

R. C. HARRINGTON.

Gas Retort.

No. 27,543.

Patented March 20, 1860.

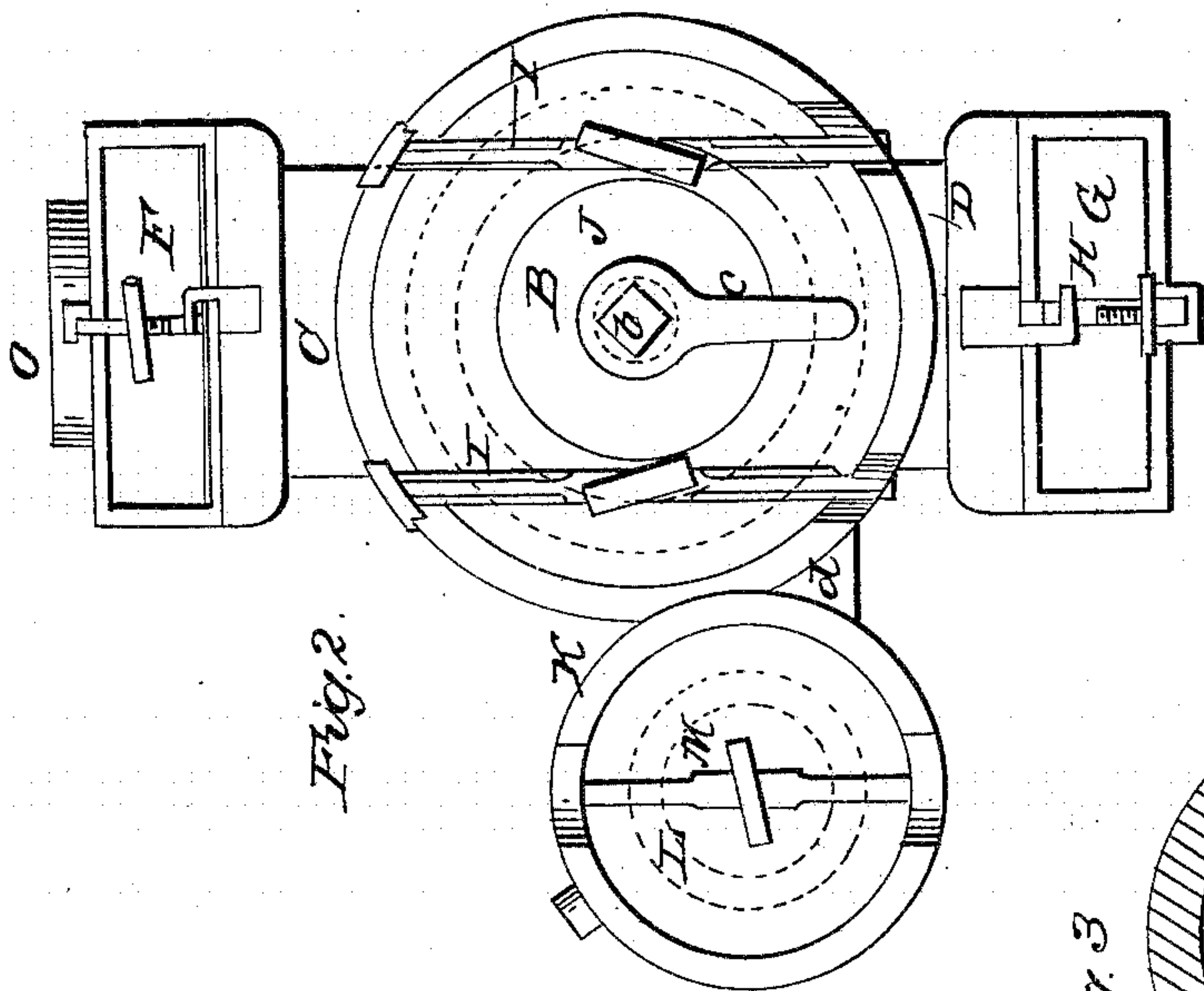
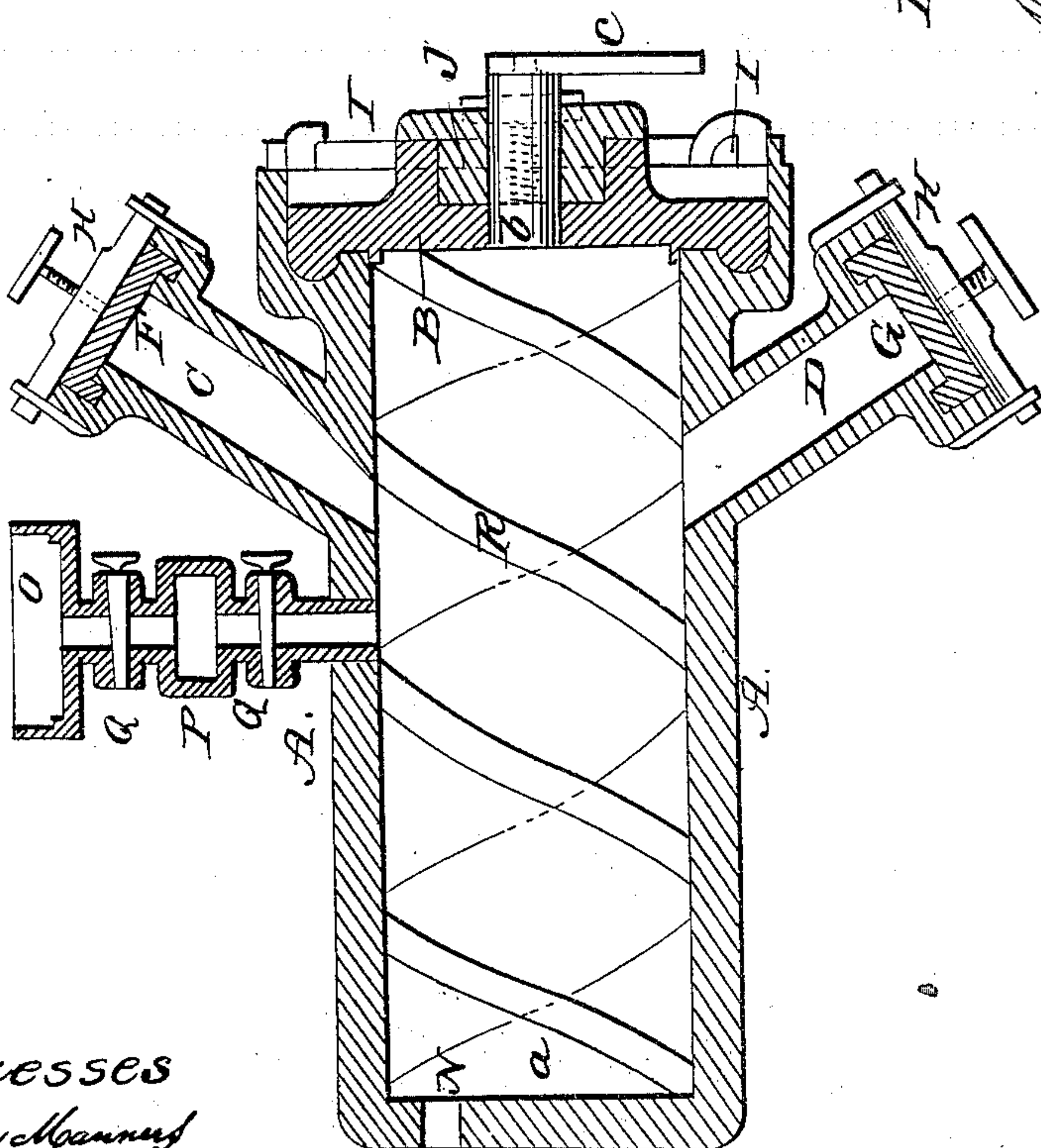
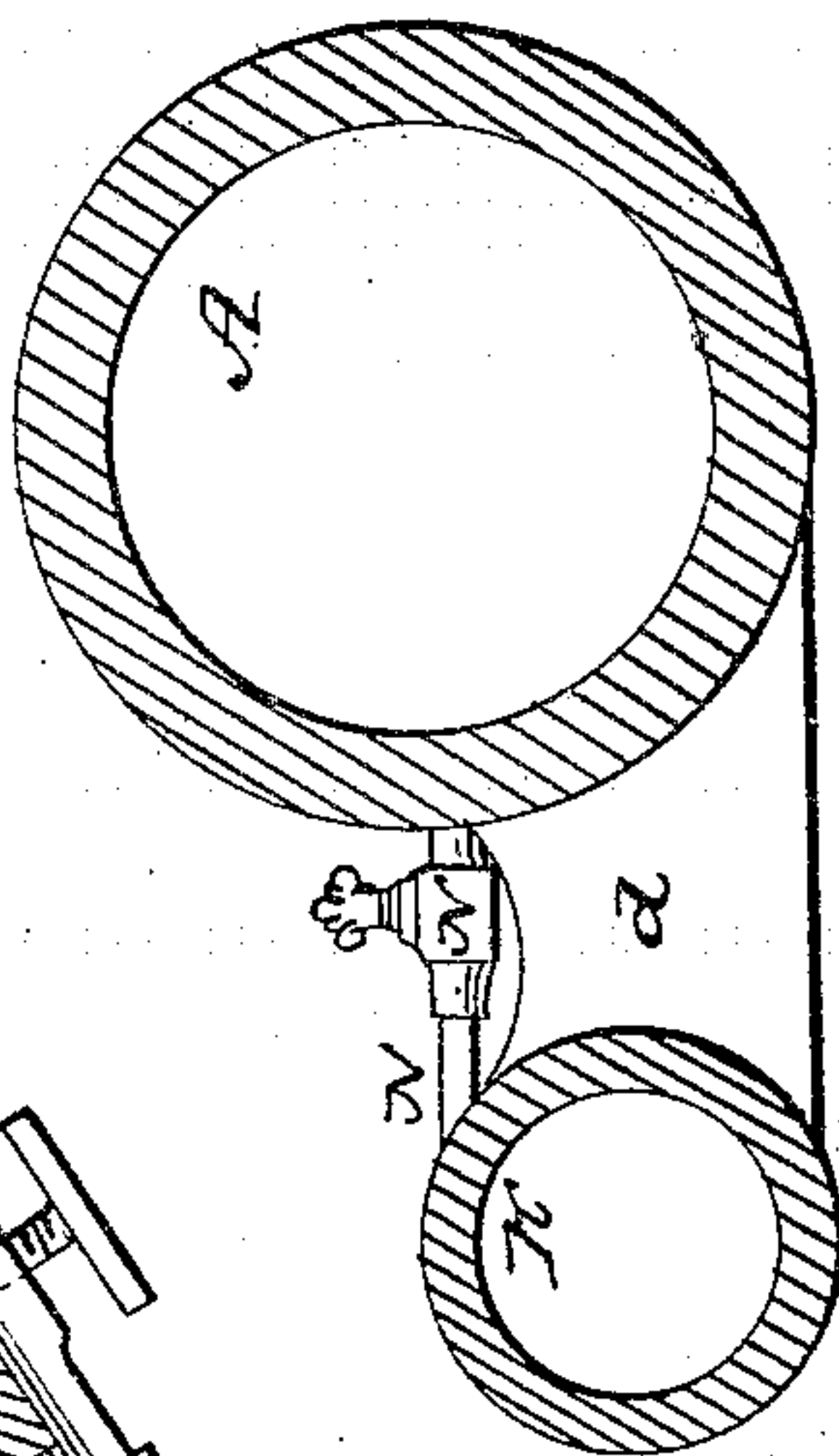


Fig. 2.

Fig. 3.



Witnesses  
Abraham Mannes  
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# UNITED STATES PATENT OFFICE.

RICHARD C. HARRINGTON, OF NEWARK, NEW JERSEY.

## GAS-RETORT.

Specification of Letters Patent No. 27,543, dated March 20, 1860.

*To all whom it may concern:*

Be it known that I, R. C. HARRINGTON, of the city of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Gas-Retorts; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1, is a longitudinal vertical section of a retort constructed according to my invention. Fig. 2, is an end view of the same. Fig. 3, is a transverse vertical section of the same.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in the combination with a horizontal cylindrical retort, having near one end an opening in the top for the introduction of coal or other solid material from which gas is to be obtained, and an opening in the bottom for the discharge of the coke or residuum, of a screw fitted to the interior of the retort, with a stem or head projecting through one end of the retort, to enable it to be turned for the purpose of moving the charge toward the opposite end of the retort to where it is introduced and of drawing out the residuum.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

A, is the body of the retort having one end *a*, cast with it and left open at the opposite end, which is suitably constructed, to enable a tight joint to be made, by luting around the movable head B. Near the open end which receives the movable head B, there is an inclined throat C, at the top for the introduction of the charge and another inclined throat D, at the bottom for the discharge of the residuum the former provided with a movable door or lid F, and the latter with a movable door G, both fitted in such manner as to admit of being luted, and furnished with fastenings H, H, of any well known or suitable character. The movable head B, which may be secured to the body A, by fastenings I, I, of the kind commonly employed or of any suitable kind, is fitted up with a stuffing box, J, for the stem *b*, of the screw R, to pass through said stuffing box, being packed with sand or other dry

packing. The screw R, fits to rotate easily within the retort, and occupies the whole length of the interior thereof. The stem *b* is fitted, outside of the head with a crank *c*, by which to turn it.

At one side of the retort, is a smaller cylinder K of the same length as the retort. This smaller cylinder and the brackets, *d*, *d*, which unite it with the body A of the retort, may be cast with the body A, and is fitted with a movable head L, at the same end as the movable head B, such head L, being secured by a fastening M, and luted. At the opposite end, the said cylinder is connected with the body A, and by a pipe N, in which is a stop cock N'. On the top of the body A, there is a funnel O, between which and the body there are two cocks Q, Q, and an interposed globe receiver P, for feeding the retort with oil or any liquid matter. The fire place may extend below both the body A of the retort, and the cylinder K, or only the body A, may be over the fire and the cylinder K, over a flue.

The operation of the retort is as follows: The retort head B, and the door G, having been both put in place, luted and fastened, the charge is put in at the throat C, and gradually worked back toward the opposite end, by turning the screw R, by the crank *c*, until the body A, is filled up, when the lid F, is put on luted and secured. The stop cock N, may be kept closed, and the gas taken direct from the body A, or the said cock may be opened to cause all the gas to pass through the cylinder K, which is to be filled with lumps of coke, broken brick or any other porous material which is kept heated to redness by the heat of the fire or flue below or surrounding of the cylinder, in which case any undecomposed vapors that may escape from the retort, will be decomposed in the cylinder and converted into permanent gas. When the gas is all worked off from the charge, the door G, is to be taken off, and the coke or residuum, withdrawn from the body A, of the retort, by turning the screw, R, in the opposite direction to that in which, it was turned to carry the charge toward the opposite end when it was put in, and thereby drawing it to the throat D, where it falls out. The heads B, and L, only require to be removed to clean out the body A of the retort and cylinder.

I do not claim broadly the use of a screw in a retort, but

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

5 The employment of a screw R fitted to the cylindrical retort substantially as described, in combination with openings C, D, provided at the top and bottom of the retort

near the same end thereof, as described, for the purpose of arranging or distributing the 10 charge and withdrawing the residuum.

RICHD. C. HARRINGTON.

Witnesses:

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