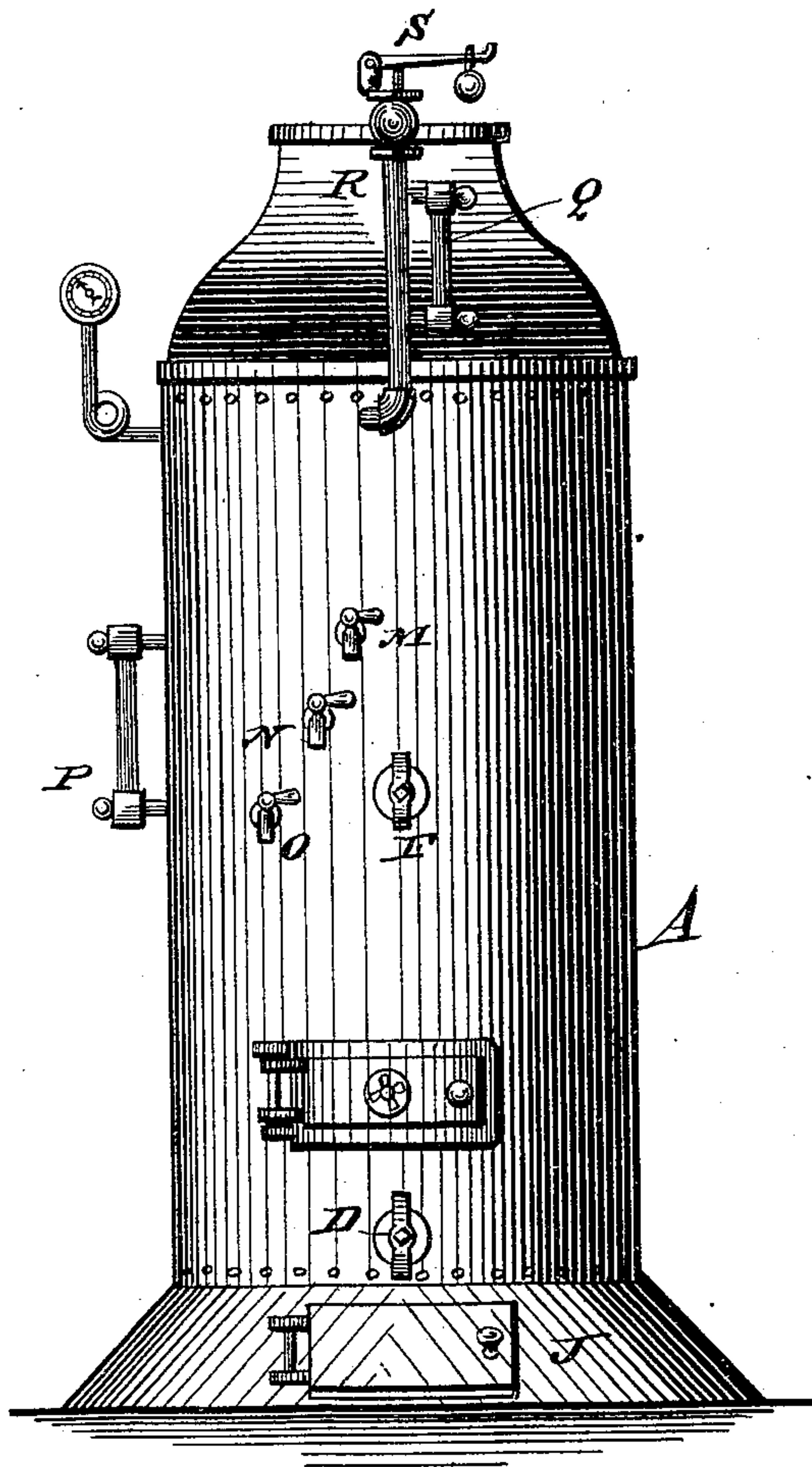


Fig. 2.

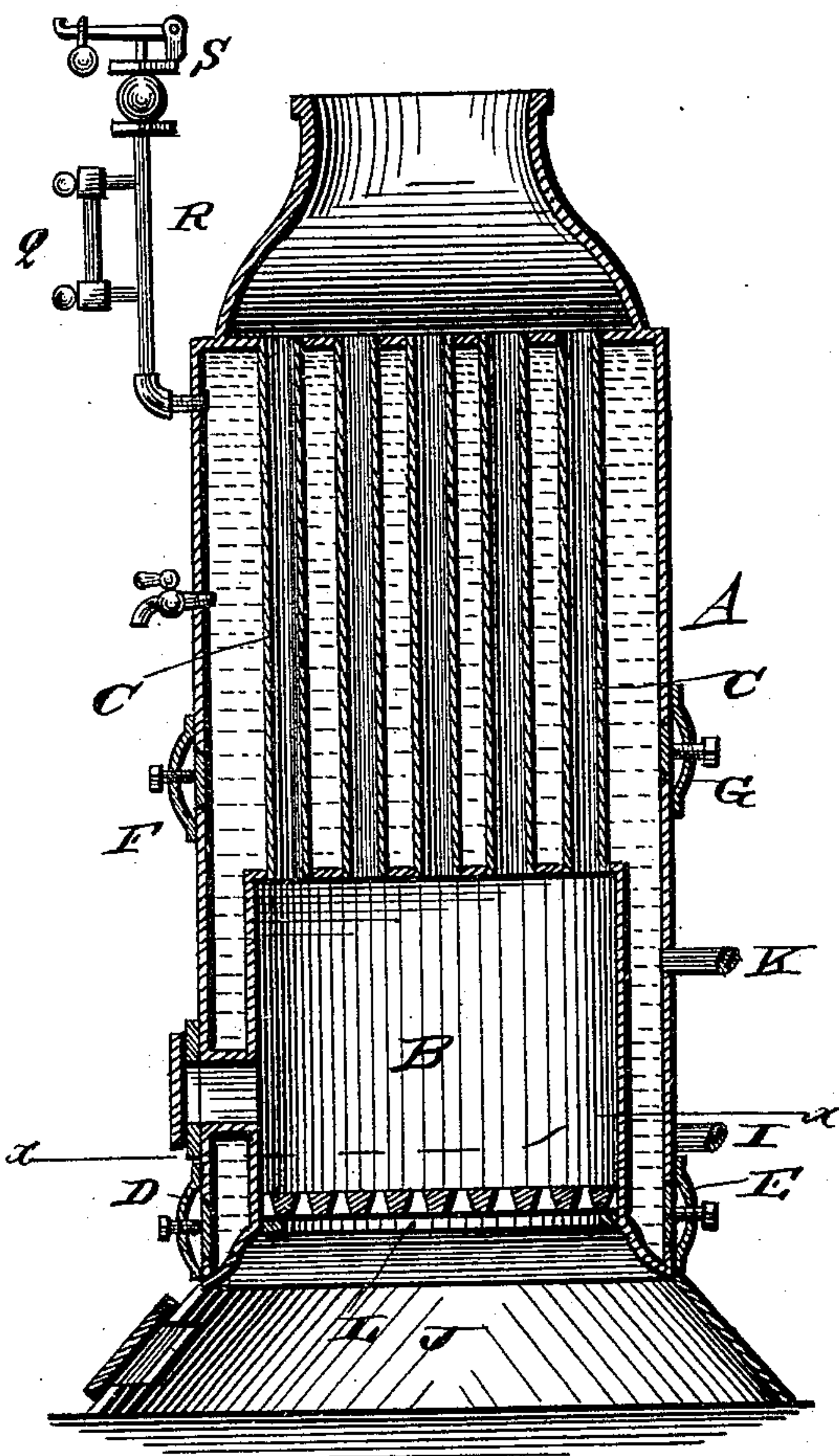
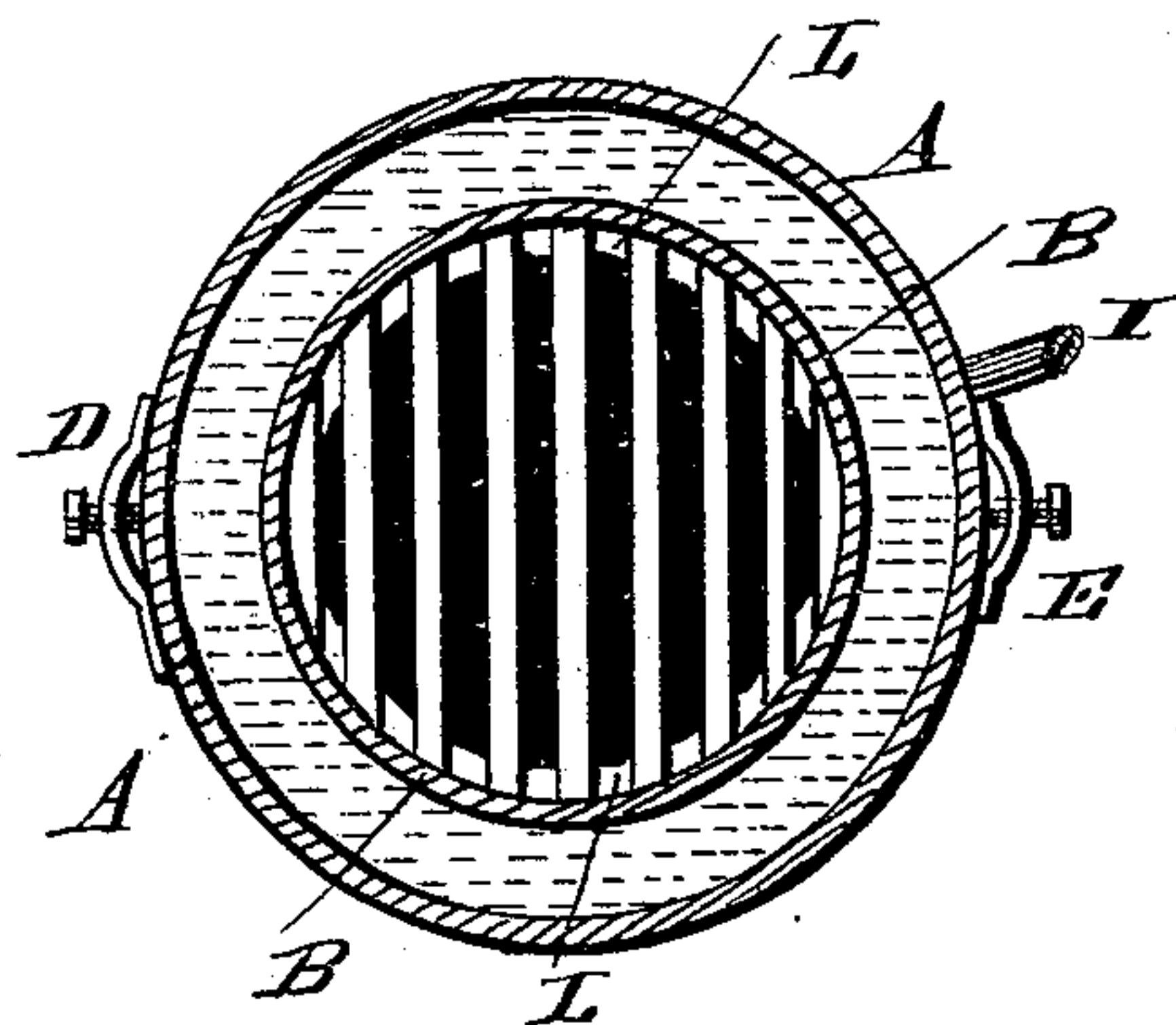


Fig. 3.



WITNESSES

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KARL AUGUST KLOSE, OF DES PLAINES, ILLINOIS.

UPRIGHT DOUBLE WATER-GAGE BOILER.

SPECIFICATION forming part of Letters Patent No. 354,710, dated December 21, 1886.

Application filed July 24, 1886. Serial No. 208,972. (No model.)

To all whom it may concern:

Be it known that I, KARL AUGUST KLOSE, a citizen of the United States, residing at Des Plaines, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Upright Double Water-Gage Boilers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a front elevation. Fig. 2 is a vertical central section; and Fig. 3 is a horizontal section on line *x x*, Fig. 2.

My invention relates to upright steam-boilers; and it consists in the construction and novel combination of parts, as hereinafter described, and pointed out in the claims.

The object of my invention is to provide a boiler with water-gages in such a manner that the boiler head and walls may be kept moist by water and common steam, thereby prolonging the usefulness of this boiler and saving in the cost of fuel to run it.

In constructing this class of boilers I build them in sizes of from one horse-power to seventy horse-power, or more, if desired. For instance, in building a ten-horse-power boiler, I use five-sixteenth-inch iron plate and three-eighth-inch-thick flue-head, and make the boiler A six feet four inches high and thirty inches in diameter. The fire-box B, I make two feet in diameter and two feet high. In riveting the plates together, I employ two hundred and forty five-eighth-inch rivets, and place them two inches apart, and I use fifty-five flues, C, which are two inches in diameter and four feet five inches long. I also provide four hand-hole plates, D E F G, two of which, D E, are one inch above the flange-ring J, and the two others, F G, are about eight inches above the fire-box B, the hand-holes being provided for the purpose of cleaning the boilers.

The blow-off hole I is about one inch above the flange-ring J, and the pipe K for filling the boiler is about eight inches above the flange-ring J.

In the fire-box B, I place a ring, L, for securing the grate-bars upon.

The boiler is provided with three air-cocks, M N O, inserted in one side of the boiler, one above another, the lowest air-cock, O, being one inch higher than the lower gage-glass, P. These air-cocks M N O are five inches apart. The upper gage-glass, Q, is ten inches long and two to four inches in diameter and five-eighths of an inch thick. The tube R, to which the upper gage-glass, Q, is secured is fifteen inches long and two to four inches in diameter, according to the size of the boiler. The safety-valve S is connected to the upper end of the tube R, and the lower end is connected with the interior of the boiler, as shown.

T designates the pressure-gage. No brick are required for this boiler except in constructing the foundation.

The pressure is one hundred and ten pounds to the square inch, and the weight of the boiler when filled is about fourteen hundred pounds.

The amount of coal required by hard firing is about forty pounds per hour. This is of itself an item. It further saves room and time, and costs about one-third as much as boilers of its class.

In starting the boiler, water is let in under pressure until it has reached the head thereof, as shown in Fig. 2 of the drawings, when it will be forced up into the upper gage. At this time the upper gage will indicate that the water has reached the head of the boiler and moistened or lubricated the same. I then blow off until the water has fallen to about the middle of the lower gage, the steam in the meantime having risen to the said head and moistened the same before the water thereon may have been allowed to dry. By this arrangement of the gages and operation of the boiler it will be seen that the head is never allowed to become dry during operation, and consequently the same cannot burn out so rapidly.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

5 The combination, with a steam-boiler, substantially as described, and provided with the blow-off and hand holes, of the water-gage connected with the said boiler adjacent to the head thereof and the gage-glass arranged about

in line with the said hand-holes, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

KARL AUGUST KLOSE.

Witnesses:

WILLIAM BIERMAN,
WILLIAM OVERHEU.