

(No Model.)

2 Sheets—Sheet 1.

W. R. DAWSON.
FIREPLACE.

No. 495,786.

Patented Apr. 18, 1893.

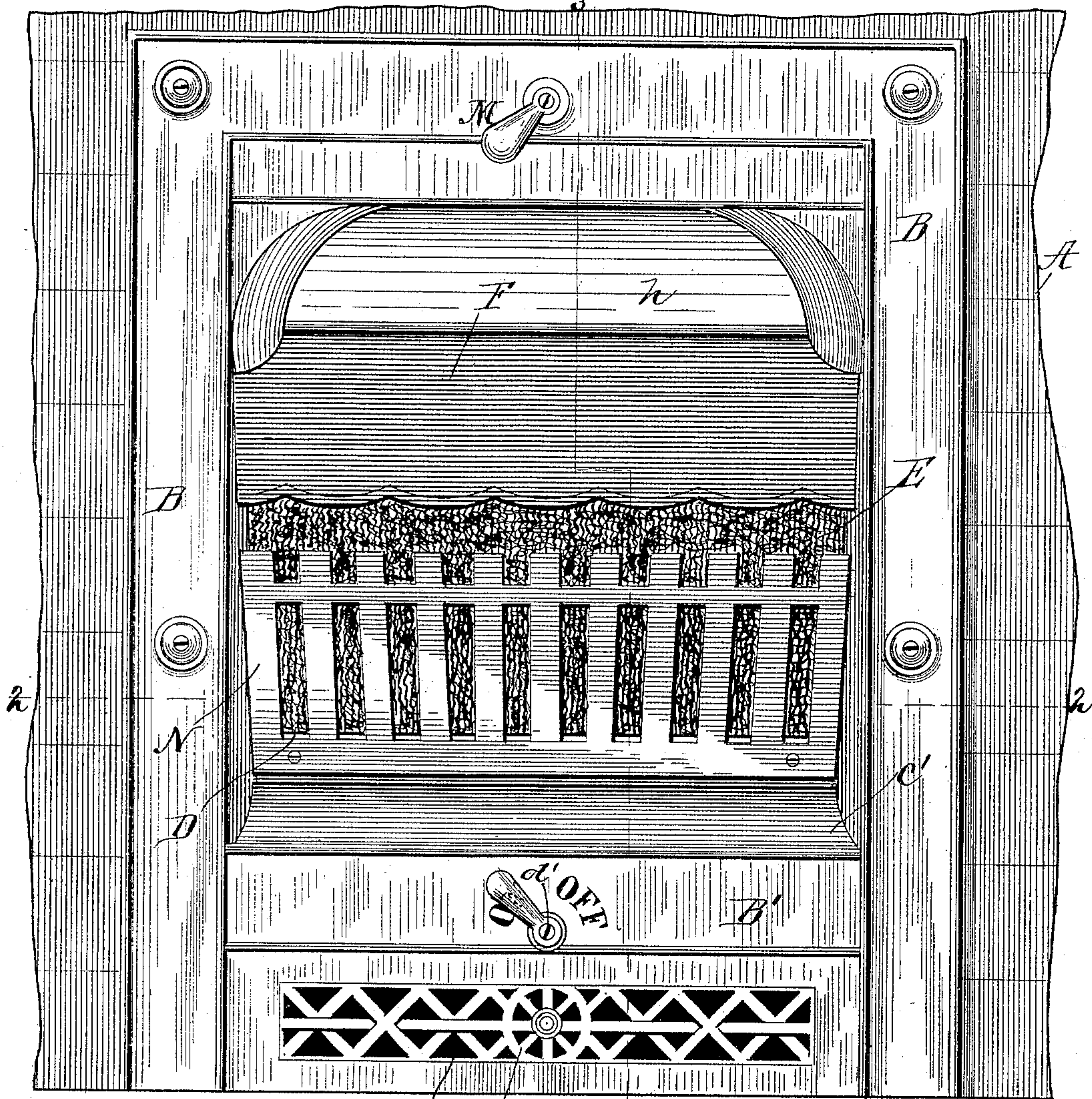
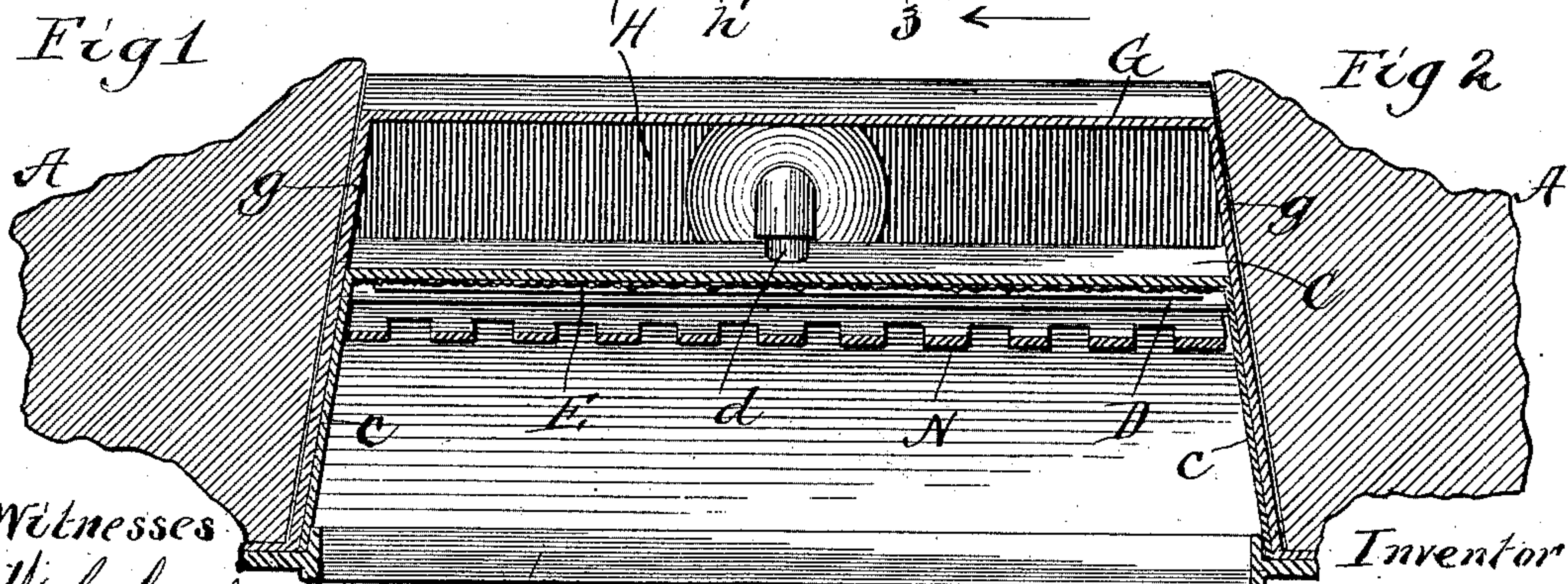


Fig 1

Fig 2



Witnesses

W. C. Coates
M. H. L. King

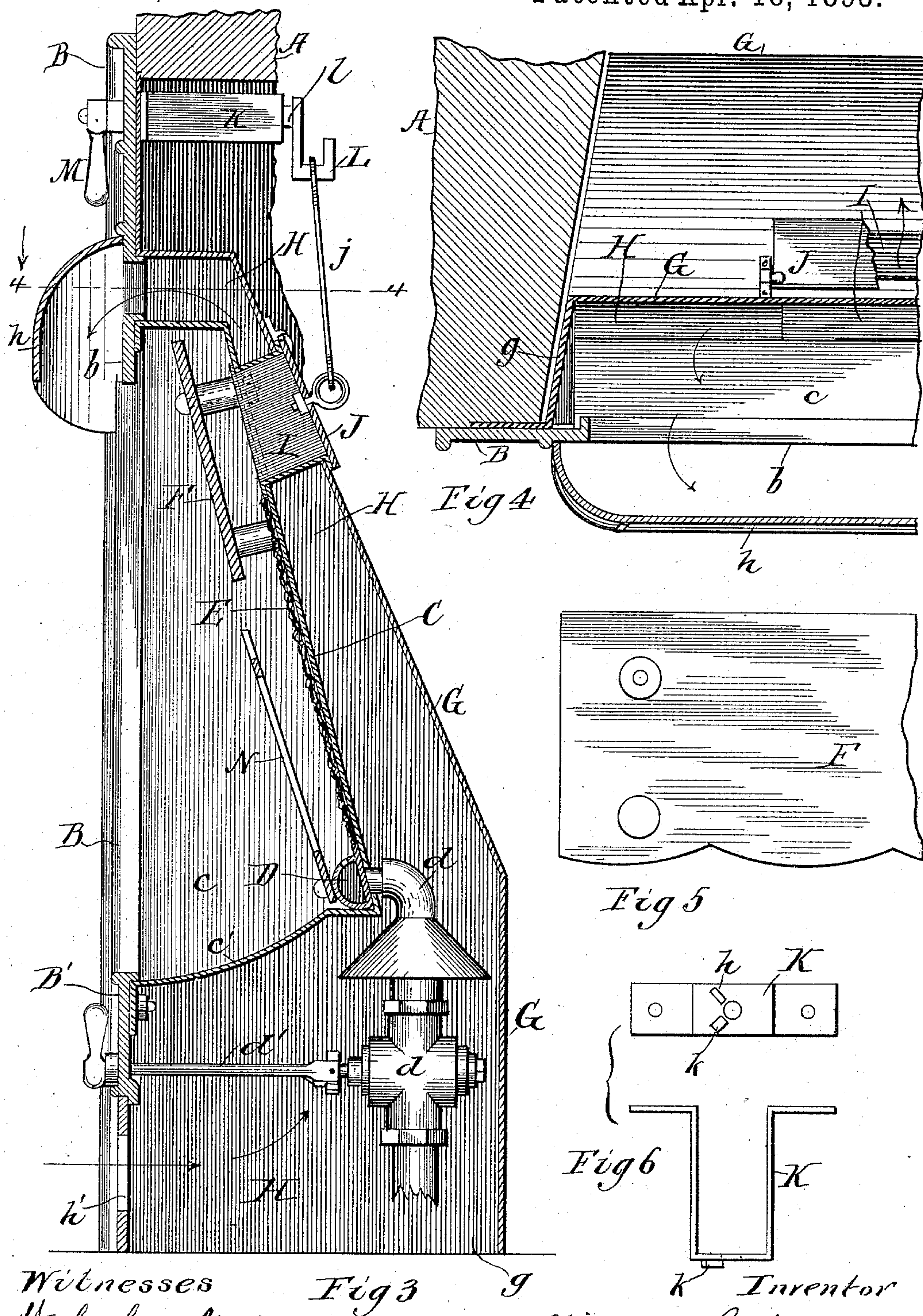
Inventor

William R. Dawson
By Louis H. Gibson
His Attorney

2 Sheets—Sheet 2.

Patented Apr. 18, 1893.

No. 495,786.



Witnesses
W. C. Corlies
M. L. Wing

Wm. R. Hanson
By Louis K. Gilman
His Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM R. DAWSON, OF CHICAGO, ILLINOIS.

FIREPLACE.

SPECIFICATION forming part of Letters Patent No. 495,786, dated April 18, 1893.

Application filed November 1, 1892. Serial No. 450,603. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. DAWSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fireplaces; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to fire places, particularly to such as are adapted for the use of fuel gas, and consists in the various parts and arrangement of parts as hereinafter set forth whereby a column of air is carried over a surface heated by the flame and the heat of the latter is concentrated upon this surface by the use of a shield behind which the flame is thrown.

In the accompanying drawings, Figure 1 is a front elevation of my improved fire place. Fig. 2 is a plan section on the line 2, 2, of Fig. 1. Fig. 3 is a transverse vertical section on the line 3, 3, of Fig. 1. Fig. 4 is a plan section of a portion of the fire place on the level of the line 4, 4, of Fig. 3. Fig. 5 is a detail of the shield; and Fig. 6 shows details of the damper regulating device.

At A, the masonry of the fire place is shown. It has no novel features but is built in the usual manner, with an opening for the fire place proper.

A metal frame is shown at B, adapted to surround the opening in the masonry, and having a cross-bar B', joining its uprights and located a little above the floor. The frame B, serves to support the other parts of the fire place. A sheet-metal casing, comprising the wings c, c, is attached to the sides of the frame and the reflector c', attached to the cross-bar B', and extending backwardly, and a fire-back C, extending upwardly from the reflector c', between the wings c, c, and inclined forwardly and connected with cross-bar b, extending between the uprights of the frame B, near their upper ends.

A gas burner D, consisting of a tube having a longitudinal slot along its upper side is located in the angle uniting the reflector c', and

fire-back C, and is fed by a gas pipe d, entering through the fire-back midway of the length of the burner. The gas pipe is provided with a shut-off valve whose stem d', extends forwardly below the reflector c', through the cross-bar B', and is provided at its outer end with a hand lever. The service pipe d, is provided with air openings between the valve and the burner so that the blue flame of a Bunsen burner is obtained. The front surface of the fire-back C, is covered with asbestos as shown at E, and the burner slot is so located that the sheet of flame from it impinges against the asbestos and is by it carried up a greater distance than it would otherwise reach.

A shield F, is located in front of and a short distance from the fire-back C, extending its entire width, and being fastened thereto by screws or bolts. This shield overlaps the top of the asbestos and the flame is carried up behind it. Space is left between the top of the shield and of the fire-back for the escape of the vapors from the flame.

A second casing, larger than, and inclosing that formed by the fire-back C, wings c, c, and reflector c', is also secured to the frame B. This casing consists of the wings g, g, extending backwardly from the uprights of the frame B, and reaching from their lower ends to the upper cross-bar of the frame; and of the back wall G, connecting these wings, and being inclined forwardly toward the top, and attached to the upper cross-bar of the frame.

Space is left between the fire-back C, and the wall G, to serve as an air flue. This flue H, opens through the front of the fire place below the cross-bar B', and above the cross-bar b. The air in the flue being heated by contact with the hot fire-back, rises and as a result, a rapid circulation is set up. It is obvious that the heating flue H, may be supplied with cool air from without the building if desired.

In the drawings, a hood h, is hung over the upper opening of the flue H. This is entirely optional and serves only to give finish to the fire-place. A simple fret work as is shown at h', covering the lower opening of the flue will serve as well.

A ventilating flue I, is carried through the fire-back C, at a point behind the shield F,

and through the back wall G, to communicate with the chimney flue. This flue is closed by a damper J, which is connected by means of a link or rod j, with a crank arm L, fixed upon a spindle l, journaled in a bracket K, projecting backwardly from the top of the frame B. The spindle l, extends through the frame B, and carries at its outer end a lever M, whereby it is turned. Stop lugs k, k, are located upon the bracket K, to limit the movement of the crank arm L. The flue I, is not necessary to the proper action of the fire-place as a heater. The use of an air or Bunsen burner supplemented by the action of the shield F, in carrying a new supply of oxygen to the flame makes the combustion complete, and there are no resulting odors. The flue, however, secures in this fire-place all of the advantages of ventilation attaching to an ordinary open fire-place.

An open or grated fender N, extends upwardly in front of the lower portion of the fire-back C, so as to partially hide the burner D, and also to limit the direct radiation.

The functions of the shield F, are two-fold. Its less important office is to aid combustion by forming with the fire-back a flue into which the flame is carried and where the rapidly ascending vapor creates a draft which draws in and mixes with the flame a new supply of oxygen; its principal office is to prolong or stretch out, as it were, the flame so as to cover a greater expanse of the fire-back while at the same time, greatly hindering direct radiation and concentrating the heat upon the fire-back so that the air in passing through the flue H, is raised to a much higher temperature than could be secured without the use of such a device.

I claim—

1. In a gas-burning fire-place, the combina-

tion with an upwardly extending fire-back and with a burner lying across its lower portion and adapted to throw a flame over the surface of the fire-back, of a shield, F, located before the upper portion of and substantially parallel with the fire-back and in close proximity thereto, whereby the flame will be lengthened and the heat concentrated upon the fire-back, and with a casing behind the fire-back and adapted to form therewith an air flue, substantially as described and for the purpose specified.

2. In a gas burning fire-place having an air heating flue located immediately behind the fire-back, the combination with the fire-back and with a burner adapted to throw a flame upwardly before it, of a shield F, located in front of the upper portion of, substantially parallel with and in close proximity to the upper portion of the fire-back, whereby the flame is lengthened and the heat concentrated upon the fire-back, substantially as described and for the purpose specified.

3. In a gas burning fire-place, the combination with a fire-back adapted to form the front wall of an air heating flue, of a burner adapted to spread a flame upwardly in front of the fire-back, a shield near to, and in front of the fire-back and adapted to extend the flame and concentrate the heat upon the fire back, a ventilating flue extending through the fire back from behind the shield, and a damper for closing the ventilating flue, substantially as described and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM R. DAWSON.

Witnesses:

DONALD MCINTYRE,
FRANK P. ARMISTEAD.