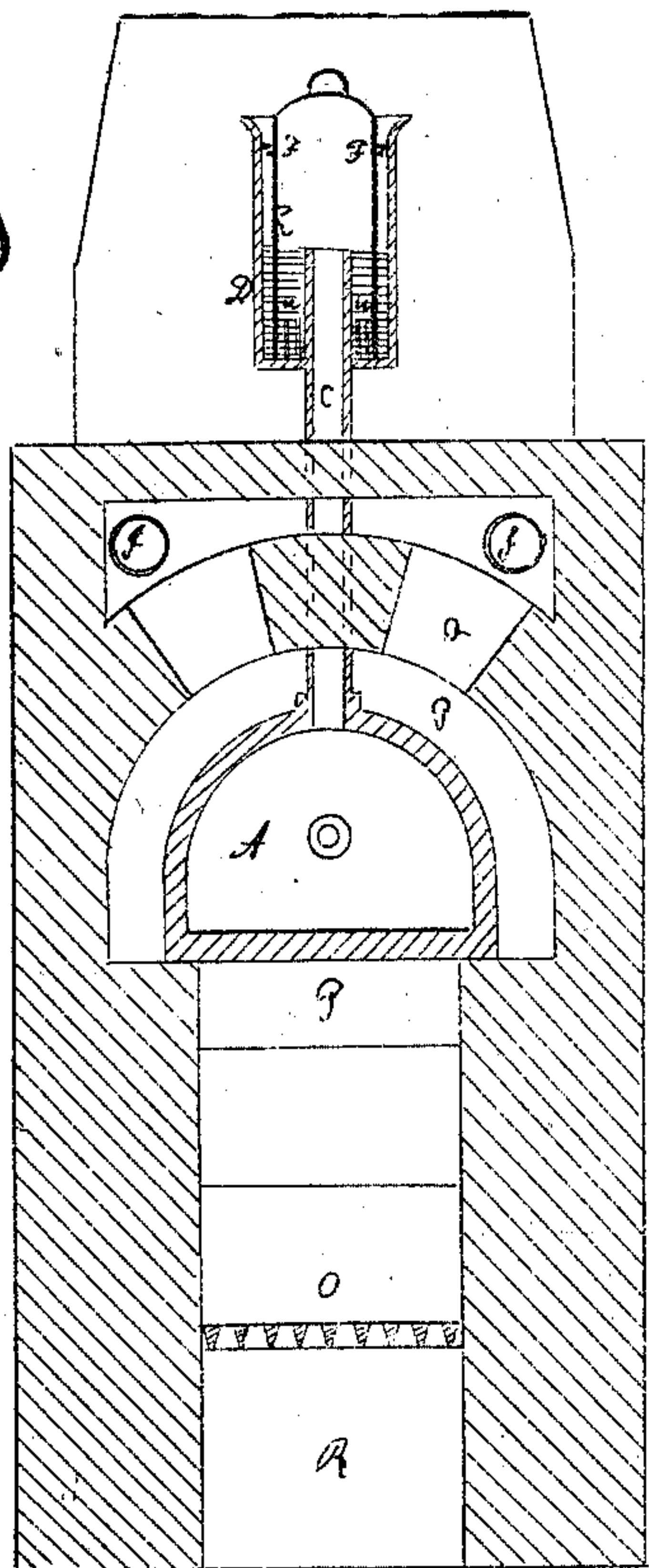
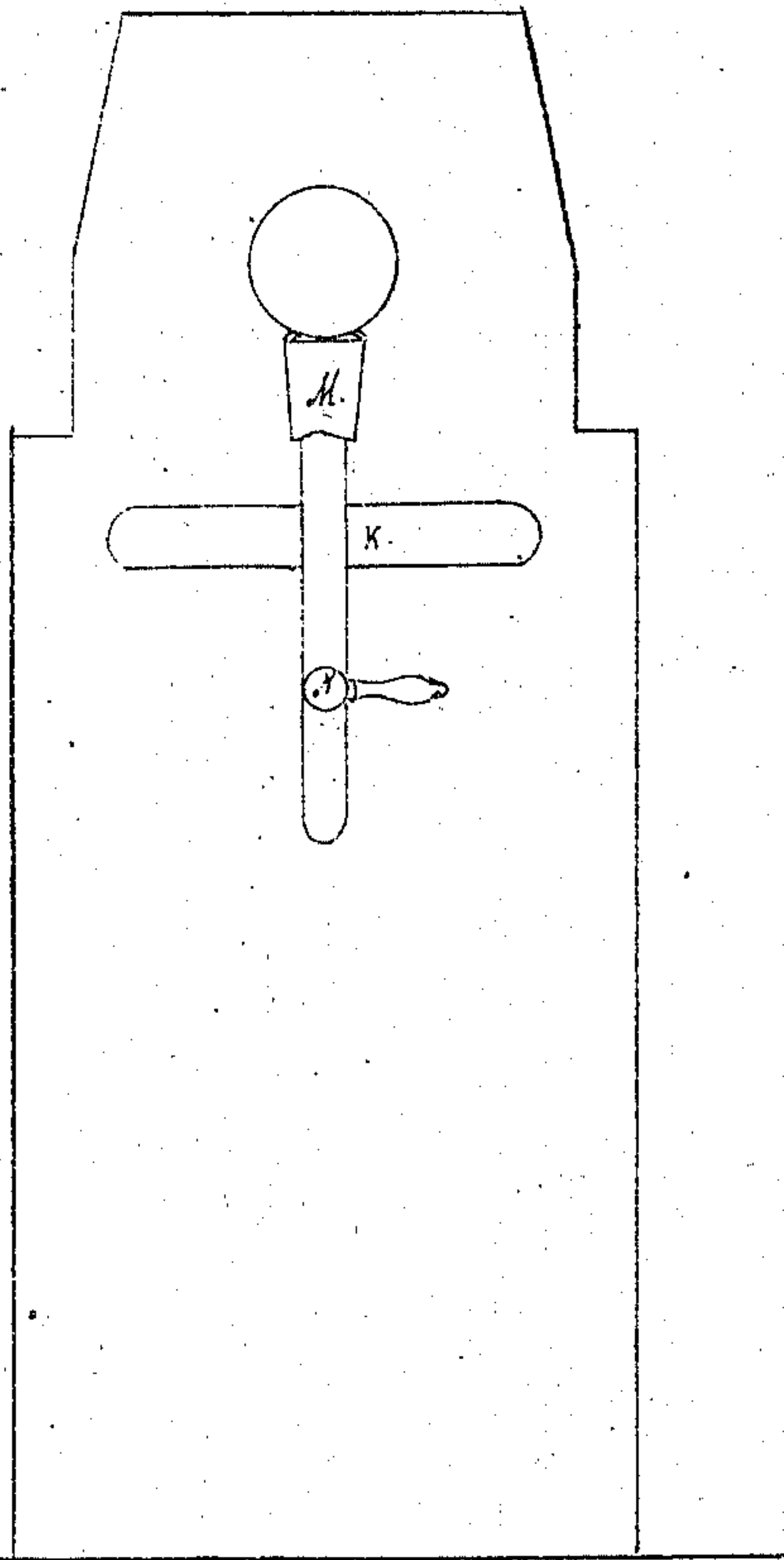


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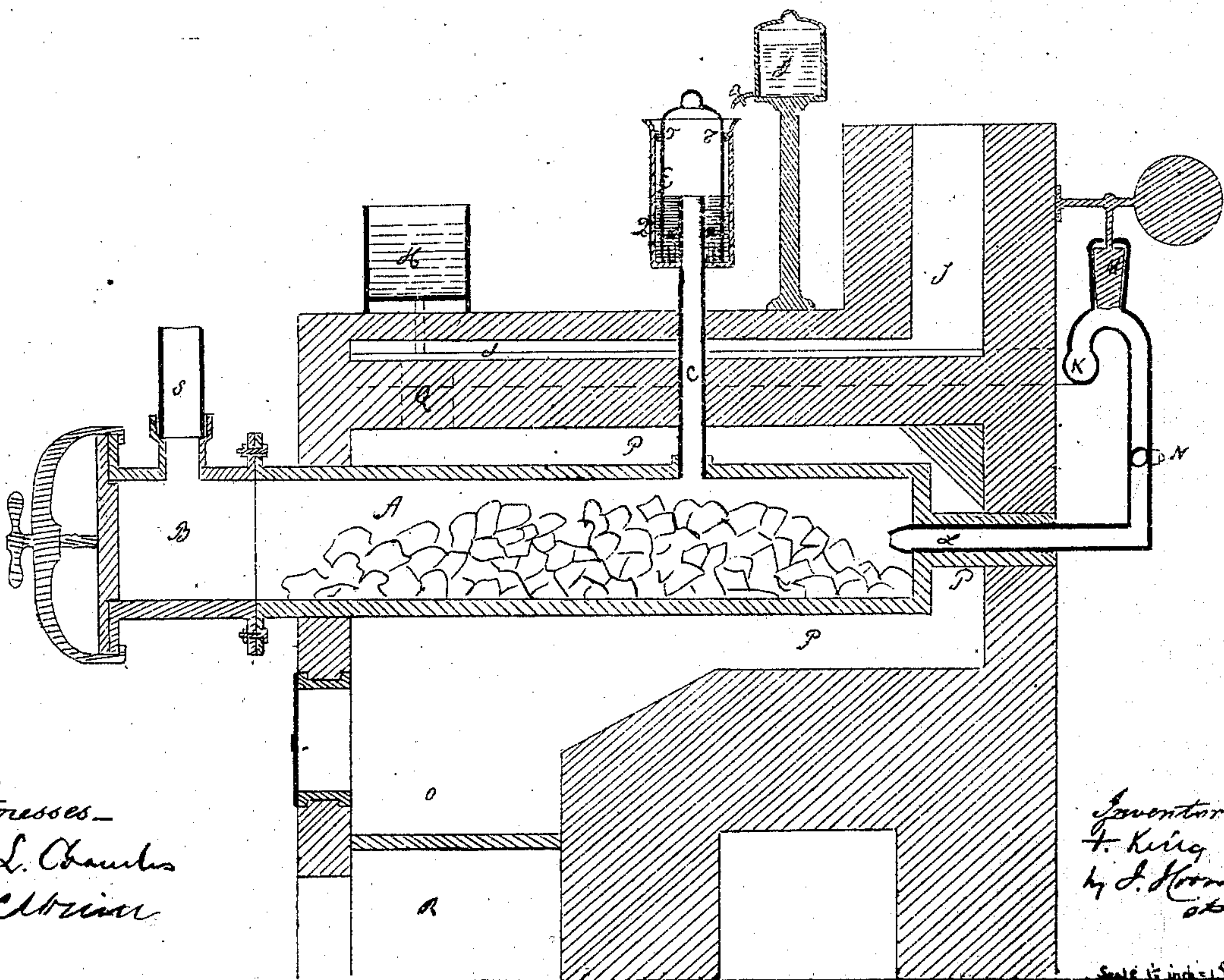
F. KING,
 Bituminised
 Hydrogen
 Gas generator.
 PATENTED
 FEB 11 1868



CROSS SECTION.



REAR ELEVATION



LONGITUD: SECTION.

Witnesses—
 J. L. Chambers
 J. M. Brown

Inventor.
 F. King
 by J. Hornum
 atty

Scale 1/2 inch = 1 ft.

UNITED STATES PATENT OFFICE.

FERDINAND KING, OF RICHMOND, VIRGINIA, ASSIGNOR TO HIMSELF AND
C. W. NEUDECKER.

IMPROVED GAS-GENERATOR.

Specification forming part of Letters Patent No. **74,230**, dated February 11, 1868.

To all whom it may concern:

Be it known that I, FERDINAND KING, of Richmond, in the county of Henrico and State of Virginia, have invented a new and useful Improvement in Bituminized Hydrogen-Gas Generators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 is a vertical cross-section through the central part of the generator. Fig. 2 is a rear elevation, and Fig. 3 is a vertical longitudinal section, of the same.

Like letters refer to the same parts in all the drawings.

A is a retort filled with coke; B, head-piece, with discharging-pipe S; C is a pipe for conducting the dissolved tar from vessel D to retort A; E is a bell-shaped vessel, open at the bottom and closed at the top, with orifices U, and lugs or catches F, to hold it down in the vessel D, the orifices U allowing the dissolved tar running into said vessel D from the tar-reservoir G to pass into the vessel E, and thence into the pipe C, the said vessels D and E forming at the same time a hydraulic closer to prevent the generated gas from forcing out the tar. H is a water-reservoir, connecting by a branch pipe, *v*, with two steam-pipes, I I. The generated steam passes from said pipes I I into K, and thence through steam-jet L into the red-hot retort A, where it is decomposed. A simultaneous reaction and combination will instantly take place between the carbureted hydrogen introduced in the dissolved tar and the hydrogen produced from the decomposed steam, and the result is carbureted-hydrogen gas escaping through

the pipe S. The steam will also act as a propelling agent to aid in forcing the gas out of the retort. M is a safety-valve; N, a steam cock to regulate the flow of steam; R, the ash-pit, and O the furnace; P, Q, and T are fire-flues.

The dissolved tar forms carbureted-hydrogen gas with an excess of carbon, but the pure hydrogen gas set free by the decomposition of the steam, combining with it, forms a gas having the proper proportions of hydrogen and carbon for illuminating purposes.

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

1. The method herein described of producing carbureted-hydrogen gas, by introducing dissolved tar, or its equivalent, and steam, into a red-hot gas-generating retort, substantially as set forth.

2. The improved gas-generator herein described, constructed and operating substantially as set forth.

3. In an apparatus for generating gas from dissolved tar or other liquid hydrocarbon in a heated retort, I claim a jet of steam introduced into said retort, to act chemically in modifying the gas generated, as described, and mechanically to force the gas from the retort, as set forth.

4. In combination with the retort A and a tar-reservoir, I claim the two vessels D and E, and the pipe C, constructed and arranged substantially as described, for introducing the dissolved tar into the retort.

FERDINAND KING.

Witnesses:

J. B. ROYSTER,
JAS. A. ROYSTER.