

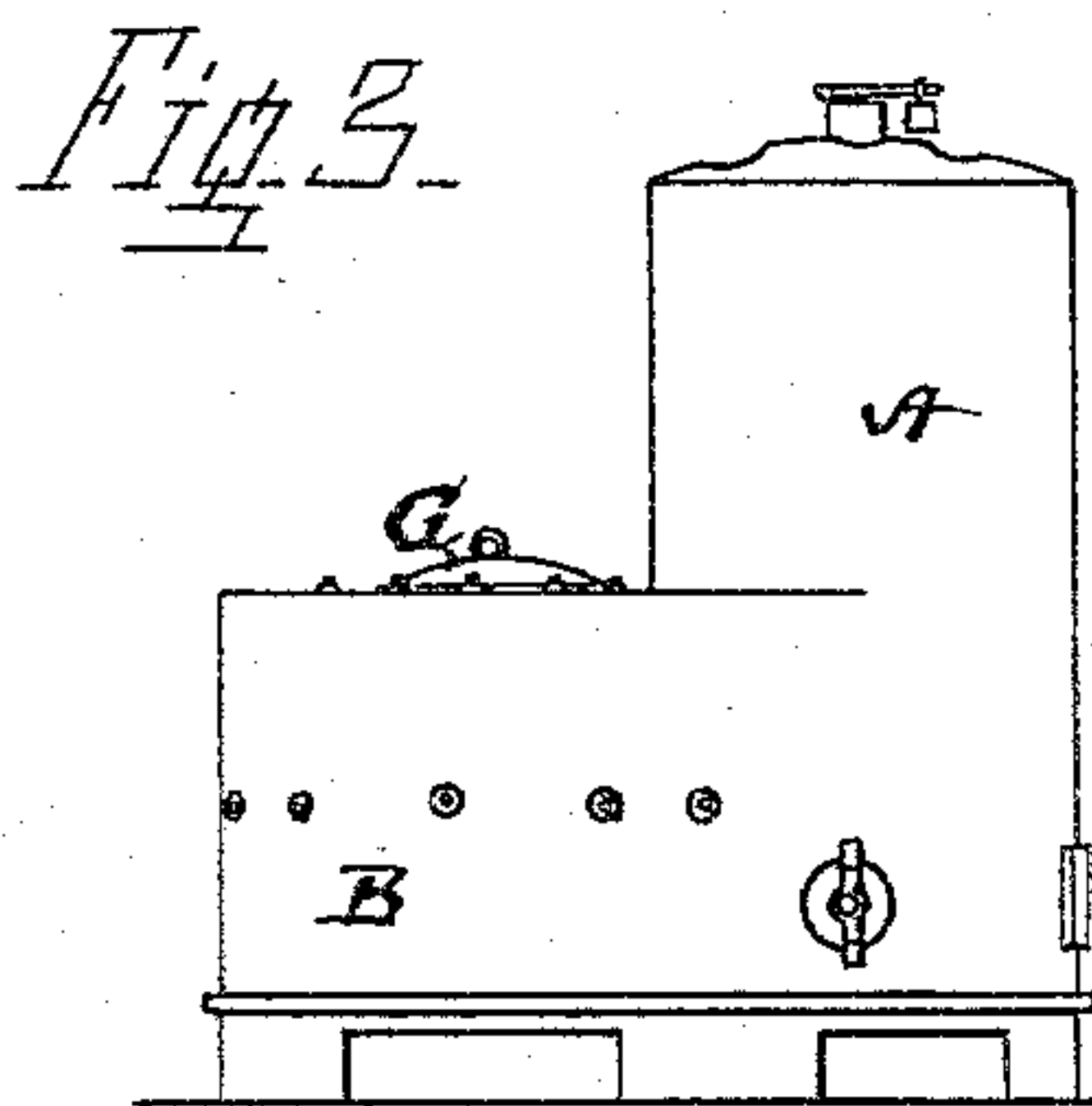
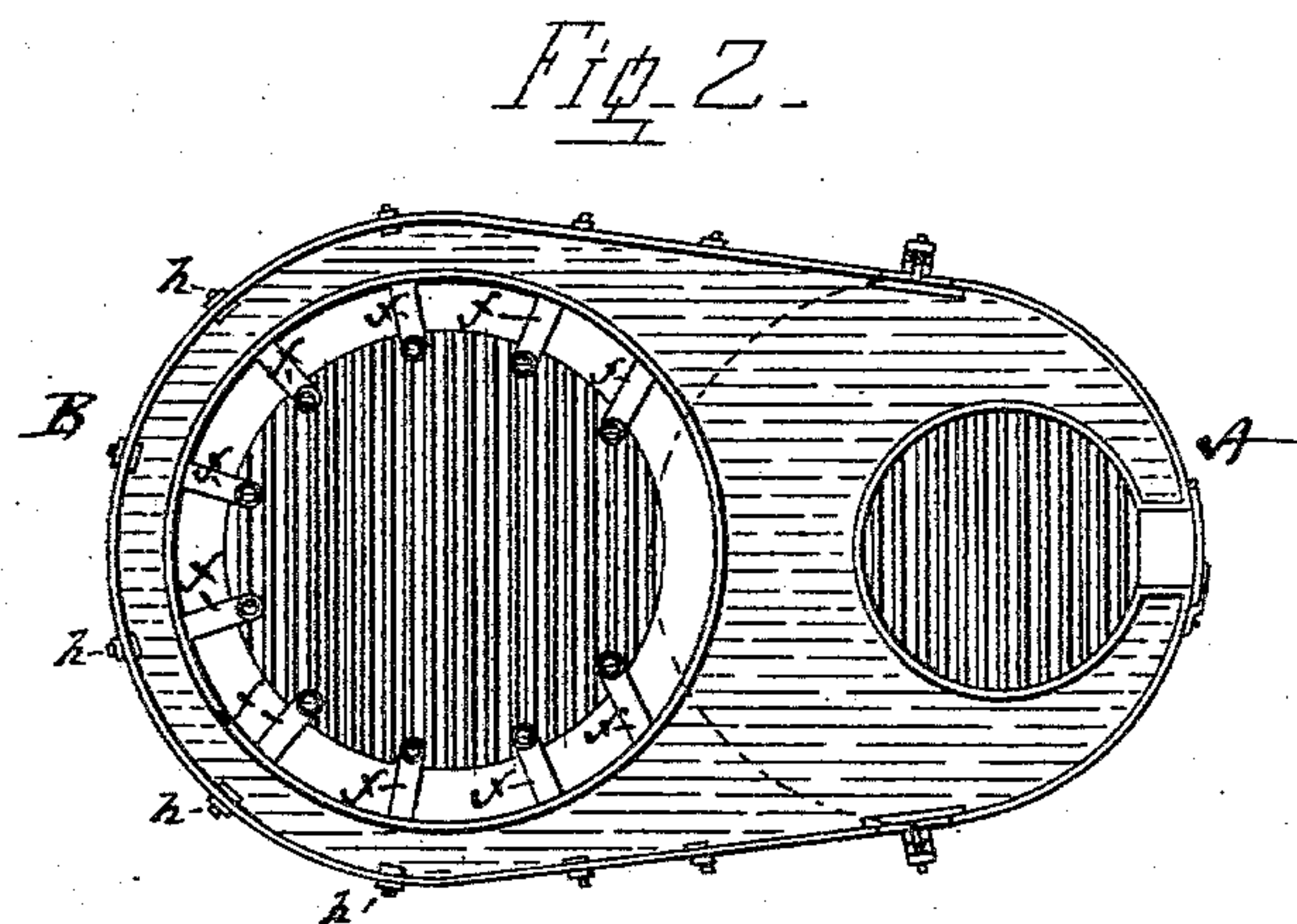
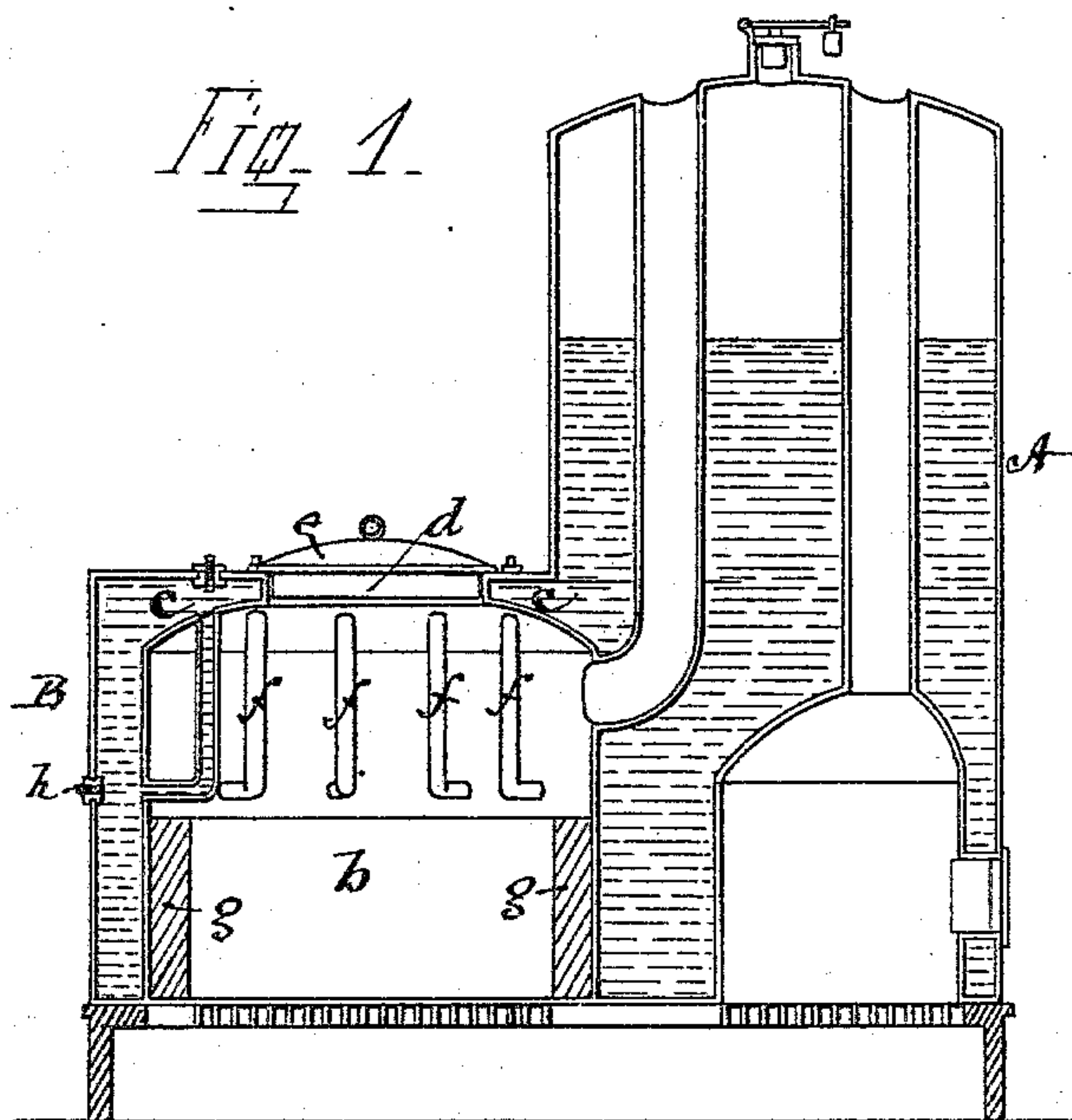
(No Model.)

A. RIEGLER.

COMBINED STEAM BOILER AND CRUCIBLE FURNACE.

No. 280,954.

Patented July 10, 1883.



Attest.
Carl Spengel.
Chm. Leimann

Inventor
Alex^r Riegler
— *by* *L. H. Hosea*
Atty.

UNITED STATES PATENT OFFICE.

ALEXANDER RIEGLER, OF CINCINNATI, OHIO.

COMBINED STEAM-BOILER AND CRUCIBLE-FURNACE.

SPECIFICATION forming part of Letters Patent No. 280,954, dated July 10, 1883.

Application filed August 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER RIEGLER, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful
5 Improvements in a Combined Steam-Boiler and Crucible-Furnace, of which the following is a specification.

My invention relates to combined crucible-furnaces and steam-boilers, being an improve-
10 ment upon that for which Letters Patent to me are now pending. Said latter application shows and describes a structure substantially similar in general form to that exhibited herein, embodying a crucible-furnace such as are
15 used in brass-foundries and a vertical steam-boiler in combination.

My present improvement consists in extending the water-jacket of the crucible-furnace inward above the grate to and surrounding
20 the access-opening, and, further, in providing a series of circulating-pipes within the fire-box, all as hereinafter more fully explained.

My invention is illustrated in the accompanying drawings, exhibiting in Figure 1 a ver-
25 tical section of my improved apparatus complete; in Fig. 2, a plan section of the same, taken through the fire-box and the circulating-tubes; and in Fig. 3, an external elevation of the apparatus complete.

30 In the drawings referred to, A designates the boiler portion of the apparatus, and B the furnace portion, both being united as one structure, having a common water-space surrounding the fire-boxes of both, and being pro-
35 vided with grate-bars and exit-flues extending upward through the boiler.

The first part of my invention consists in arching the inner wall of the furnace fire-box
40 b, as shown in Fig. 1 at c c, toward and surrounding the opening d, which enables me to increase the diameter of the water-shell B and of the fire-box without enlarging the aperture d or the removable cover e. By this means a
45 considerable economy of heat is effected by the absorption and reflection of that portion radiated upward.

In connection with this improvement I introduce a series of short pipes, f, arranged concentrically within the fire-box opening through the arched portion c c of the inner
50 shell around the aperture d, vertically. At their lower portions the pipes are preferably turned outward and enter the shell above the lining g; or they may extend downward behind
55 or through the linings and enter the shell below. Opposite the pipe-openings in the external shell are corresponding openings, which are provided with screw-plugs h, and thus afford a means of access to the pipes for cleans-
60 ing when necessary. In practice, however, this is seldom required, as the effect of heat and the differences in temperature cause a circulation of water in the tubes f, which prevents any deposit of sediment therein.

By these improvements the steaming capac-
65 ity of the apparatus is very much enhanced and a saving in fuel effected.

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

In a combined crucible furnace and steam-
70 boiler, the water-jacketed crucible-furnace, constructed with its inner shell arched inward toward the cover-opening, and provided with a series of circulating-pipes arranged verti-
75 cally around the fire-chamber and opening vertically through the arched shell above and radially through the shell below, in combina-
80 tion with removable plugs closing access-openings in the outer shell, arranged to register with the openings of the circulating-pipes through the inner shell, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ALEX. RIEGLER.

Witnesses:

L. M. HOSEA,
CHAS. LEIMANN.