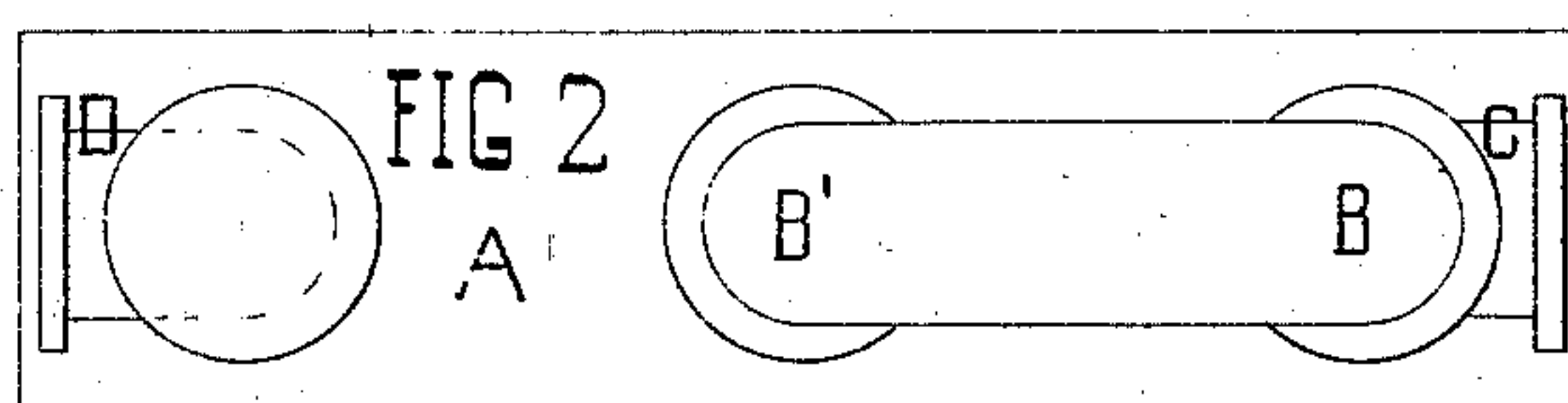
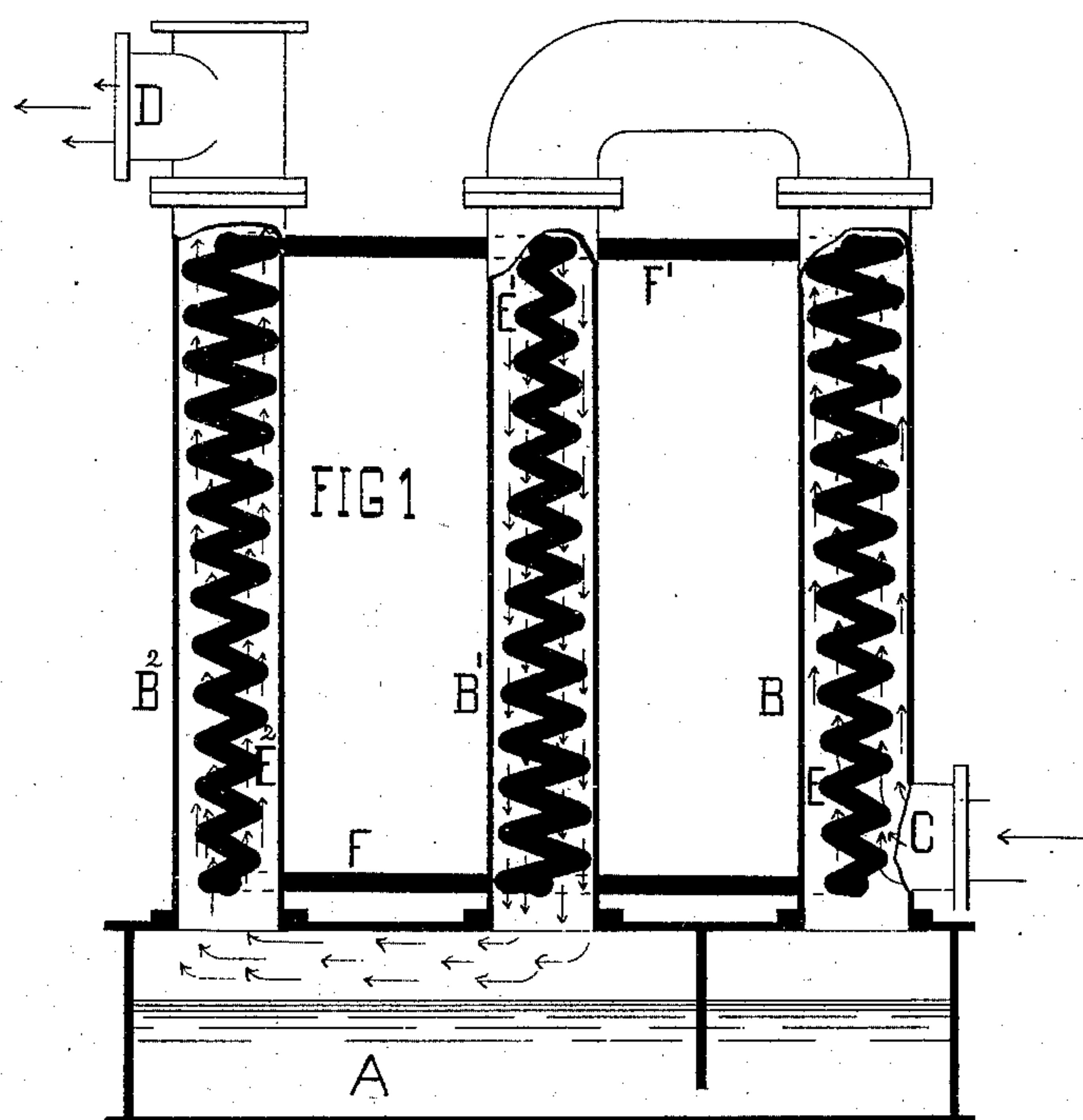


P. MUNZINGER.
Methods of Extracting the Salts of Ammonia from
Coal Gas.

No. 152,913.

Patented July 14, 1874.



WITNESSES

Robert Carr
Robt P. Murray

INVENTOR

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his Atty

UNITED STATES PATENT OFFICE

PETER MUNZINGER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN METHODS OF EXTRACTING THE SALTS OF AMMONIA FROM COAL-GAS.

Specification forming part of Letters Patent No. **152,913**, dated July 14, 1874; application filed January 14, 1874.

To all whom it may concern:

Be it known that I, PETER MUNZINGER, of the city of Philadelphia, State of Pennsylvania, have invented an Apparatus for Removing Ammonia from Illuminating-Gas, of which the following is a specification:

The gas in its passage is caused to flow through one or more purifying-chambers, which are heated by coil heating tubes of any description, either cylindrical, conical, or tapering. The tubes atomize and heat the gas to the required degree, whereby its ammonia is removed and precipitated.

Figure 1 is a vertical section of an apparatus designed to illustrate the invention. It has conical heating-coils in this instance. Other coils can be used, either cylindrical, tapering, or of a shape suited to convenience or necessity. Fig. 2 is a plan view.

A is a fluid and precipitating chamber, to which connect the communicating purifying-chambers B B¹ and the single purifying-chamber B². C is the gas-inlet pipe, from the hydraulic main of the works, and D the outlet-pipe. E E¹ E² are conical coil heating-and-atomizing pipes in the chambers B B¹ B². They are supplied with steam and exhausted by the pipes F F¹. The gas enters at the pipe C, and, following the direction of the arrows, passes out at the pipe D. In its pas-

sage through the chambers B B¹ B² it is thoroughly atomized by the coils, and every particle is brought in intimate contact with their heated surfaces, which raises the temperature of the gas to the required degree, whereby the salts of ammonia are removed and precipitated in the vessel A.

The invention consisting, as shown, of one or more purifying-chambers, in connection with coil heating-pipes, I, therefore, wish it distinctly understood that I do not confine myself to the chambers or pipes B B¹ B², as shown. Neither do I confine myself to the number of chambers and coils to an apparatus.

I claim as my invention—

1. A coil heating-pipe, in combination with a heating-pipe or purifier, for the purpose shown and described.
2. The combination of a precipitating-vessel, A, a heating chamber or pipe, B, and a coil heating-pipe, E, for the purpose shown and described.

In testimony whereof I hereunto sign my name in presence of two subscribing witnesses.

PETER MUNZINGER.

Witnesses:

ELMER W. CLARK, Jr.,
FRANCIS D. PASTORIUS.