

(No Model.)

H. JEFFREY.
TUBE WELDING FURNACE.

No. 412,187.

Patented Oct. 1, 1889.

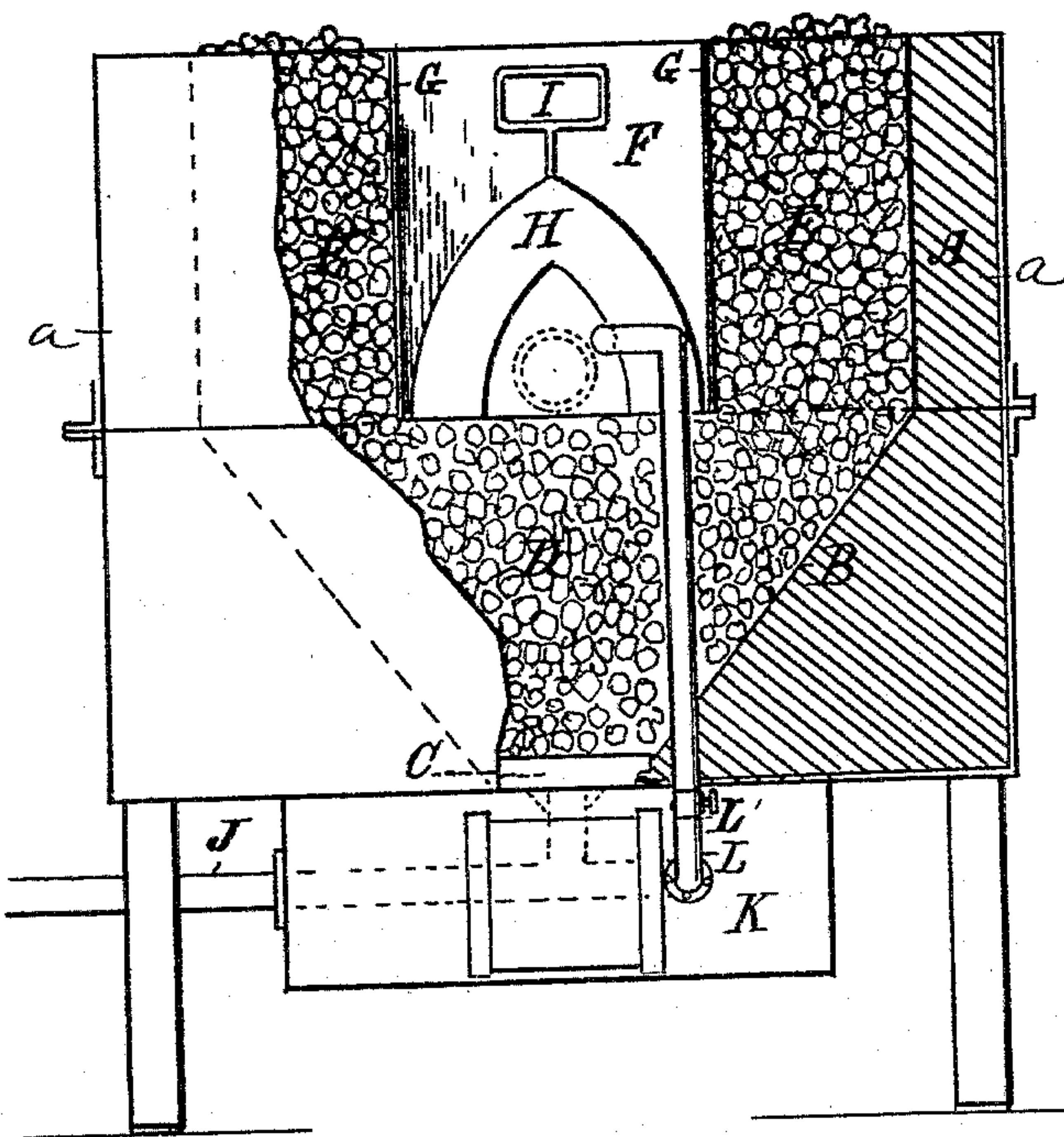


Fig. I.

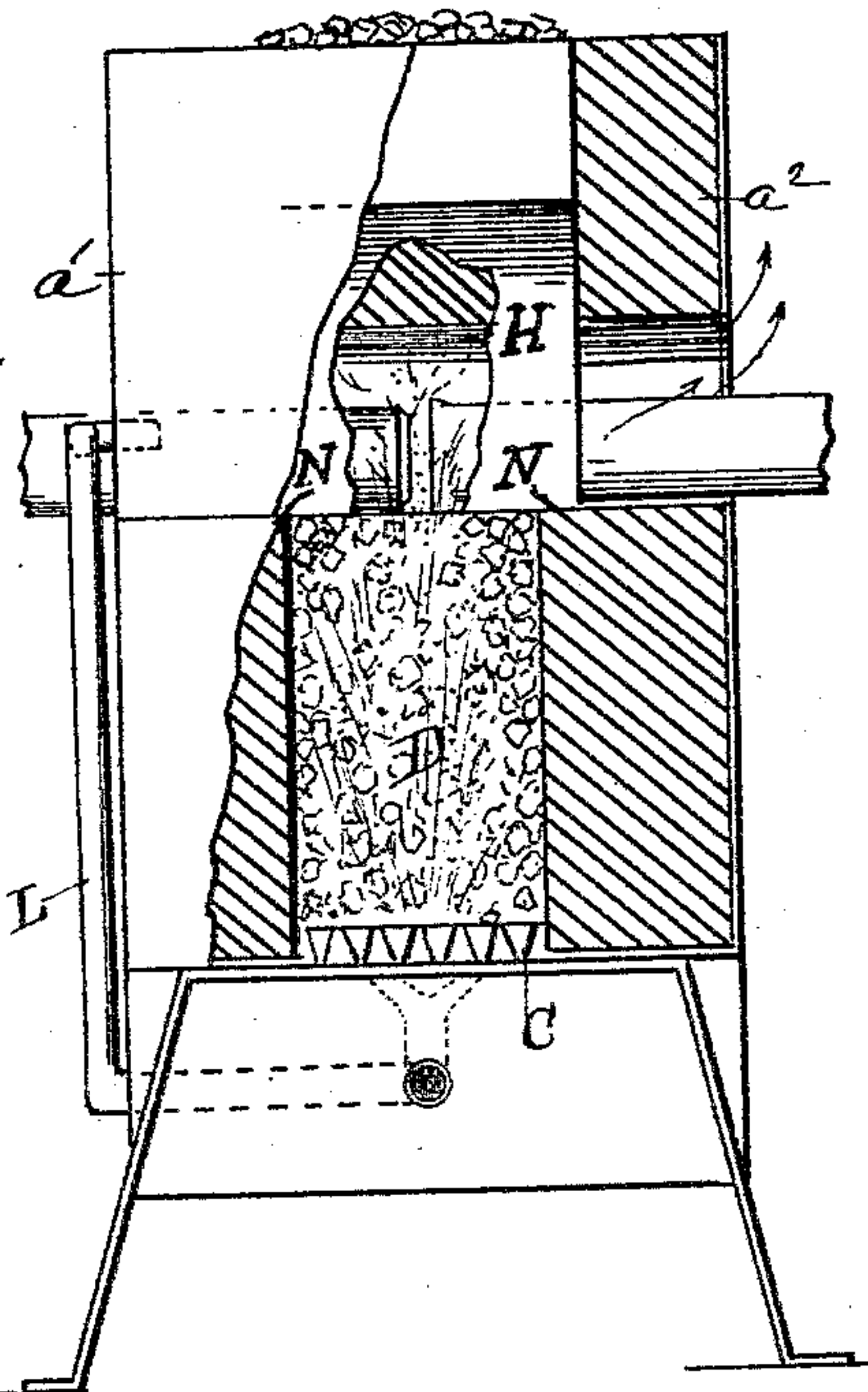


Fig. II.

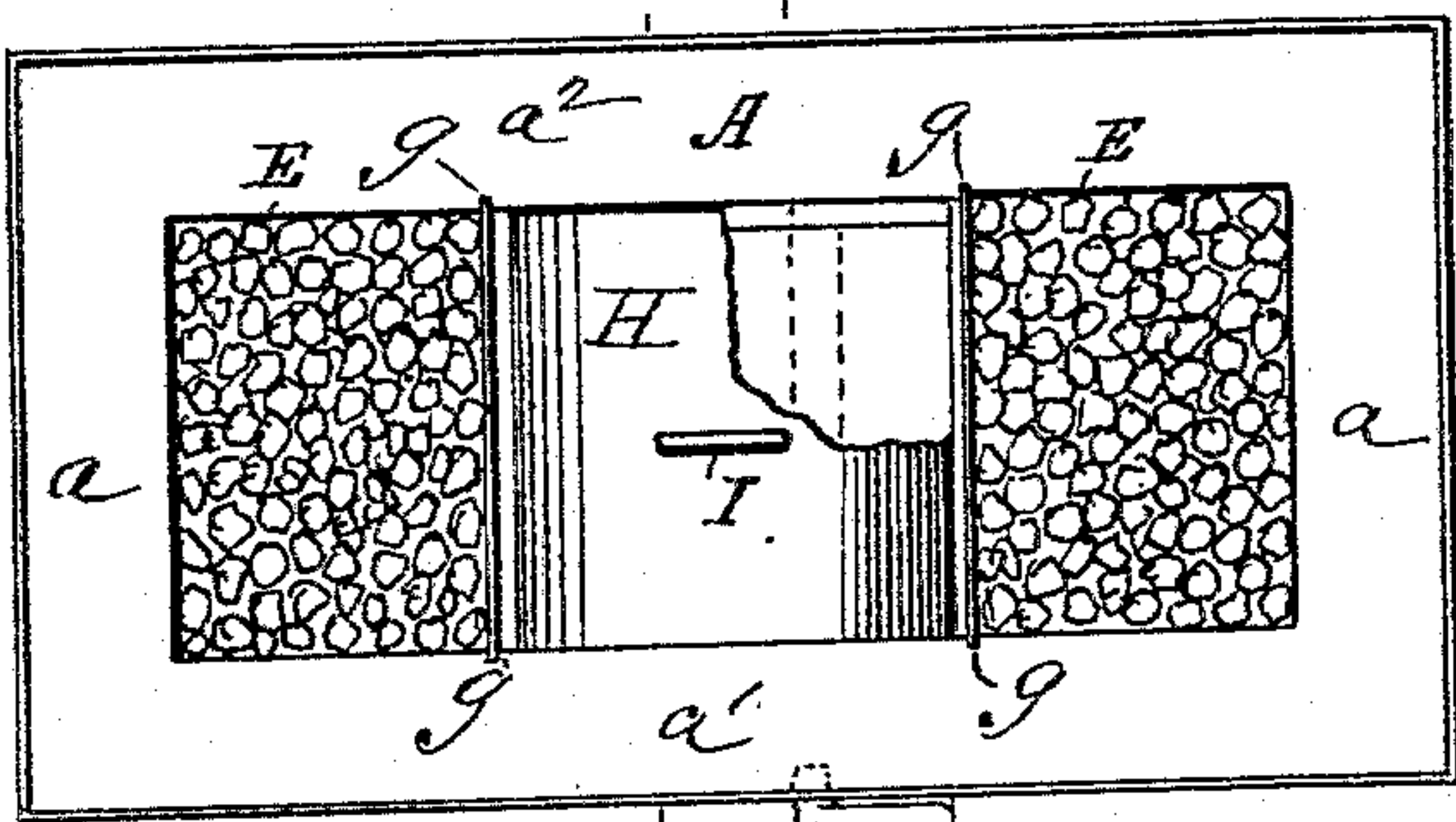


Fig. III.

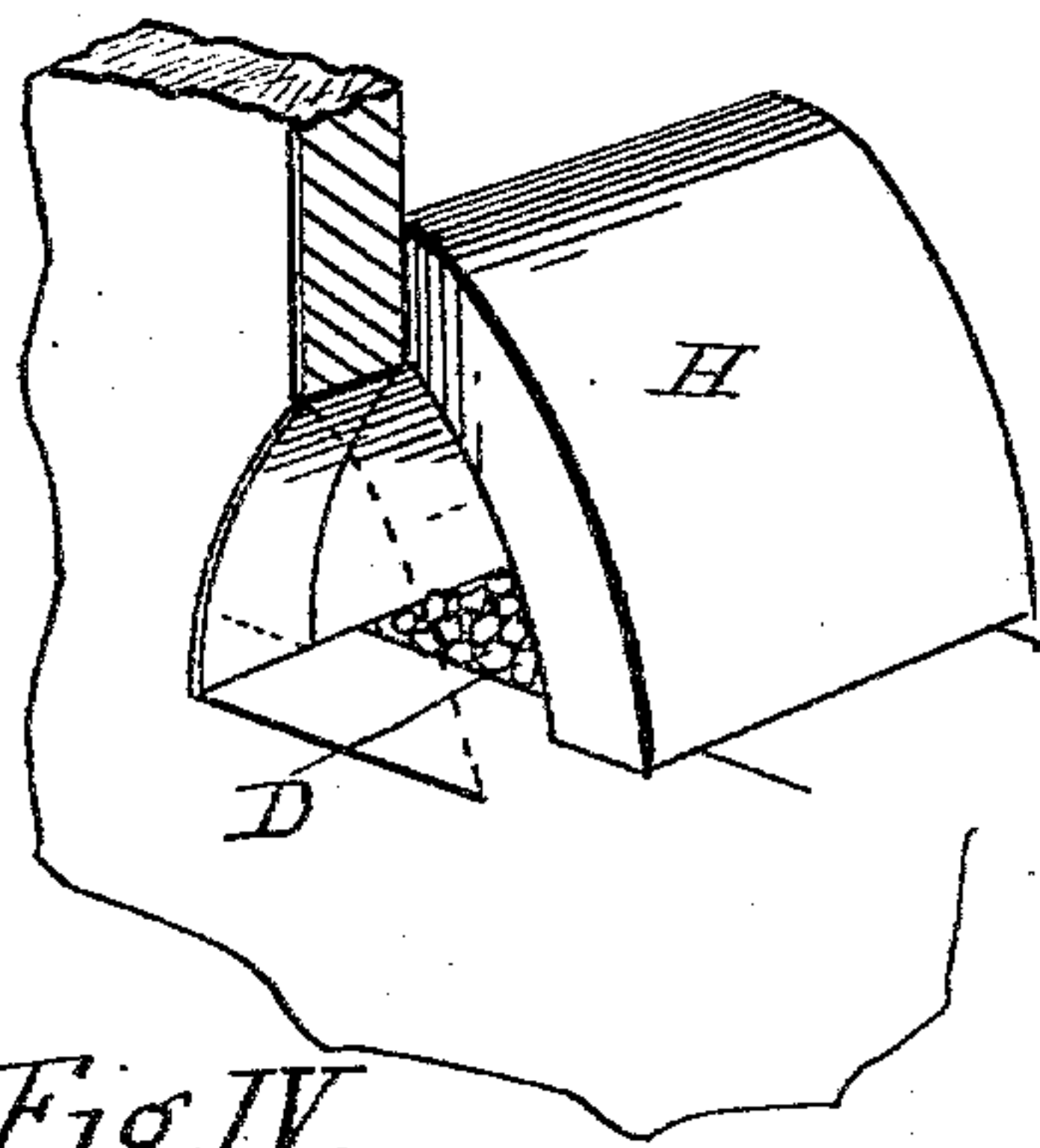


Fig. IV.

WITNESSES:

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UNITED STATES PATENT OFFICE.

HARRY JEFFREY, OF LUDLOW, KENTUCKY, ASSIGNOR OF ONE-HALF TO
FRED. HOEFFLIE, OF MERIDIAN, MISSISSIPPI.

TUBE-WELDING FURNACE.

SPECIFICATION forming part of Letters Patent No. 412,187, dated October 1, 1889.

Application filed August 8, 1887. Serial No. 246,438. (No model.)

To all whom it may concern:

Be it known that I, HARRY JEFFREY, of Ludlow, in the county of Kenton and State of Kentucky, have invented a new and useful
5 Improvement in Tube-Welding Furnaces, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure I is a front view of my furnace,
10 partly in section. Fig. II is an end or side view of the same; Fig. III, top view, and Fig. IV perspective view of the hood.

The object of this invention is to construct
15 a furnace capable of producing an extra amount of heat for rapidly heating metal bars, tubes, and other articles to be welded; and it consists of a structure made, preferably, of fire-brick, wherein the lower part of the interior is V-shaped in form, having two verti-
20 cal chambers, (one on each side of the central fire-chamber space,) in which the mass of coal is to be placed, the central space being provided with an inclined U-shaped hood and being provided beneath a V-shaped coal-space
25 with a pipe which connects with a blast-fan, so that when air is forced through the pipe it will pass up through the mass of the coal centrally and escape from the coal at a point beneath the hood, all of which will now be fully
30 set forth in detail.

A represents the outer wall of the structure, which is composed of the side walls a , Fig. III, and the front and rear walls a' a^2 , respectively, and is preferably made rectangular in hori-
35 zontal section, the base of the chamber within being inclined at each end at an angle of about forty-five degrees, as shown at B. These lines B converge toward the center, a grate C being placed at their base. The walls a' a^2
40 are provided with rectangular instanding ledges or shoulders N flush with the tops of the inclines B. The chamber D thus formed is to receive the coal. Vertical chutes E E extend up from the fire-chamber D on each
45 side of the central space F. The inner walls G G of the chutes are slightly inclined, so as to enable the hood H, which is placed in the space F, to be readily withdrawn. The chute-plates G are slid in grooves g , Fig. III, into po-
50 sition, the said grooves retaining them in

place. The hood H is preferably made of fire-brick, although it may be made of any other suitable material, and is provided with a handle I on top. This hood is designed to be placed in the space F directly over the
55 hole in or top of the chamber D. The pipe J from the blast-fan passes through the ash-chamber K to the grate C, so that the force of the blast will be exerted upward through the mass of the coal to the region of the hood,
60 causing the superheated flame from the burning coal to rise beneath the hood, where it is confined, in a measure, thereby.

As the action of the blast generates a large amount of gas, it is desirable that the work-
65 men shall be protected from it as much as possible, and in order to do this I have provided a pipe L, the lower end of which is connected with the blast-pipe J, and the upper end of which extends to the hood, so that when
70 the blast is forced through the pipe J a portion of the air will be directed through the pipe L to the hood and blow the gases out of the hood. The pipe L has a valve L' , so as to regulate the draft, as desired. If desired, one
75 or both sides of this hood may be partially closed by means of suitable doors, so as to still further confine the direct action of the blast within the hood, and thus increase the temperature. The top of the chutes E may
80 or may not be closed; but in either event the blast from the pipe J will pass through the coal at the point of least resistance, which will be the point covered by the hood, and as the bottoms B are inclined it is obvious that
85 the coal placed in the chute E will move down of its own gravity, and thus automatically feed coal as it is desired.

The advantage in this form of furnace is that the article to be welded, which is placed
90 in the furnace below the hood, does not come in contact with the coal, and it is not necessary in heating the metal to constantly stir up the coal in order to insure a welding heat. The lower edges of the sides of the hood H
95 rest upon the ledges or shoulders N, which also widen the bearing-surfaces upon which the tubes to be welded rest.

What I claim as new is—

In a tube-welding furnace, the combination 100

of a furnace-chamber having a V-shaped bottom, the grate C, plates G, forming the inner walls of said chutes E, the removable V-shaped hood H, the blast-pipe J, arranged under the
5 grate, and the branch air-pipe L, opening into the hood H, said branch pipe having a valve L', substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand, this 17th day of June, 1887, in the presence of witnesses.

HARRY JEFFREY.

Witnesses:

ROBT. S. MILLAR,
ROBERT RAMSEY.