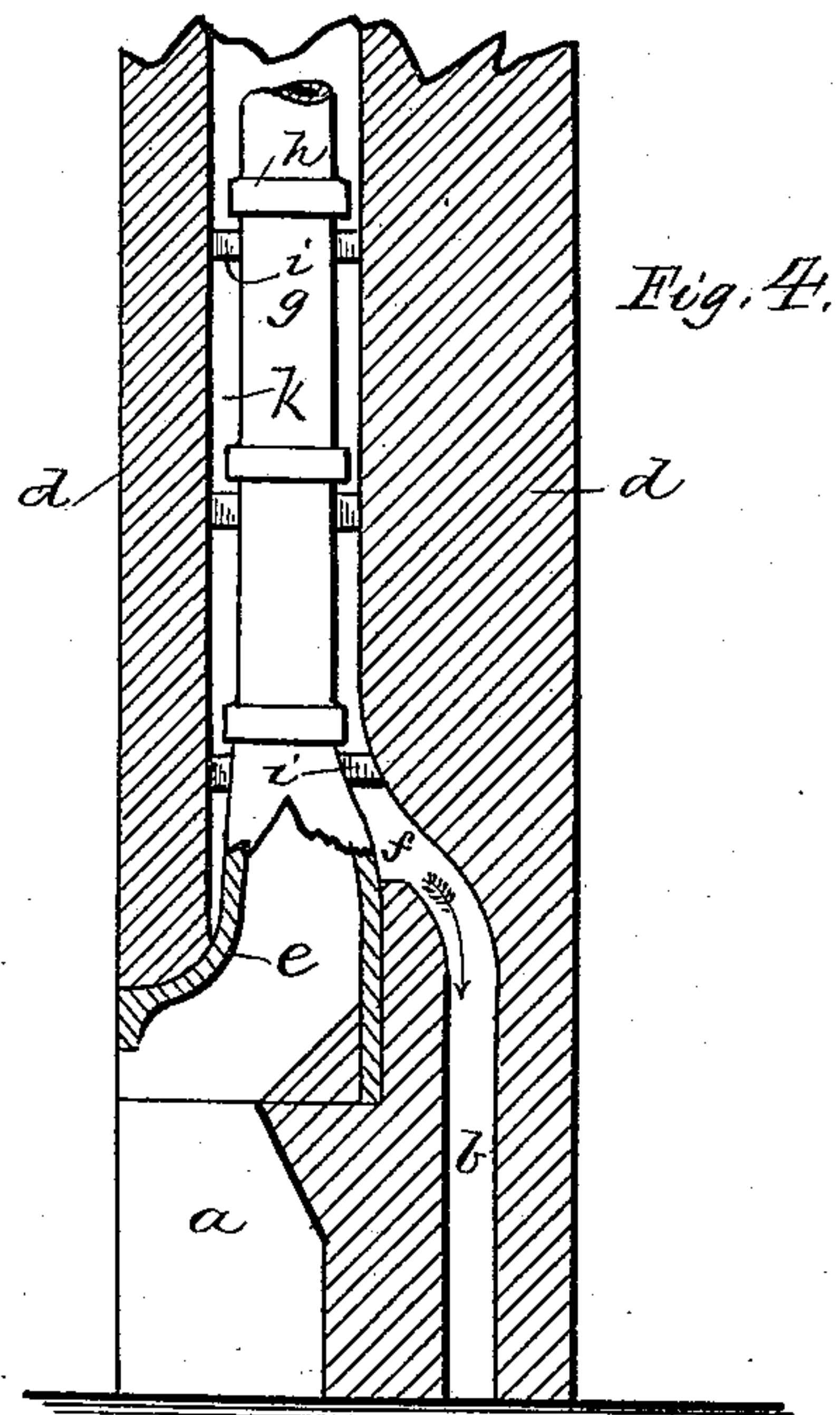
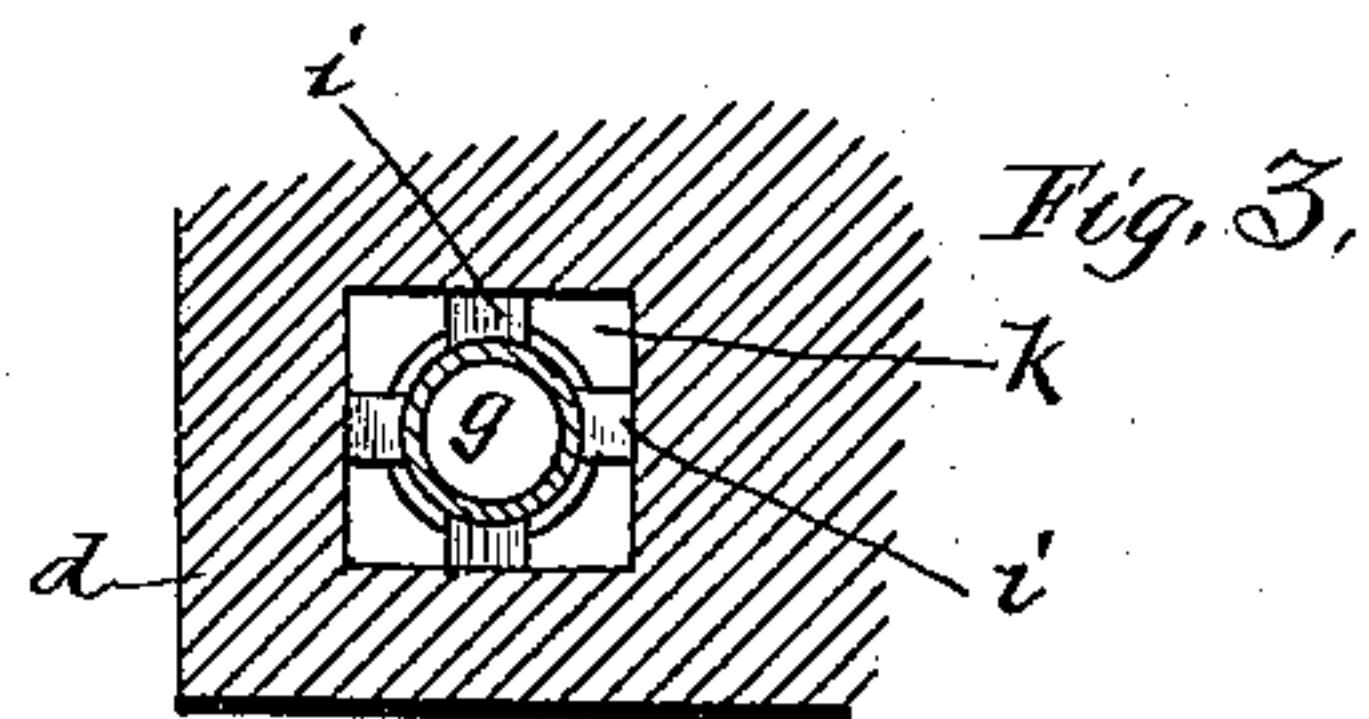
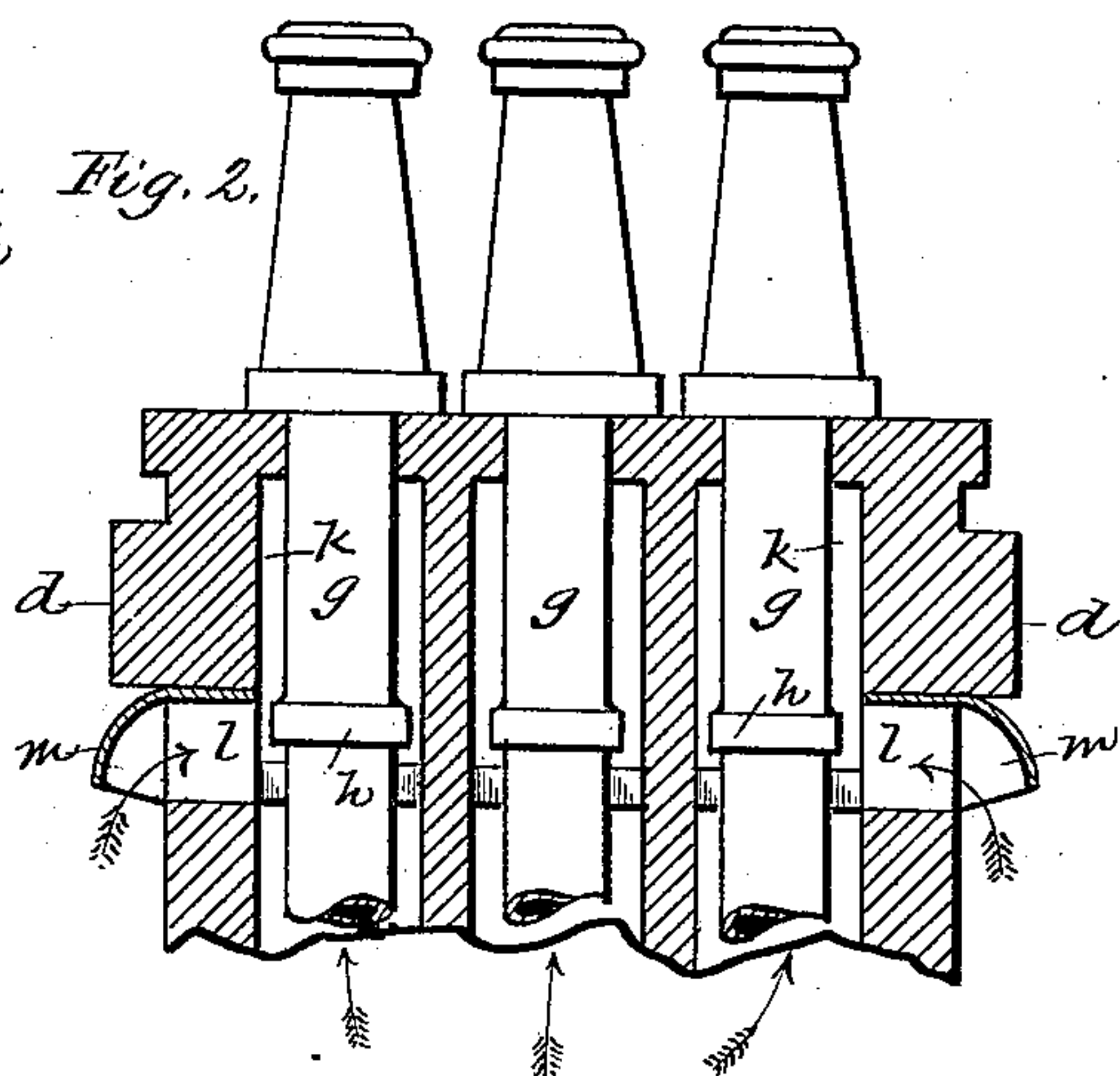
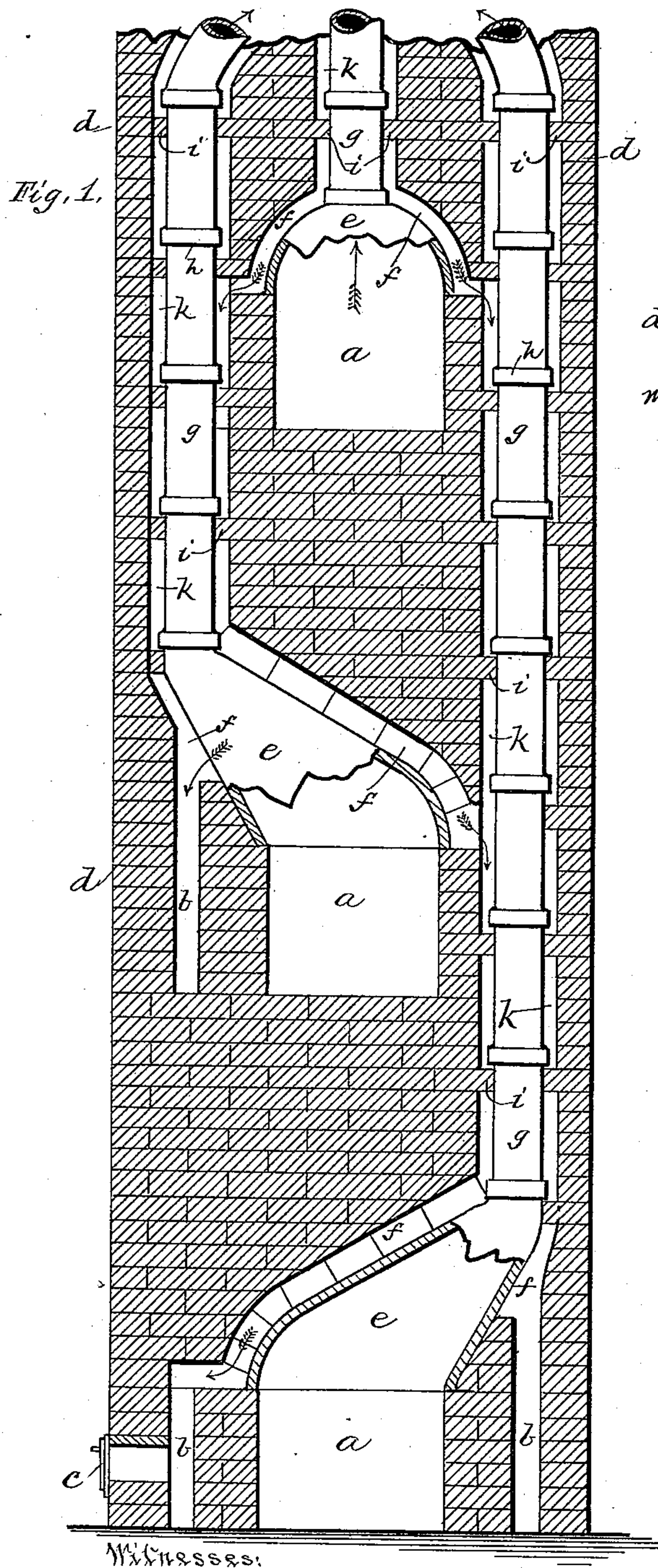


(No Model.)

J. B. BARNEY & S. B. BRYAR.
CHIMNEY FLUE.

No. 396,458.

Patented Jan. 22, 1889.



Witnesses:
H. E. Harrison.
J. A. Herrow.

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UNITED STATES PATENT OFFICE.

JAMES B. BARNEY AND SAMUEL B. BRYAR, OF PITTSBURG, PENNSYLVANIA.

CHIMNEY-FLUE.

SPECIFICATION forming part of Letters Patent No. 396,458, dated January 22, 1889.

Application filed July 9, 1888. Serial No. 279,460. (No model.)

To all whom it may concern:

Be it known that we, JAMES B. BARNEY and SAMUEL B. BRYAR, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Chimney-Flues; and we do hereby 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to an improved safety chimney-flue; and it consists of the novel construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a front sectional elevation of an ordinary chimney, showing the fire-places and flues leading therefrom constructed according to our invention. Fig. 2 is a sectional elevation of the top or finish of the same. Fig. 3 is a sectional plan view of one of the flues. Fig. 4 is a side sectional elevation of our improved chimney-flue and fire-place.

To put our invention into practice, we construct at the rear and at each end of a fire-place, *a*, an air-space, *b*, into which cold air may be admitted through an ordinary register, *c*, set into the side wall of the chimney *d*. On the top of each fire-place *a* is a cap or connection, *e*, having an air-space, *f*, surrounding the same, and a reduced circular neck at the top for the purpose of connecting the same to the refractory flue-liners *g*. These liners *g* we prefer to be circular in cross-section and provided at one end with a bowl, *h*, for the purpose of making a substantial connection, the one with the other. At regular intervals along the entire length of these liners *g* are outwardly-projecting bricks *i*, which serve to rigidly hold the same in position, leaving a continuous space, *k*, from the commencement of the flue *g* to the top of the chimney *d*, at which point an opening, *l*, is formed, provided with an overhanging cap, *m*, which prevents rain from entering the space *k*. By reference to Fig. 1 on the drawings it will be seen that all these air-spaces are intercommunicating and constructed in a manner that will enable a current of cold air to circulate freely about the flue-liners *g*, and

thereby prevent the same from burning out or being seriously injured from excessive heat. 55

It is also obvious that in this construction of a chimney the danger from defective flues is avoided. The fire from the flue-liner *g*, if the same is broken, must first cross the space *k* and then find a defective place in the side walls of the chimney *d*, which is almost impossible. 60

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is— 65

1. A chimney having a series of fire-places, *a*, each surrounded by an air-space, *b*, which communicates with the exterior surrounding atmosphere by openings *c*, a separate vertical flue for each fire-place, which flues are arranged in different vertical planes and communicate with the air-space *b*, a hood, *e*, placed over each fire-place and having a contracted exit which terminates in the lower end of the vertical flue, and the flue-liners *g*, housed within said flues and communicating with the hoods *e*, the flue-liners being of less diameter than the flues, to leave an intermediate air-space, *k*, substantially as and for the purpose described. 70 75 80

2. A chimney having a series of fire-places, *a*, each surrounded by an air-space, *b*, which communicates with the surrounding atmosphere, a series of vertical flues, one of which is provided for each fire-place and communicating with the air-space *b* thereof, the connecting-flues *f*, intermediate of the vertical flues, a hood, *e*, placed over each fire-place and having a contracted exit terminating in the lower end of the vertical flue, and a flue-liner, *g*, provided in each vertical flue, to leave an intermediate air-space, *k*, and connected with the contracted exit of the hood *e*, the upper end of the vertical flues communicating with the surrounding atmosphere by openings *l*, which are protected by depending curved hoods *m*, substantially as and for the purpose described. 85 90 95

In testimony that we claim the foregoing we hereunto affix our signatures, this 19th day of June, A. D. 1888. 100

JAMES B. BARNEY. [L. S.]

SAMUEL B. BRYAR. [L. S.]

In presence of—

M. E. HARRISON,

C. C. LEE.