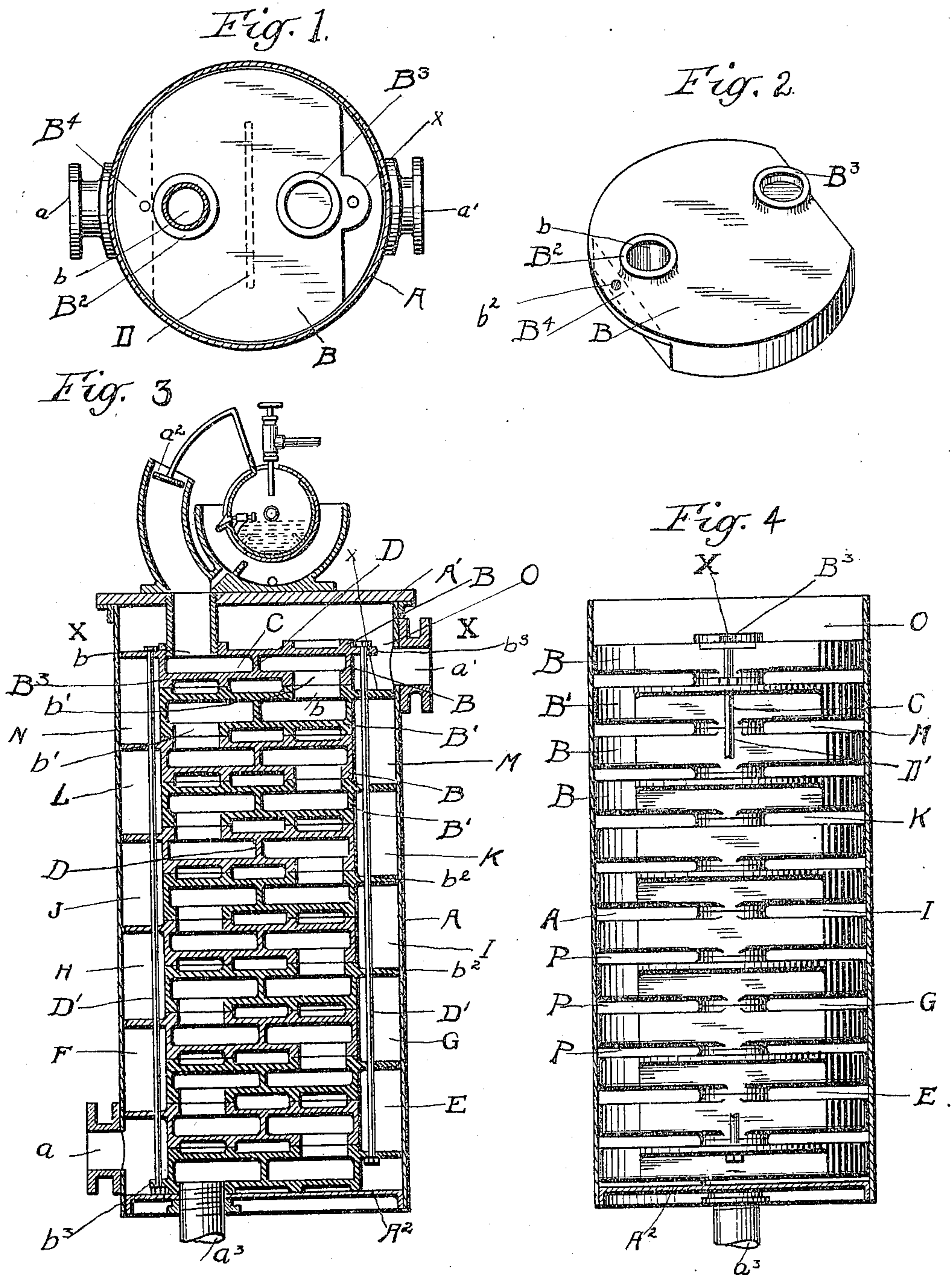


B. M. ASLAKSON.
VAPORIZER FOR GAS PRODUCERS.
APPLICATION FILED JAN. 14, 1908.

962,610.

Patented June 28, 1910.



WITNESSES
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BAXTER M. ASLAKSON, OF SALEM, OHIO.

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962,610.

Specification of Letters Patent. Patented June 28, 1910.

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To all whom it may concern:

Be it known that I, BAXTER M. ASLAKSON, a citizen of the United States, and residing at Salem, Columbiana county, Ohio, have
5 invented certain new and useful Improvements in Vaporizers for Gas-Producers, of which the following is a specification.

The present invention relates to vaporizers for use with gas producers.

10 The object of the invention is to provide a vaporizer of high efficiency and of simple construction.

Referring to the drawings which form a part of this specification,—Figure 1, is a
15 plan view on line X—X of Fig. 3. Fig. 2, is a perspective view of one of the interchangeable units by means of which conduits are formed. Fig. 3, is a vertical sectional side view through the casing and cast-
20 ings therein. Fig. 4, is a vertical sectional front view through the casing, disclosing the exterior surfaces of the castings.

A, indicates a casing which is provided with a top A' and a bottom A², and having
25 an inlet *a* and outlet *a'*, for the hot gas which passes through the vaporizer on its way from the producer to the scrubber of the gas plant.

The top A' and bottom A², are provided
30 with an inlet and an outlet *a*² and *a*³ respectively, through which air and water flow by way of a conduit formed in the castings B—B', etc. The castings B and B', are exact
35 duplicates of each other, and are formed as shown in Fig. 2, being arranged with their overhanging or projecting portions B⁴ oppositely disposed in order to form the conduits, as will be hereinafter set forth.

The casting B, is of proper form and of
40 sufficient external diameter to closely conform to the interior diameter of the casing A on two of its sides, and is provided with an opening in its top and bottom indicated
45 by *b* and *b'* respectively, each of which is surrounded by a boss B². A boss B³, is also formed on each side of the casting B at the points indicated, but there are no openings to the interior or chamber C, formed in said
50 casting at these points, the bosses serving to separate the castings from each other a predetermined distance to provide a passage between the castings from one side of the casing to the other, as hereinafter more fully described.

55 The castings are preferably provided with a wall D, which is formed integral there-

with, and is indicated in Fig. 1 by dotted lines, and extends across the center a sufficient distance to force the gases to flow
60 around the ends thereof before they can reach the outlet *b'*, for a purpose hereinafter explained.

The projecting portion B⁴, is provided with a hole *b*², through which a rod D' is
65 passed, by means of which the castings are held together as shown, the top unit and bottom unit being provided with a short projection *b*³, located as shown to permit the
70 rods D', to hold the top and bottom units on this side of the casting, as will be readily understood.

When the castings B are arranged in the casing as shown, the openings *b* and *b'* will register and communication be established
75 from the interior of chamber C in one casting to chamber C of the next, thereby forming a conduit which extends from the inlet *a*² to outlet *a*³, the gases flowing around the
80 ends of the walls D, as previously described. This arrangement of castings B, also forms a conduit leading from inlet *a* in the casting
85 to outlet *a'*, the gases flowing in at *a*, and around each side of the bosses B² and B³ successively, to chambers E, F, G, H, I, J, K, L, M, N and O, through the passage P
90 formed between the castings by separating them by bosses B² and B³, as will be easily understood.

The hot gases from the gas producer enter
95 the casing at *a* and leave at *a'*, flowing over the outer surfaces of the castings B, and air and water are admitted at *b* to the interior of the castings and flow through the conduit formed therein to the outlet *a*³ on their
100 way to the producer, absorbing the heat from the hot gases flowing through the other conduit, as will be readily understood.

A water feeding device is shown located on the top of the casing and is arranged to
105 automatically deliver the proper amount of water with the air admitted to the vaporizer.

There are several advantages derived from the present construction, such as large surface area in small space and the conduits arranged to effect a quick exchange of heat
110 from one gas to the other, due to their juxtaposition.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is—

1. A vaporizer comprising a casing, a plurality of castings of like form located there-

- in and closely fitting the inner wall thereof and forming by their arrangement in and with said casing two separate conduits, one of which extends through said castings and the other between said castings and casing, each of said castings having a projecting portion, and rods extending through said projecting portion to hold said castings together.
2. A vaporizer comprising a casing having a plurality of castings therein, of like form and closely fitting the inner wall thereof, each of which is provided with a chamber, and forming by their arrangement a tortuous conduit between said castings and said casing which extends alternately across said casing, said chambers being in open connection with each other and forming a conduit through said castings.
3. A vaporizer comprising a casing having a plurality of castings therein of like form superimposed one above the other and separated from each other a predetermined distance, each of said castings having the projecting portions arranged alternately on opposite sides from each other, and in contact therewith at its sides thereby forming a tortuous passage extending alternately from one side of the casing to the other, contributing with said casing to form a conduit as set forth, each of said castings having a chamber with an inlet and an outlet, the inlet of one registering with the outlet of the adjacent one, thereby forming a conduit leading through said castings, as set forth.
4. In a vaporizer, an element comprising a casting having a divided chamber therein, and having an opening in its top and bottom, each of which is surrounded by a boss, and having a supporting boss located opposite said first named boss.
5. In a vaporizer, an element comprising a casting having a chamber therein provided with an inlet on the bottom and an outlet on the top and obliquely disposed, each being surrounded by a boss as set forth, and having a projecting portion at one side thereof for the purpose described.
6. In a vaporizer, a plurality of elements of like form, each of which has a chamber therein provided with an inlet and an outlet and a boss around said inlet and outlet which abuts a like boss on the adjacent element to separate said elements and form a passage between them, and a second supporting boss located opposite said first named boss on each element.
7. In a vaporizer, a plurality of elements of like form, each of which has a chamber therein having a vertical partition, and provided with an inlet and outlet, and each inlet and outlet having a boss serving to separate said elements and also to connect said chambers in open communication, and each having a laterally projecting portion adapted to form a partition to cause the gases to flow alternately from one side of the casing to the other.
8. In a vaporizer, a casing, a plurality of elements therein of like form and extending from one side of said casing to the other, each of which has a chamber therein provided with an inlet and outlet, and each inlet and outlet having a boss serving to separate said elements and also to connect said chambers in open communication as set forth, and means extending through said elements exterior to said chambers, for holding said elements together.
9. In a vaporizer, a casting having an upper and lower wall and a side wall, forming a chamber, a vertical wall in said chamber and an inlet in the lower wall on one side of vertical wall and an outlet in said upper wall and on the opposite side of said vertical wall, said inlet and outlet each having a boss as set forth.
10. In a vaporizer, an element comprising a casting having a chamber therein divided by a vertical inner wall, and having an opening in its top and bottom located on opposite sides of said wall, and having one of said openings surrounded by a boss, as set forth.
11. In a vaporizer, an element comprising a casting having a chamber therein divided by a vertical wall, and having an opening in its top and bottom located on opposite sides of said wall and having bosses formed thereon, as set forth, and having a projection at one side as shown.
12. A vaporizer comprising a casing having a plurality of castings therein of like form as shown which closely fit the wall of said casing, and arranged to form a plurality of conduits one of which extends alternately across the casing between said castings and each of which is provided with an inlet and an outlet through said casing, substantially as described.
13. A vaporizer comprising a casing, a plurality of castings therein which extend across said casing and each provided with a chamber, and a laterally projecting flange extending from each casting to said casing, said castings being superimposed one above the other and their chambers connected together to form a conduit, and said castings and casing also forming a conduit between them which extends across alternately from one side of the casing to the other.
14. A vaporizer comprising a casing, a plurality of castings therein which extend across said casing and each provided with a chamber, and a laterally projecting flange extending from each casting to said casing, said castings being superimposed one above the other and their chambers connected together to form a conduit, and said castings

and casing also forming a conduit between them which extends across alternately from one side of the casing to the other and a rod extending through said flanges to hold said 5 castings together.

15. In a vaporizer, a casing, a plurality of elements of like form located therein, each of which has a chamber therein having a vertical partition, and provided with an 10 inlet and outlet; means for separating said elements, a predetermined distance from each other, said chambers being in open communication with each other; each of said

elements having a laterally projecting portion adapted to form a partition to cause the 15 gas to flow alternately from one side of the casing to the other.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses, this tenth day of 20 January 1908.

BAXTER M. ASLAKSON.

Witnesses:

FRANK M. ASHLEY,
A. T. SCHARP.