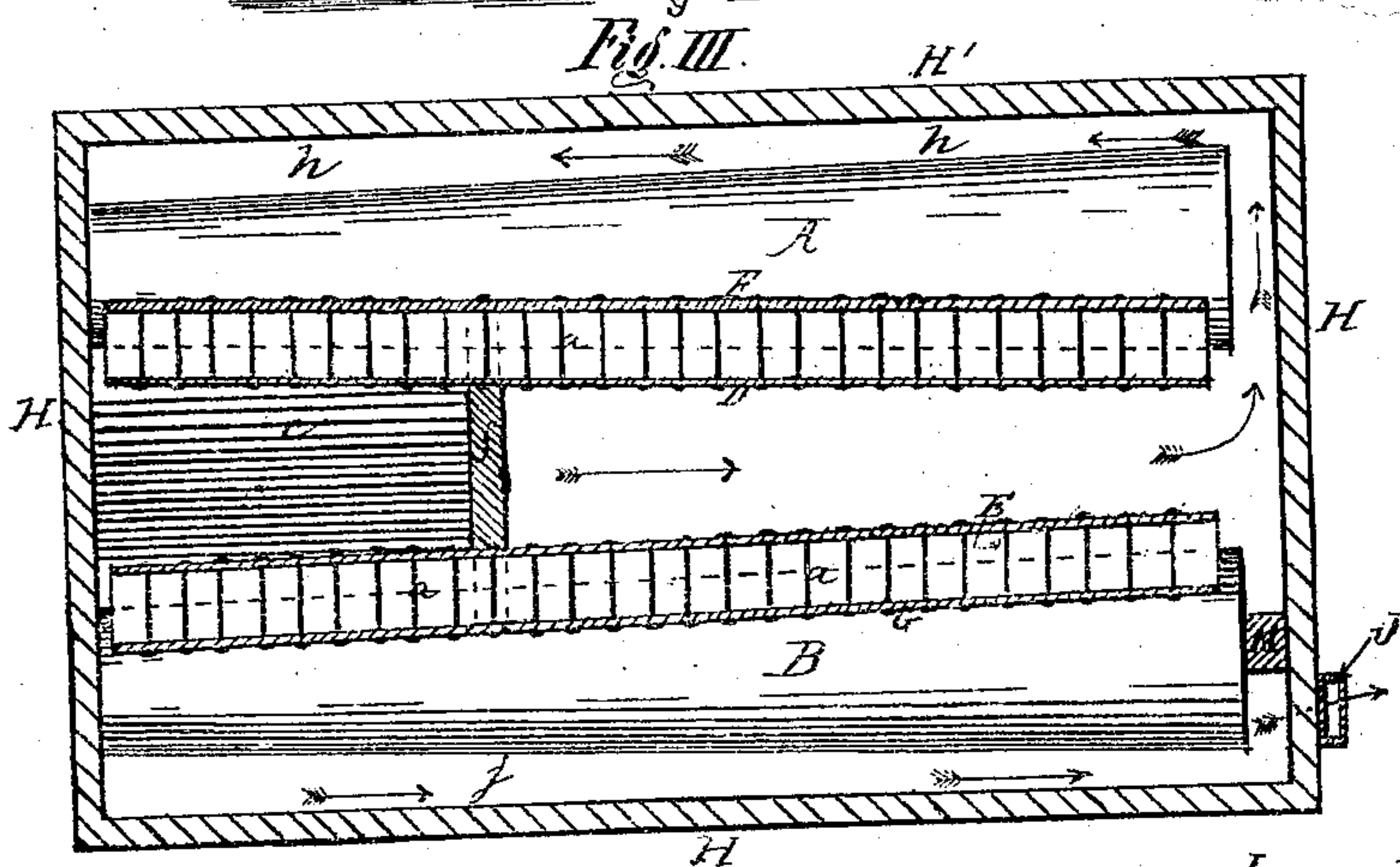
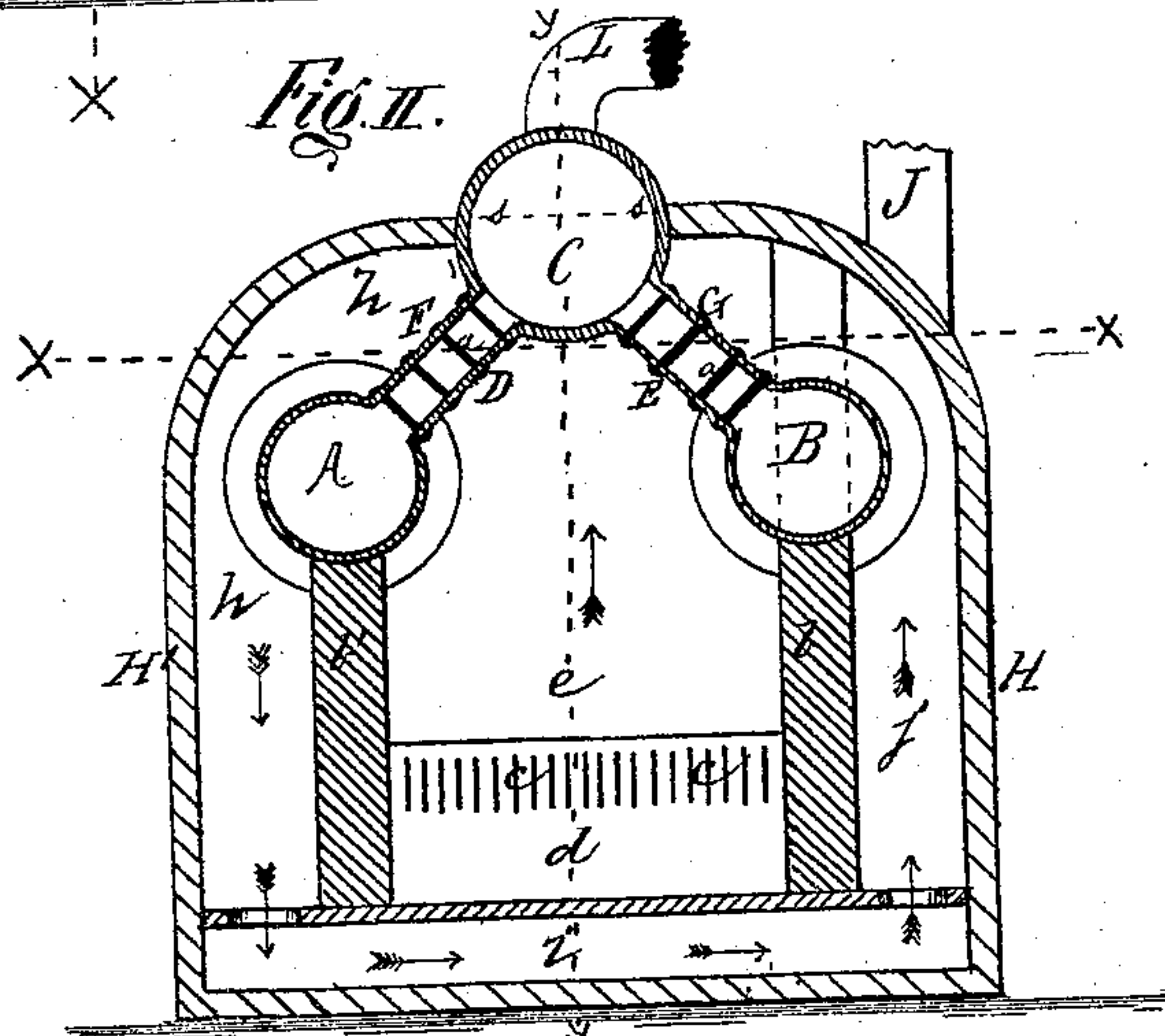
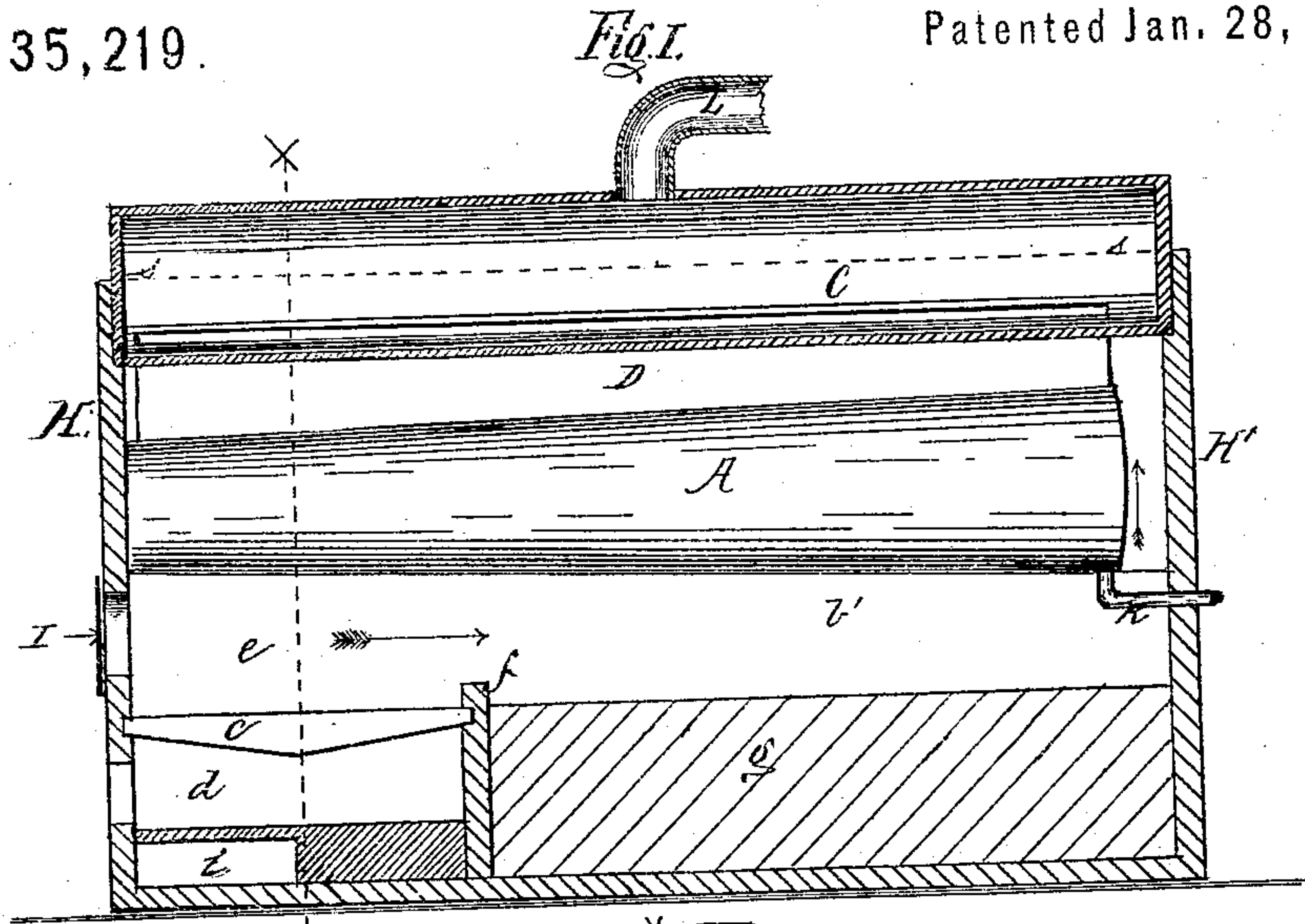


T. HARANG.
No. 135,219.

Steam-Generators.
Patented Jan. 28, 1873.



Witnesses:
Richard Lerner.
Franklin Lerner.

Inventor:
Theophile Harang
Per. Henry Lerner, Atty.

UNITED STATES PATENT OFFICE.

THÉOPHILE HARANG, OF BANANA GROVE PLANTATION, PARISH OF LA FOURCHE, LOUISIANA.

IMPROVEMENT IN STEAM-GENERATORS.

Specification forming part of Letters Patent No. **135,219**, dated January 28, 1873.

To all whom it may concern:

Be it known that I, THÉOPHILE HARANG, of Banana Grove Plantation, parish La Fourche, State of Louisiana, have invented certain Improvements in Steam-Boilers, of which the following is a specification:

The object of my invention is to construct and provide for an improved steam-boiler or steam-generator, which is easily constructed, and will generate steam very rapidly and economically, having a superior heating-surface so arranged that the heat will be most effective and the water circulate very rapidly. All impurities contained in the water will lodge in the rear of the boiler, where it is less in danger from burning out or injuring the plates.

In order to describe my invention more fully, I will refer to the accompanying drawing forming a part of this specification.

Figure I is a longitudinal cut section through line *y y*, Fig. II. Fig. II is a horizontal cut section through line *x x*, Fig. I. Fig. III is a plan cut sectional view through line *x x*, Fig. II.

A and B are two metallic cones, which are connected to the cylinder C by the two parallel metallic walls D, E, F, and G, which are thoroughly stayed by stay-bolts *a a*, which prevent the pressure from separating them. The front and back ends of the cones, walls, and cylinder are closed. This boiler so constructed forms a saddle, which is placed on the brick walls *b b'*, between which the fire-bars *c c* are laid; *d* forming the ash-pit; *e*, the furnace; *f*, the fire-bridge; and *g*, a brick filling. The saddle-boiler and the brick walls *b b'* are surrounded by the brick structure H H', forming an oven, to which the fire-door I forms the inlet or door for feeding the fire-bars with

fuel, and J forms the outlet or chimney for the smoke and products of combustion. This oven H H' is closed in the front and end, and serves also, where the arches lie against the cylinder C, to support and steady the saddle-boiler in its position.

The flame and heated products of combustion strike first the inside of the cones A B, the walls D E, and the bottom of the cylinder C, from where it is conducted around the back end of the cone A and into the chamber *h*, between the outside of the cone A, wall F, and outer side of the cylinder C and brick wall *b'* and wall H'; from this downward into the flue *i*, from where it ascends up into the flue *j*, formed between the wall H, wall *b*, outside of the cone B, wall G, and outer side of the cylinder C; and from this escapes through the chimney J into the atmosphere. K is a pipe for removing impurities settled in the rear of the cones A and B. L is a steam-pipe for conducting the steam from the boiler. M is a brick wall between the cone B and the back end of the oven H H', which causes the flame and heated products to take the course described. The water-level in the boiler is kept up to the dotted lines *s s*, the upper part of the cylinder C forming the steam-reservoir.

Having thus described my invention, I desire to claim—

A steam generator or boiler consisting of the conical vessels A and B, walls D, E, F, and G, and cylinder C, arranged in the form of a saddle, substantially as and for the purpose hereinbefore set forth.

THÉOPHILE HARANG.

Witnesses:

PASCAL FORTUNÉ FAZENDE,
ADAM BARRIOS.