

(No Model.)

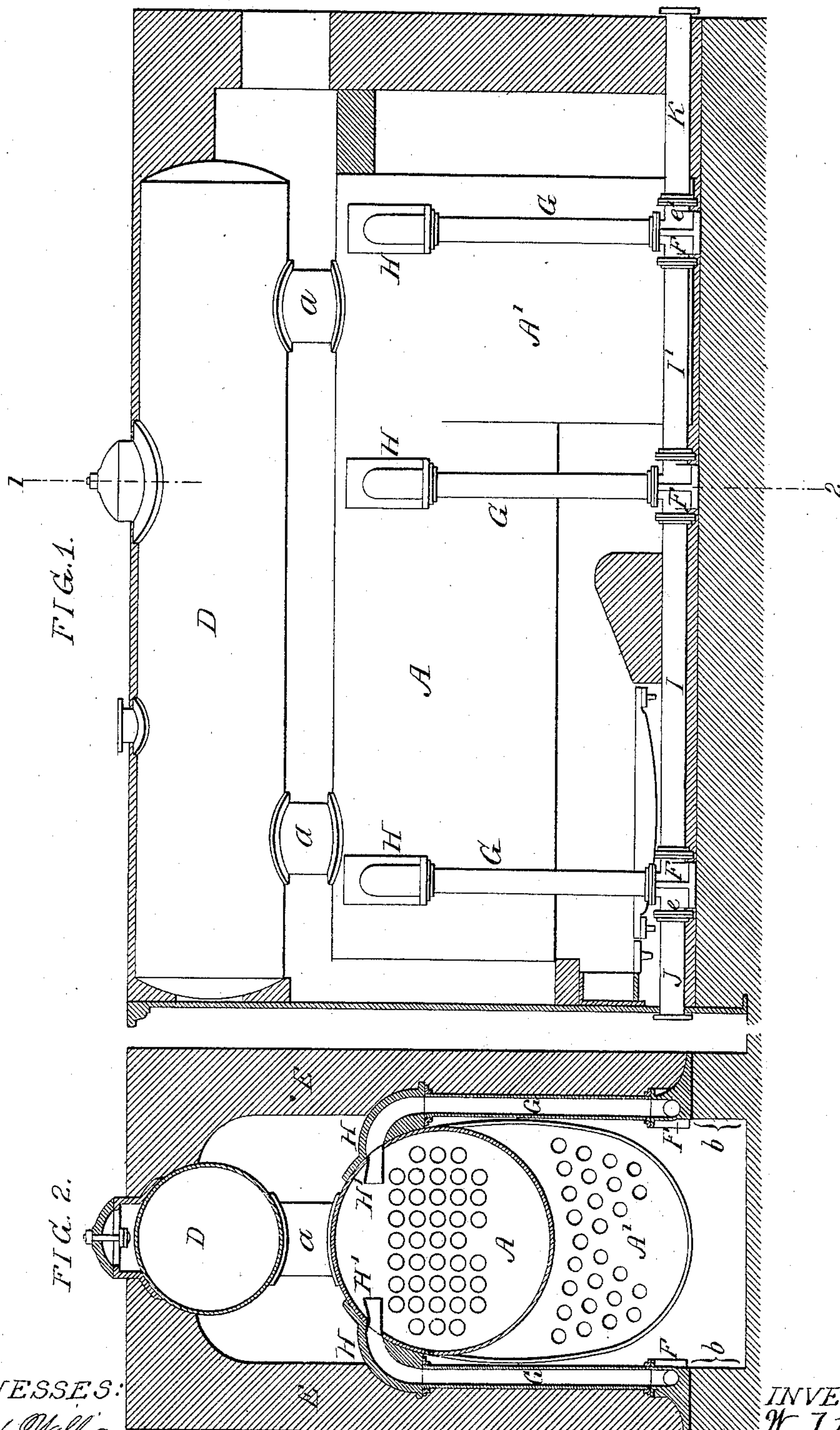
2 Sheets—Sheet 1.

W. T. BATE.

STEAM BOILER.

No. 319,383.

Patented June 2, 1885.



WITNESSES:
David Williams
Harry L. Ashenfelter

INVENTOR
W. J. Bate
by his Attorneys
Howson & Sons

(No Model.)

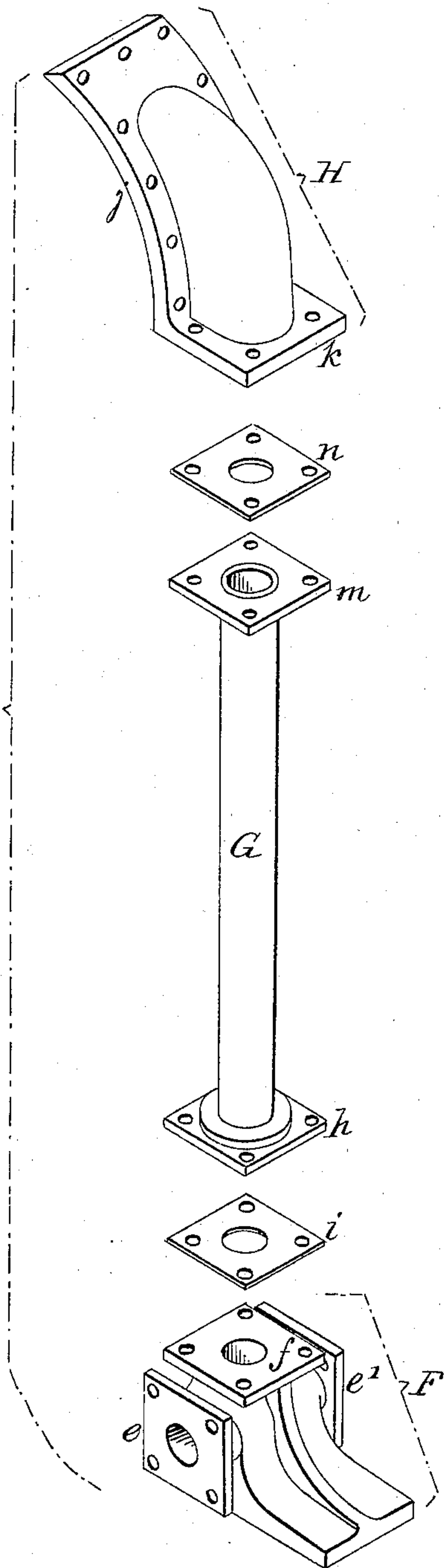
2 Sheets—Sheet 2.

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FIG. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM T. BATE, OF CONSHOHOCKEN, PENNSYLVANIA.

STEAM-BOILER.

SPECIFICATION forming part of Letters Patent No. 319,383, dated June 2, 1885.

Application filed April 23, 1883. Renewed December 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. BATE, a citizen of the United States, and a resident of Conshohocken, Montgomery county, Pennsylvania, have invented certain Improvements in Steam-Boilers, of which the following is a specification.

My invention consists of certain improvements in the construction of steam-boilers, designed mainly with the view of supporting the boiler independently of the usual brick walls and brackets, and of utilizing these supports as feed-water pipes, as more fully described and claimed hereinafter.

In the accompanying drawings, Figure 1, Sheet 1, is a side view of a steam-boiler with my improvement, the brick-work being in section; Fig. 2, a transverse section on the line 1 2; and Fig. 3, Sheet 2, perspective views of the parts composing one of the feed-water supports.

Although my invention is applicable to steam-boilers differing in construction, I have illustrated it in the present instance as applied to the steam-boiler for which Letters Patent No. 207,940 were granted to me September 10, 1878, A being the main cylindrical body or barrel of the boiler; A', the leg, in both of which are tubes, and D the upper shell, communicating through branches *a* with the lower portion of the boiler.

The fire-place and flues are too clearly shown in the drawings to need description. The boiler itself does not rest on the brick-work, but is supported by feed-water columns constructed and applied in the manner which I will now proceed to describe. The lower portions, *b b*, of the side walls, E E, are the only permanent portions of the brick-work, and form the foundations of the supports, as shown in Fig. 2. On each of these foundations *b b* are placed as many bases, F, as there are columns G, each base, as shown in Fig. 3, having two flanged branches, *e e'*, and a third flanged branch, *f*, to which is secured the bottom plate, *h*, of the column G, a suitable packing-plate, *i*, intervening between the foot of the column and the flange *f* of the base F.

To each side of the main body A of the boiler are secured as many tubular saddles, H,

as there are columns G, the curved flange *j* of each saddle being permanently riveted to the shell of the boiler, and the flange *k* of the saddle being secured to the upper flange, *m*, of the column, and a packing-plate, *n*, being interposed between the two flanges. The bases F of the columns on each side of the boiler are connected together by pipes I I', and a pipe, J, is secured to the branch *e* of the base F nearest the fire-place, a pipe, K, being secured to the branch *e'* of the base nearest the rear end of the boiler. If desired, this pipe may be furnished with a suitable cock, through which the contents of the several pipes may be blown off when circumstances suggest such a proceeding. Flaring funnels H' are applied to the openings of the saddles H, so as to form mouths of large area for collecting the scum and floating matter on the surface of the water in the boiler when blowing off. On each side of the boiler there is a direct communication between the pipes J I I' K and between the said pipes through the three columns G and the tubular saddles H with the interior of the main body of the boiler, and the pipes J are in communication with a feed-pump or other water-supply; or the feed-water may be introduced into the pipe K. The columns G are so situated in respect to the walls E that a portion of each column will be exposed to the products of combustion; or, by preference, the walls are recessed where the columns occur, so that the products of combustion can circulate around the columns. It will be seen that there is on each side of the boiler a system of pipes always in communication with each other, with the boiler, and with the feed-water supply; that these tubes serve as a feed-water heater, as they are in whole or in part exposed to the products of combustion, and that at the same time the columns G, with their bases and the saddles, serve to support the boiler independently of the brick-work above the foundation *b*.

The prominent advantage of my invention is the facility with which the upper brick-work can be removed without disturbing the boiler whenever the latter has to be repaired. In erecting a boiler in the first instance, moreover, it can be subjected to hydraulic tests be-

fore the brick-work is erected, and any defects indicated by the tests can be promptly remedied.

The main object of making the supports in 5 sections is to afford facilities for removing any damaged column G and replacing it with a new one.

I claim as my invention—

10 The combination of the main body of a steam-boiler with a series of hollow supports on each side thereof and communicating with

the interior of the boiler, each support consisting of a vertical column, G, base F, and saddle H, substantially as described.

In testimony whereof I have signed my name 15 to this specification in the presence of two subscribing witnesses.

WILLIAM T. BATE.

Witnesses:

HARRY L. ASHENFELTER,
HUBERT HOWSON.