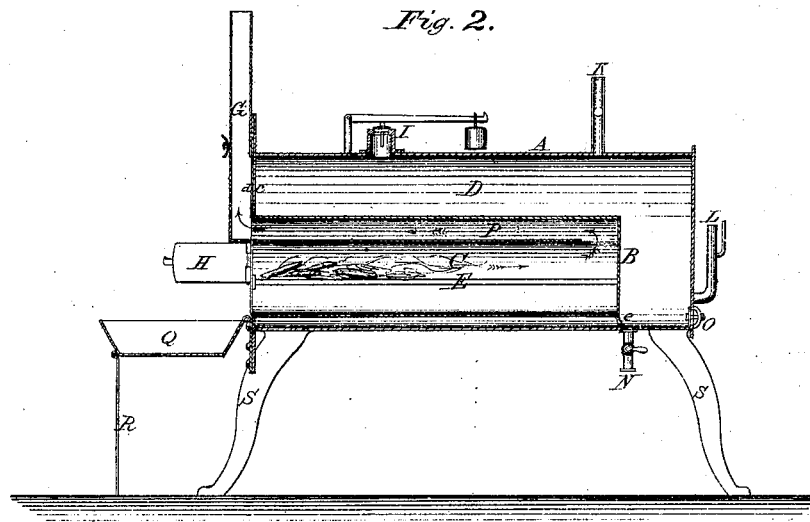
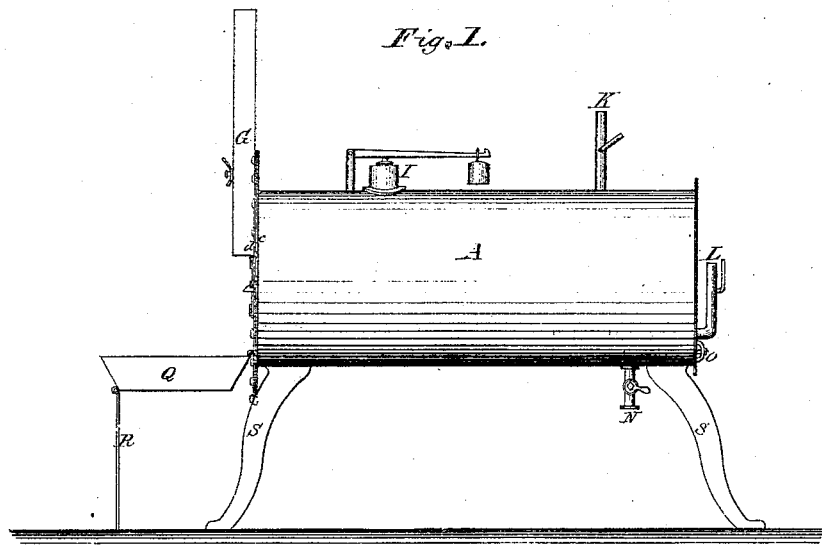


J. E. Woodruff,

Steam Boiler.

No. 112,761.

Patented Mar. 14, 1871.



Witnesses:
F. C. Brecht,
Oliver C. Fay

Inventor
James E. Woodruff
per Otto Leisnering
att'y.

UNITED STATES PATENT OFFICE.

JAMES E. WOODRUFF, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF
HIS RIGHT TO JAMES F. ROWLEY, OF SAME PLACE.

IMPROVEMENT IN PORTABLE STEAM-GENERATORS.

Specification forming part of Letters Patent No. **112,761**, dated March 14, 1871; antedated March 6, 1871.

To all whom it may concern:

Be it known that I, JAMES E. WOODRUFF, of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Portable Steam-Generators, of which the following is a specification.

The object of this invention is to produce a light and portable steam-generator for farming, laundry, and other purposes of like character; and the invention consists in the general construction and arrangement of parts, as will be hereinafter more fully described.

In the accompanying drawings, Figure 1 is a side view; Fig. 2, a sectional view.

The steam-generator consists of two oval-shaped cylinders, A and B, provided with flanges *c* and *d*. The inside cylinder, B, provided with lugs *e e*, is incased within the cylinder A, and serves as a fire-box, C. The two cylinders A and B are securely riveted together through their flanges *c* and *d*, the flange *d* entirely covering the flange *c*, and held in a position in front by the flanges *c* and *d*, and in rear by the lugs *e e*, to produce the space D. The fire-box C is provided with the grate E, extending the full length, and also the diaphragm P, having in it an opening near the rear of the fire-box, so as to form a return-flue, the smoke passing out through the stack G at the front of the generator.

H is the door of the fire-box. I is the safety-valve; K an escape-pipe, and L a valve for supplying water to the generator. O is an opening in rear of generator for cleaning out the water-space D. N is a water cock in the bottom of the generator for drawing off the water. Q is a removable hinged ash-pan secured to the front of the generator, so that it will turn up against the end of the cylinder and be out the way, and when in use is supported by hinged legs R S and legs of the generator.

There is less expense in constructing my steam-generator than is required in other forms in use, as the furnace and flue are formed with but a single steam and water tight cylinder, B, and there is but a single aperture to be made in cylinder A to insert the furnace and flue.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The oval-shaped cylinder A, having the oval-shaped fire-box B, provided with a diaphragm, P, and surrounded by the water-space D, all constructed and arranged as herein described, and for the purpose specified.

2. In combination with the above, the hinged ash-pan Q, for the purpose specified.

JAS. E. WOODRUFF.

Witnesses:

THEODORE MUNGEN,
L. A. PARKE.