

A. Faber du Faur's Imp^l in Retort Furnaces
assigned to himself & Edward Bulbach Jr.

108695

PATENTED OCT 25 1870

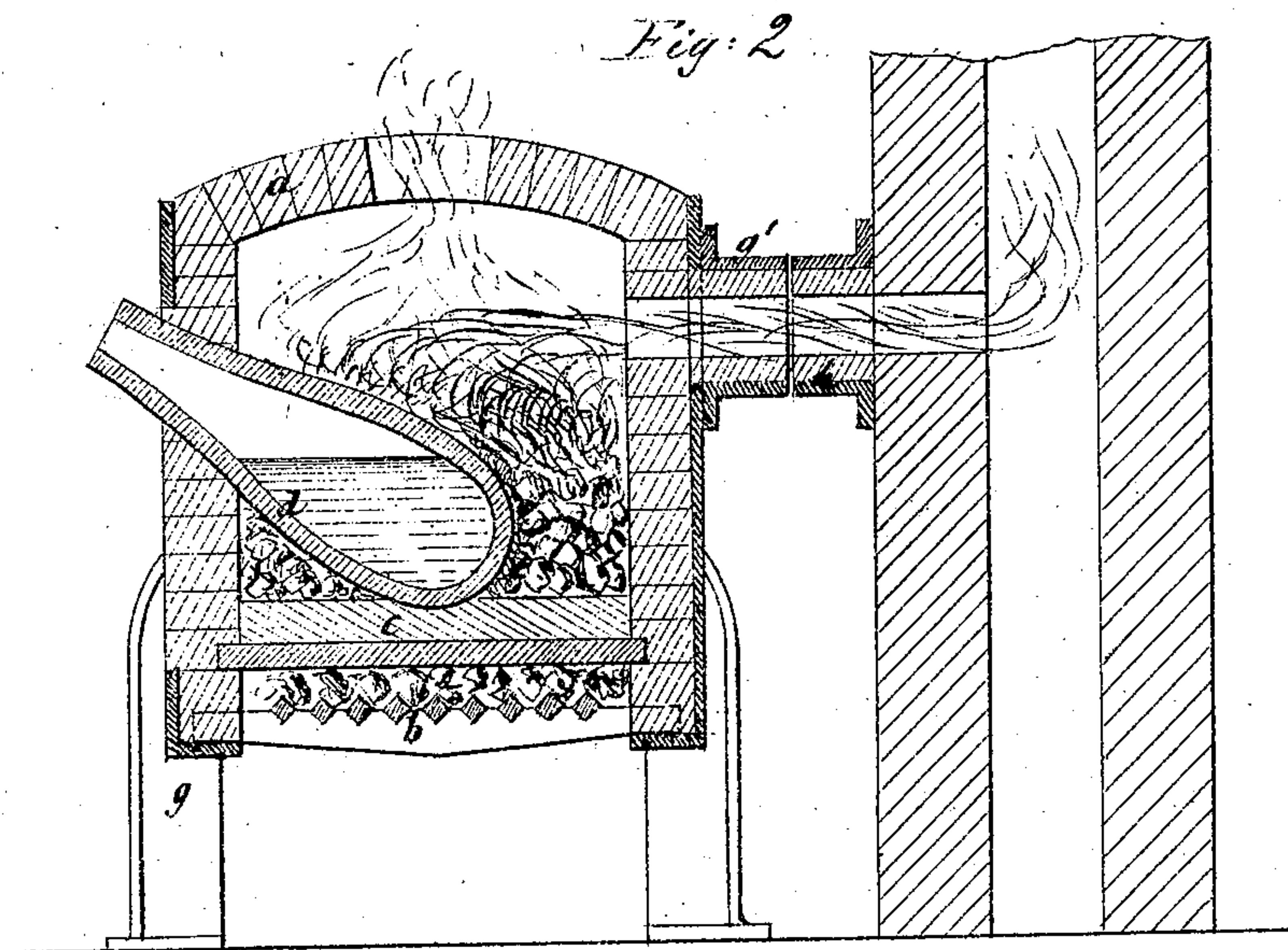
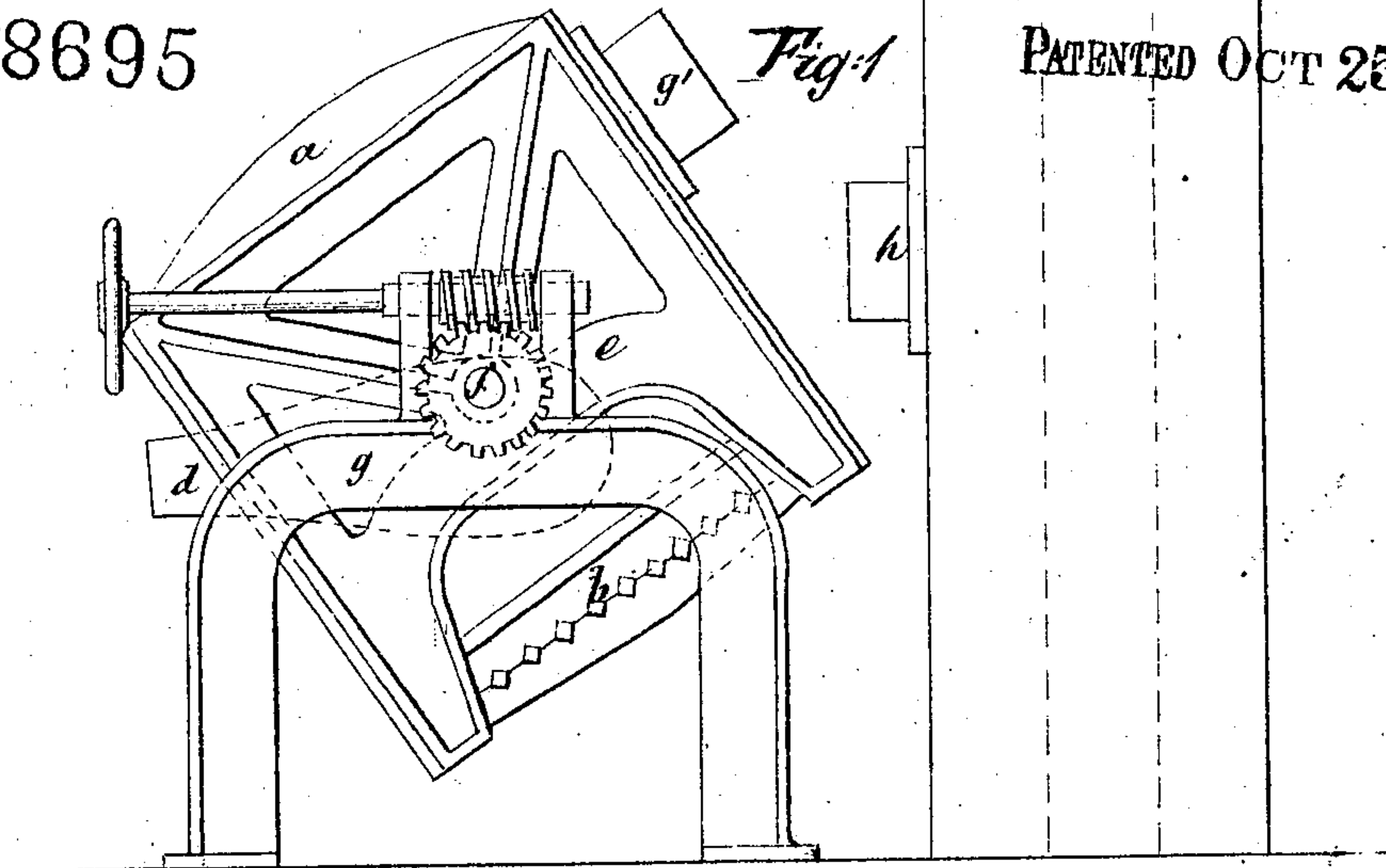
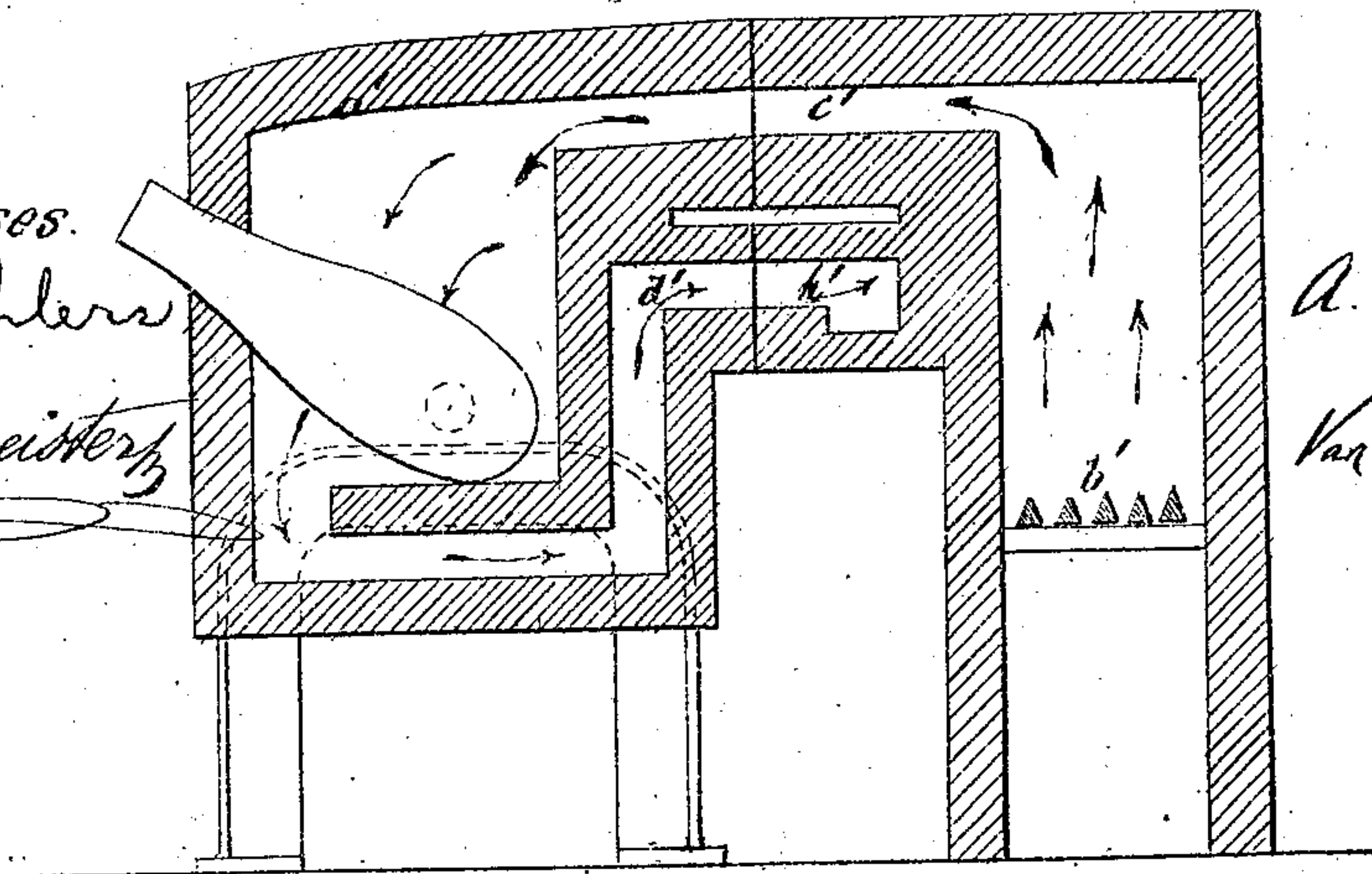


Fig: 3.



Witnesses.

C. Trahlens

Rudolf Langmeister

Inventor.

A. Faber du Faur
per
Van Santvoorde & Co.

UNITED STATES PATENT OFFICE

ADOLPH FABER DU FAUR, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF AND EDWARD BALBACH, JR.

IMPROVEMENT IN RETORT-FURNACES.

Specification forming part of Letters Patent No. 108,695, dated October 25, 1870.

To all whom it may concern:

Be it known that I, ADOLPH FABER DU FAUR, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Retort-Furnaces; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a side view of this invention, showing the furnace in position to discharge the contents of the retort. Fig. 2 is a vertical section of the same, showing the furnace in its upright position. Fig. 3 is a similar section of a modification thereof.

Similar letters indicate corresponding parts.

This invention relates to a certain improvement on a patent for improvement in separating zinc from gold and silver, granted to Edward Balbach, Jr., May 21, 1867, and numbered 64,934.

The nature of the invention as described in this patent consists in a movable black-lead retort with a neck, applied in a furnace in such a manner that it can be turned up for the reception of the alloy of gold, silver, lead, and zinc, while the latter is distilled off by the heat and condensed, and then turned down to empty out the precious metals, with the alloy and impurities to be subsequently refined; the retort is then turned up to its place and recharged.

The retort described in said patent is inclosed in a stationary furnace built up of brick, the neck of the retort being supported by a bearer, which is removed when the retort is to be turned down for discharge. Said bearer is built up of fire-brick, and the operation of removing the same is difficult and laborious on account of the heat to which the workmen attending to this part of the work are exposed; and, furthermore, after the retort has been discharged, the bearer has to be replaced, and before this can be done the retort and the furnace must be allowed to cool down, whereby much loss in time and in fuel is occasioned. This difficulty is obviated by my improvement, which consists in combin-

ing with a retort a furnace supported by gudgeons, which have their bearings in stationary frames or standards, in such a manner that the furnace, together with the retort, can be turned, and the retort can be discharged, and afterward recharged, without disturbing any part of the furnace, and without interrupting the operation of the furnace. The smoke-flue of my furnace projects from its rear, so that in turning the furnace on its gudgeons in one direction said smoke-flue swings away from the flue leading to the chimney, and by turning the furnace back in the opposite direction its smoke-flue is brought up against the mouth of the chimney-flue, and, consequently, the operation of the furnace is not interrupted.

In the drawing, the letter *a* designates a furnace, which is built up of brick, and provided with a grate, *b*, and a bridge or bearer, *c*, capable of supporting the retort *d*, and so formed that coals may be packed at the sides of it, and also at the sides of the retort. To the sides of the furnace *a* are secured brackets *e*, by preference made of cast-iron, and from each of these brackets projects a gudgeon, *f*, which has its bearing in a standard, *g*, situated one on each side of the furnace, and of such a height that the furnace can be conveniently turned on its gudgeons. From the rear wall of the furnace projects the smoke-flue *g'*, and, if said furnace is brought in an upright position, (see Fig. 2,) this smoke-flue bears against the mouth of a flue, *h*, leading to the chimney or smoke-stack, while the same does not interfere with the operation of turning the furnace. (Shown in Fig. 1.)

The retort *d* is so arranged in the furnace that the same occupies an upright or upwardly-inclined position when the furnace is brought in the position shown in Fig. 2; but by turning the furnace to the position shown in Fig. 1, the retort is brought in its discharging position.

When a flame of fire is required, the fire-place may either be attached to the movable furnace, or it may be separate, as shown in Fig. 3, where *a'* represents the movable furnace, and *b'* the fire-place, which communicates, through a flue, *c'*, with the furnace,

while the flame, after having circulated through said furnace, passes, through a flue, *d'*, to the chimney-flue *h'*, the furnace being so constructed that the same, on being turned on its gudgeons, swings away from the flue *c'* and chimney-flue *h'*.

By these means the retort can be conveniently charged and discharged without disturbing any portion of the furnace, and without the necessity of allowing the furnace to cool down after every discharge of the retort.

It is obvious that this improvement is of importance for all operations in which retorts are used that have to be repeatedly charged and discharged.

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

1. The combination of a furnace supported by gudgeons with a retort, substantially in the manner herein shown and described.

2. The arrangement of a smoke-flue, *g'*, projecting from the rear wall of a furnace, supported by gudgeons, said flue being capable of turning off from or up against the mouth of the flue leading to the chimney, substantially in the manner set forth.

A. FABER DU FAUR.

Witnesses:

W. HAUFF,

E. F. KASTENHUBER.