W. D. ROBERTSON.

112965

COMB.D STOVE & BOILER. PATENTED MAR. 21 1871

FIG. 1.

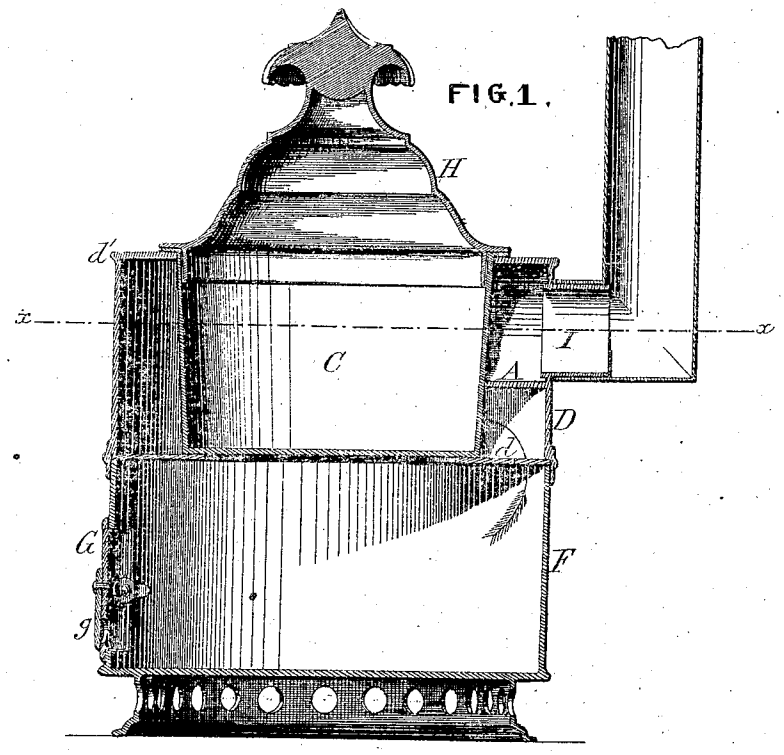
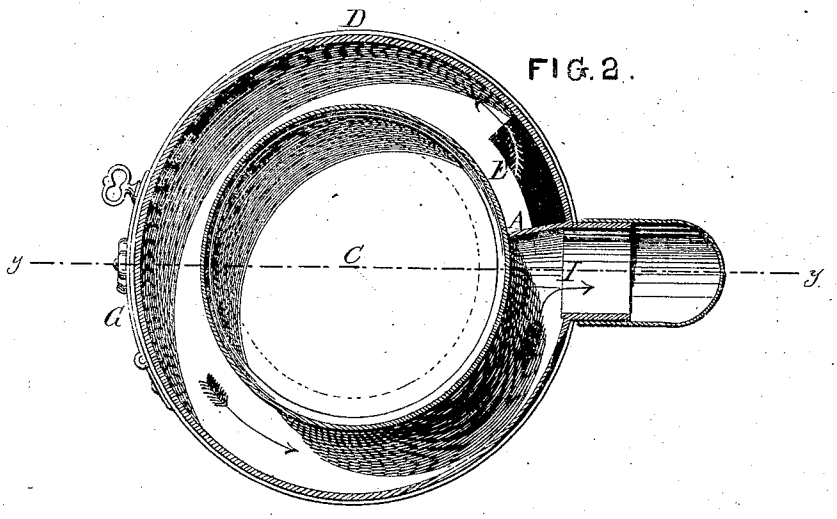


FIG. 2.



WITNESSES.

Wm. H. Brereton Jr.

Jas. L. Ewin.

INVENTOR.

W. D. Robertson

By Knight Bros

Attys

United States Patent Office.

WILLIAM D. ROBERTSON, OF KNOXVILLE, TENNESSEE.

Letters Patent No. 112,965, dated March 21, 1871.

IMPROVEMENT IN PORTABLE FURNACES.

The Schedule referred to in these Letters Patent and making part of the same.

I, WILLIAM D. ROBERTSON, of Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Combined Stove and Boiler, of which the following is a specification.

Nature and Objects of the Invention.

The object of my invention is to provide a simple, portable, and convenient apparatus for boiling water or generating steam, adapted for use in dyeing establishments, laundries, &c., and for culinary or other purposes where it is required to use boiling water or steam under moderate pressure.

The apparatus consists of three parts, as shown, viz: a bottom or stove portion for containing the fuel, a hot-air chamber resting thereon, and a boiler, which may be provided with a cover either of the ordinary kind or steam-tight.

A pipe for the escape of smoke, &c., is also provided.

Description of the Accompanying Drawing.

Figure 1 is a vertical section of the apparatus on the line *y y*, fig. 2.

Figure 2 is a horizontal section of the same at *x x*, fig. 1.

General Description.

F is the stove, which may be cylindrical or of any convenient form, and adapted to burn either coal or wood.

It has a door, G, and draft-regulator *g*, of any usual kind.

D is a drum or hot-air chamber, of shape adapted to fit on the stove F, and having partition plates *d d'* at top and bottom, of annular or other proper form.

The lower one of these, *d*, has sufficient opening in the clear to allow the bottom of the boiler to fit accurately thereto and prevent the passage of smoke and heated air, except through the flue E; more than one flue may be provided, if necessary or desirable.

Immediately over the flue E, and between it and the stove-pipe aperture I, is placed a deflecting plate, A, of sufficient width and proper form to extend across the space between the boiler C and the rear of the drum, and compel the products of combustion generated in the stove below, after passing through the flue E, to make the circuit of the boiler C before arriving at the stove-pipe hole I, through which they finally escape.

C represents the boiler, the bottom of which corresponds in shape and dimensions to the clear aperture of the partition plate *d*, as aforesaid, the depth of the boiler being equal to that of the drum; its top, which is provided with a rim or flange, conforming to the aperture of the top partition plate *d'*.

The boiler is provided with a lid or cover, H, which may be fitted steam-tight thereto.

The operation of the apparatus is so obvious as scarcely to require particular description; it is, however, apparent that the heated products of combustion during their upward progress are completely utilized by being brought in contact with every part of the bottom and sides of the boiler.

It is perhaps unnecessary to state that no particular shape of the respective parts is essential to their successful operation, and that each and all of them may be made of any suitable material, as galvanized sheet-iron, cast-iron, or other substance.

Claim.

I claim as my invention—

The combined stove and boiler, constructed with a furnace, F, drum D, boiler or heater C, flue E, partitions *d d'*, and deflecting plate A, all arranged to operate substantially as and for the purposes herein set forth.

WILLIAM D. ROBERTSON.

Witnesses:

CHARLES SEYMOUR,

OCTAVIUS KNIGHT.