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Patented Aug. 15, 1899.

A. KERRIS.

APPARATUS FOR REMOVING GRAPHITE CRUSTS FROM INTERIORS OF GAS RETORTS.

(Application filed Dec. 19, 1898.)

(No Model.)

FIG. 3.

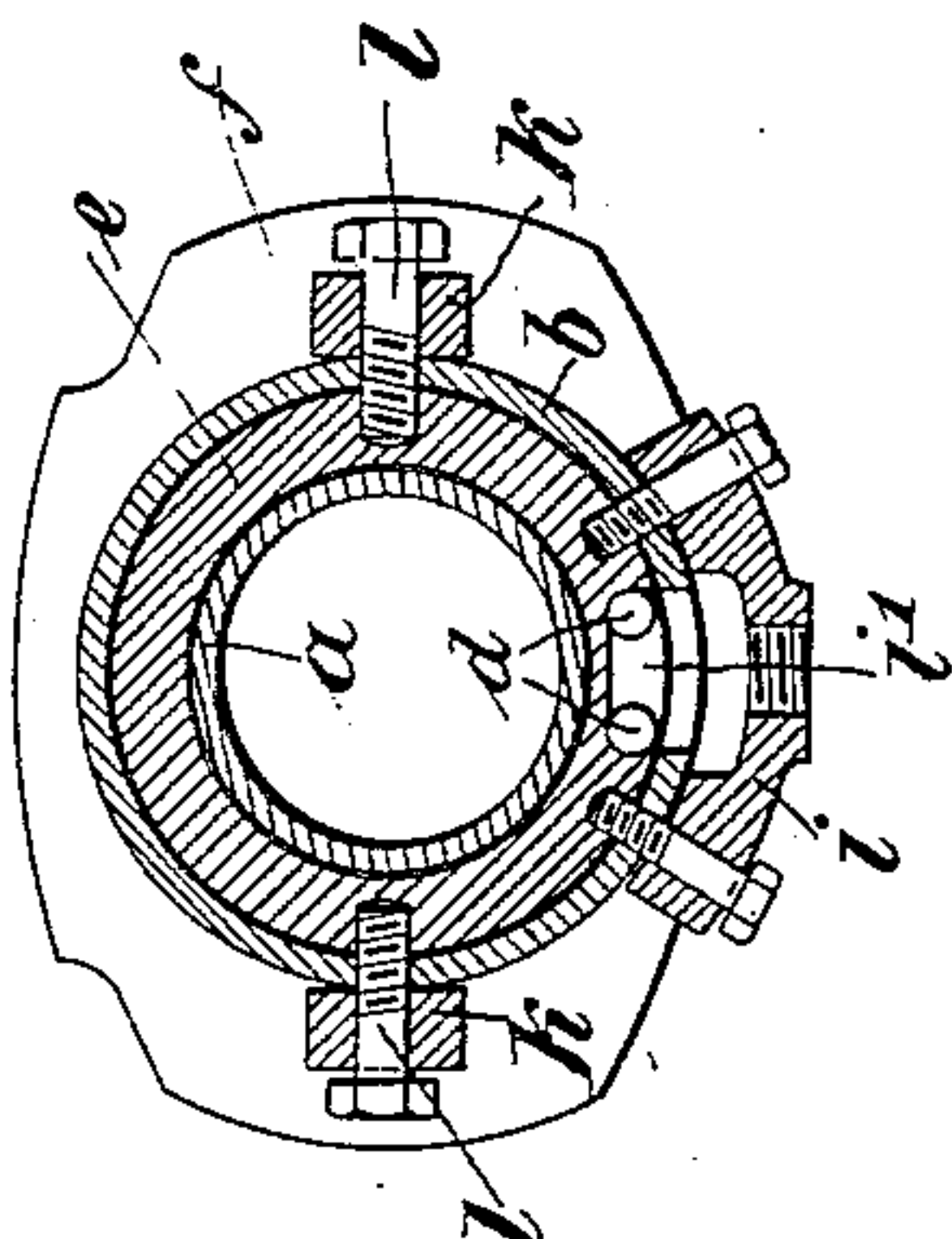


FIG. 1.

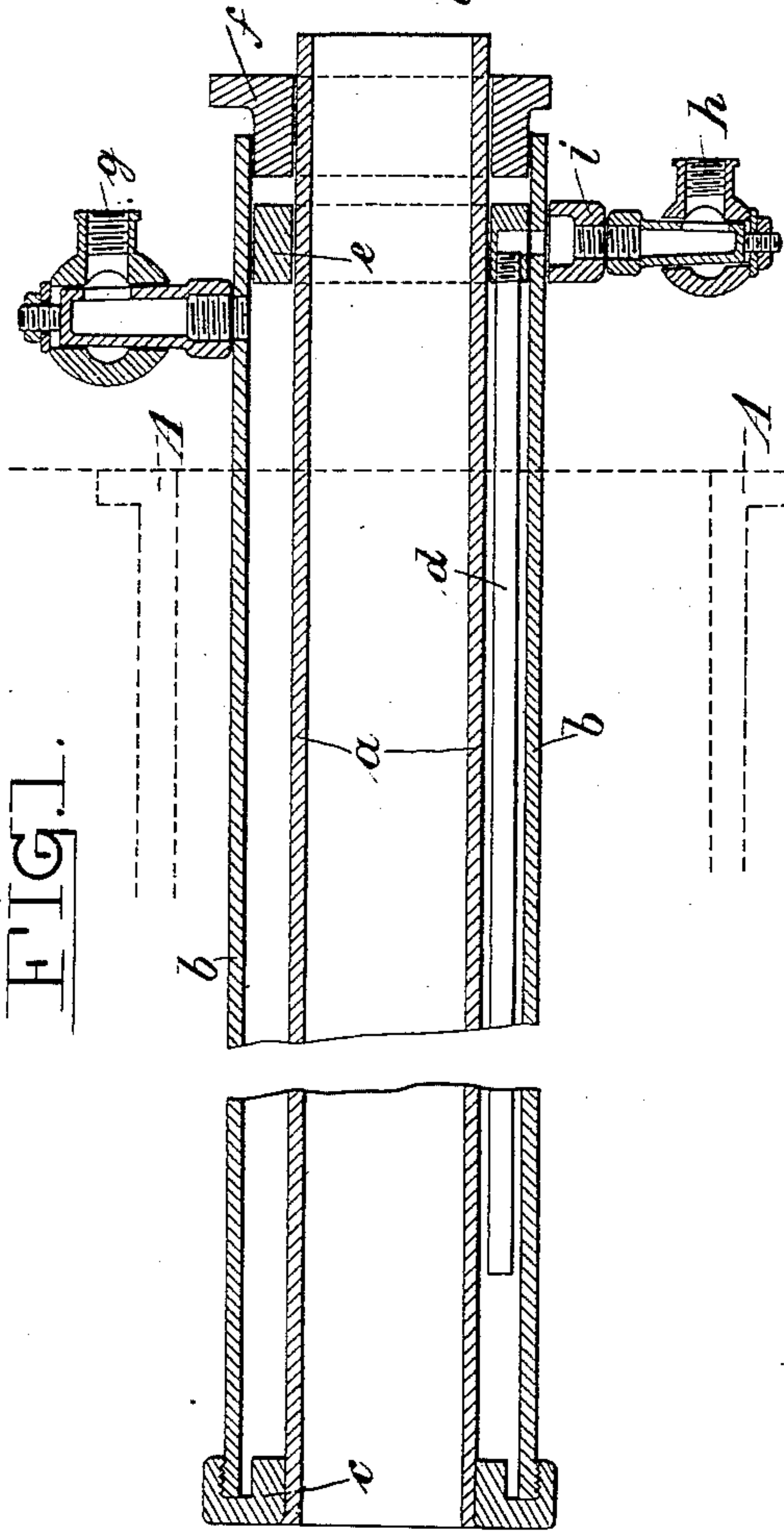
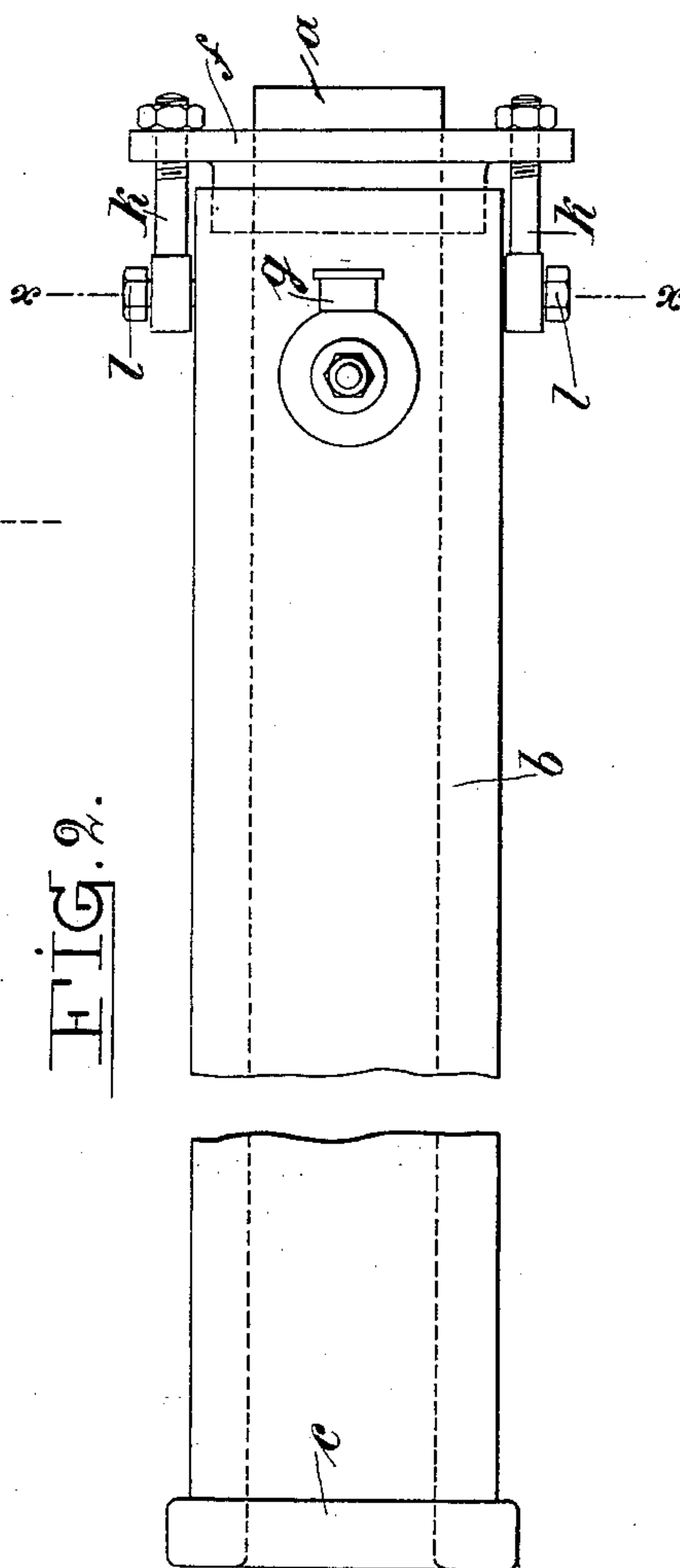


FIG. 2.



Witnesses:

Alfred M. Murray
Hugo Böhm.

Inventor:

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by: *Eustace W. Murray*
Att'y:

UNITED STATES PATENT OFFICE.

ALPHONS KERRIS, OF GODESBERG, GERMANY.

APPARATUS FOR REMOVING GRAPHITE CRUSTS FROM INTERIORS OF GAS-RETORTS.

SPECIFICATION forming part of Letters Patent No. 630,897, dated August 15, 1899.

Application filed December 19, 1898. Serial No. 699,765. (No model.)

To all whom it may concern:

Be it known that I, ALPHONS KERRIS, a subject of the Emperor of Germany, residing at Godesberg-on-the-Rhine, Germany, have invented a new and useful Improved Apparatus for Removing Graphite Crusts from Interiors of Gas-Retorts, of which the following is a full, clear, and exact description.

The present invention consists of an apparatus for removing graphite crusts from the interiors of gas-retorts.

Graphite incrustations on the interior of gas-retorts have hitherto been removed by means of steam or hot air or a mixture of both introduced into the retort in order to burn off the crust. Various apparatuses have been employed. They consist, mainly, of a pipe which is passed into the retort and provided as large an area as possible for the hot air, steam, or mixture of both, so that the graphite will be gasified as soon as possible and thus removed from the retort.

Of late years the graphite formed in gas-retorts has become an important article of commerce for electrical and other purposes; and the object of the present invention is to detach the graphite from the walls of the retorts quickly and conveniently, but in pieces of considerable size, which may be of use in commerce. This object is obtained by the apparatus hereinafter described, and particularly set forth in the claim annexed.

In order to render the present specification more easily intelligible, reference is had to the accompanying drawings, in which similar letters of reference denote similar parts throughout the several views.

Figure 1 is a longitudinal section through the apparatus; Fig. 2, a plan of the same, and Fig. 3 a cross-section on the line $x x$ of Fig. 2.

The apparatus consists of an inner tube a , open at both ends, and an outer tube b , surrounding the same, the annular spaces between the two tubes being closed at the rear end by the annular plate c and at the front end by a gland f , fitting tightly into the outer tube and around the inner tube a , but allowing of movement between the two tubes in the longitudinal direction, such relative movement being necessary in order to compensate for the variations in expansion due to the different diameters and lengths of the inner and

outer tubes. At the front end of the apparatus a collar e is inserted between the two tubes, said collar serving to support one or more tubes d , extending from the said collar to the rear end of the annular space between the two tubes. The front ends of these tubes communicate by means of a chamber i , Fig. 3, with a water-inlet h , opening into the chamber i and connected by means of an advantageously flexible tube connection to a water-supply source. The front end of the tube b is in communication with a water-outlet g . The gland f is secured in position by means of the bolts $k k$, pivotally supported at $l l$ on the front end of the outer tube b .

The device is manipulated in the following manner: The combined tubes extend through out nearly the whole length of the retort, which is indicated in dotted lines at A in Fig. 1. The front end of the retort is closed up by a suitable plate around the tube b . The retort being in a heated condition, cold water is now allowed to circulate between the pipes, being conducted to the rear end of the retort through the pipe or pipes d , entering the latter at h and being conducted off at g , the cold water thus filling the space between the two pipes and keeping them cool. The effect is to suddenly cool the air within the hot retort, thus cooling the interior surface of the graphite crust, while the surface next the hot retort-walls remains hot. The graphite consequently cools or partially cools unevenly and will fall off the walls of the retort, cracking and splitting off in pieces of considerable size.

I claim as my invention—

In an apparatus of the class specified, the combination, with an outer tube, of an inner tube supported in said outer tube; a collar having a fluid connection surrounding said inner tube; a pipe extending from said collar; a gland at one end of the outer tube, pivoted bolts passing through a flange on the gland; and an outlet-pipe connected with said outer tube.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ALPHONS KERRIS.

Witnesses:

WILLIAM H. MADDEN,
CHAS. E. BARNES.