(No Model.)

R. H. DAMES.

STEAM BOILER.

No. 539,891. Patented May 28, 1895.

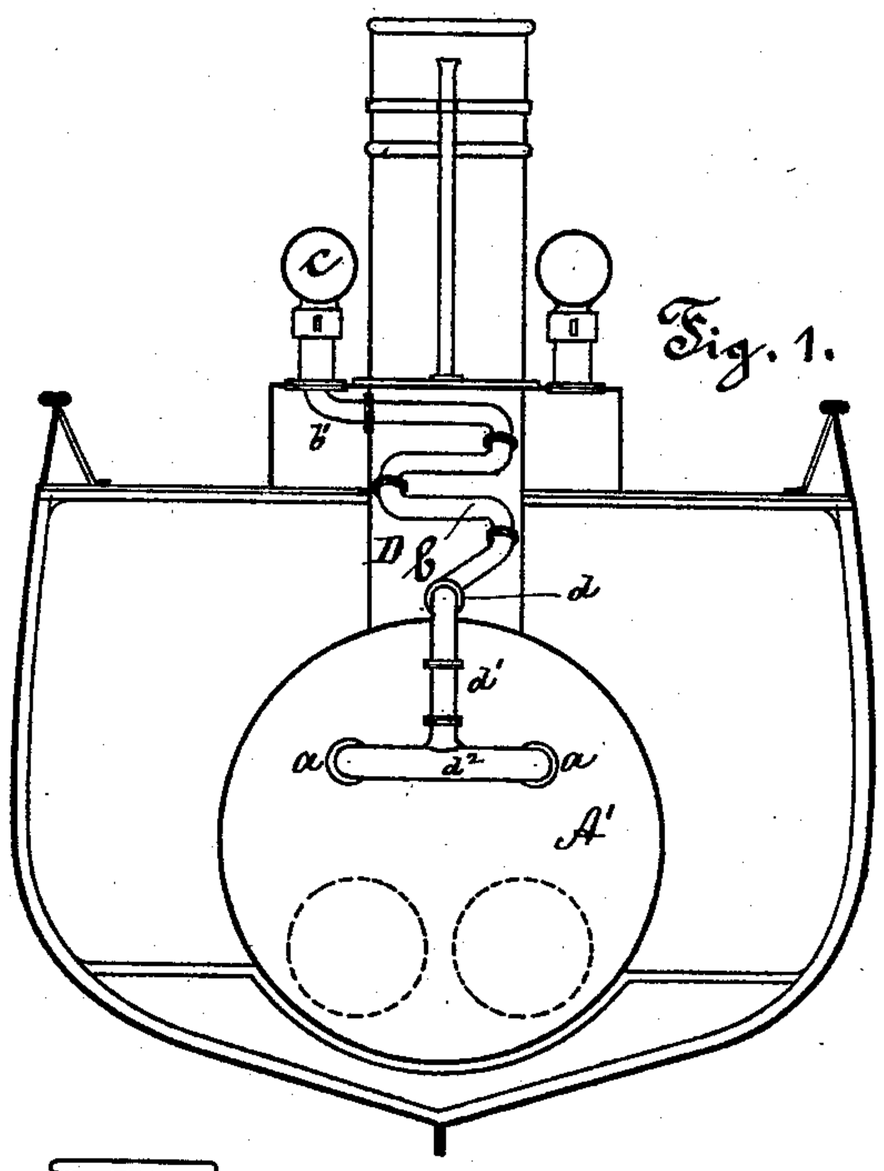

Fig. 1.

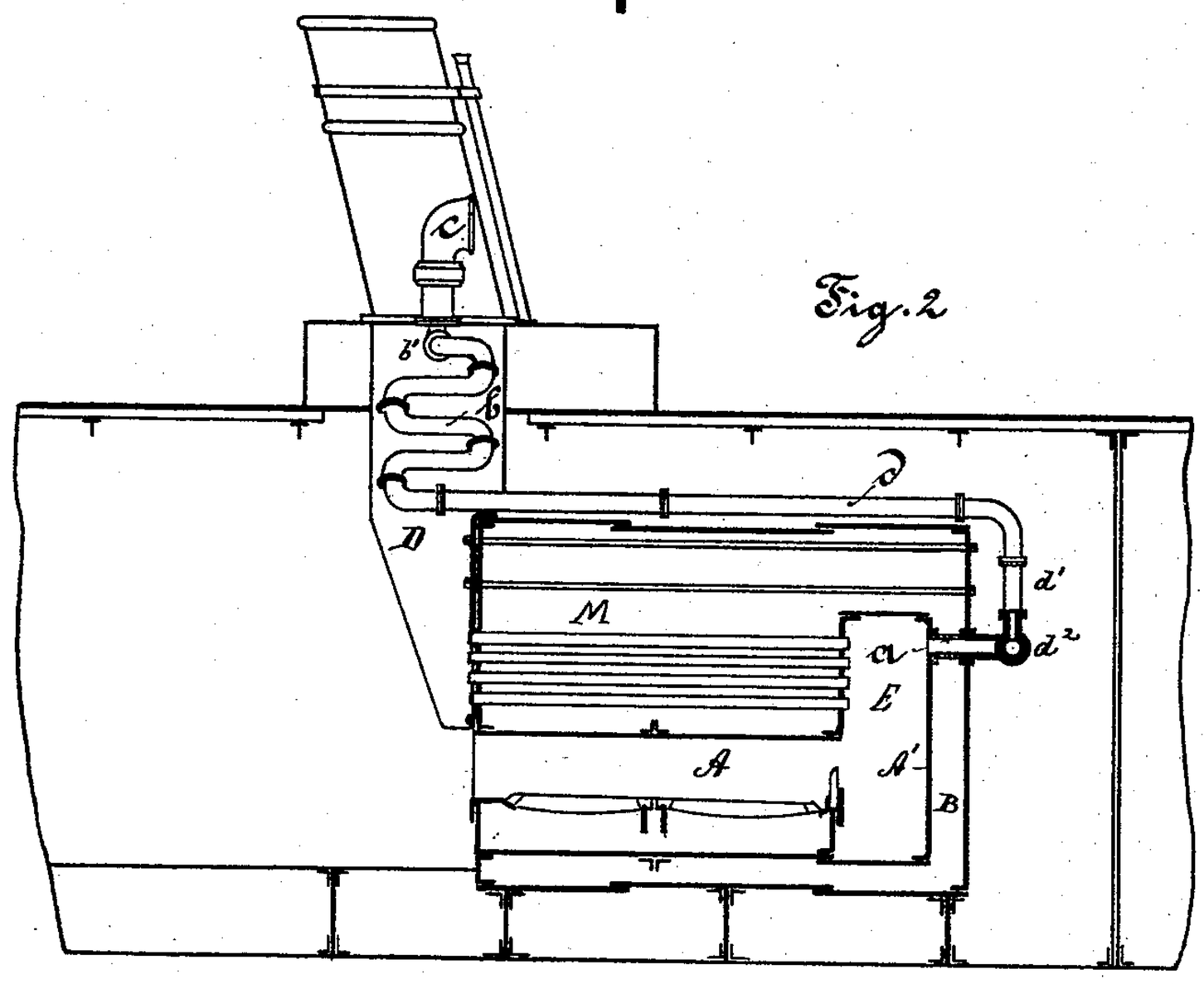

Fig. 2

Witnesses:
William Schulz
John Becker

Inventor:
Richard Hugo Dames
by his attorneys
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UNITED STATES PATENT OFFICE.

RICHARD HUGO DAMES, OF HAMBURG, GERMANY.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 539,891, dated May 28, 1895.

Application filed November 27, 1894. Serial No. 530,083. (No model.)

To all whom it may concern:

Be it known that I, RICHARD HUGO DAMES, a citizen of Germany, residing at Hamburg, Germany, have invented new and useful Improvements in Steam-Boilers, of which the following is a specification.

This invention relates to an improved steam boiler and more particularly to the means for insuring a perfect combustion of the fuel at the rear ends of the boiler flues.

In the accompanying drawings, Figure 1 is a rear elevation of a maritime boiler provided with my improvement. Fig. 2 is a side elevation, partly in section, thereof.

The letter A represents the fire chamber of a tubular boiler M, which opens at its rear into the combustion chamber E. The combustion chamber extends upwardly along the rear end of the boiler, so that the rear ends of the boiler flues open into the same. The upper portion of the combustion chamber, *i. e.*, the portion in line with the boiler flues is provided with a supply of fresh air by a pipe or pipes *a*, that enter the back plate A′, of the combustion chamber.

In the case of maritime boilers which are surrounded by a water chamber B, the pipes *a*, pass of course, through said chamber.

Into the lower part of the funnel or uptake D, I place a heating coil *b*, in the form of a serpentine or superheater. This coil is connected at its upper end, by a branch *b′*, with a ventilator *c*, of the ordinary construction, or with an air blast or blower. At its lower end the coil *b*, connects with a tube *d*, *d′*, that extends along and back of the boiler and is then branched as at d^2, to connect with the pipes *a*, or with the openings in the back plate A′. Either the natural wind pressure or the forced pressure will force the air into the coil *b*, where it is heated to enter the rear end of the combustion chamber. The smoke and products of combustion pass from the fire chamber over the bridge wall and upwardly into the upper part of the combustion chamber, thence forwardly through the boiler flues and out through the uptake D. While the smoke thus passes into the rear ends of the boiler flues it is supplied with a quantity of fresh air through the pipes *a*. Thus it will be seen, that with my construction a perfect draft and a thorough combustion, more particularly at the rear ends of the fire flues, are obtained.

What I claim is—

The combination of a steam boiler having continuous fire flues with a combustion chamber at the rear of the boiler, an uptake at the front of the boiler, a fire chamber beneath the front of the boiler, and a hot air pipe that enters the back plate of the combustion chamber and is adapted to carry hot air to the products of combustion as they turn forwardly into the fire flues, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RICHARD HUGO DAMES.

Witnesses:
W. T. E. KOCH,
H. EGGERS.