

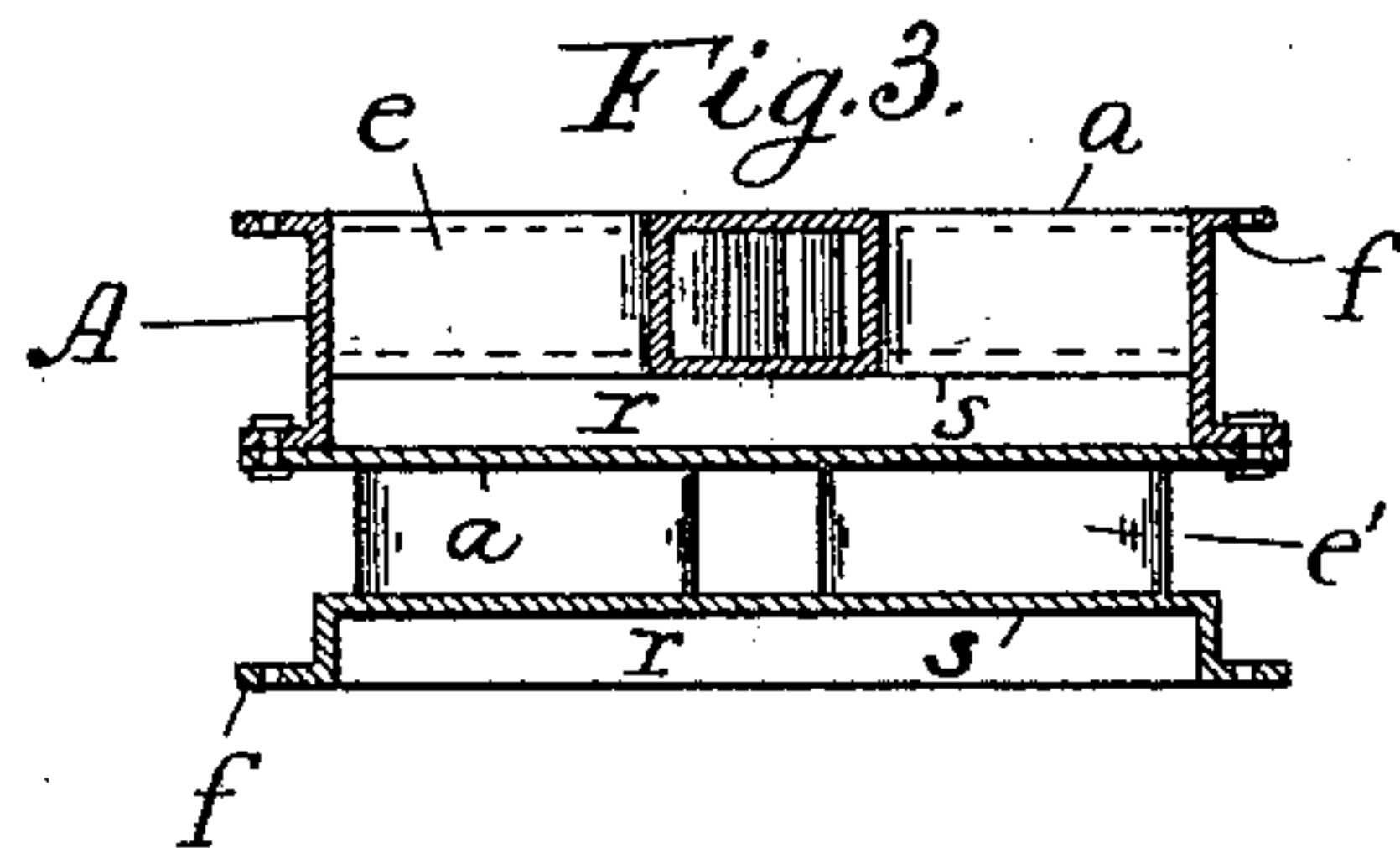
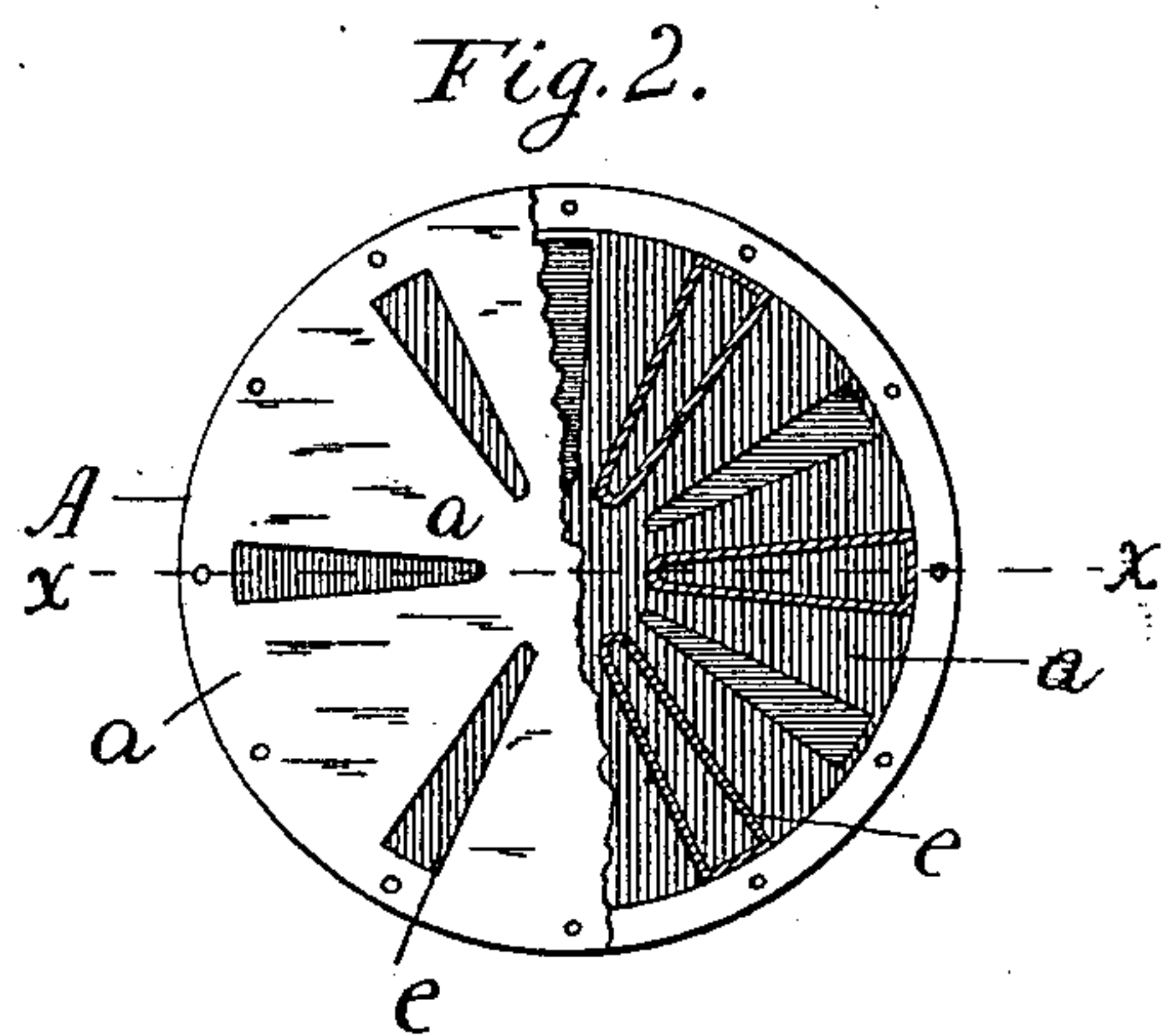
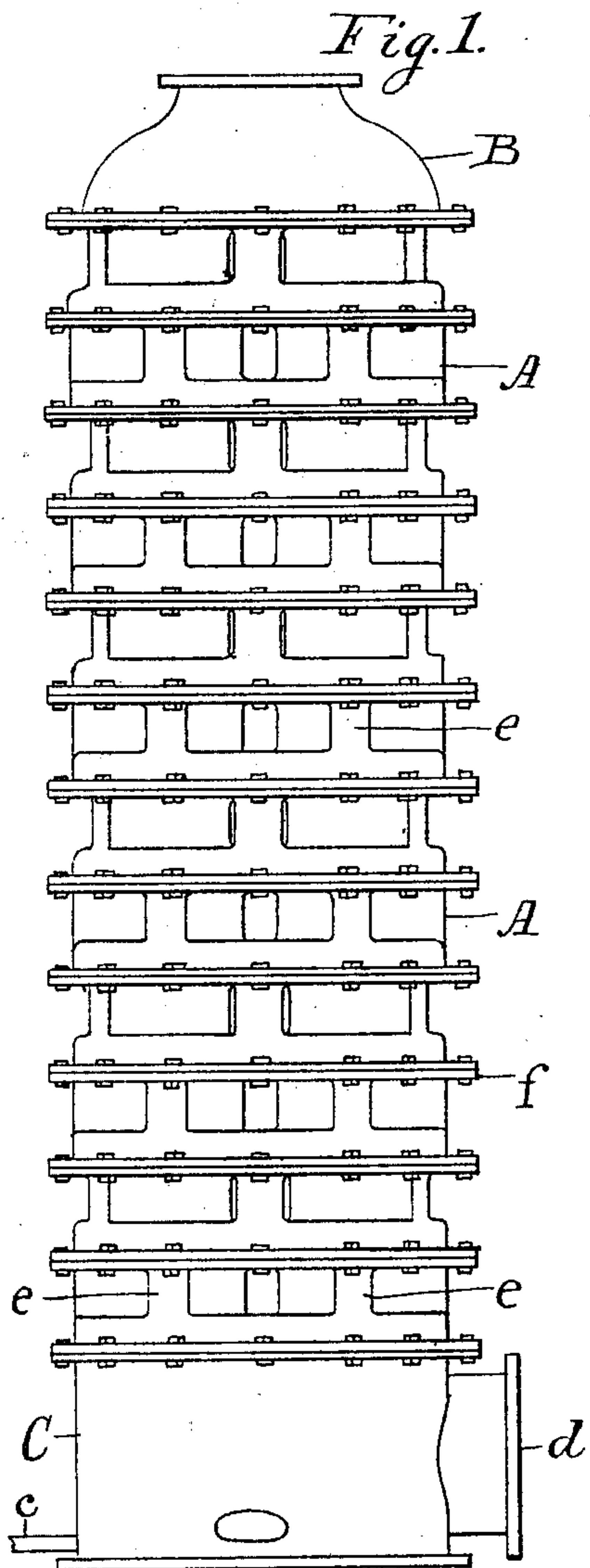
No. 632,081.

Patented Aug. 29, 1899.

E. H. YORKE.  
GAS SCRUBBER.

(Application filed Mar. 9, 1899.)

No Model.)



Witnesses:

Wm W Mitchell  
Lester M. Bradford

Inventor:

Eugene H. Yorke  
by S. W. Bates  
his atty.

# UNITED STATES PATENT OFFICE.

EUGENE H. YORKE, OF PORTLAND, MAINE.

## GAS-SCRUBBER.

SPECIFICATION forming part of Letters Patent No. 632,081, dated August 29, 1899.

Application filed March 9, 1899. Serial No. 708,440. (No model.)

*To all whom it may concern:*

Be it known that I, EUGENE H. YORKE, a citizen of the United States of America, and a resident of Portland, Cumberland county, State of Maine, have invented certain new and useful Improvements in Gas-Scrubbers, of which the following is a specification.

My invention relates to gas-scrubbers for removing the heavy tars from illuminating-gas. These scrubbers usually consist of elongated flues or chambers through which the gas is made to pass in a tortuous course, so that it may impinge as much as possible against the surfaces of the flue or chamber and be thereby freed from the heavy tars which are held in suspension.

The object of my present invention is to devise an apparatus in which the gas will be "baffled" or made to change direction as much as possible, which will present the greatest possible surface for the impingement of the gas, and which may be easily and cheaply constructed.

My invention consists of a gas-scrubber made up of a series of sections placed one on top of the other to form a vertical flue or passage for the gas, each section being provided with a horizontal diaphragm containing openings, which are preferably radial, the openings in each diaphragm being offset or out of line with relation to those in the adjacent diaphragms.

In the most approved construction of my scrubber there is a chamber formed above each diaphragm by means of a second diaphragm placed in each section, with ducts connecting the chambers through the two diaphragms, the outer surfaces of these ducts being exposed to the atmosphere, so that the cooling-surface is very great.

These various features of my invention will be hereinafter described and claimed.

I illustrate my invention by means of the accompanying drawings, which represent my improved gas-scrubber in its most approved form.

In the drawings, Figure 1 is a side elevation of the scrubber in its completed form. Fig. 2 is a part plan and part horizontal section of one of the units or sections; and Fig. 3 is a section on the line  $x x$  of Fig. 2, showing two of the sections.

The scrubber is built up of a plurality of sections or units A, placed one on top of another, with a base C, having a connection  $d$  for connecting with the gas main, and a cap B, having a similar connection. As many sections as desired may be used in building up the scrubber, according to the work to be done, and several scrubbers may be connected together, so that the gas will flow through them in succession. The base C is provided, as here shown, with a drip-pipe  $c$  for removing the tar.

The sections A, as here shown, are generally cylindrical in shape, and each has at one end, preferably the upper end, a diaphragm  $a$ , pierced by openings, (shown as radial openings,) six in number, evenly spaced around the cylinder. The lower end of each cylinder or that portion which rests on the diaphragm  $a$  of the next lower section is formed into a chamber  $r$  by means of a second diaphragm  $s$ , somewhat above the lower end of the section and having radial openings corresponding with the openings in the diaphragms  $a$ .

Each of the sections A rests in such a position on the one below it that the openings  $e$  in one section are out of line or offset from those of the adjacent section, so that the gas as it flows up or down through the openings  $e$  is constantly baffled and made to impinge directly against the face of one of the diaphragms  $a$  or  $s$ , and in this manner the heavy tar is thoroughly extracted. The several sections A are secured together by means of flanges  $f$  with suitable bolts. In practice I use twelve bolts equally spaced around the flange  $f$ , and as each section is put in place it is turned one-twelfth on the one below it or the distance of one hole, so that each of the openings  $e$  will come exactly half-way between the two openings below and above it.

It is evident that the sections may be so formed that the joints between sections will come at any desired point.

I claim—

1. The herein-described gas-scrubber, consisting of a series of sections, placed one on top of the other, to form a vertical flue or passage for the gas, each of said sections, having a pair of diaphragms connected by ducts or tubes, secured to and passing through them,



the successive pairs of diaphragms being separated from each other by a space or chamber, the ducts of each pair of diaphragms being out of line with the ducts of the next adjacent pair and the external surface of the ducts, being exposed to the external atmosphere.

2. The herein-described gas-scrubber, consisting of a series of sections, placed one on top of the other, to form a vertical flue or passage for the gas, each of said sections, having a pair of diaphragms connected by ducts or tubes, secured to and passing through them the openings of the tubes or ducts through

the diaphragms radiating from the centers of said diaphragms, the successive pairs of diaphragms being separated from each other by a space or chamber, the ducts of each pair of diaphragms being out of line with the ducts of the next adjacent pair and the external surface of the ducts, being exposed to the external atmosphere.

Signed by me at Portland, Maine, this 28th day of February, 1899.

EUGENE H. YORKE.

Witnesses:

S. W. BATES,

L. M. GODFREY.