

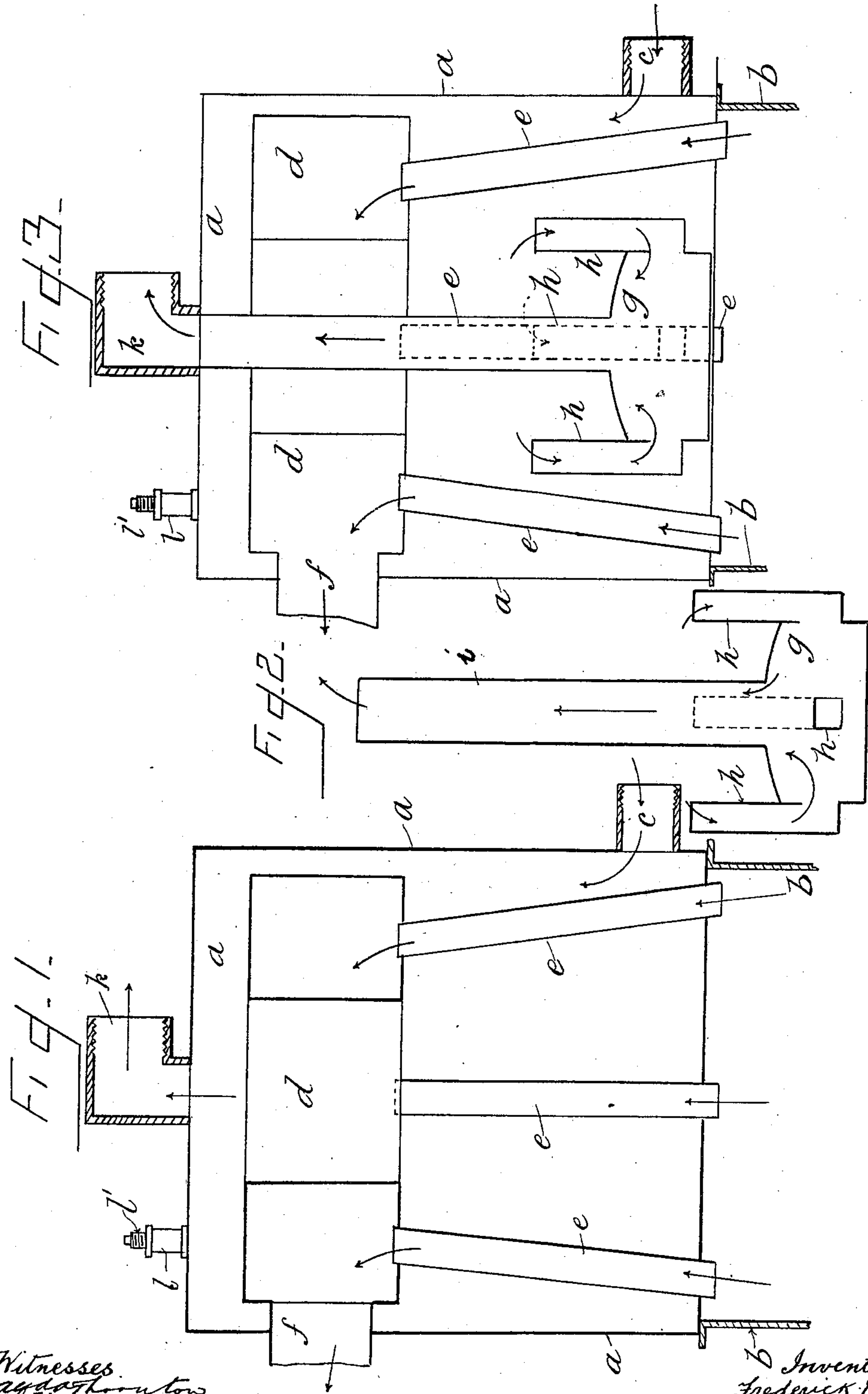
No. 620,979.

Patented Mar. 14, 1899.

F. B. SCOTT.
BOILER.

(Application filed May 20, 1898.)

(No Model.)



Witnesses.
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UNITED STATES PATENT OFFICE.

FREDERICK BATHER SCOTT, OF LONDON, ENGLAND.

BOILER.

SPECIFICATION forming part of Letters Patent No. 620,979, dated March 14, 1899.

Application filed May 20, 1898. Serial No. 681,255. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK BATHER SCOTT, a subject of the Queen of Great Britain, residing at Camberwell Grove, London, England, have invented a new and useful Improvement in Boilers for Hot-Water Heating Apparatus, (for which I have obtained a patent in Great Britain, No. 24,508, bearing date the 22d day of October, 1897,) of which the following is a specification.

This invention relates to a new or improved construction of boiler for hot-water heating apparatus, and has for its object to produce a simple form of boiler adapted to be heated by any description of stove (oil, gas, coke, coal, or the like) and in which an efficient circulation of the water shall be obtained throughout the system of pipes employed to conduct the water around or through the house, building, or room to be heated.

In accordance with this invention I construct the boiler in two portions, one contained within the other. Into the outer portion the water to be heated is conducted, from whence it flows into the inner portion. Thence it flows through an outlet provided at the top through the heating-pipes, and finally, after circulating throughout the whole system of pipes employed within the building, house, or room for heating purposes, reenters the outer portion of the boiler, where the operation is repeated, and so on.

The following is a specification of my invention, which will be readily understood upon reference to the accompanying sheet of drawings and the letters of reference marked thereon.

Figure 1 is a sectional elevation of the outer shell or portion of the boiler. Fig. 2 is a similar view of the inner portion arranged and contained within the outer portion or shell shown in Fig. 1, and Fig. 3 shows in sectional elevation the two portions fixed in position.

Similar letters of reference indicate like parts wherever occurring throughout the figures.

The water to be heated is introduced into the outer portion *a* of the boiler through inlet *c*. A smoke-box *d* is arranged within the shell *a*. Communicating with the smoke-box *d* are pipes or tubes *e*, leading from the stove *b* and by means of which the smoke and prod-

ucts of combustion are conducted from stove *b* to the outlet *f*, formed in the smoke-box *d*, all as shown by arrows in Figs. 1 and 2.

g is the inner portion of the boiler, having vertical tubes *h* connected around same.

i is a central vertical tube connecting inner boiler *g* with outlet *k* at the top of the outer shell *a*.

l is an air-valve on outlet-shell *a*, fitted with a screwed plug *l'*, which plug is removed during the operation of filling the boiler.

The outer and inner shells and the smoke-box *d* may be circular, square, or of any other convenient shape in plan view to suit requirements.

The water admitted into the outer shell *a* through inlet *c* will, when it rises to the level of the top of the vertical tubes *h*, flow through such tubes into the inner portion of boiler *g* and thence upward through pipe *i* to the outlet *k*, whence it circulates throughout the system of pipes in connection therewith (not shown in the drawings) and is returned to the boiler through inlet *c*, as shown by arrows, Figs. 1, 2, and 3, and so a constant circulation is kept up or maintained.

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

1. In boilers for hot-water heating apparatus, the two portions arranged one within the other, the outer one provided with water inlets and outlets, and smoke-box and uptakes; and the inner one provided with inlet-tubes and outlet-tubes all in combination with circulating-pipes and heating-stove constructed and operating substantially as hereinbefore set forth.

2. In boilers for hot-water heating apparatus the outer shell *a* provided with water-inlet *c*, smoke-box *d*, uptake-tubes *e*, smoke-outlet *f'*, water-outlet *k'*, and air-valve *l'* the inner boiler *g*, provided with the vertical tubes *h h*, and *i* in combination, and all constructed, arranged, and operating, substantially as set forth.

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

FREDERICK BATHER SCOTT.

Witnesses:

V. HUGHES,

ALFRED A. THORNTON.