

J. HANLON.
Revolving Retorts and Apparatus for Manufacturing Gas.
 No. 157,819. Patented Dec. 15, 1874.

FIG 1.

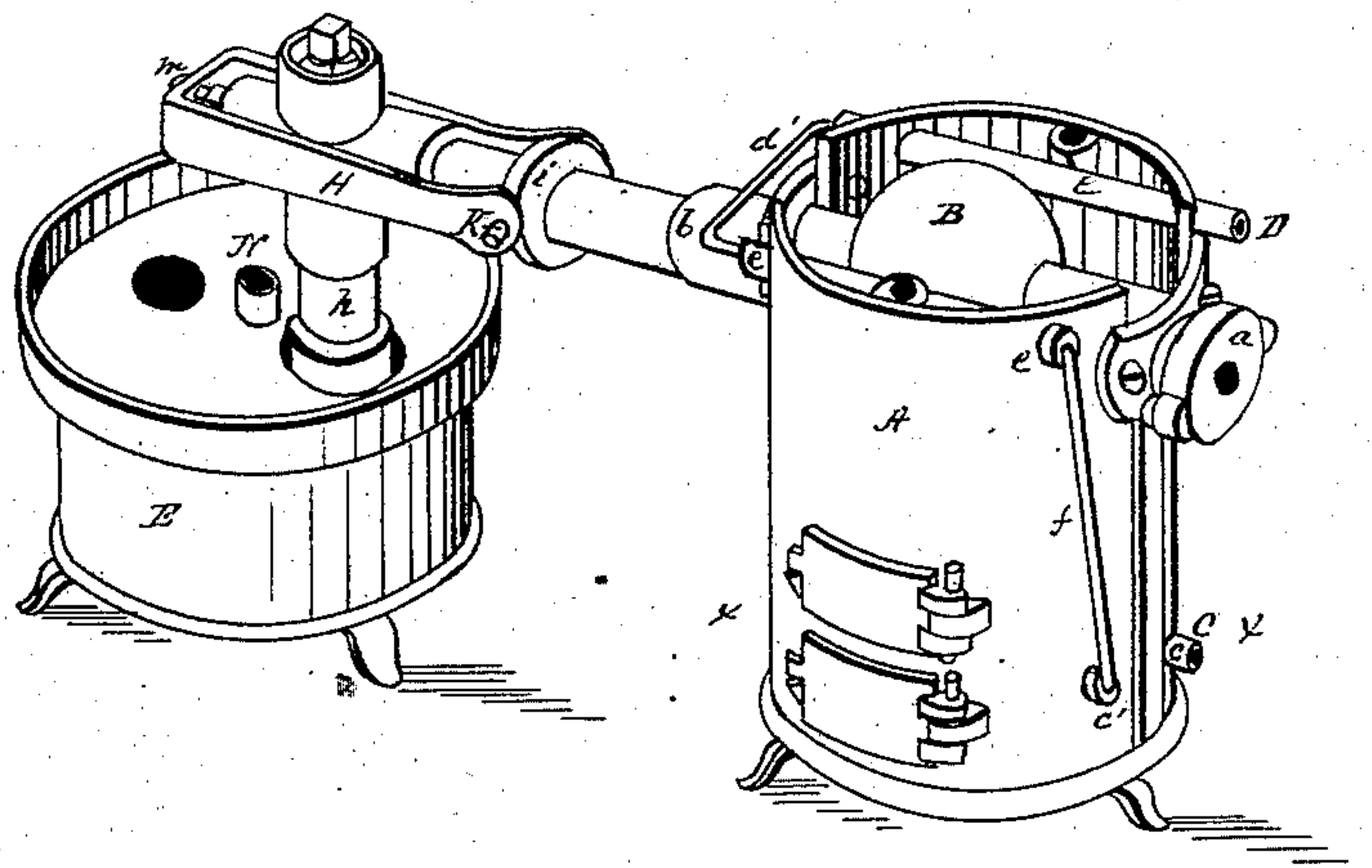


FIG 2.

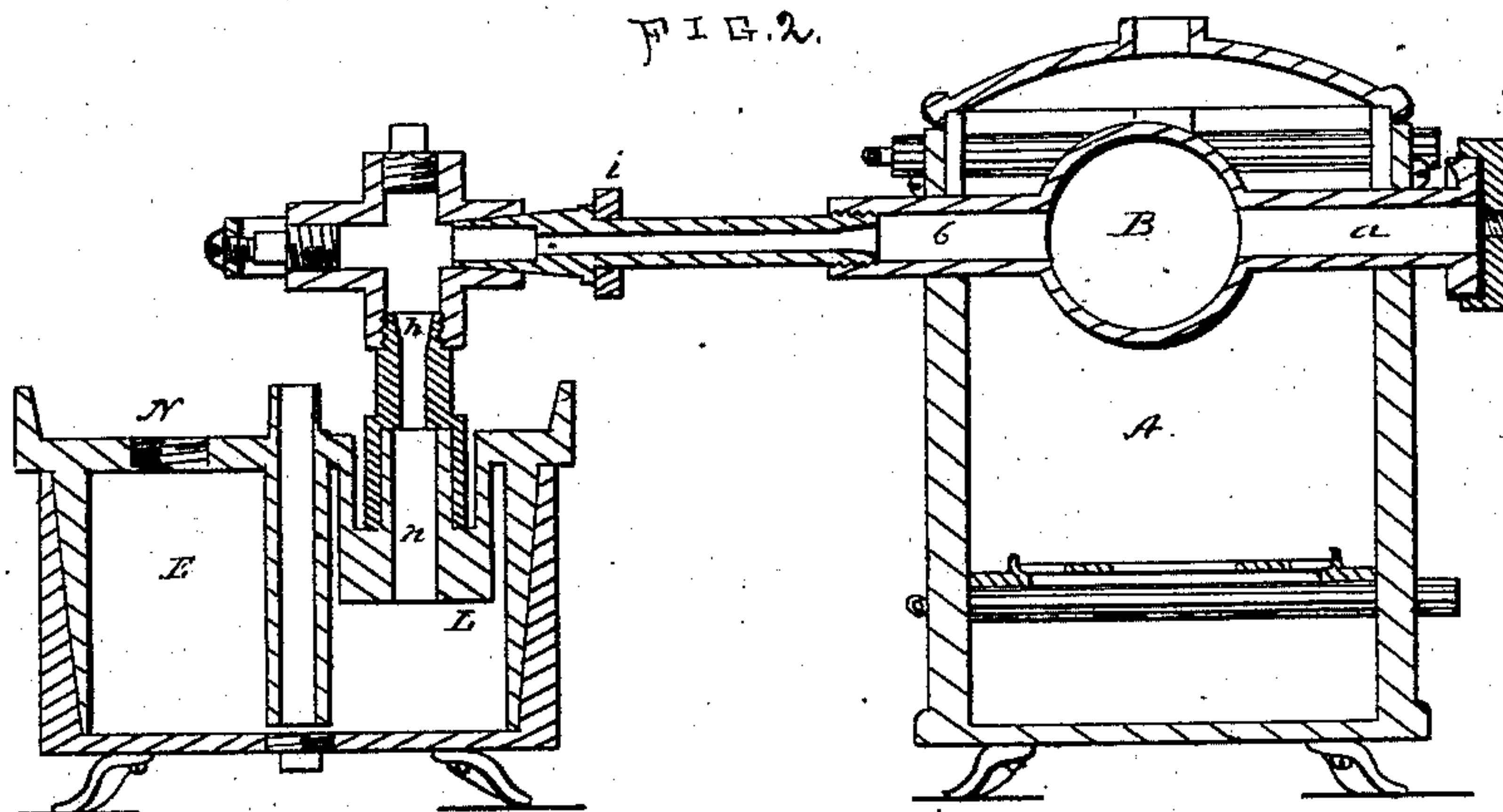


FIG. 3.

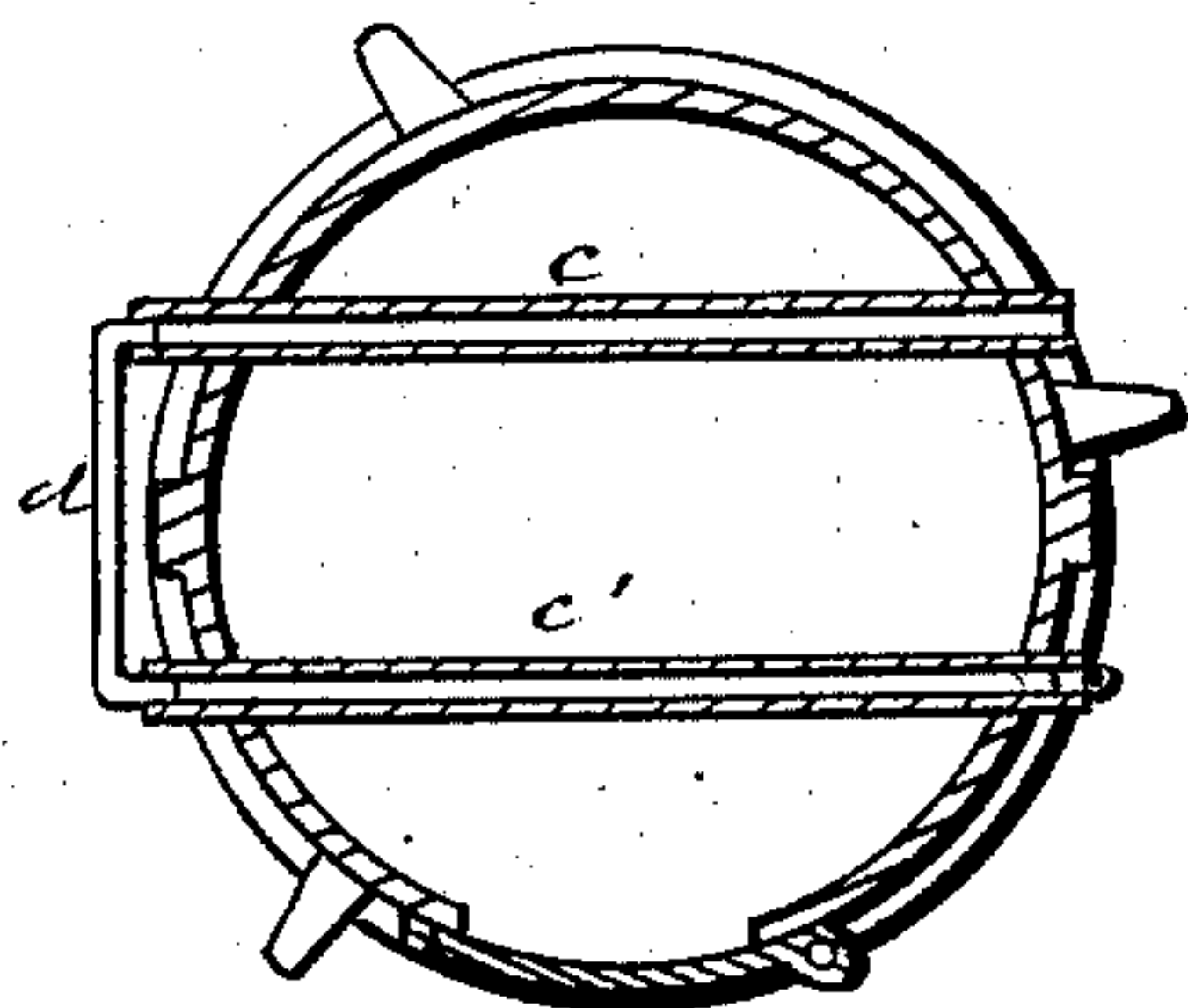
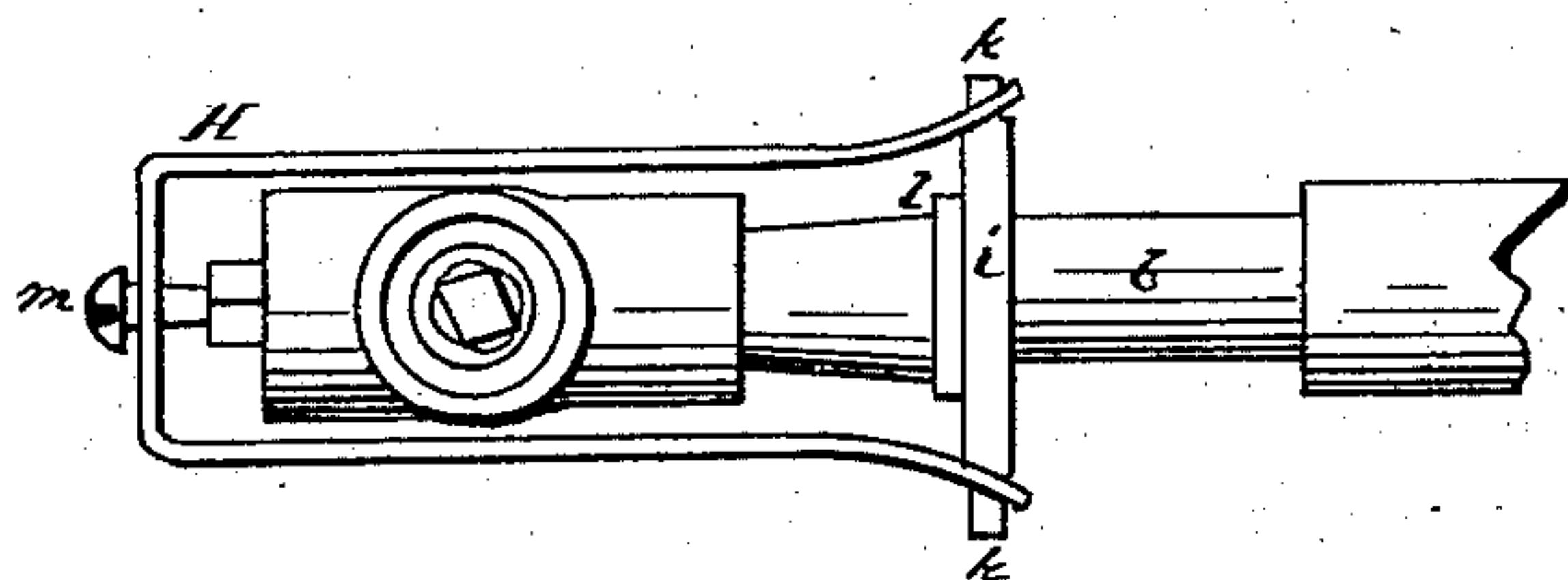


FIG. 4.



WITNESSES.

F. B. Townsend.
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INVENTOR

John Hanlon
per Atty. A. H. Evans & Co.

UNITED STATES PATENT OFFICE.

JOHN HANLON, OF NEW YORK, N. Y.

IMPROVEMENT IN REVOLVING RETORTS AND APPARATUS FOR MANUFACTURING GAS.

Specification forming part of Letters Patent No. **157,819**, dated December 15, 1874; application filed December 7, 1874.

CASE C.

To all whom it may concern:

Be it known that I, JOHN HANLON, of the city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for the Manufacture of Gas; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 is a perspective view of my apparatus with cap removed. Fig. 2 is a vertical section. Fig. 3 is a horizontal section on the line *x x*. Fig. 4 are details to be referred to.

My invention relates to an apparatus for manufacturing carbureted hydrogen gas for illuminating purposes; and consists in the combination of devices, hereinafter described and explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents a vertical furnace, in the upper portion of which is a retort of peculiar shape. The retort B is a hollow globe, constructed with the hollow cylindrical arms or shafts *a* and *b*, rigidly attached, and having bearings in the opposite sides of the furnace, as shown in Fig. 2. These are revolved readily in their bearings, and furnish means for easily revolving the retort in the furnace when desired. The pipes *c c'* are parallel water-pipes, passing horizontally through the furnace below the fire-box, and connected together by the pipe *d*, and *e e'* are corresponding water-pipes, passing horizontally through the upper portion of the furnace near the retort, and connected together by the pipe *d'*. The pipe *c'* is connected by the vertical pipe *f* to the pipe *e*, thus forming a continuously-connected water-pipe from its point of entrance at C to its exit from the furnace at D, between which points the water has been gradually heated and converted into steam, ready to be introduced into the retort with the hydrocarbon oils, the devices for which are not shown, as they constitute no part of

my invention. E is a chamber for receiving the gas from the retort, and in which the gas is cooled, washed, and purified, ready for illuminating purposes. The passage of the gas from the retort to the purifying-chamber E is through the hollow arm or shaft *b*, to the vertical pipe *h*, and down that pipe into the chamber. Between the shaft *b* and the pipe *h* I make a ground joint, and secure the two parts together by a novel arrangement. The sliding disk or collar *i* fits loosely around the shaft *b*, and is provided on opposite sides with the lugs *k*, fitting into holes in the ends of the metal loop H. By means of the loop H, the sliding collar is drawn against the shoulder *l* on the shaft *b*, and then, by means of the thumb-screw *m*, is tightened to secure the joint. By this simple means I entirely avoid the use of either screw-threads or packing in making a tight joint, and provide a device by which the parts are quickly and easily joined or detached.

In the purifying-chamber I secure a safe connection with the vertical pipe *h* by means of the suspended cup L, secured to the top of the chamber, and provided with the vertical pipe *n*, passing through it into the chamber below. This cup being partially filled with water, the vertical pipe is passed into it, and allowed to rest on its bottom, the water in the cup furnishing a secure packing, and the gas escaping through the pipe *n* into the purifying-chamber below, where it is washed, and passed out at the exit N, ready for illuminating purposes.

Over the globular retort B I construct and fit a concave top to the furnace, in which it is incased, and thus secure within the concavity the greatest possible amount of heating-surface, on which the heat of the furnace is thus concentrated, and by which arrangement I secure a quick and powerful action of the retort with a great saving of fuel.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The revolving globular retort B, provided with the hollow cylindrical arms or shafts

a and *b*, rigidly attached thereon, in combination with the furnace A, substantially as and for the purpose set forth.

2. The revolving globular retort B, provided with the hollow cylindrical arms or shafts *a* and *b*, in combination with the water-pipes *c c'*, *d d'*, *e e'*, and *f*.

3. The metal loop H and thumb-screw *m*,

in combination with the collar *i*, provided with the lugs *k*, the shaft *b*, and vertical pipe *h*, substantially as and for the purpose set forth.

JOHN HANLON.

Witnesses:

WILL H. MOXON,
I. H. PEECE.