

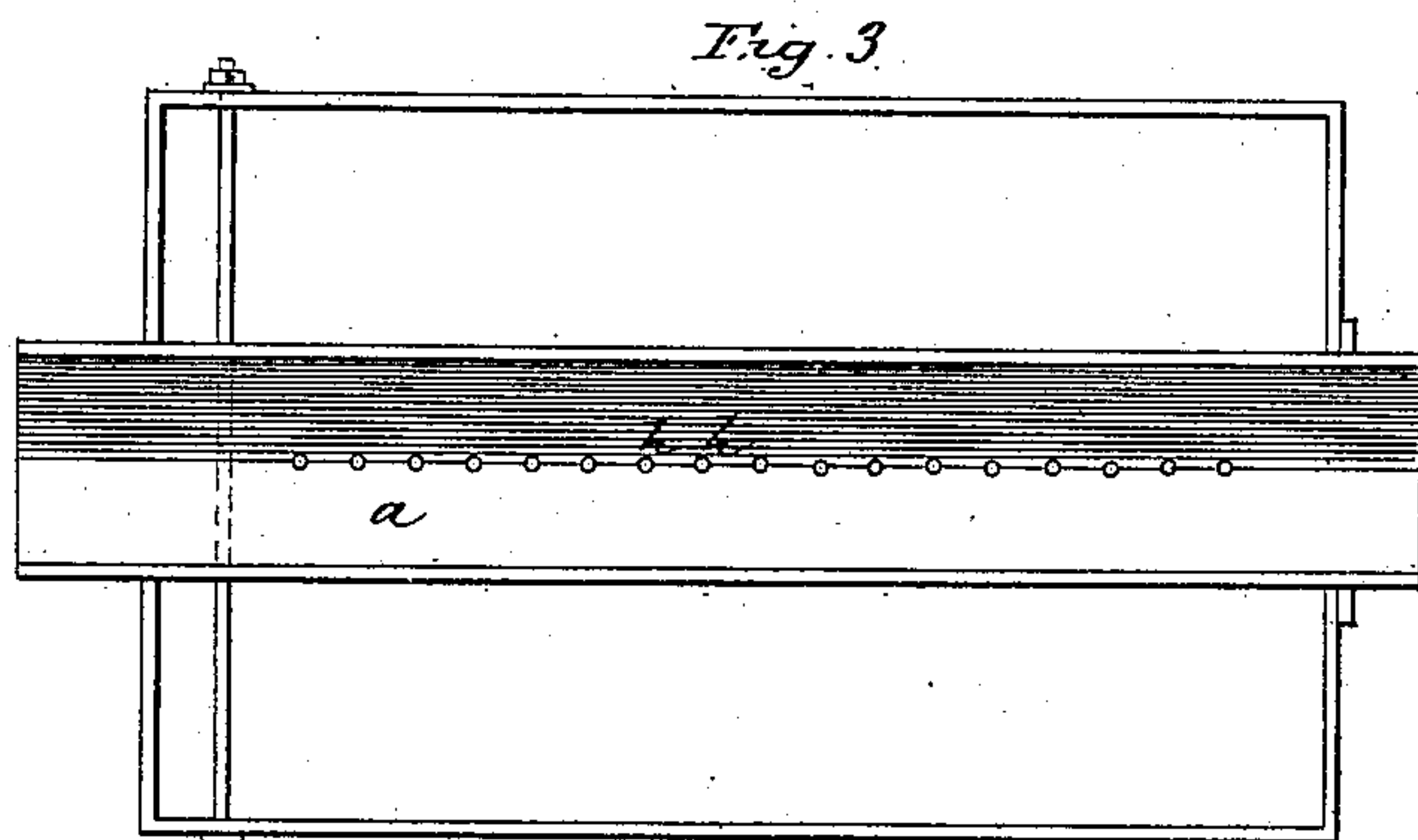
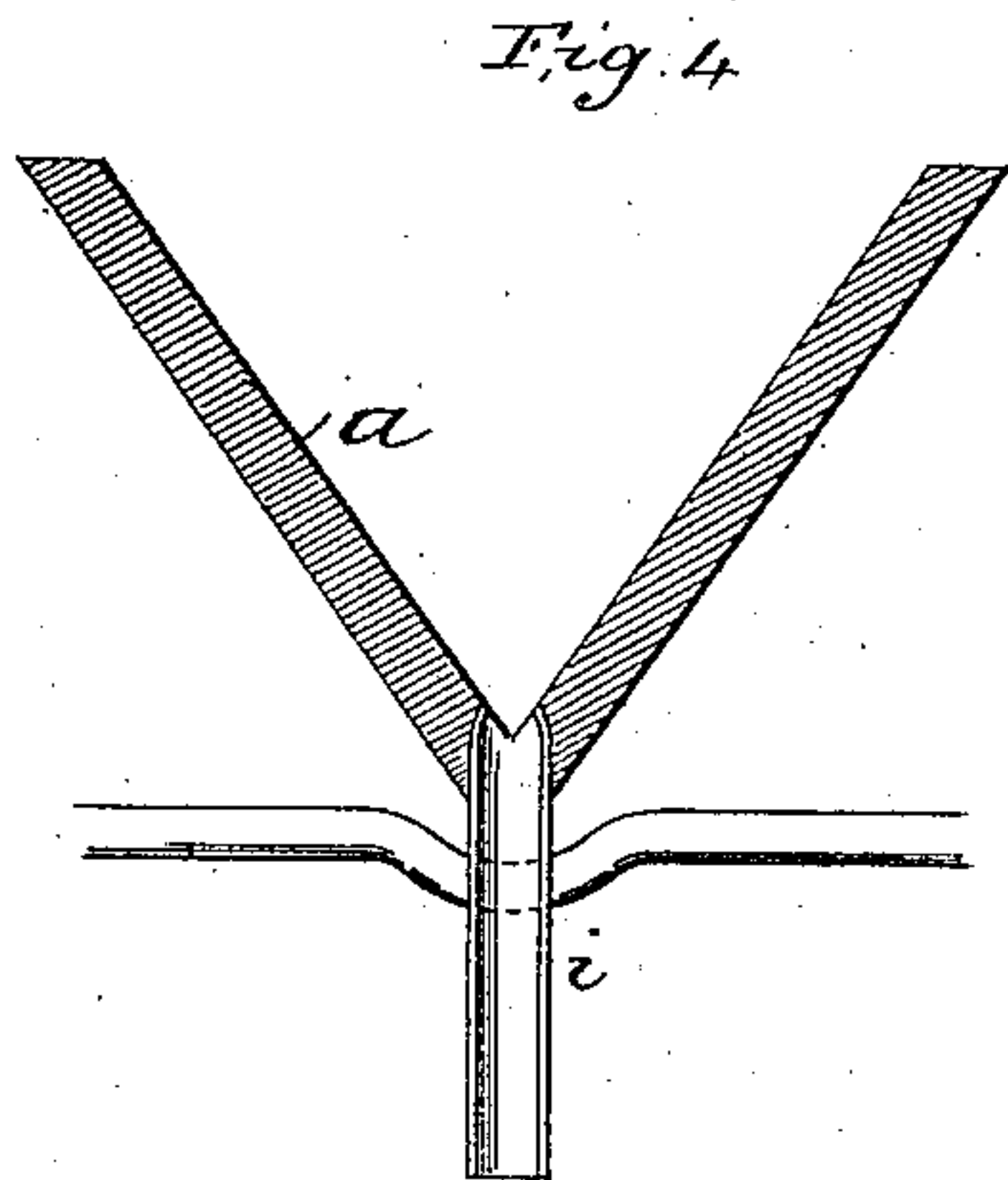
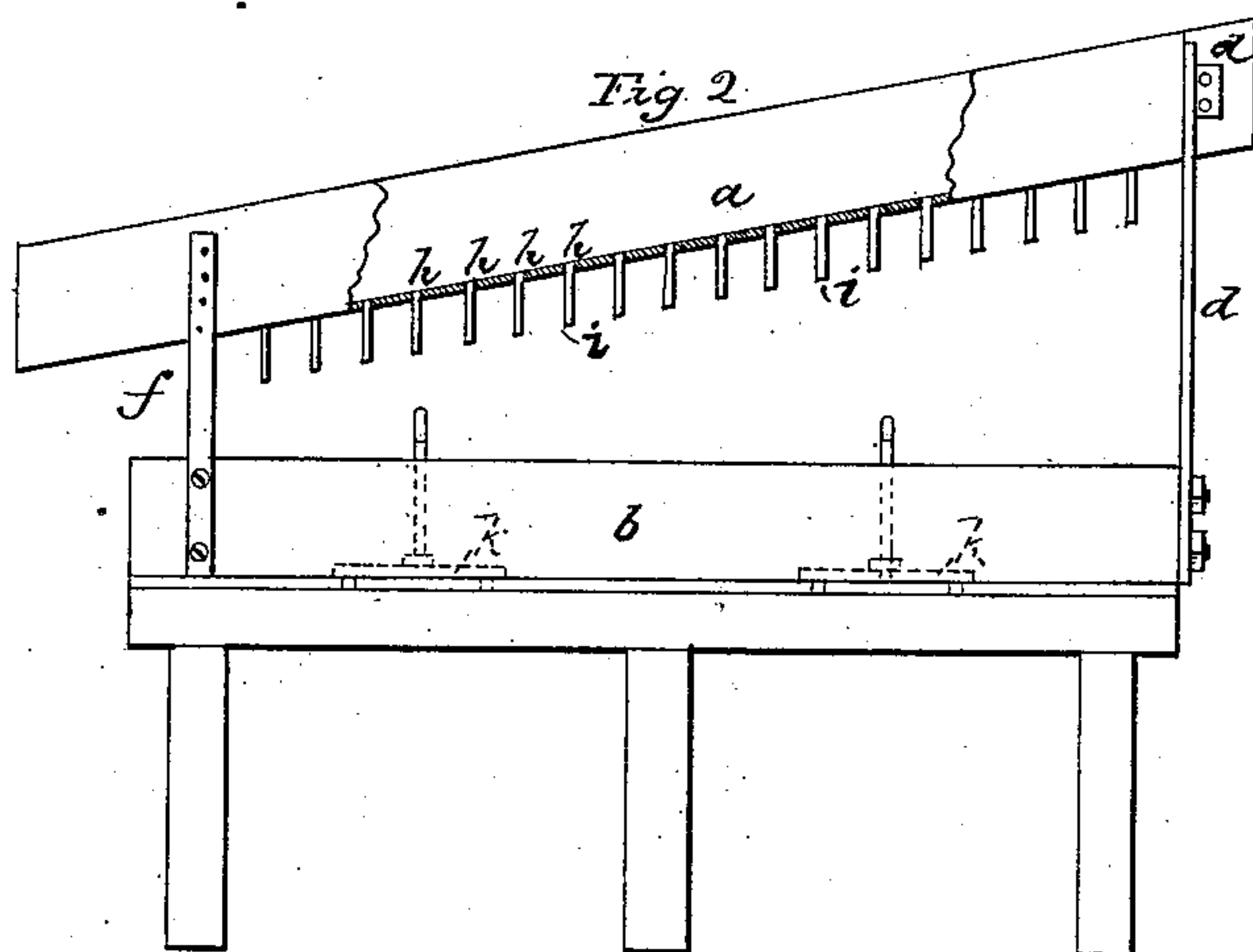
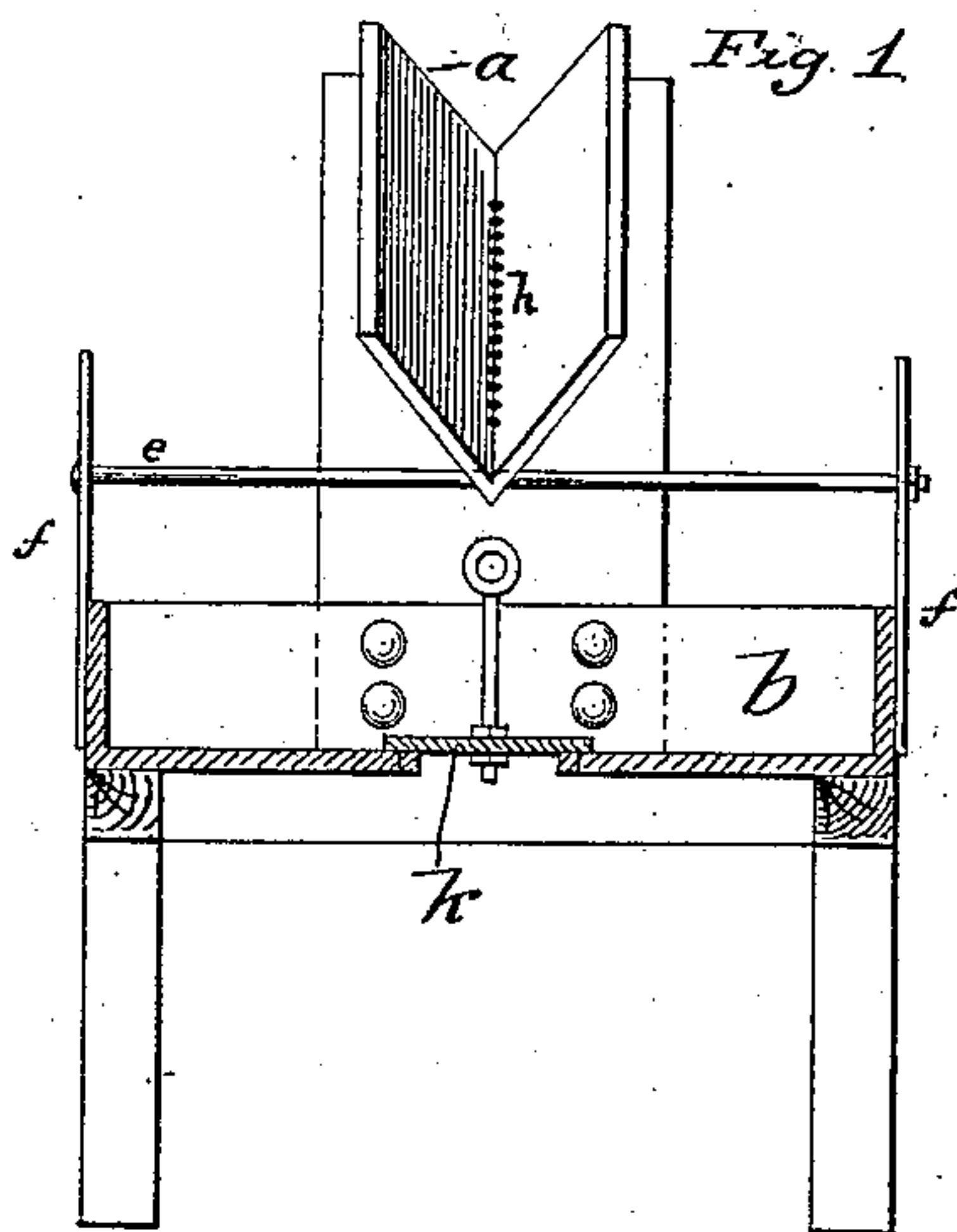
(No Model.)

F. H. BLAKE.

MACHINE FOR CONCENTRATING ORES, &c.

No. 337,122.

Patented Mar. 2, 1886.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANCIS H. BLAKE, OF PINAL, ARIZONA TERRITORY.

MACHINE FOR CONCENTRATING ORES, &c.

SPECIFICATION forming part of Letters Patent No. 337,122, dated March 2, 1886.

Application filed June 8, 1885. Serial No. 167,931. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS H. BLAKE, of Pinal, in the county of Pinal and Territory of Arizona, have invented a new Improvement in Machines for Concentrating Ores and Minerals; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a sectional end view of the concentrator; in Fig. 2, a side elevation showing the sluice in partial section; in Fig. 3, a top or plan view of the same, and in Fig. 4 a transverse section of the sluice enlarged.

This invention relates to an improvement in machines such as are employed for concentrating finely-divided minerals or such particles as are held in suspension or carried along by running water.

The object of my invention is to draw off from the running water the heavier particles which accumulate along the bottom of the launder or sluice; and to that end my invention consists in the construction hereinafter described, and more particularly recited in the claim.

In the construction of sluice developed by me in practical working I find such as illustrated in Figs. 1, 2, 3, and 4 to be best, and in this the sluice *a* is of V shape, so as to produce substantially a sharp angle at the lowest point. The sluice is made from boards or planks nailed together at the angle, so that the apex of the V forms the lowest point, through which the water and mineral it carries will freely run. This V-shaped sluice is arranged over a receiver, *b*, as seen in Figs. 1 and 2, and is arranged in an inclined position, and should be so that the inclination may be adjusted, say, by supporting the highest end on trunnions or hinges *d*, and the lowest end upon a transverse bar, *e*, the said bar being supported in uprights *f f*, through which are a series of holes, one above another, so that the bar may be set in either one or the other, according as the inclination of the sluice is to be greater or less. On the bottom of the sluice, and in the angle, a series of apertures, *h*, are made, and preferably into these tubes *i* are introduced, extending downward and en-

larged somewhat from their upper ends, so that below the apertures the tubes are somewhat enlarged. The V shape of the sluice causes the particles in the water to concentrate in the central line or line of the apertures, so that the particles if possibly they pass one aperture will escape through another, and so that substantially all the particles will escape from the water before the lowest or last aperture is reached. It will be understood that a certain portion of the water passes through the apertures, carrying such particles with it, and from whence it is discharged into the receiver *b* below. The tubes *i* form bushings for the apertures to prevent the apertures from closing under the action of the water. It will be understood that the sluice is made from boards or planks, and as these apertures are necessarily very small, say, about one-sixteenth of an inch, the fibers of the wood, under the action of the water, expand or are raised so as to choke the apertures, if they be not bushed. By the introduction of the bushing not only are the apertures thus prevented from closing, but the wood is also prevented from wearing away and increasing the size of the apertures.

In the bottom of the receiver openings, closed by gates *k*, are arranged, so that after the water has been drawn off the material which has settled upon the bottom of the receiver may be hoed or scraped from the bottom and discharged through the openings into a wheelbarrow or whatever receptacle may be placed beneath.

I do not wish to be understood as claiming, broadly, a sluice having a series of apertures in line of the lowest depth thereof, as such, I am aware, is not new; but

What I do claim is—

In a concentrator for minerals, a V-shaped sluice made from wood and constructed with a series of small openings in the line of its apex, combined with metal bushings introduced into said openings, the said bushings forming apertures through which heavier particles may pass with a portion of the water from the sluice, substantially as described.

FRANCIS H. BLAKE.

Witnesses:

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