

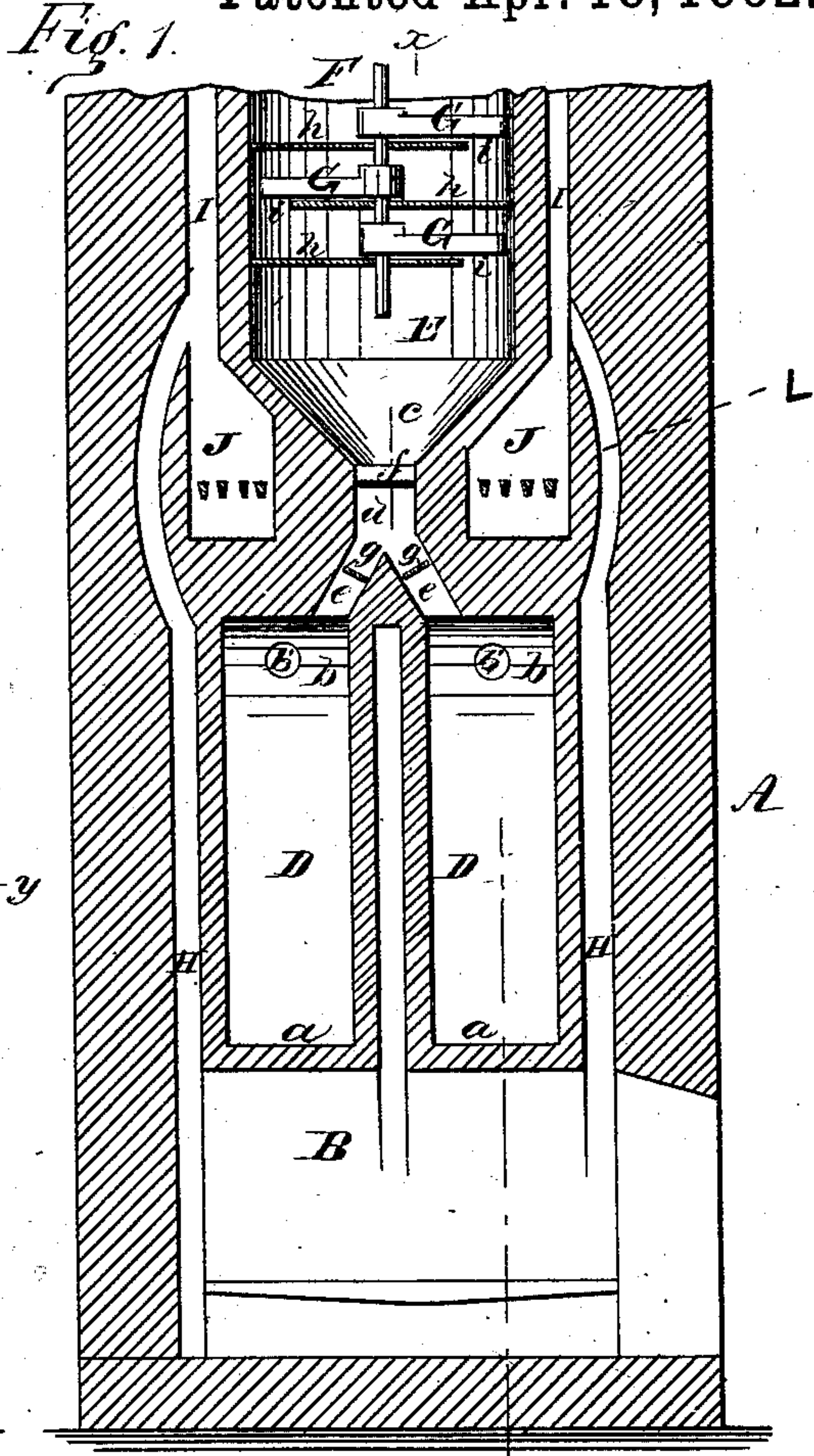
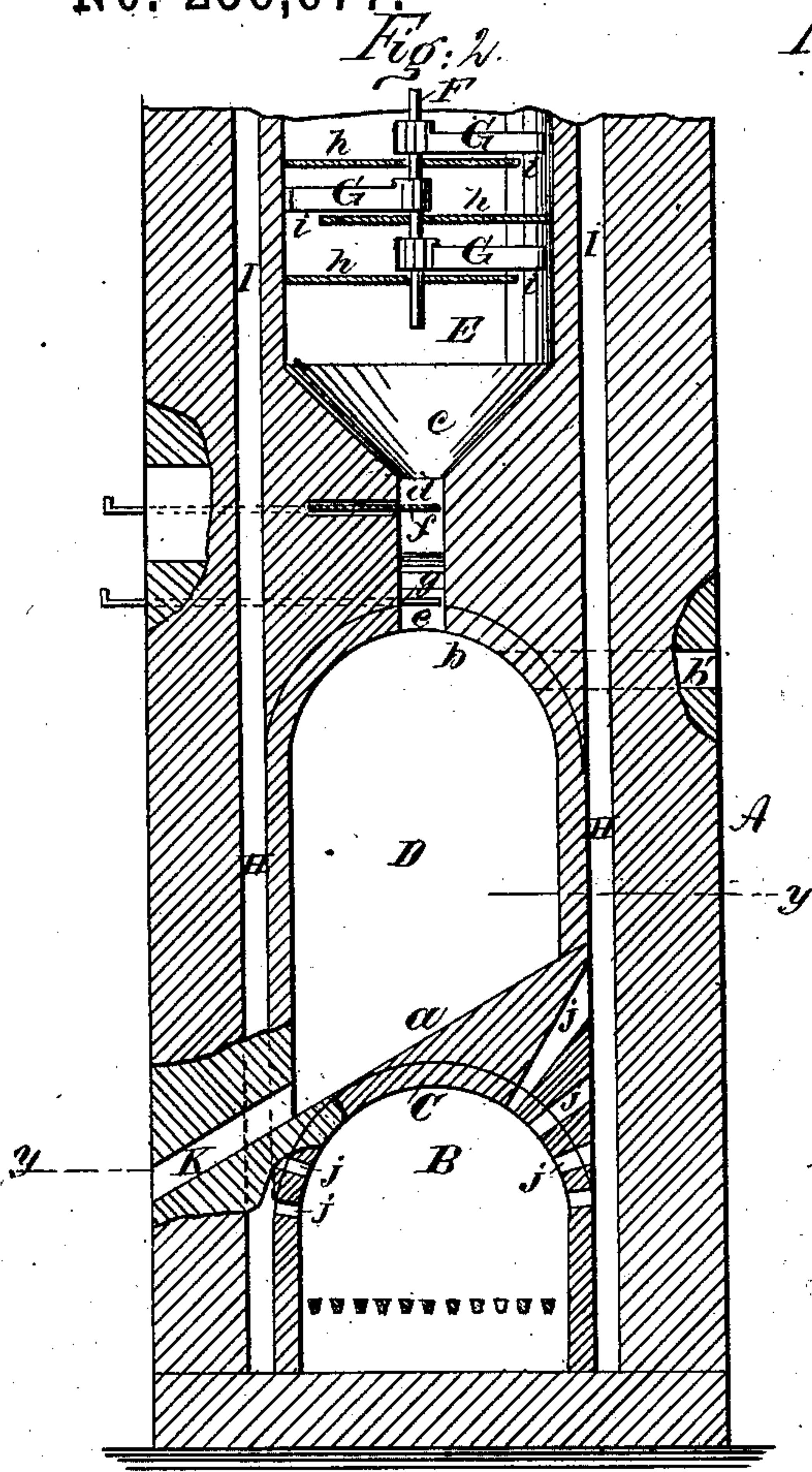
(No Model.)

E. G. HALL & M. D. HASKINS

FURNACE FOR TREATING THE ORES OF MERCURY.

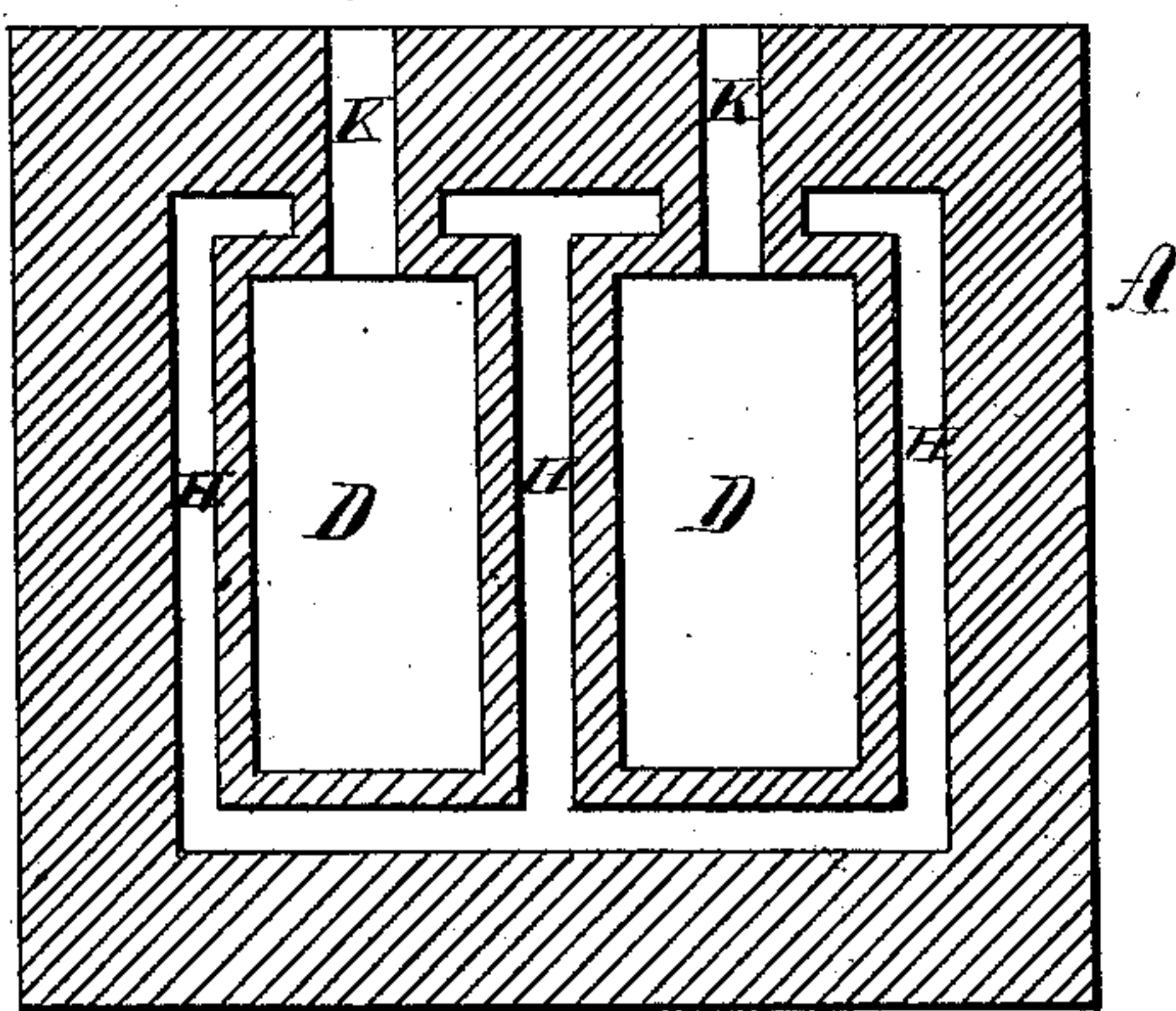
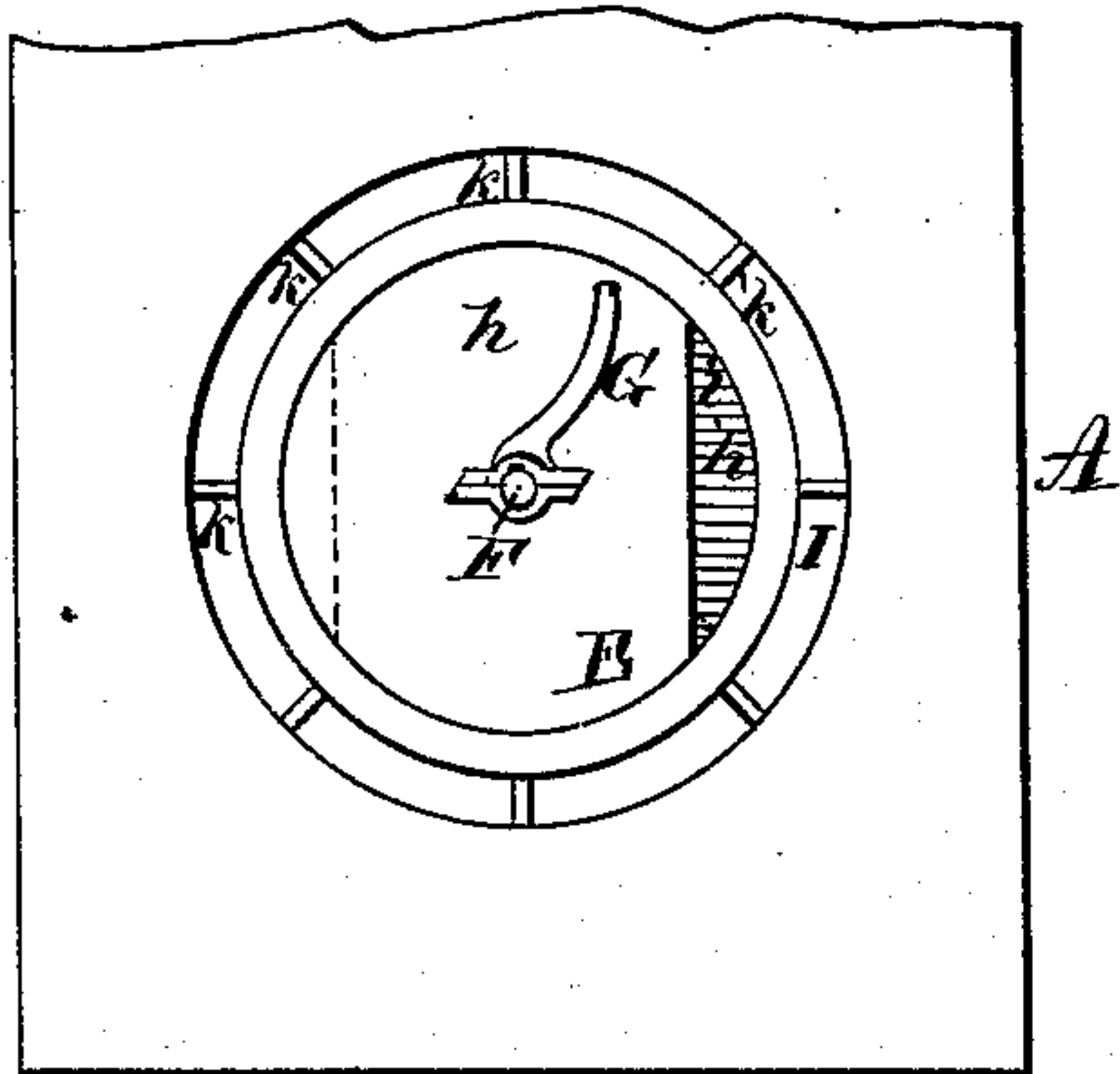
No. 256,677.

Patented Apr. 18, 1882.



*Fig. 3.*

*Fig. 4.*

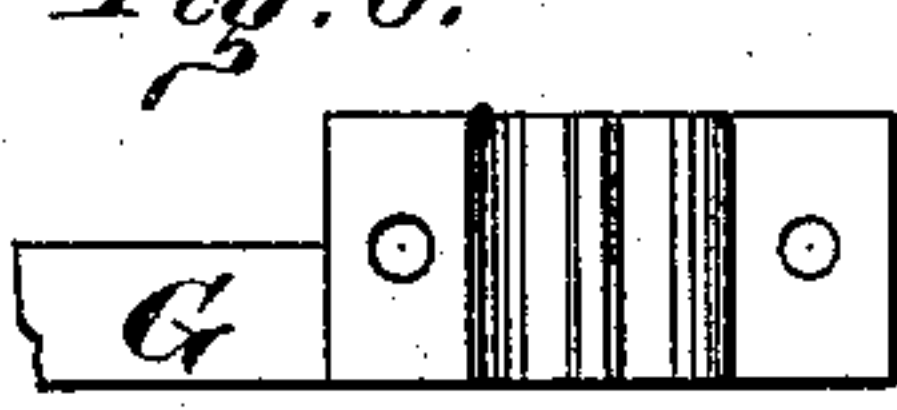


WITNESSES:

*Fig. 5.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

EDWARD G. HALL, OF HEALDSBURG, AND MYRON D. HASKINS, OF  
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## FURNACE FOR TREATING THE ORES OF MERCURY.

SPECIFICATION forming part of Letters Patent No. 256,677, dated April 18, 1882.

Application filed July 23, 1881. (No model.)

*To all whom it may concern:*

Be it known that we, EDWARD G. HALL, of Healdsburg, in the county of Sonoma and State of California, and MYRON D. HASKINS, of Guerneville, in the county of Sonoma and State of California, have invented a new and Improved Furnace for Treating the Ores of Mercury, of which the following is a specification.

Figure 1 is a vertical section of our improved furnace. Fig. 2 is a vertical section on line  $x$  in Fig. 1. Fig. 3 is a plan view. Fig. 4 is a horizontal section on line  $yy$  in Fig. 2. Figs. 5, 6, and 7 are detail views of the cam-shaft and cam.

Similar letters of reference indicate corresponding parts.

Our invention relates to improvements in furnaces for treating the ores of mercury; and it consists in a novel construction and arrangement of parts, as hereinafter described, and pointed out in the claims.

Referring to the drawings, A is the outer wall of the furnace, within which is formed a fire-place, B, having an arched top, C.

Above the top of the fire-place B there are two similar chambers, D, having inclined floors  $a$  and arched tops  $b$ . Passages  $b'$  lead from these chambers to the condensers.

Above the chambers D there is a cylindrical chamber, E, having a funnel-shaped bottom,  $c$ , from which a chute,  $d$ , leads to the pipes  $e$ , which communicate with the chambers D. In the chute  $d$  there is a valve,  $f$ , and the pipes  $e$  are provided with valves  $g$ .

In the cylindrical chamber E there are diaphragms  $h$ , which extend from one side of the chamber nearly to the opposite side, leaving spaces  $i$  between their edges and the sides of the chamber. These spaces are arranged in alternation, so that the ore must traverse the entire width of the diaphragm before falling to the next below.

A vertical shaft, F, is journaled centrally in the chamber E, and is slotted to receive splines in the boss or hubs of the cams G, said hubs being divided so that they may be readily bolted together on the shaft. An arm is placed in each space between the diaphragms.

A flue, H, surrounds the chambers D, and communicates with an annular space or flue, I, that surrounds the chamber E. A number of passages,  $j$ , lead from the fire-place B to the flue H for leading away the products of combustion, and auxiliary furnaces J are arranged in the space between the contracted portion of the chamber E and the annular wall L, which projects from the upper surface of the chambers D and surrounds the contracted part of the chamber E, for imparting heat to the said chamber in addition to that received from the fire-place B through the flue H. The chamber E is stayed by a number of fire-bricks,  $k$ , placed in the annular space I. These bricks also serve the purpose of equalizing and distributing the ascending heat generated in the fire-places.

Chutes K, having suitable stop-valves, extend from the lower portion of the floor of the chambers D through the wall A for discharging the depleted ore.

The manner of using our improved furnace is as follows: The chamber E is filled with ore and lime in the usual way and the cams G are rotated. As soon as the ore becomes partly roasted it is discharged into one of the chambers D by opening the valve  $f$  and one of the valves  $g$ . In its fall it becomes separated and broken up, so that the mercury is easily liberated when subjected to heat in the chamber D, and is driven off and conveyed through the passage  $b'$  to the condensing-chamber. The chambers D are each made sufficiently large to contain two full charges from the chamber E. By means of this arrangement the ore can be subjected to an intense heat in the chambers D for several hours longer than the charge in the chamber E. The chambers D are filled from the chamber E in alternation, and when the mercury is thoroughly driven off the depleted ore is removed through the chutes K.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In a furnace for treating ores of mercury, the combination, with the chambers D, provided with inclined floors and arched tops, of

the chamber E, having a funnel-shaped bottom arranged above the said chambers, and provided with the diaphragms *h*, projecting from opposite sides of the chamber nearly  
5 across the same, and the revolving arms G, and communicating with the said chamber at its bottom, substantially as and for the purpose set forth.

2. In a furnace for treating ores of mercury,  
10 the combination, with the chamber E, having a funnel-shaped bottom, and the fire-place B, of the chambers D, having inclined floors, and communicating with the said chamber, and arranged between the said chamber and fire-place,  
15 substantially as and for the purpose set forth.

3. In a furnace for treating ores of mercury,

the combination, with the chambers D, the annular wall L, and the chamber E; having its lower part contracted, of the furnaces J, arranged in the space formed by the said annular wall and the lower contracted part of the chamber, substantially as and for the purpose described. 20

4. The annular space I, surrounding the chamber E, and connected with the flues H  
25 and furnaces J, as and for the purpose herein shown and described.

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MYRON DOUGLAS HASKINS.

Witnesses:

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