

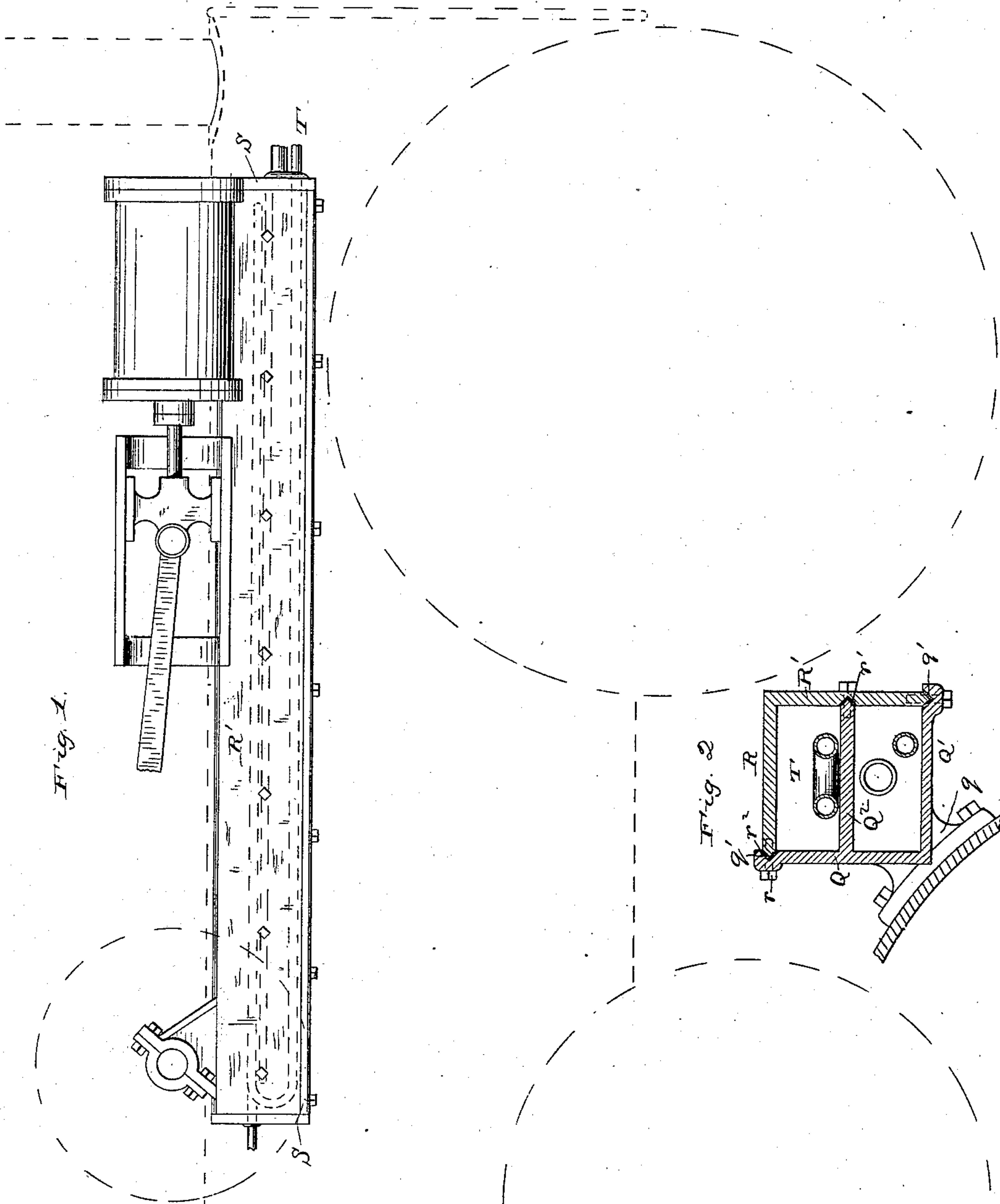
(No Model.)

J. H. ELWARD.

BED PLATE FOR STEAM ENGINES.

No. 279,924.

Patented June 26, 1883.



Witnesses:

H. N. Low
J. S. Barker.

Inventor:

John H. Elward

by Doubleday & Bliss
attys

UNITED STATES PATENT OFFICE.

JOHN H. ELWARD, OF POLO, ILLINOIS, ASSIGNOR TO MARY ELWARD, OF
SAME PLACE.

BED-PLATE FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 279,924, dated June 26, 1883.

Application filed October 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. ELWARD, a citizen of the United States, residing at Polo, in the county of Ogle and State of Illinois, have invented certain new and useful Improvements in Bed-Plates for Steam-Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in bed plate or frame for supporting the engine upon the boiler, it being especially applicable to the devices of this class intended to be used on portable engines. The improved bed-plate or supporting-frame which I have devised may also be used to provide a chamber in which the feed-water can be heated before it enters the boiler.

In the drawings, Figure 1 is a side elevation of the heater and of enough of the other parts of an engine to clearly illustrate the method of applying it; and Fig. 2 is a vertical section.

It is well known to builders of this class of engines that the expansion of the bed-plate or frame-work upon which the cylinder and the engine-shaft are mounted varies with different conditions of the temperature to which the engine is subjected, because this different condition affects the temperature to which the bed-plate will be heated. Thus the distance between the steam-ports into the cylinder and the eccentric on the engine-shaft is increased or diminished according to the state of the weather, the result being a variation in the opening and closing of the ports by the valve, and, as a necessary consequence, an irregularity in the operation of the engine. In order to obviate this difficulty, I form the bed-plate or frame-work upon which the engine rests in two longitudinal sections, one of which is attached rigidly to the boiler, and the other is attached to the cylinder, the steam-chest, the guides, and pillow-block which supports the engine-shaft, in order that this upper section shall be less affected by changes in temperature than it would be if it were formed in one and the same piece with that section which is attached to the boiler.

In the drawings I have illustrated one method of carrying out my invention, in which Q Q' represent two walls or plates arranged at

about a right angle to each other, and provided with a bracket, *q*, adapted to be bolted to the boiler, and having, also, a third wall or plate, *Q*², projecting at right angles to the plate *Q*'. *R R'* are two corresponding walls or plates, formed, preferably, in one piece, and at about a right angle to each other. The edges of the plates *Q Q'* may be grooved, as at *q' q'*, and the opposing edges of the plates *R R'* may be beveled to correspond with and fit therein, where they are secured by screw-bolts *rr*, or otherwise. The plate *R'* may be grooved, as at *r'*. The edge of the plate *Q*² may be beveled, so as to form, practically, a steam-tight joint therewith. By preference I insert strips of rubber or other suitable packing material in all the joints, as indicated at *r*². By means of these parts and suitable heads, *S S*, secured to the ends thereof, this frame constitutes a heater through which the exhaust-steam and the feed-water pass, the plates *Q*² forming a diaphragm or partition throughout the entire length of the heater, except that at one end provision is made for permitting the steam to pass through or around this plate, and also for the introduction of the feed-water pipes *T*.

What I claim is—

1. The herein-described frame or support for the engine, consisting of the inner section bolted to the boiler and the outer section adapted to be bolted to the inner section, and cast with the cylinder, the steam-chest, and the guides, substantially as set forth.

2. The herein-described frame or support for the engine, consisting of the inner section bolted to the boiler and the outer section adapted to be bolted to the inner, and cast with the cylinder, the steam-chest, and the pillow-block of the main shaft, substantially as set forth.

3. The herein-described support for the engine, composed of the plates *Q Q'*, cast in one piece, and plates *R R'*, cast in one piece, together with the cylinder and the steam-chest, and bolted to said part *Q Q'*, substantially as set forth.

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

JOHN H. ELWARD.

Witnesses:

H. H. BLISS,
M. P. CALLAN,