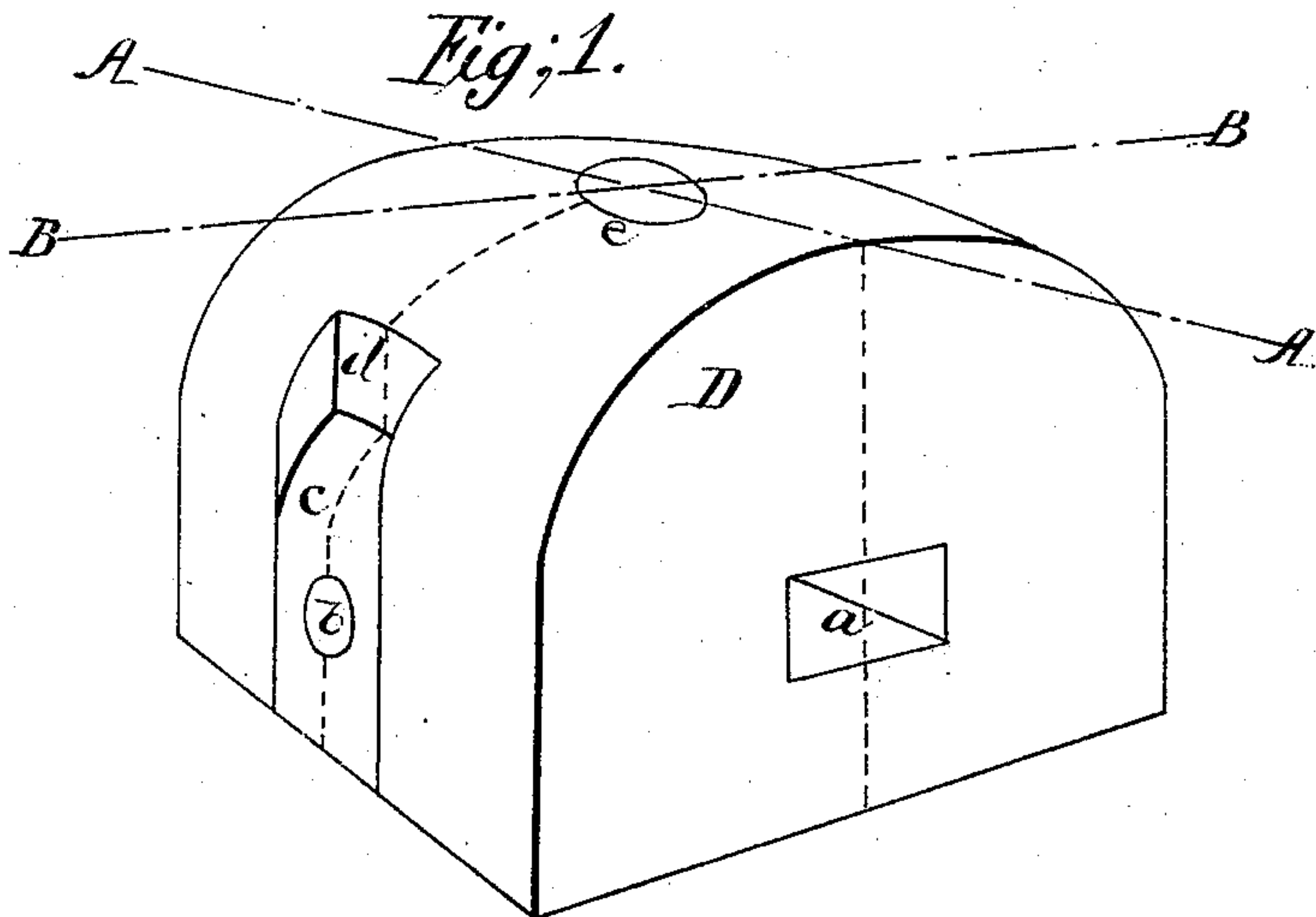


J. Roy.

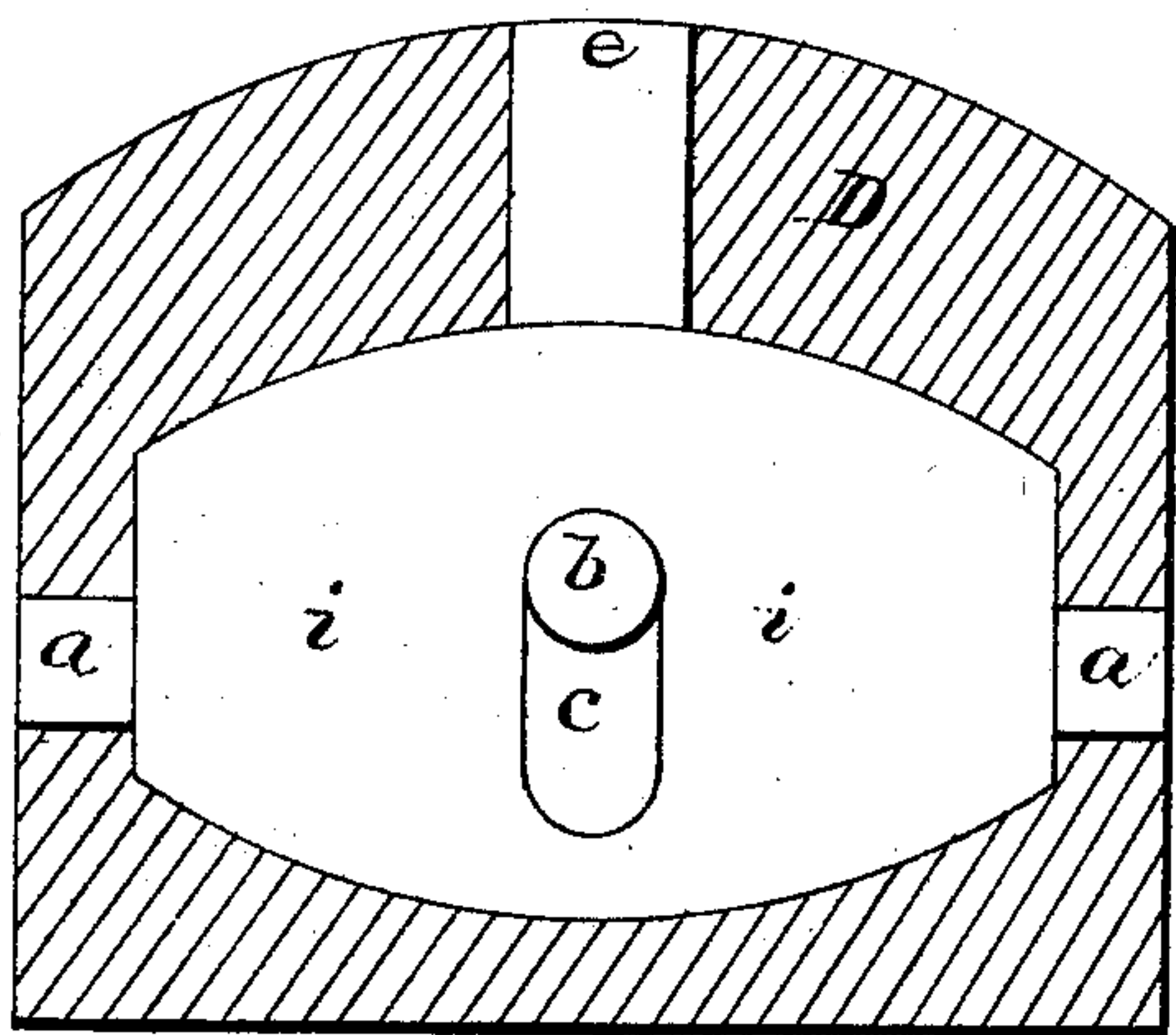
App's for Heating Metals.

N^o 86,456.

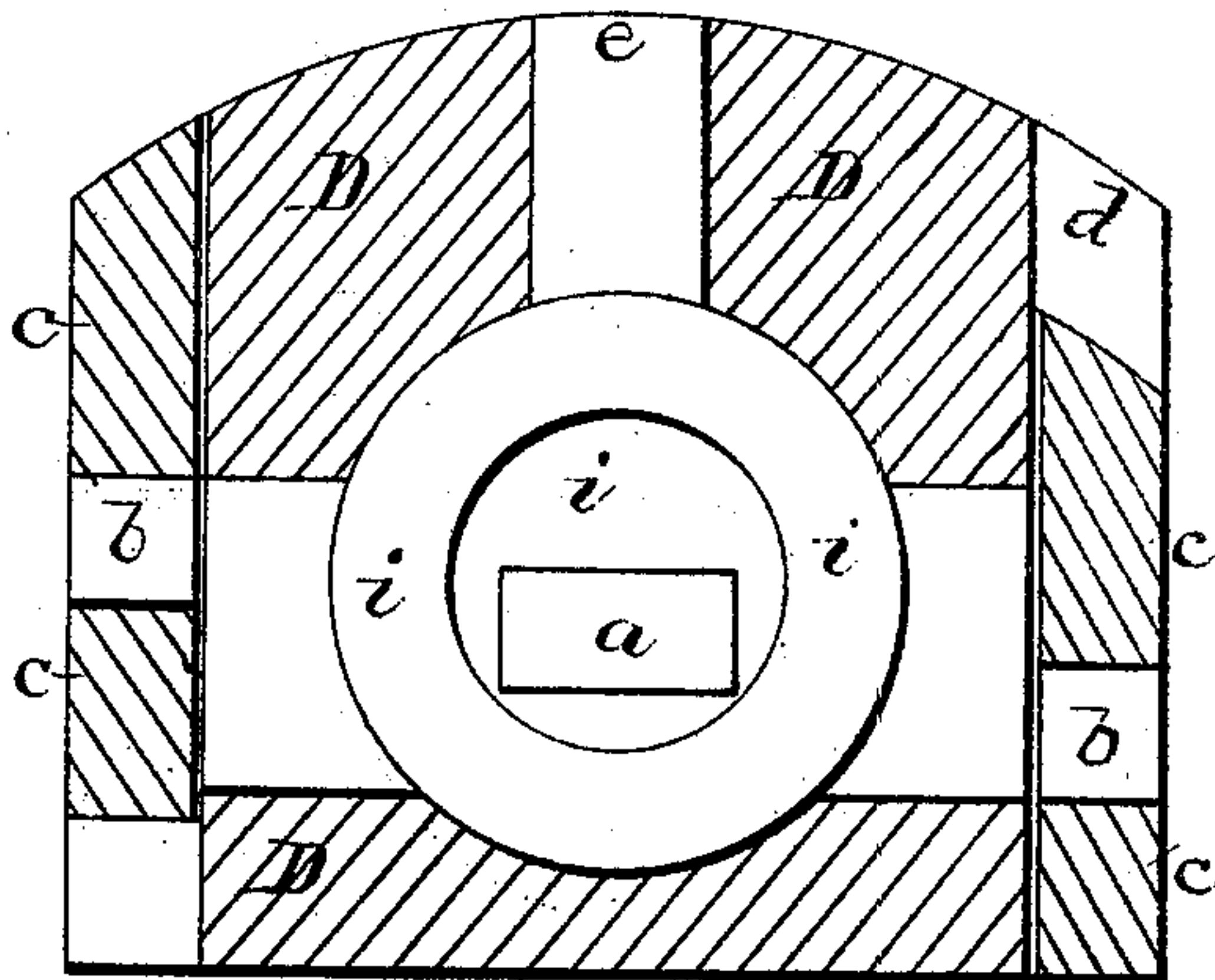
Patented Feb. 2, 1869.



Fig; 2.



Fig; 3.



Witnesses;
Carroll D. Wright.
A. F. Butterworth.

Inventor;
Joseph Roy



JOSEPH ROY, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 86,456, dated February 2, 1869; antedated January 30, 1869.

IMPROVED APPARATUS FOR HEATING METALS.

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, JOSEPH ROY, of Boston, in the county of Suffolk, in the State of Massachusetts, have invented a new and improved Mode of Heating Metals for forging and rolling-purposes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The object of my invention is to produce an apparatus by which metals can be heated continually, and to various degrees of heat, for the purpose of forging, or rolling, by the application of heat produced by any known means directly upon or above or below the rod or bar of metal to be forged or rolled, while the rod or bar is in motion.

The nature of my invention consists of a furnace, constructed with apertures in two sides opposed to each other, for the passage of a rod or bar of metal to be worked, and one or more apertures on the opposite sides for the conduction of heat to the interior of the furnace.

In the drawings annexed—

Figure 1 is a perspective view of the furnace.

a is the aperture for admitting a bar or rod of metal to be worked, there being a corresponding aperture on the opposite side, shown at *a* in fig. 2.

b is the aperture for the conduction of heat.

This aperture is arranged in a slide, *c*, which runs in the groove *d*.

A like arrangement is also made on the opposite side, shown in fig. 3, at *b c d*.

e is an opening at the top of the furnace for the escape of gas, smoke, &c.

Figure 2 represents a vertical section in line A A in fig. 1, showing the interior, *i*, of the furnace; also, the aperture *b* in slide *c*, with aperture raised.

Figure 3 is a transverse vertical section in line B B in fig. 1, showing aperture *b* for current of heat, one aperture above the axis of the aperture *a a*, while on the other side it is below the axis. Fig. 3 also shows

the interior, *i*, and aperture *a* for admitting bars or rods of metal.

D is the body of the furnace, constructed of any durable metal or compound.

The apertures *b b*, which may be inserted to any desirable number, are arranged in the slides C, moving in grooves *d*, so that a blaze of fire or current of heat, from any known method of producing heat, can be applied directly upon the axis of the apertures *a a*, or may be applied above or under the axis. This is of great importance, as it is necessary to be able, in heating metals to be worked, to vary the application of the heat in order to produce different degrees of the same. When it is desired to obtain the most intense heat in the metal, the current of heat must be applied below the metal, while to lessen the heat of the metal, the current must bear upon or above the same.

Another important feature of a furnace constructed in the manner described above is, that when the blaze or current of heat is projected through the apertures *b* upon a bar or rod of metal passing through apertures *a a*, thereby continuing the heat upon the metal undergoing the process of forging or rolling, thus securing a continued application of heat; also, the heat being intensified in the interior of the furnace, the furnace itself accumulates and retains a portion of the heat, and throws the same back upon the metal.

What I claim, therefore, as my invention, and desire to secure by Letters Patent, is—

In combination with the chamber *i*, the apertures *a a* for the admission of the bar to be heated, the elongated apertures *b* for the admission of the blast of hot air or flame, the slides *c*, having apertures *b*, and aperture *e*, all arranged and operating, relatively to each other, substantially as described.

JOSEPH ROY.

Witnesses:

CARROLL D. WRIGHT,
J. E. CARPENTER.