

(No Model.)

2 Sheets—Sheet 1.

R. BAUMANN.
BRASS SMELTING FURNACE.

No. 567,371.

Patented Sept. 8, 1896.

Fig. 1.

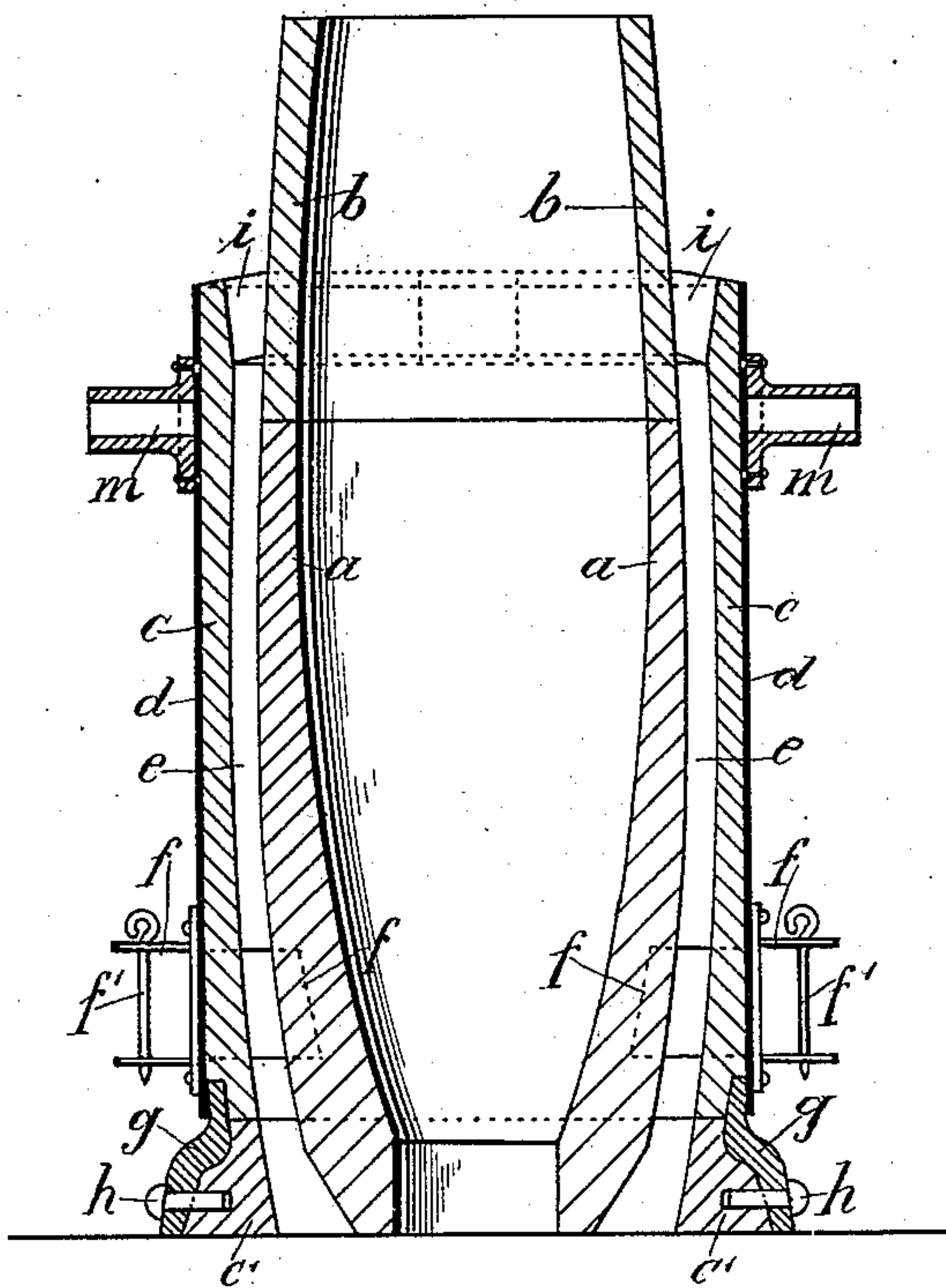
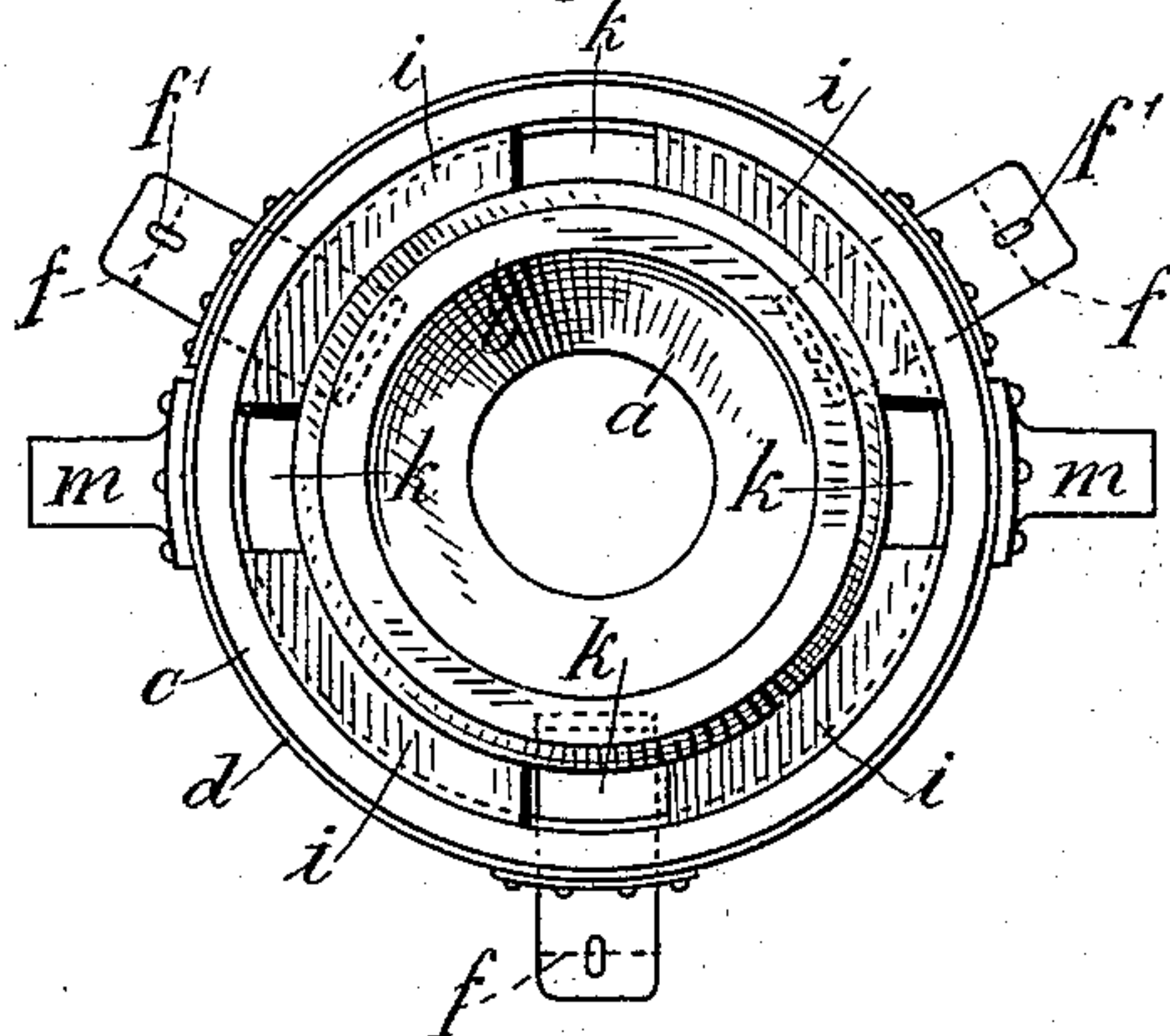


Fig. 2.



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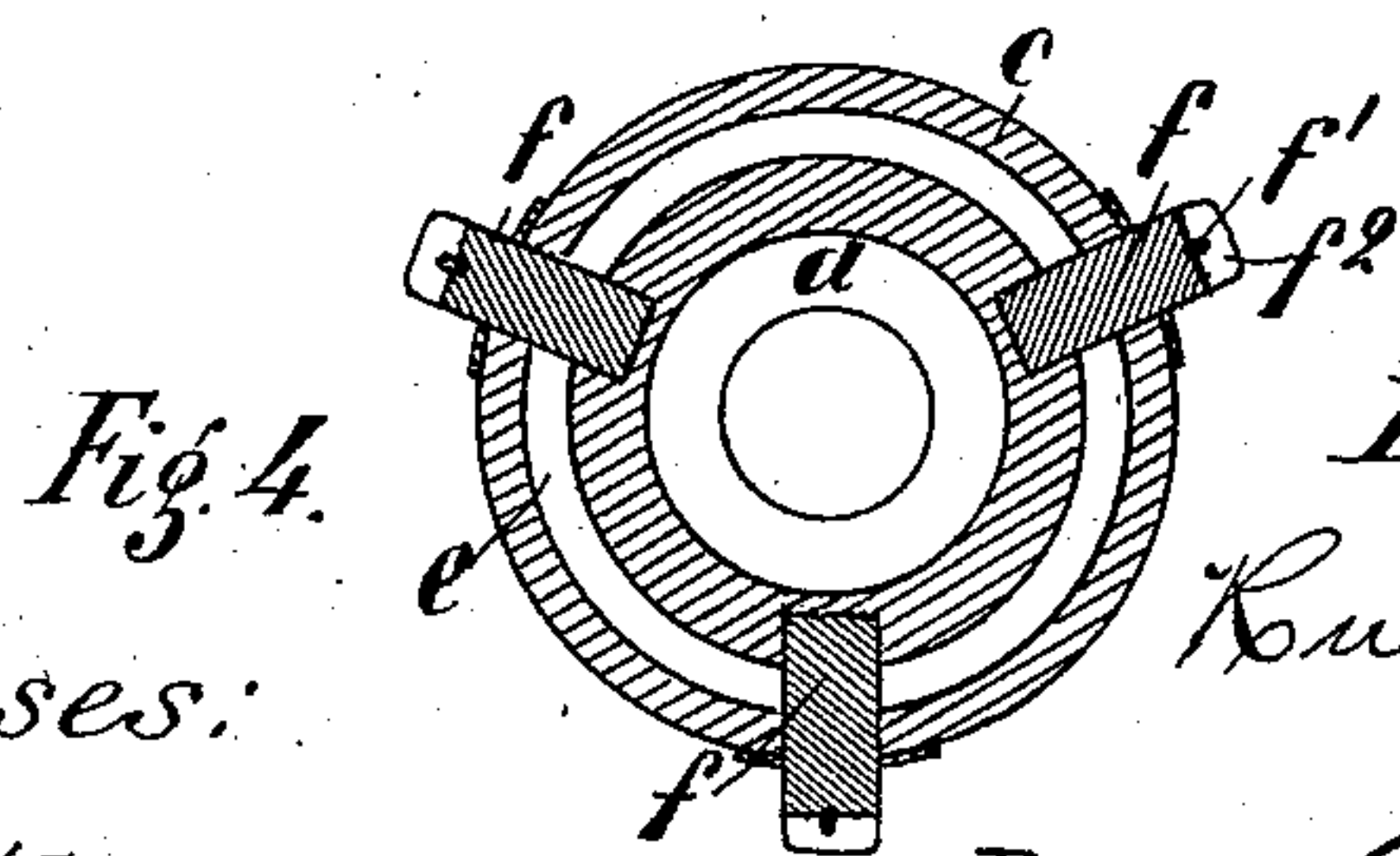
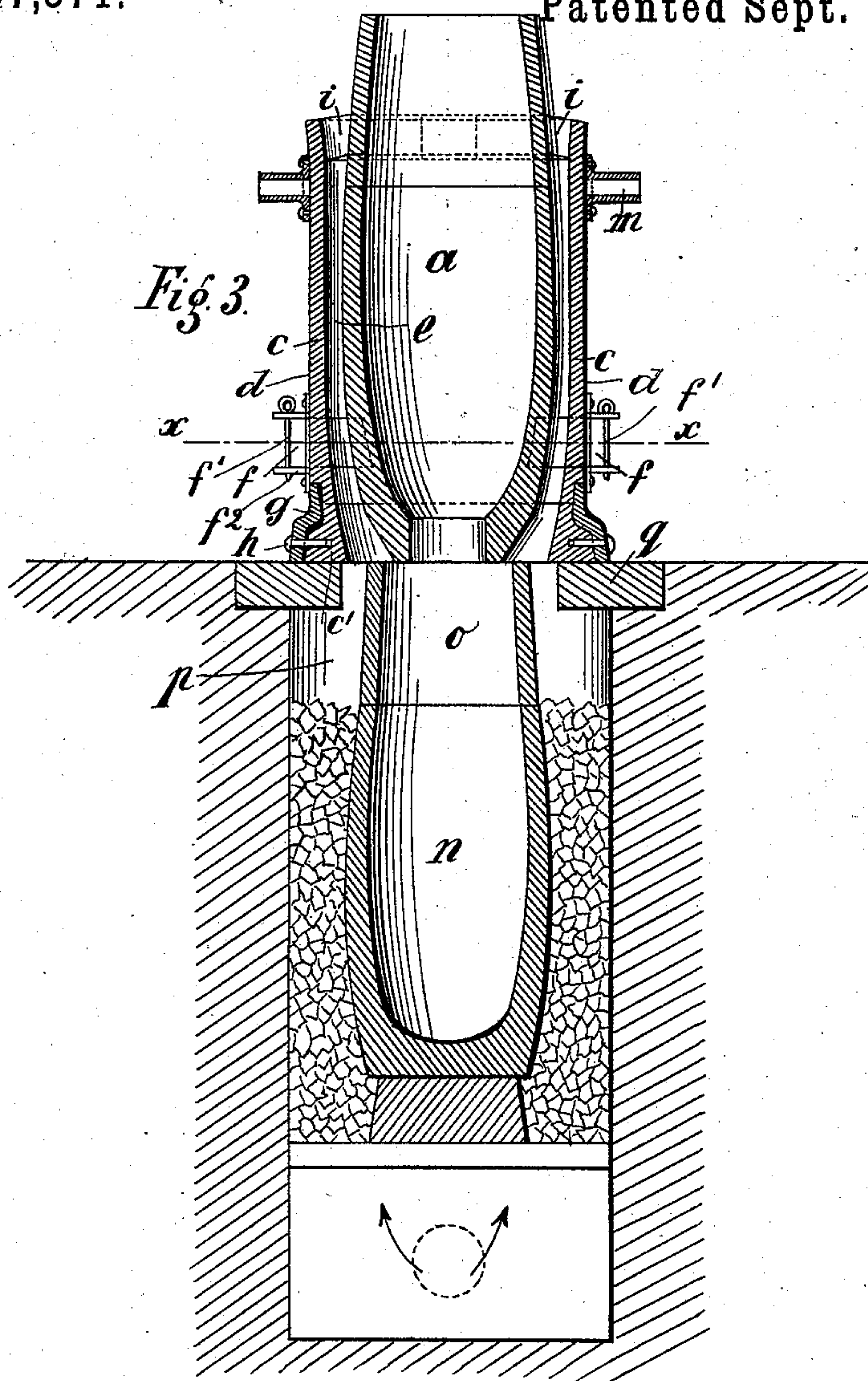
(No Model.)

2 Sheets—Sheet 2.

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BRASS SMELTING FURNACE.

No. 567,371.

Patented Sept. 8, 1896.



Witnesses:

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UNITED STATES PATENT OFFICE.

RUDOLF BAUMANN, OF SEEBACH, SWITZERLAND.

BRASS-SMELTING FURNACE.

SPECIFICATION forming part of Letters Patent No. 567,371, dated September 8, 1896.

Application filed January 4, 1896. Serial No. 574,382. (No model.) Patented in Switzerland February 18, 1895, No. 9,558, and in France February 18, 1895, No. 245,205.

To all whom it may concern:

Be it known that I, RUDOLF BAUMANN, a citizen of Switzerland, residing at Seebach, near Zurich, canton of Zurich, Republic of Switzerland, have invented a certain new and useful Improvement in Ajutages on Brass-Smelting Furnaces for Melting Brass Turnings; and I 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.

The invention has been patented in Switzerland, No. 9,558, dated February 18, 1895, and in France, No. 245,205, dated February 18, 1895.

My invention relates chiefly to the melting of brass turnings and borings or the like, but is also applicable to the melting of turnings, borings, filings, planings, and other similar fine scrap cut or machined from or composed of other similar metals or alloys.

The invention consists of a portable auxiliary heat intercepting and concentrating crucible, cap, or appliance placed over or in connection with the smelting-furnace. The appliance is so arranged that I obtain the full benefit of the heated gases from the furnace, together with considerable economy in fuel and very little gaseous loss of metal, the heat being capable of regulation so as not to exceed the temperature required to effect the proper melting of the metal.

In the drawings, Figure 1 is a vertical section of the melting appliance, while Fig. 2 is a plan view. Fig. 3 shows the cap in position on top of the furnace with which it is used, and Fig. 4 is a cross-section on line xx of Fig. 3.

The appliance consists of an inner separate and separable melting-chamber a , made of graphite or other suitable heat-resisting or refractory material. The outer casing c is surrounded for the greater part of its depth by a jacket d , of sheet or other metal, and the enlarged foot c' of the casing c is embraced by a curb-ring g , of cast-iron or other suitable material, secured to the foot c' by studs h . Between the interior circumference of the

outer casing c and the exterior of the chamber a there exists an annular space e , this being the space through which the heating-gases from the smelting-furnace pass. In order to preserve the chamber a in a position truly concentric with relation to the surrounding casing c , I furnish the casing c with three or more radial blocks f , of refractory material, which are passed through spaces in the side of the casing c , the ends abutting against the inner smelting-chamber a , which is thus maintained truly concentric. The blocks f are prevented from being displaced outward by retaining-studs f' , these studs f' passing through brackets f^2 , secured to the side of the casing and projecting outward. The annular space e at the top of the casing c is partially blocked by four segments i , spaces k for the passage of the gases being left between the respective segments. These segments i constitute a means for regulating the temperature to which the contents of the chamber a should be subjected. For example, by extending the segments so as to narrow the openings k the draft is diminished, while if the segments are reduced, so as to increase the size of the openings k , the draft is increased. The projections marked m on the casing c are trunnions, whereby the appliance may be slung or lifted from place to place.

n is the known main crucible, placed in the furnace p and provided with the prolongation o , and q is a plate laid on top of the furnace p , upon which plate the cap is placed.

It will be evident that the separate smelting-chamber a might be renewed from time to time without renewing the rest of the appliance.

In using my improved appliance it is first well heated and is then placed upon or in communication with the furnace and filled with brass turnings, for instance. The blast is then put on and the intensely-heated gases from the furnace pass through the annular space e , quickly raising the smelting-chamber to white heat or melting-temperature. The hot gases are intercepted and concentrated in the annular space e , so that the full amount of heat is given up, less fuel being therefore required in the furnace. The gases escape, as aforesaid, through the openings k . The

melted metal accumulates in the crucible or may be led to any suitable vessel.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In combination with a crucible-furnace, a crucible located therein an intercepting-crucible arranged over the escape-passage thereof, adapted to utilize the heat escaping from said furnace comprising an inner receptacle of graphite and the like and an inclosing shell with a free-draft space between it and the inner receptacle, said crucible being placed over the main crucible-furnace, substantially as described, to aline with the crucible thereof with the free-draft space

connecting with the space around the main crucible.

2. In combination with the main crucible-furnace, a crucible arranged therein an intercepting-crucible arranged over the escape-passage thereof, said crucible comprising an inner receptacle and an outer shell with a free-draft space between the same and the inner receptacle and the independently-removable segments in the said space, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

RUDOLF BAUMANN.

Witnesses:

HERMANN KIRCHHOFER,
H. LABHART.