

(No Model.)

A. C. SWAIN.

GAS RETORT.

No. 310,744.

Patented Jan. 13, 1885.

Fig. 1.

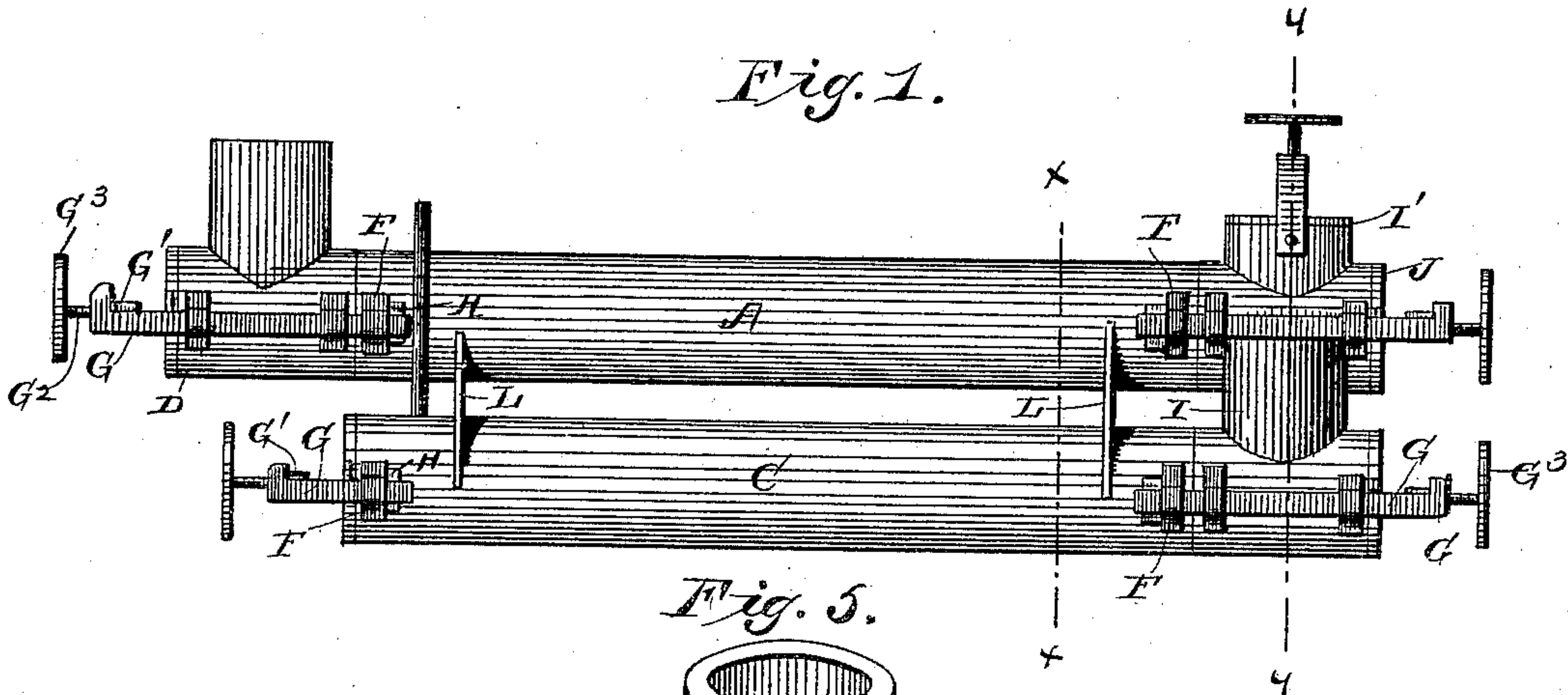


Fig. 5.

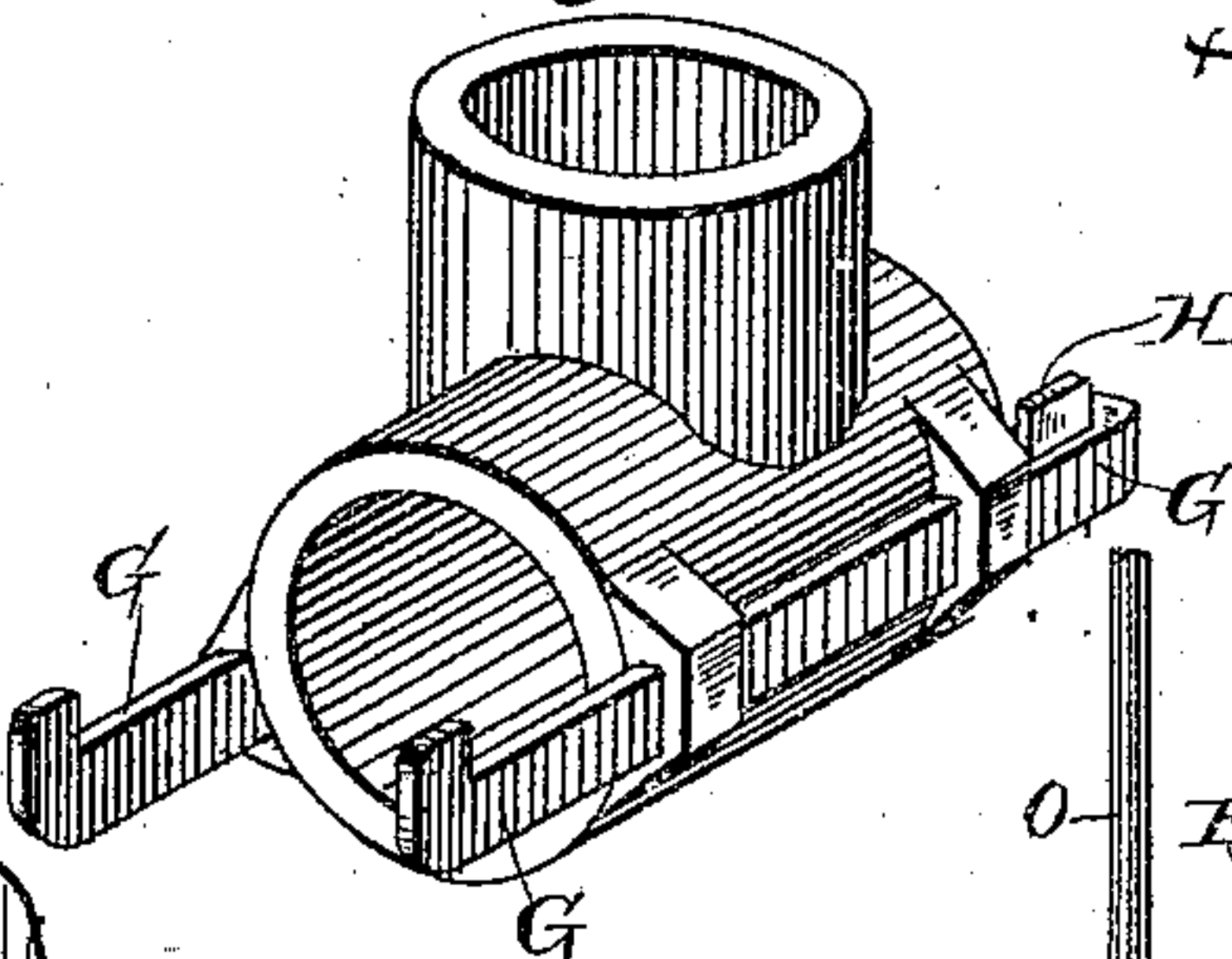


Fig. 3.

Fig. 2.

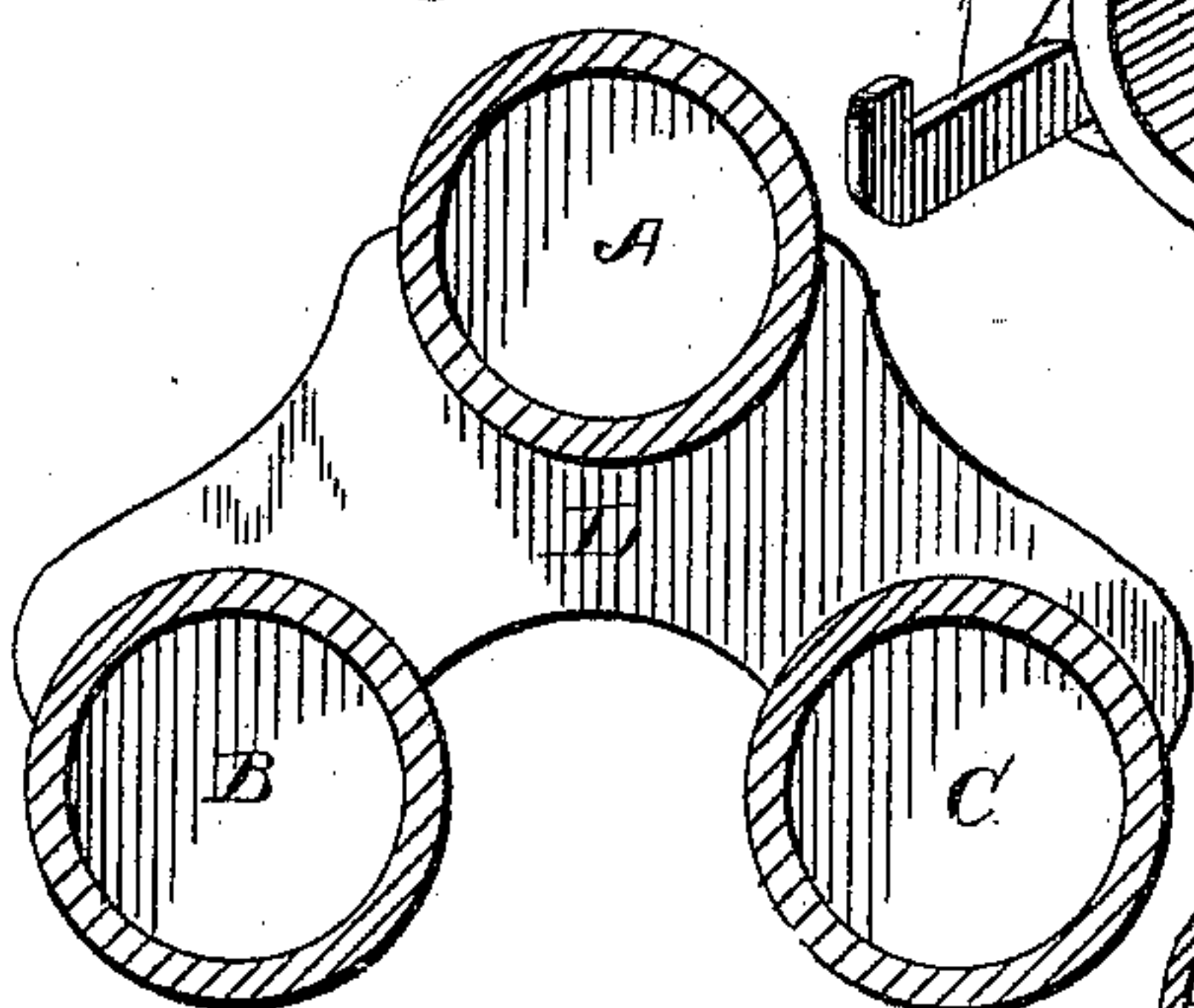
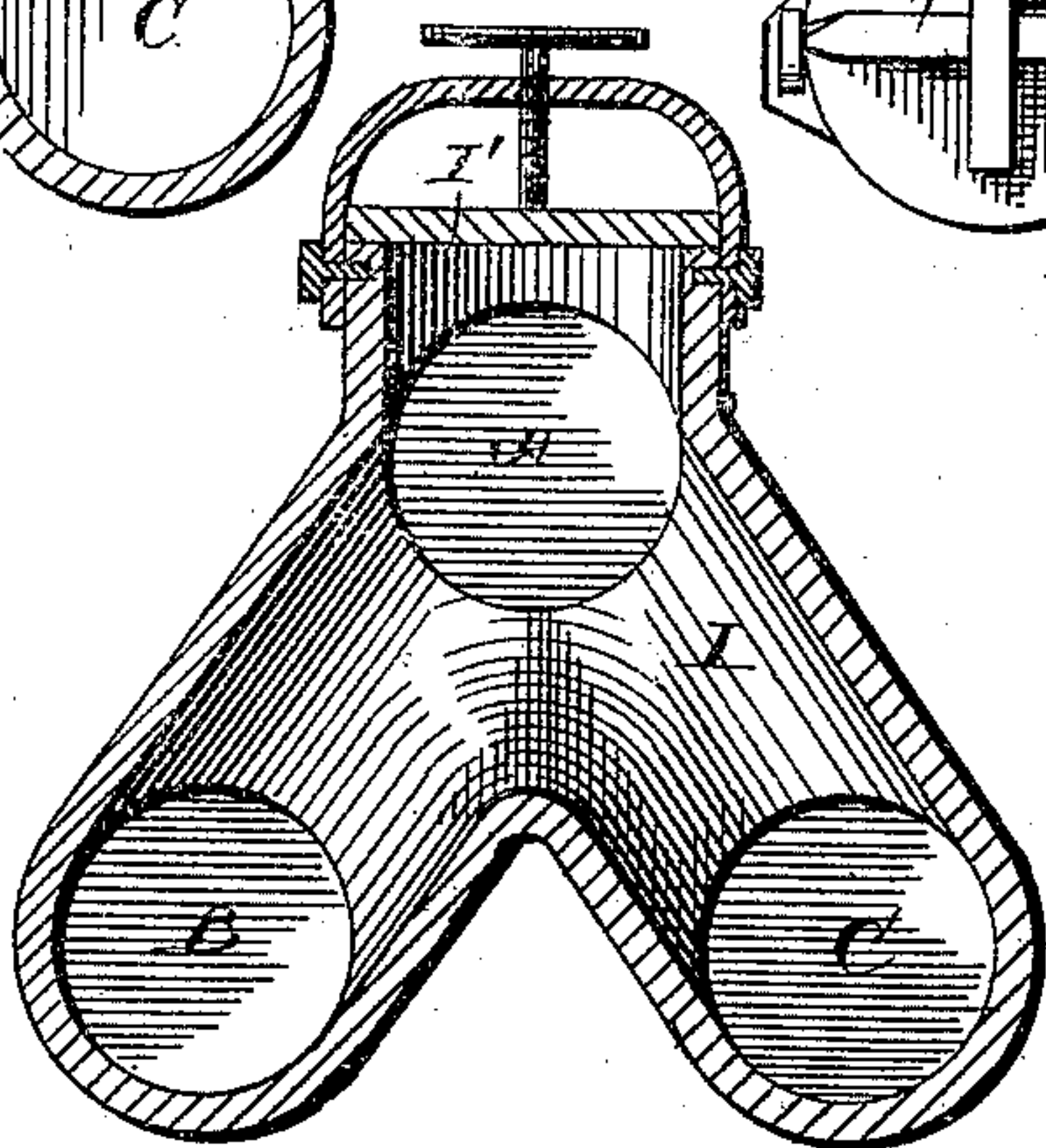


Fig. 4.



WITNESSES

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APPIOUS CLAUDIOUS SWAIN, OF CHICO, CALIFORNIA.

GAS-RETORT.

SPECIFICATION forming part of Letters Patent No. 310,744, dated January 13, 1885.

Application filed August 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, APPIOUS C. SWAIN, a citizen of the United States, residing at Chico, in the county of Butte and State of California, have invented a new and useful Improvement in Gas-Retorts, of which the following is a specification, reference being had to the accompanying drawings.

My invention has relation to gas-retorts; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a gas-retort embodying my improvements. Fig. 2 is a sectional detail view on the line *xx* in Fig. 1. Fig. 3 is an end elevation. Fig. 4 is a vertical section on the line *yy* in Fig. 1, and Fig. 5 is a detail view of a portion of the upper retort.

Referring by letter to the accompanying drawings, A designates the upper retort or superheater, and B and C are two lower retorts.

I have deemed it unnecessary to illustrate the brick-work, as my improvement relates only to the gas-retorts; and the object of the invention is to so arrange the retorts in the brick-work that in the event of a retort giving or wearing out it may be removed from the brick-work and replaced by a new retort without tearing down the brick-work. This object I accomplish by making the connections for the retorts outside of the brick-work, and also make them removable, as will be hereinafter further described. The retorts are cylindrical in form and are made of cast metal. They are all of the same size, so that their replacement can be readily effected when necessary.

On the upper retort or superheater, A, at its front end, I provide a mouth-piece, D, which can be taken off in case the retort burns out or breaks, thereby saving the expense of a new mouth-piece. The mouth-piece D is provided with a collar, D', that receives the pipe that leads to the purifying-department.

The retorts A, B, and C are provided with lugs or staples F near their ends to receive the arms of the bars G, which are turned in at their inner ends to form seats for the keys

H, and are turned up or formed with shoulders at their outer ends to form bearings or shoulders for the lid-bars G', which are provided with screws G², having handles G³, by which said screws G' are turned to lock the lids H to place. It will be observed that by unscrewing the hand-screws the lids may be readily removed when necessary.

The back connection, I, is made of cast metal, the same as the retorts, and is cast in one piece, with an opening, I', in the top, which is closed by a lid, bail, and hand-screw, in order that should the holes or passages from the bottom retorts to the superheater become filled up or clogged with soot or carbon they can be cleaned out by using a straight bar without shutting down work.

The hole or passage J in the superheater is provided with a bail, J', hand-screw J², and a lid, J³, that can be swung around while at work for the purpose of cleaning the superheater. The joints at the lids are luted and held tightly to place by the screws when at work. All of the lids are sealed with luting when the gas is being made. By this construction each retort has its entire surface perfectly heated, the trusses L L separating the retorts, and thus presenting the greatest surface to the action of the fire. The heat in the retorts is uniform, and a large surface is presented to the fire. The retorts are independent of each other, and there can be no cracking apart of the retorts by the expansion and contraction of the material of which they are made. By this arrangement one of the retorts may be heated more highly than the others, thereby enabling one to have a superheated retort, as described. The connections being outside of the brick-work, it requires less time to clean the retorts than heretofore. On the front of the two bottom retorts there are two filling-pipes, O, and when oil is used it enters the retorts through these pipes.

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

1. The combination, with the retorts A B C, separated by trusses and provided with staples near their ends, of the lids, the head-bars turned in at their inner ends and turned up at their outer ends, the keys H, the lid-

bars G, and the hand-screws, substantially as specified.

2. The combination of the retorts B and C and the superheater A, connected by re-
5 movable end connections, said superheater being provided with the removable mouth-piece D, substantially as specified.

3. The combination, with the retorts A B C, separated by trusses and provided with
10 lugs near their ends, of the removable end

connections and the removable mouth-piece, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

APPIOUS CLAUDIOUS SWAIN.

Witnesses:

JOHN BURKETT,
JOHN T. NEALE.