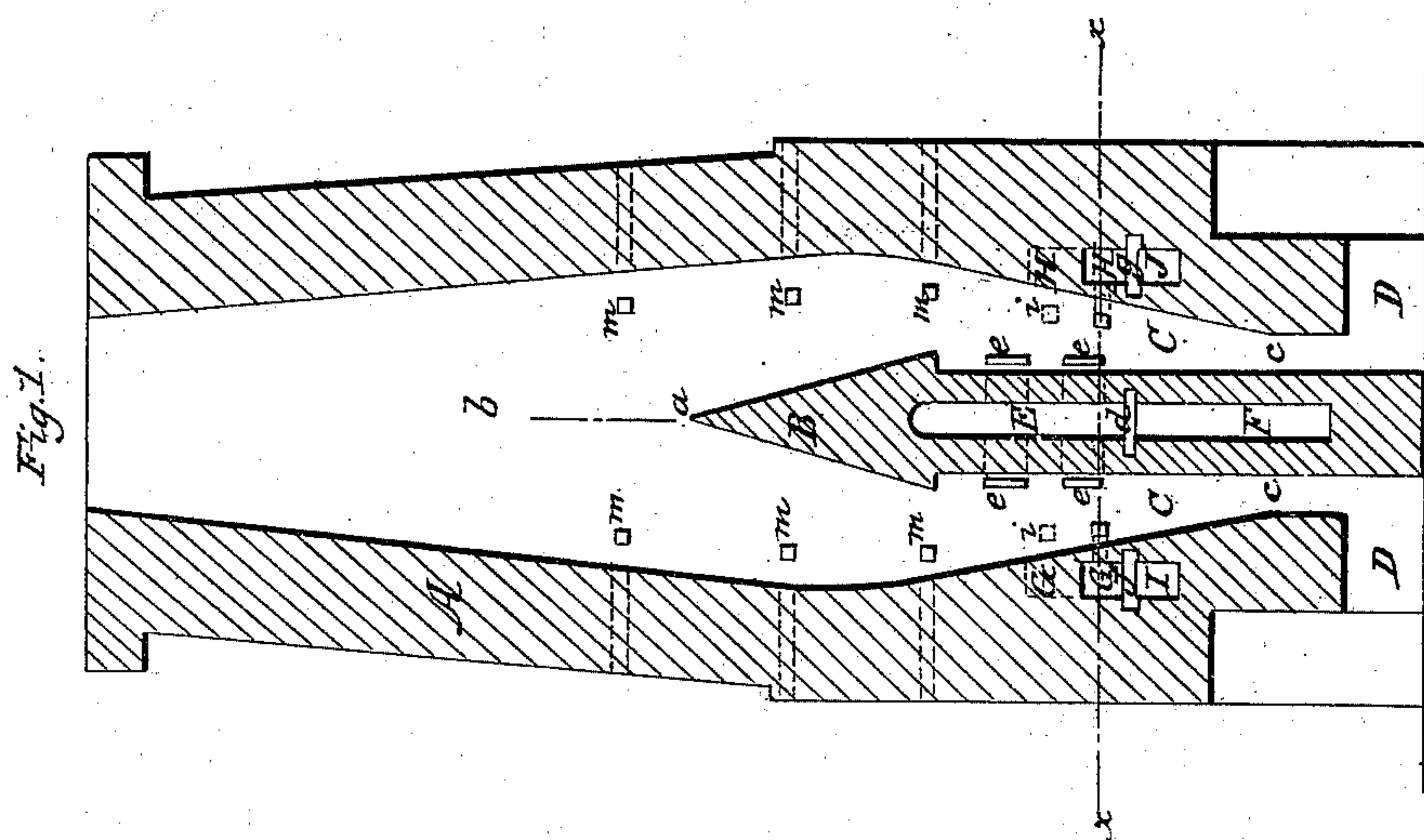
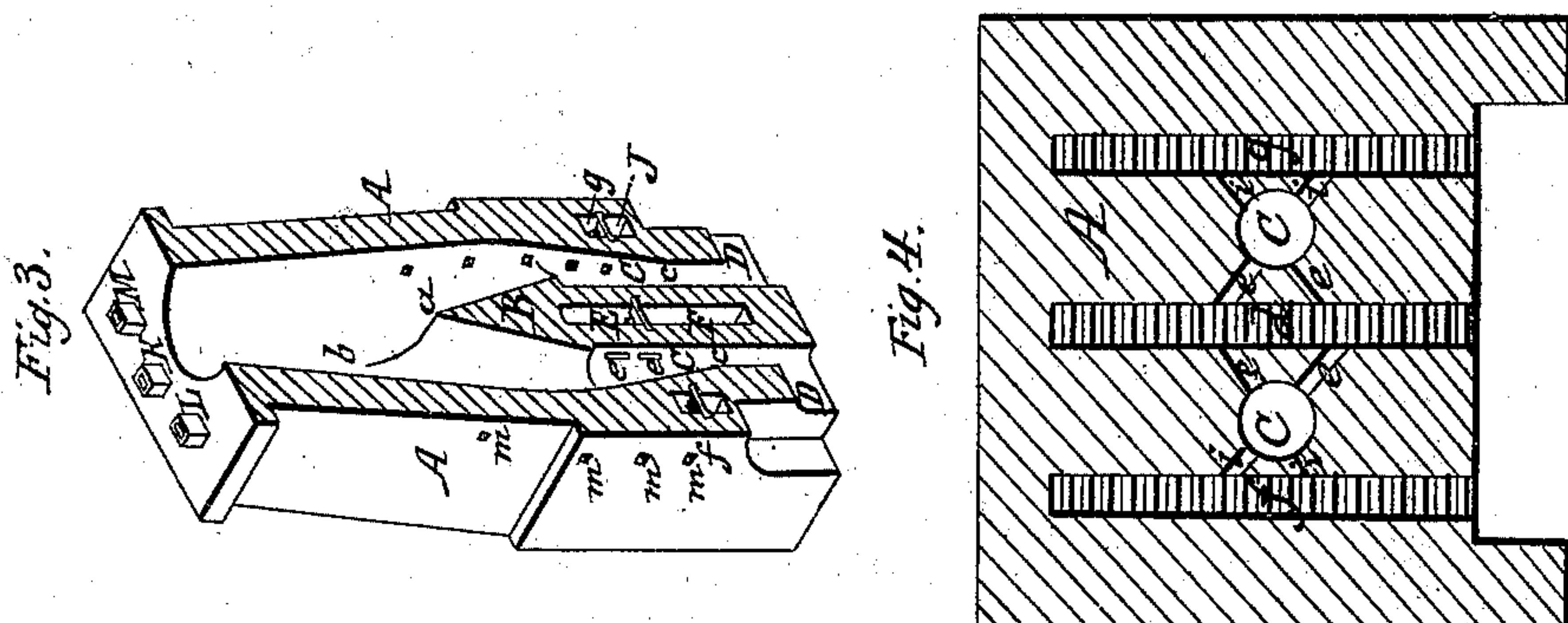
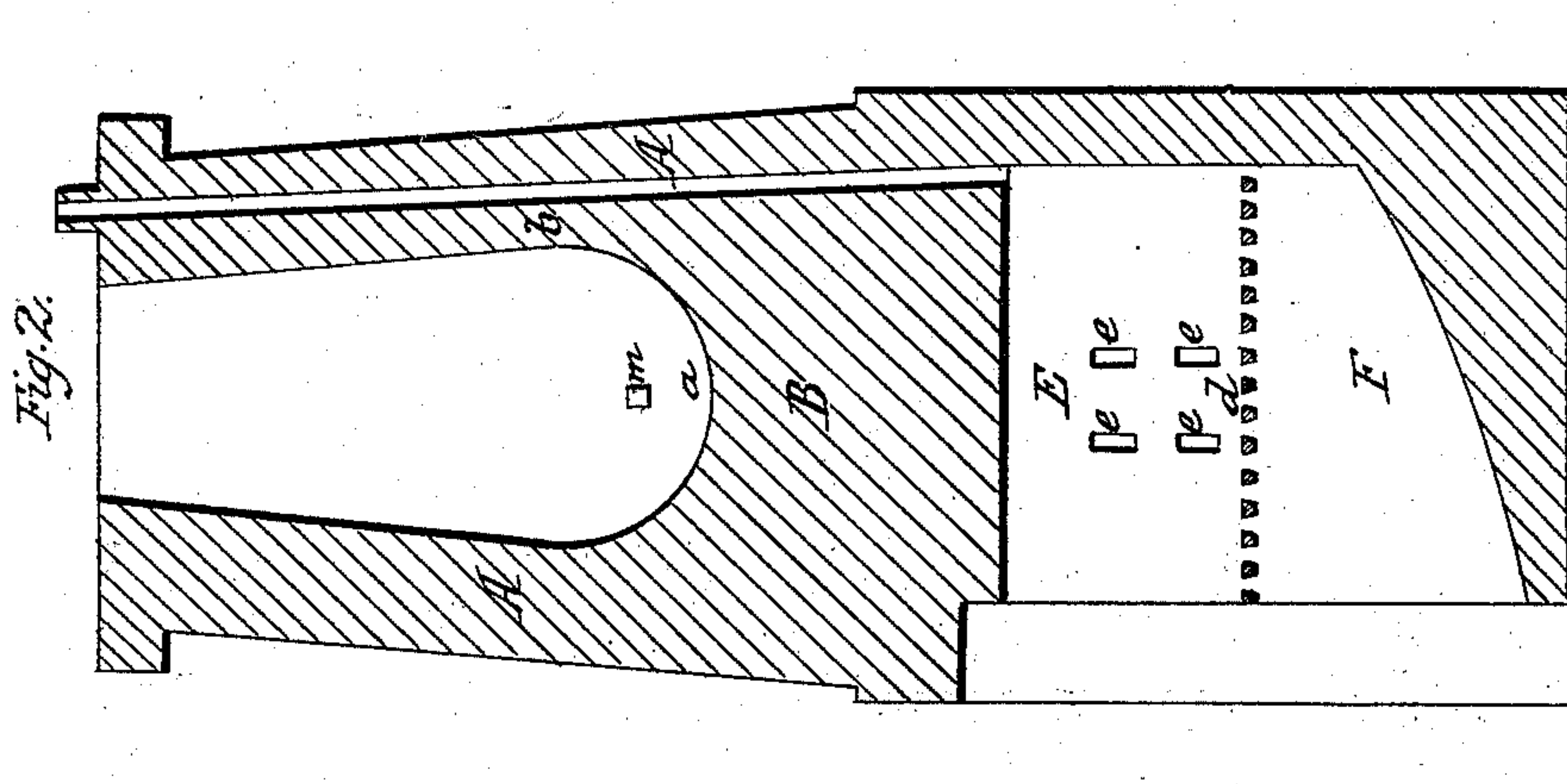


W. ROBINSON.

Lime Kiln.

No. 17,056.

Patented April 14, 1857.



UNITED STATES PATENT OFFICE.

WILLIAM ROBINSON, OF BALTIMORE, MARYLAND.

LIMEKILN.

Specification of Letters Patent No. 17,056, dated April 14, 1857.

To all whom it may concern:

Be it known that I, WILLIAM ROBINSON, of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Limekilns; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, represents a vertical central section. Fig. 2, represents a vertical section taken through the kiln, at right angles to that shown in Fig. 1. Fig. 3, represents in perspective, and on a reduced scale, a section similar to that in Fig. 1. Fig. 4, represents a top plan taken at the line x, x , of Fig. 1, supposing the kiln to be cut through horizontally at that point.

Similar letters of reference, where they occur in the several figures, denote like parts of the kiln in all the figures.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

The stack A, is built in a permanent manner, and lined with fire brick—the kiln being intended for a perpetual one, in which the operation of burning may be continued at pleasure. The bosh, or interior of the stack, in which the lime stone is placed, to be burned, is of the form represented in the drawings, and divided by a cuniform partition B, the center a (Fig. 3) of which, is lower than the sides b , which are united to the stack, the top edge forming an inverted arc. The swell of the bosh, from the top of the stack downward is shown in Fig. 1, and it is divided by the partition B, so that at a point below the lowest part of said partition, the bosh is in two separate chambers, which contract in area down to the points c, c , near the bottom of the stack.

The lime stone is fed in at the top of the stack, which expanding in area from that point, allows said stone to freely settle down toward the fires, where it is checked until sufficiently burned and then it drops as lime to the bottom of the chambers C, C, and is drawn through the openings D D. Over the mouths of the openings D, as well as over the fire doors, are turned in the stack,

arches, so that the walls of the stack shall project over these points.

E, is a central fire chamber, provided with a long grate d . The crown of this fire chamber is in the lower part or base of the wedge-shaped partition, and from this fire chamber, any suitable number of fire flues e , may lead immediately into the burning chambers C, C, so as to meet the lime stone at various points, on that side of the respective chambers.

F, is the ash pit for the fire chamber E.

In the walls of the stack, and on each side of the central fire chamber E, are placed other fire chambers G, H, furnished respectively with long grates f, g , and ash pits I, J. From these fire chambers, which may extend upward any suitable distance in the walls of the stack, though not so high as the central fire chamber E, fire flues i lead into the burning chambers C C. I have represented in full, but one set of these flues (i), but have shown by dotted lines in Fig. 1, additional ones—their number depending on the size, and capacity of the kiln. K, is the flue, for the central fire chamber, and L, M, respectively the flues for the auxiliary or side fires G H.

m , are the usual "peep holes," for examining the burning of the lime stone.

By this arrangement of triple fires, in connection with the wedge shaped partition dividing the bosh into two parts, much more uniform burning of the stone is had, and should one portion of the kiln burn faster or slower than other portions, the fires may be slackened or increased, to suit such contingency, and thus every part of the stone uniformly subjected to the fire.

I am aware that in the kiln patented to Levi Averill, on the 19th August, 1856, the mass of stone in the kiln was divided into two parts, by a partition similar to that shown by me, so as to be able to bring lesser quantities to the concentrated heat of the fire. But in this kiln a single central fire was used, which was found insufficient for the purpose, as the proper degree of heat could not be carried around to points opposite the fire, without too much heat more immediately near the fire or furnace. By my arrangement I not only equalize the burning throughout the kiln, but expedite

the operation, and produce a better quality of lime, it being more evenly burned.

Having thus fully described the nature and object of my invention, what I claim therein as new and desire to secure by Letters Patent is—

In connection with the central fire, and partition B, the arrangement of the side, or

auxiliary fires G, H, for the purpose of more equally introducing the heat into the stack, and promoting more uniform burning, as herein set forth and explained.

WILLIAM ROBINSON.

Witnesses:

EDWD. O. TURFORD,
A. H. PENINGTON.