

No. 785,472.

PATENTED MAR. 21, 1905.

H. BROWN.
ROTARY BOILER.

APPLICATION FILED JULY 20, 1904.

2 SHEETS—SHEET 1.

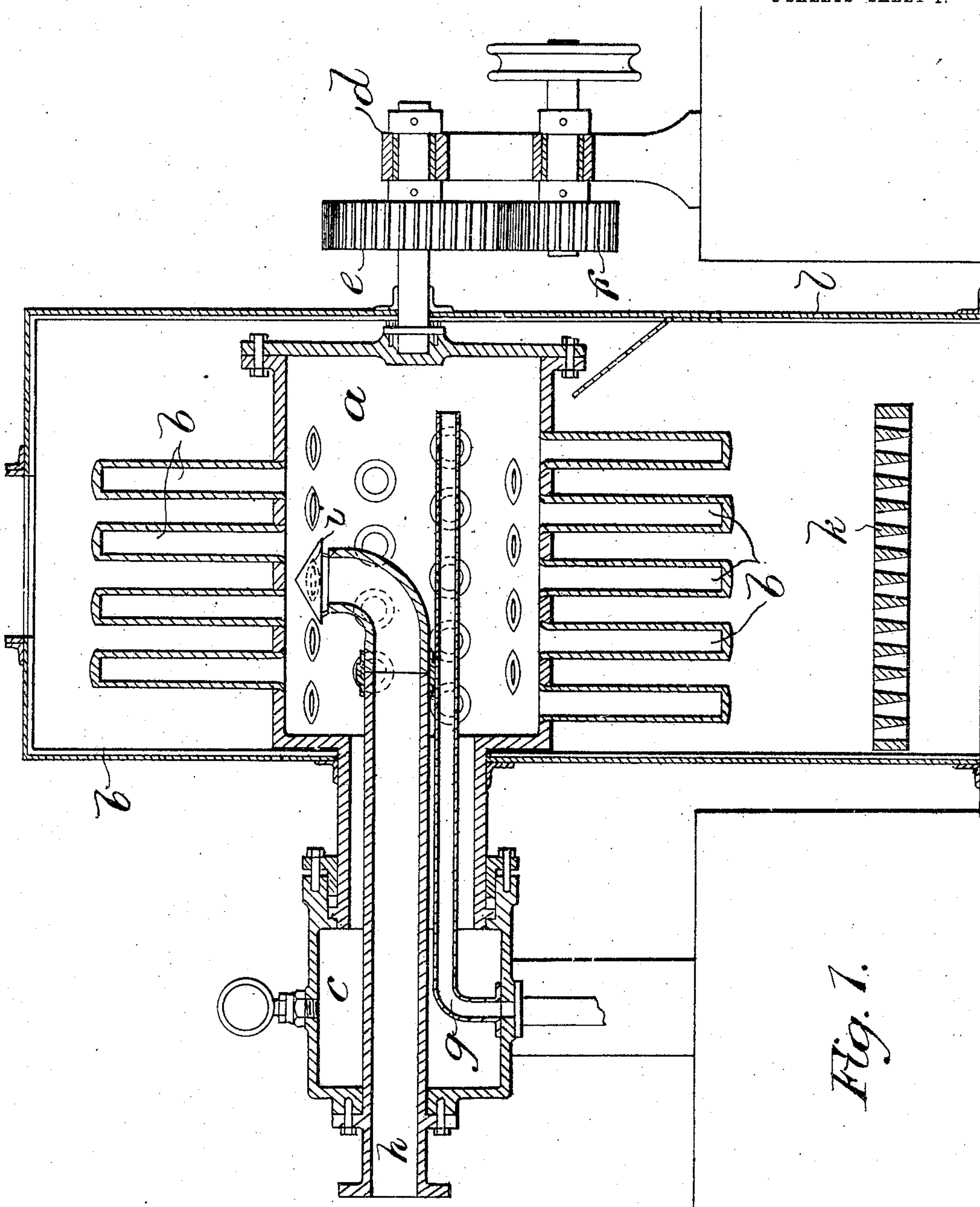


Fig. 1.

WITNESSES:

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J. D. Ammer

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2 SHEETS—SHEET 2.

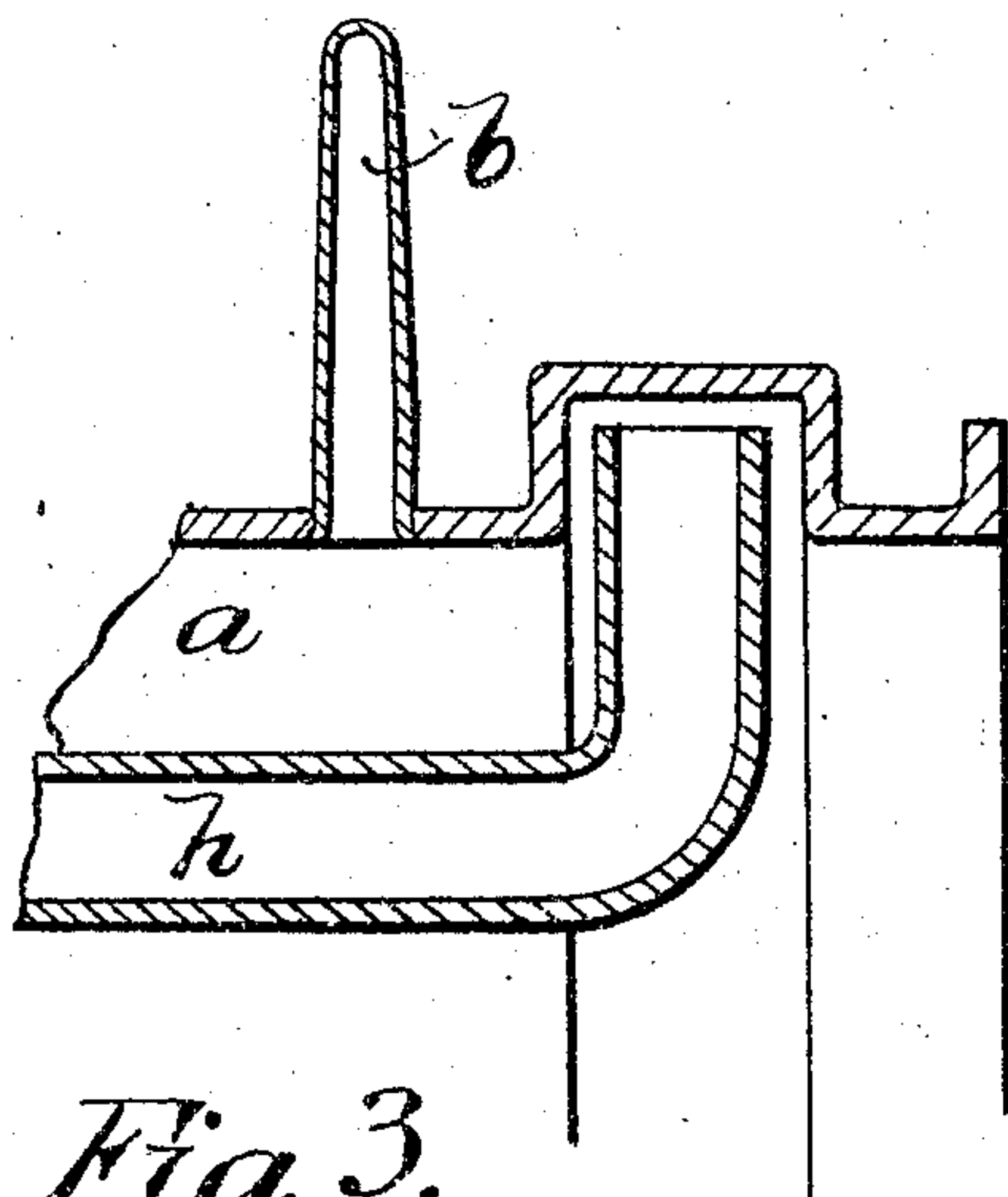


Fig. 3.

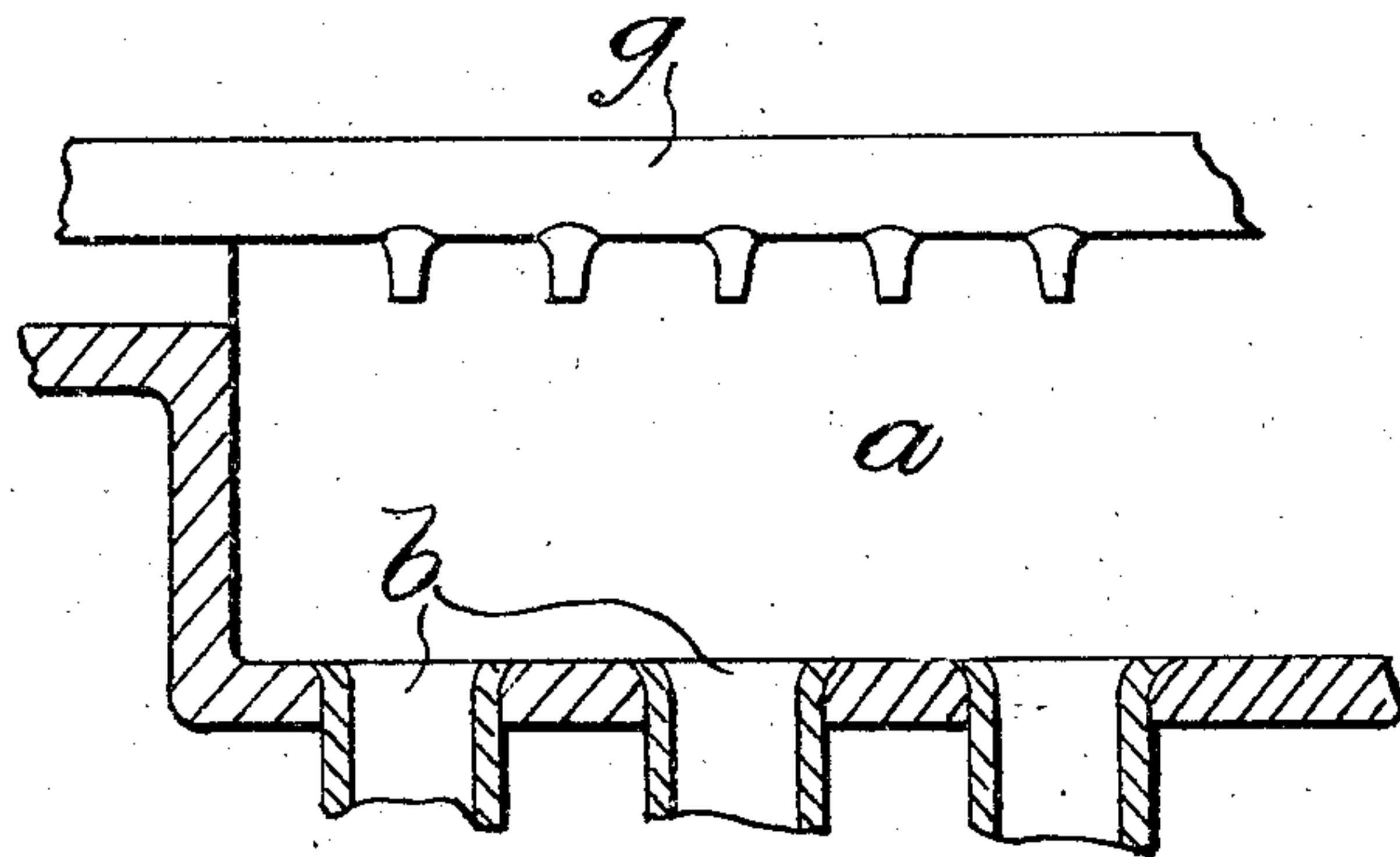


Fig. 2.

WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY BROWN, OF HERNE HILL, LONDON, ENGLAND.

ROTARY BOILER.

SPECIFICATION forming part of Letters Patent No. 785,472, dated March 21, 1905.

Application filed July 20, 1904. Serial No. 217,430.

To all whom it may concern:

Be it known that I, HENRY BROWN, a subject of the King of Great Britain and Ireland, residing at 4 Herne Hill Mansions, Herne Hill, London, S. E., England, have invented certain new and useful Improvements in Rotary Boilers, of which the following is a specification.

This invention relates to water-tube boilers, the object being to provide a boiler in which thorough circulation and agitation of water in the tubes is insured and burning or overheating of the tubes is prevented.

This invention consists in mounting a tubulous boiler on trunnions and then rotating said boiler about its longitudinal axis over a furnace, the feed-water and the steam generated being led, respectively, to and from the boiler through a trunnion or trunnions.

The accompanying drawings illustrate the invention, Figure 1 being a longitudinal sectional elevation, and Figs. 2 and 3 details of one form of boiler arranged according to the invention.

In carrying the invention into effect, as illustrated in Fig. 1, a central drum *a* is fitted with a number of radial tubes *b*, which may be screwed, expanded, or secured to the drum in any of the usual methods employed in boiler-making. The central drum *a* is mounted on trunnions in bearings *c d* and is provided at one end with gearing for rotating it over a furnace *k* within a casing *l*. The means for rotating the boiler may comprise spur-gearing *e f*, the pinion *f* being on a shaft driven from any suitable source of power. A feed-pipe *g* for water and an outlet-pipe *h* for steam generated are led to the drum through one trunnion.

The feed-water pipe may be a simple open-ended pipe, as shown in Fig. 1, or it may be provided with nozzles, as in Fig. 2, so spaced as to inject water direct into the tubes just before they pass down over the furnace, thereby insuring that the tubes will be full of water when subjected to most heat.

The steam-pipe *h* is preferably curved upwardly, as shown, so as to reach above the water-level into the upper or steam space of the drum. The end of the pipe *h* is also preferably

fitted with a deflecting-cone *i* to prevent any water which may not be evaporated in the tubes falling down into the steam-pipe. In order to avoid liability to priming, one end or other part of the drum may be enlarged, as shown in Fig. 3, so as to form a dry-steam space for the steam-pipe *h*. The water-tubes may be made conical, as also indicated in Fig. 3. One bearing, preferably the one for containing the steam and feed-water pipes, may be arranged, as shown at *c*, to act as a stationary steam and water chamber, upon which a pressure-gage, water-gage, and other usual boiler-fittings may be mounted.

It will be understood that owing to the tubes being wholly covered with water when over the furnace burning or overheating of the tubes is obviated and that owing to the forced circulation and agitation of the water the generation of steam is facilitated. A higher pressure of forced draft may be used than usual, so that a boiler of given weight will produce a much greater quantity of steam per unit of time than an ordinary water-tube boiler of the same weight.

Having thus described my invention, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a steam-boiler comprising a drum fitted with radial tubes and adapted to be rotated on trunnions over a furnace within a casing, a feed-water pipe and a steam-exit pipe passing through one trunnion the water-pipe being provided with radial jets and the steam-pipe being fitted with a deflecting-cone, substantially as and for the purposes hereinbefore set forth.

2. In a steam-boiler comprising a drum fitted with radial tubes and steam and feed-water connections said drum being adapted to be rotated over a furnace, an enlargement on the drum for the purpose of forming a dry-steam space, substantially as hereinbefore described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

HENRY BROWN.

Witnesses:

ALBERT E. PARKER,
FRANCIS J. BIGNELL.