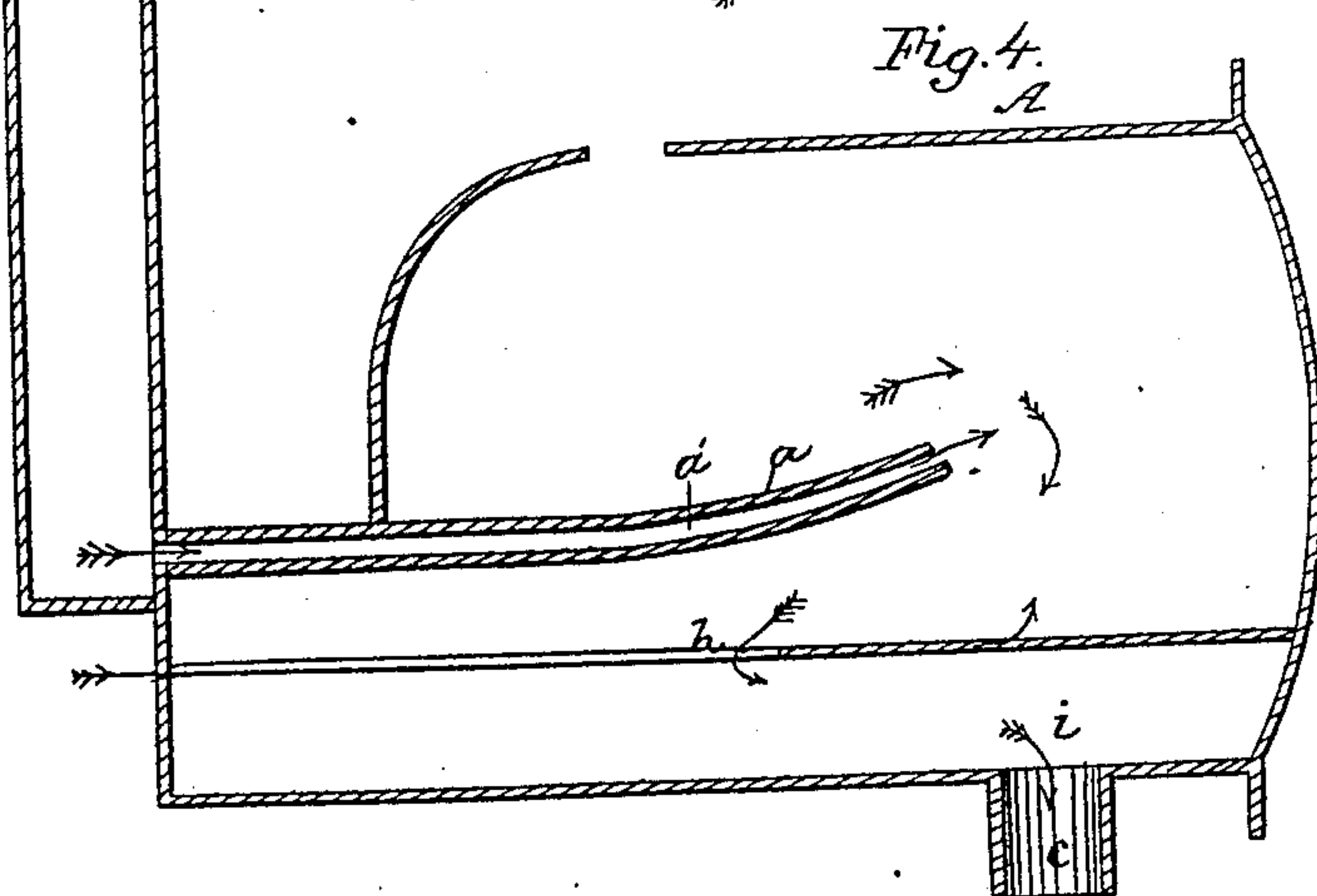
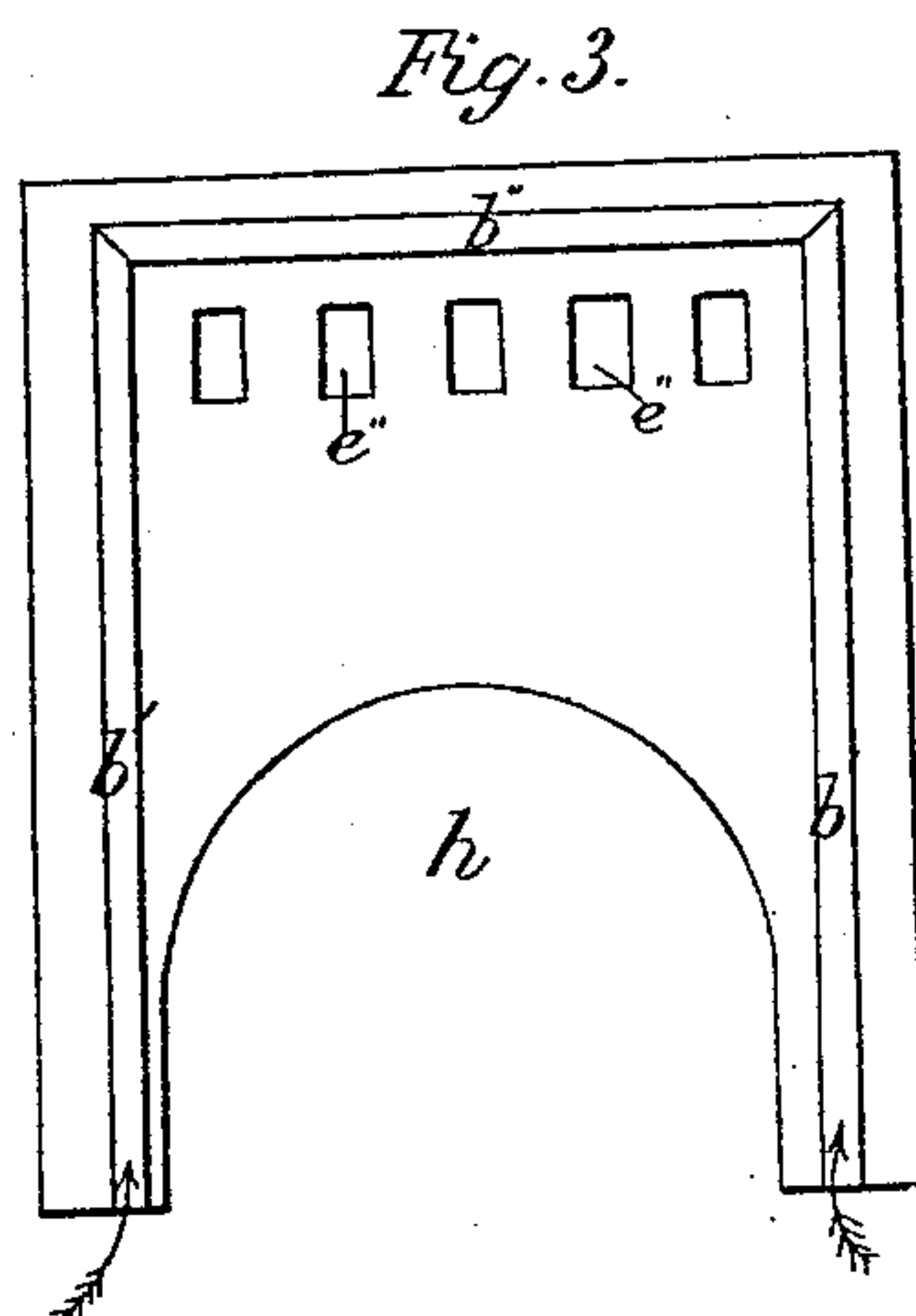
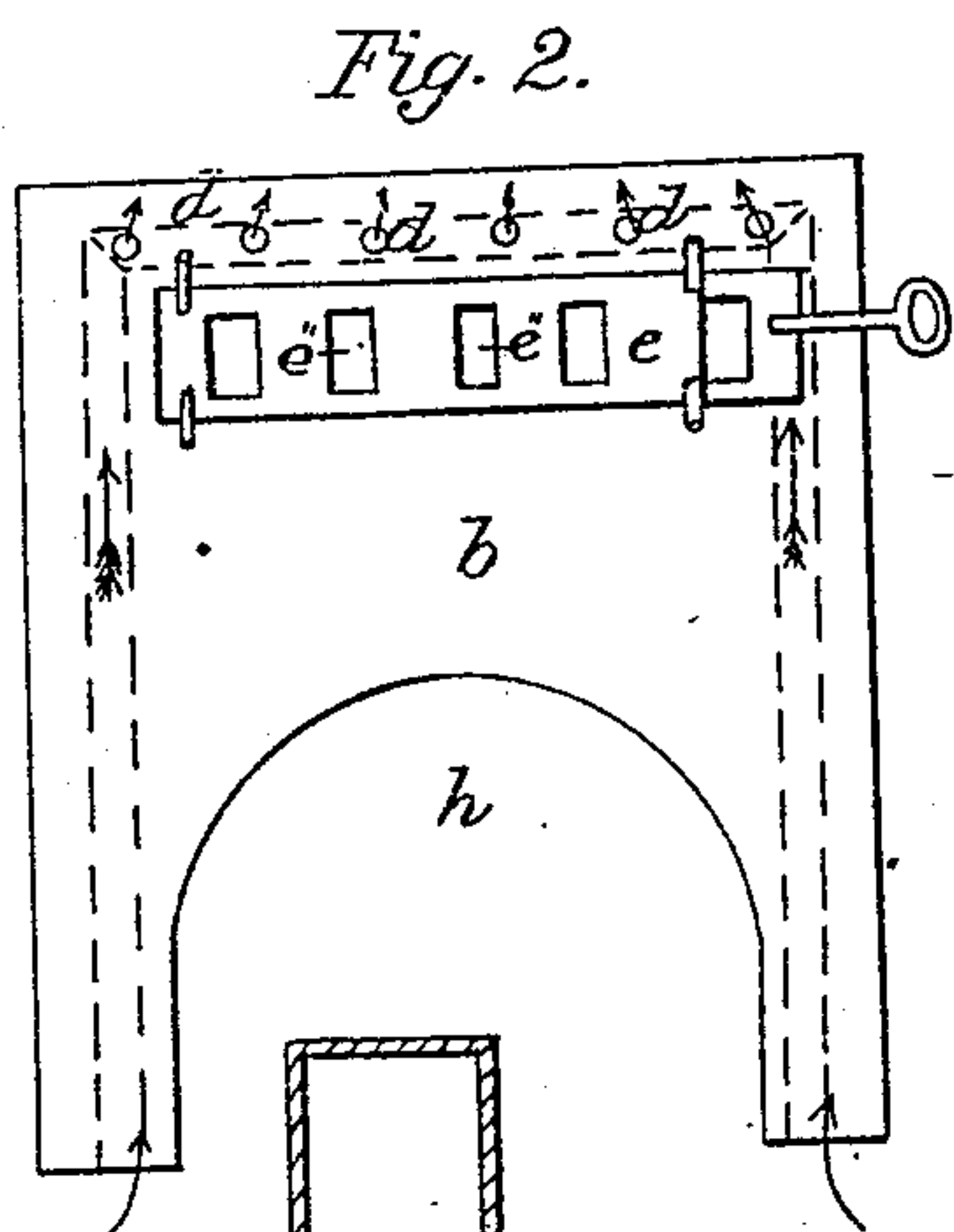
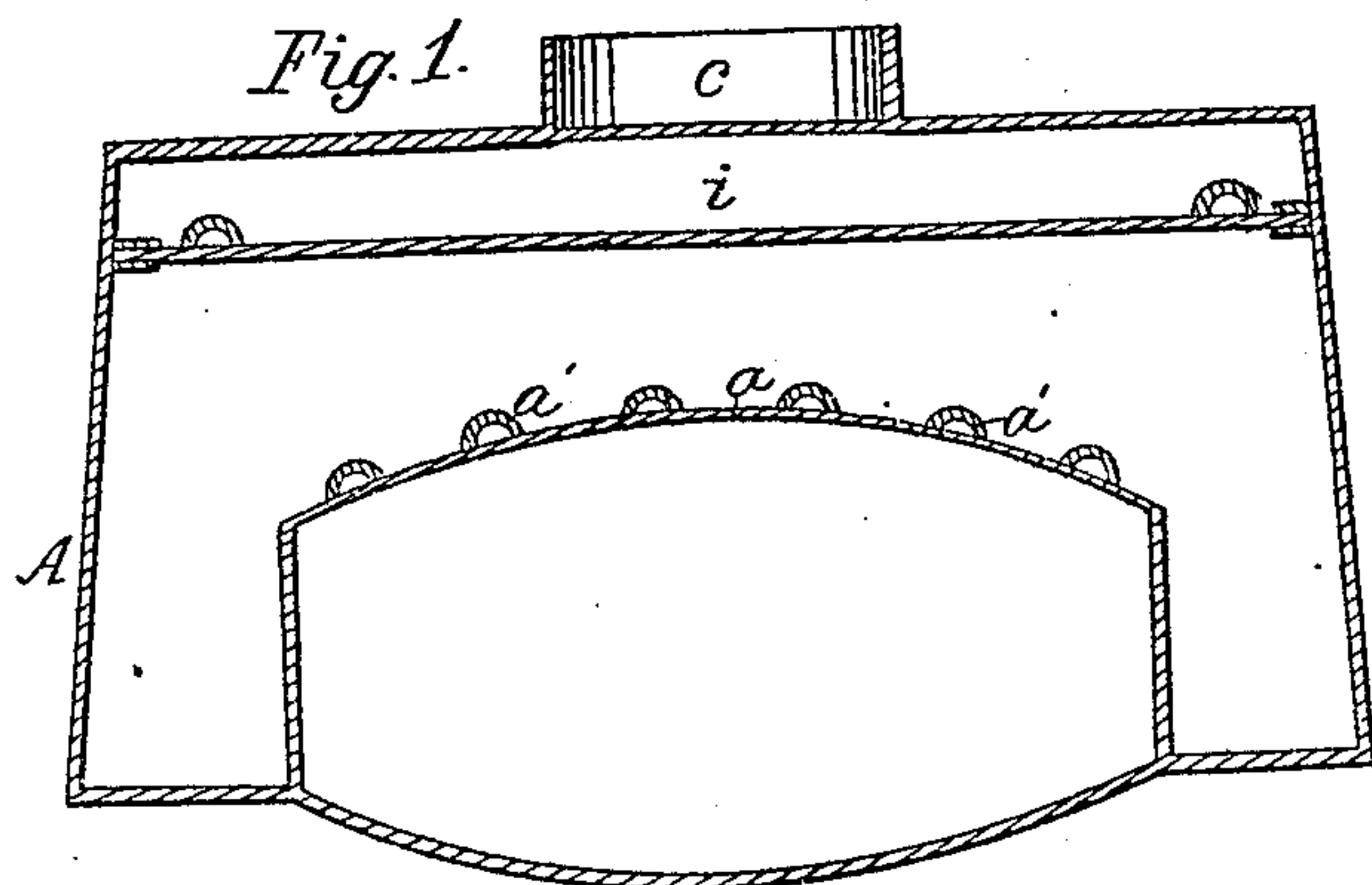


A. J. HASWELL.

Stove and Fireplace.

Patented Oct. 13, 1868.

No. 82,945.



C. F. Brown
C. S. Olson

Inventor
A. J. Haswell
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Atty

United States Patent Office.

A. J. HASWELL, OF CIRCLEVILLE, OHIO.

Letters Patent No. 82,945, dated October 13, 1868; antedated October 6, 1868.

IMPROVEMENT IN HEATING STOVES AND FIRE-PLACES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, A. J. HASWELL, of Circleville, in the State of Ohio, have invented a new and useful Improvement in Smoke-Burning Stoves; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and letters of reference marked thereon, making a part of this specification, in which—

Figure 1 is a horizontal section of my invention;

Figure 2, a front view of the division-plate;

Figure 3, a rear view of the same; and

Figure 4 a longitudinal vertical section.

To enable those skilled in the art to make and use my invention, I now proceed to describe its construction and operation.

Similar letters in the drawings refer to like parts.

This invention consists of devices for bringing heated air in contact with the smoke and gases produced by the burning of fuel in a stove, for the purpose of effecting the more complete combustion of the same, as will hereinafter more fully appear.

A represents a stove for heating-purposes, the same being of common construction, so far as its exterior is concerned. *a* represents the back wall of the fire-place, said wall consisting of cast-iron, and supporting on its back a number of tubes, *a'*, open at both ends, the upper ends being even with the top of the fire-plate *a*.

The tubes *a'* throughout their whole length are in contact with the fire-plate *a*, and passing through the bottom of the stove, open into the external atmosphere below, their function being to conduct air from the outside, and discharge it heated during its passage, by contact with the hot fire-plate *a*, under the current of smoke and gases passing from the fire-place, when fuel is burning therein, for the purpose of more completely effecting the combustion of the same.

b represents a vertical division-plate, also of cast-iron, connected at its upper end with the top of the stove, and extending nearly to the bottom thereof, suf-

ficient space being left for the passage of the products of combustion from the fire-place, whose path is, as shown in fig. 4, over the top of the fire-plate *a*, thence through the passage *h*, under the division-plate *b*, and thence up through the passage *i* to the place of exit at the pipe *c* in the back of the stove. By this means the smoke and gases being retained longer in the stove than as though they travelled by a direct route, are made productive of more heat for the benefit of the room containing the stove, and are also rendered available for the heating other currents of air for smoke-consuming purposes, said other currents being produced by the tubes *b'*, of which there are two, both being in contact with the plate *b*, one at each side thereof, extending vertically downward to and through the bottom of the stove, and opening into the external atmosphere in like manner with the tubes *a'*, their upper ends being connected by the horizontal tube *b''*, also in contact with the plate *b*, near the top thereof. A suitable number of orifices, *d*, in the plate *b*, opening into the tube *b''*, admit of the discharge of the heated air in said tube upon the current of smoke and gases passing through the passage *h*.

A slide, *e*, with orifices *e'*, slides horizontally in the plate *b*, in which are corresponding orifices *e''*, by the opening and closing of which, effected by moving the slide *e*, the draught is regulated.

Having thus fully described my invention,

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

1. The division-plate *b*, applied in connection with the stove *A* in the rear of the fire-plate *a*, to produce the passages *h* and *i*, in the manner and for the purpose explained.

2. The division-plate *b*, provided with the tubes *b'* *b''*, and the orifices *d*, substantially as described.

A. J. HASWELL.

Witnesses:

P. O. SMITH,
W. F. HURST.