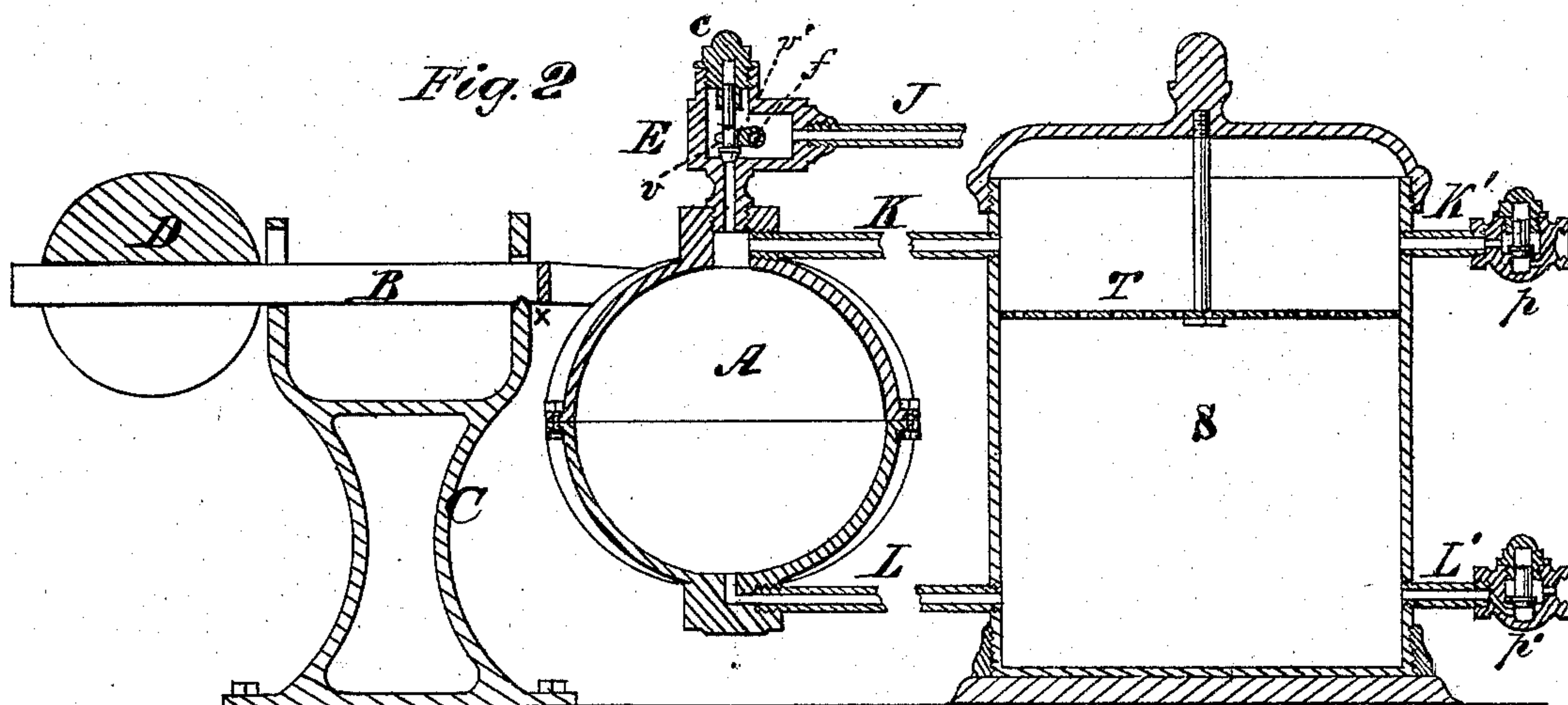
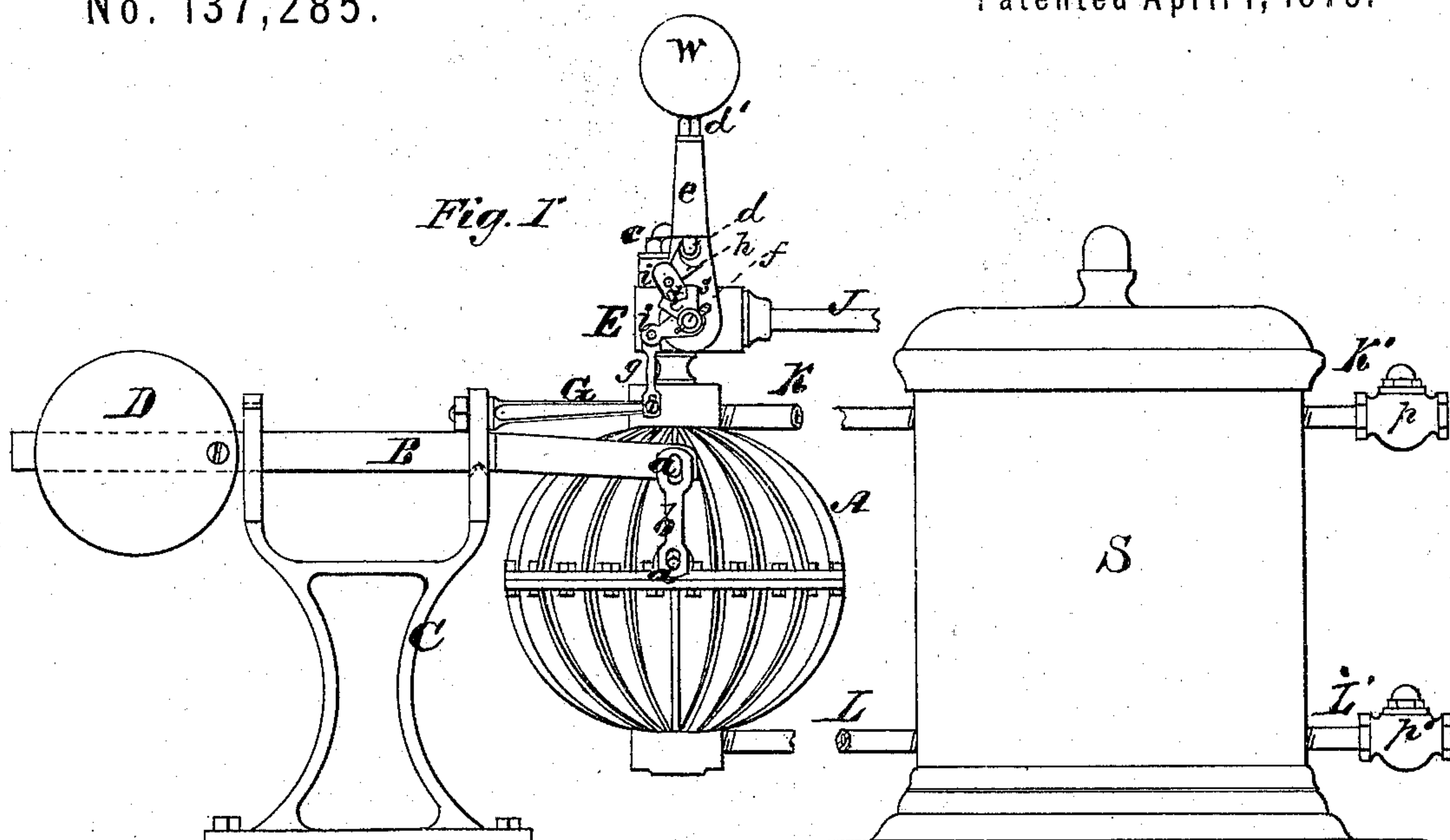


J. H. BLESSING.

Steam Traps.

No. 137,285.

Patented April 1, 1873.



Witnesses.
R. S. Campbell,
J. W. Campbell.

Inventor
James H. Blessing
by
Mason, Smith & Lamm.

UNITED STATES PATENT OFFICE.

JAMES H. BLESSING, OF ALBANY, NEW YORK, ASSIGNOR TO FREDERICK TOWNSEND AND JAMES H. BLESSING, OF SAME PLACE.

IMPROVEMENT IN STEAM-TRAPS.

Specification forming part of Letters Patent No. 137,285, dated April 1, 1873; application filed January 2, 1873.

To all whom it may concern:

Be it known that I, JAMES H. BLESSING, of the city and county of Albany, and State of New York, have invented an Improvement in Steam-Traps; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is an elevation of one side of the improved trap. Fig. 2 is a vertical section of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improvement on the steam-heating trap for which Letters Patent were granted to me on the 13th day of February, 1872, wherein I described a gravitating receiver, which by its automatic up-and-down movements would receive the drip water and return it into the boiler. The object of this invention is to increase the capacity of the trap without necessarily increasing the size of said gravitating receiver, as will be hereinafter explained.

The following description of my invention will enable others skilled in the art to understand it.

In the accompanying drawing, I have represented my improvement applied to the gravitating receiver, which I have described in my Letters Patent dated on the 13th day of February, 1872; but for the purposes of more completely explaining my improvement, I will again describe the construction and operation of the gravitating receiver.

A represents a hollow spherical vessel, which is suspended from a beam, B, by means of links *b* and knife-edges *a a*. The beam B is supported in a standard, C, by means of a knife-edge, *x*, and on the longest arm of this beam is a weight, D, which is adjustable for the purpose of allowing the receiver to descend when it contains any desired or given quantity of water. On top of the receiver is a valve-box, E, into which enters a pipe, J, that leads from the dome of a steam-boiler, for the purpose of introducing steam to balance pressures in the receiver and boiler. The valve-box E communicates with the receiver,

as shown in Fig. 2, and inside of this box is a valve, *v*, which has its seat upon the upper end of the passage leading into the receiver A. The stem of the valve *v* is flattened at one point, and this flattened portion is received between the forked ends of a lifting-arm, *v'*, which is keyed on a stem, *f*, as shown in Fig. 2. The stem *f* passes horizontally through the valve-box E, and has a forked tripping-piece, *s*, keyed on it, between the forked ends of which is a lug, *t*, which is on a right-angular lever, *i*, that oscillates on the stem *f*. The upper arm of this lever *i* has pivoted to it a tripping-piece, *h*, the upper concave edge of which supports a loaded stem, *d*. This loaded stem *d* has an anti-friction wheel on its lower end, and a weight, W, on its upper end, which weight is adjustable, and can be held after adjustment by means of a jam-nut, *d'*. The lower arm of the right-angular lever *i* is connected to a stationary arm by means of a link, *g*, so that when the receiver A descends, the arm *v'* will lift the valve *v*, and when the receiver rises this valve will be shut. The receiver A communicates at its upper and lower ends with a tank, S, by means of pipes K and L, the upper one, K, of which enters the tank above a finely-perforated distributing-plate, T, therein, while the lower pipe L enters the tank near its bottom. The two pipes K and L, should be of such length that by their flexibility they will allow the receiver A to rise and descend, as above described. K' represents a pipe, which leads from the heating-coils in the building into the tank S above the distributing-plate T, in which pipe is a receiving valve-box, *p*. Near the lower end of the tank S is a pipe, L', which leads into the steam-boiler and discharges the drip-water into such boiler. The valve *p'* in pipe L' opens upward and allows the escape of water from the tank S. By the use of the tank S, in combination with the receiver, I greatly increase the capacity of the apparatus, for it will be observed that the drip-water from the coils, as it flows into the tank, flows correspondingly into the receiver A, and is discharged simultaneously from both into the boiler.

When the receiver A has a sufficient quantity of water in it to overcome the weight D

on the beam B, it will descend and open the valve *v*, which allows steam from the boiler to enter both the receiver and tank at the same time, thereby balancing pressures in them and the boiler. This will allow water to flow from said receiver and tank into the boiler, and when a sufficient quantity of water has escaped from the tank and receiver to allow the latter to rise, the steam-valve *v* will shut and another quantity of drip-water will be trapped.

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

1. The auxiliary tank S combined with the gravitating receiver A, constituted and operated substantially as described.

2. The valve-tripping mechanism applied on top of the gravitating receiver A, in combination with such receiver and the tank S, substantially as described.

JAMES H. BLESSING.

Witnesses:

A. P. STEVENS,
PETER J. CALLEN.