

No. 826,691.

PATENTED JULY 24, 1906.

S. F. SEAGER.
GAS PURIFYING APPARATUS.
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Fig. 1.

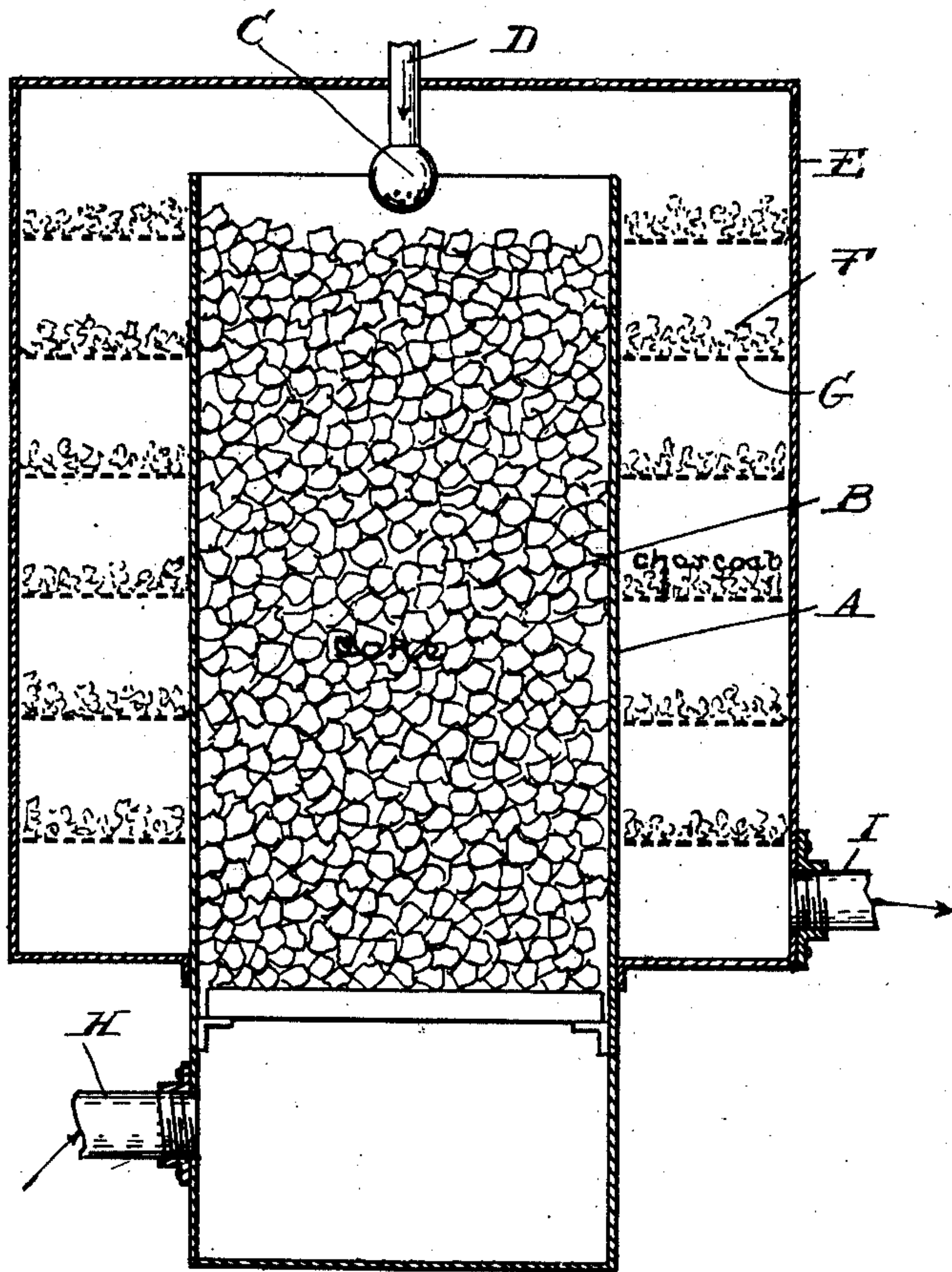
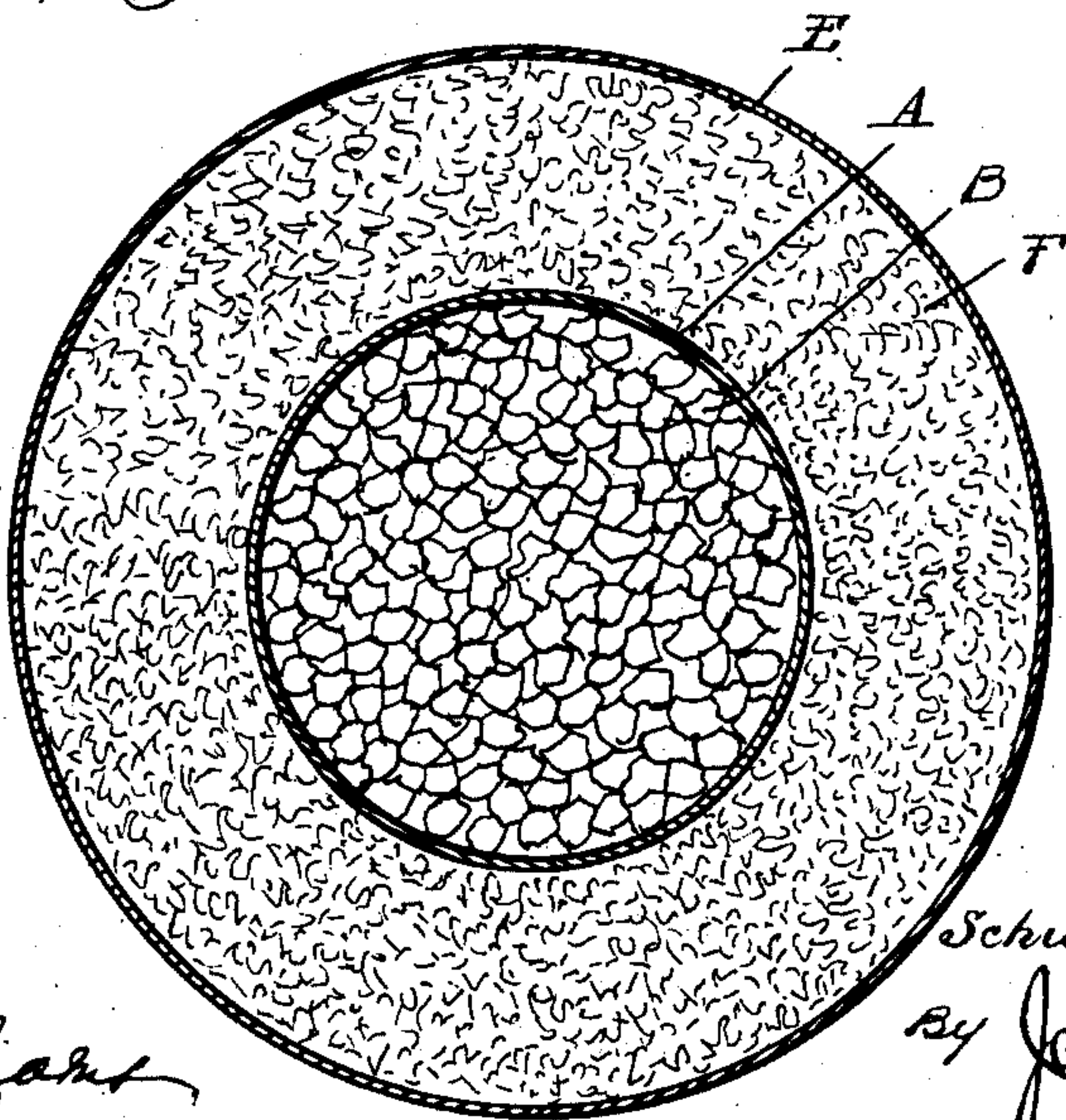


Fig. 2.



witnesses
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UNITED STATES PATENT OFFICE.

SCHUYLER F. SEAGER, OF LANSING, MICHIGAN, ASSIGNOR TO AMERICAN
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GAS-PURIFYING APPARATUS.

No. 826,691.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed December 20, 1905. Serial No. 292,570.

To all whom it may concern:

Be it known that I, SCHUYLER F. SEAGER, a citizen of the United States of America, residing at Lansing, in the county of Ingham and State of Michigan, have invented certain new and useful Improvements in Gas-Purifying Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to gas-purifying apparatus more particularly designed for use in connection with suction-gas producers; and the invention consists in the construction as hereinafter set forth.

In the drawings, Figure 1 is a vertical central section through the apparatus, and Fig. 2 is a horizontal section thereof.

In the present state of the art apparatus for purifying gas usually includes a "scrubber"—i. e., a casing containing coke or like material—through which the gas is passed in an upward direction and water is passed in a downward direction, bringing the two in intimate association and removing impurities from the gas. In addition to the scrubber a "cleaner" is generally provided, which consists of a chamber containing perforated trays supporting some loose material, such as shavings, through which the gas filters and is further purified. These two pieces of apparatus as usually constructed are of considerable bulk and, together with the necessary connecting-conduits, occupy a great deal of valuable floor-space.

It is the special object of the present invention to economize space by associating the scrubber and cleaner in a single structure, this also simplifying and cheapening the construction by dispensing with the connecting-conduits necessary with the separate structures.

As illustrated in the drawings, A is the scrubber-casing, preferably an upright cylinder, containing the coke or other scrubbing material B and provided at its top with a sprinkler-nozzle C, connected to a water-inlet conduit D. The waste water and products washed from the scrubber may be taken off from the bottom of the casing A by any suitably trapped or valved conduit. (Not shown.) Surrounding this casing A and preferably arranged concentric therewith is an outer casing E. The annular space be-

tween these casings constitutes the cleaner-chamber, and the cleaning material F therein is preferably supported on a series of annular perforated grids G. Any suitable cleaning material may be employed, such as charcoal or wood-shavings. The scrubber and cleaner are in direct communication with each other at their upper ends, preferably by terminating the casing A a short distance below the top of the casing E, thereby forming an annular port connecting the two chambers. Thus the gas which is admitted through an inlet-conduit H, connected to the lower end of the casing A, is drawn off through a conduit I, connected to the lower end of the casing E, and is caused to first travel upward through the scrubbing material within the casing A and then downward through the cleaning material supported on the annular grids G.

It is obvious that by properly proportioning the diameters of the two casings the desired area of surface may be given to the annular grids, and at the same time the combined structure will occupy much less floor-space than two separate structures of equal capacity.

What I claim as my invention is—

1. In a gas-purifying apparatus, the combination with a cylindrical casing, of a cylindrical casing of smaller diameter therein, said casings forming a cylindrical chamber and an annular chamber having communication at their upper ends, of conduits opening into the lower ends of said chambers for connecting with a gas-line, a sprayer in the top of said cylindrical chamber and means for supporting scrubbing and cleaning material in said chambers, for the purpose described.

2. In a gas-purifying apparatus, the combination with a cylindrical casing and a smaller cylindrical casing inclosed thereby to form a cylindrical chamber and an annular chamber, of a scrubber comprising purifying material and a sprayer therefor arranged in said cylindrical chamber, annular grids bearing cleaning material supported in said annular chamber and inlet and outlet connections to the lower ends of said chambers respectively, said chambers being in communication at their upper ends.

3. In a gas-purifying apparatus, two casings arranged the one about the other and

communicating with each other at their upper ends, a sprayer and scrubbing material arranged within one casing, a series of trays for supporting the cleaning material within
5 the other casing and inlet and outlet connections to the lower ends of the scrubber and cleaner respectively.

4. In a gas-purifying apparatus, a scrubber comprising grids containing purifying
10 material and a sprayer therefor, a casing surrounding said scrubber and communicating

therewith at its upper end and a series of horizontal perforated grids extending across the space between said casings and serving to support the cleaning material.

In testimony whereof I affix my signature
in presence of two witnesses. 15

SCHUYLER F. SEAGER.

Witnesses:

JAMES H. BROAD,
JOHN BELL.