(No Model.)

A. KREUSLER.

STEAM GENERATING APPARATUS.

No. 502,418. Patented Aug. 1, 1893.

Fig. 1.

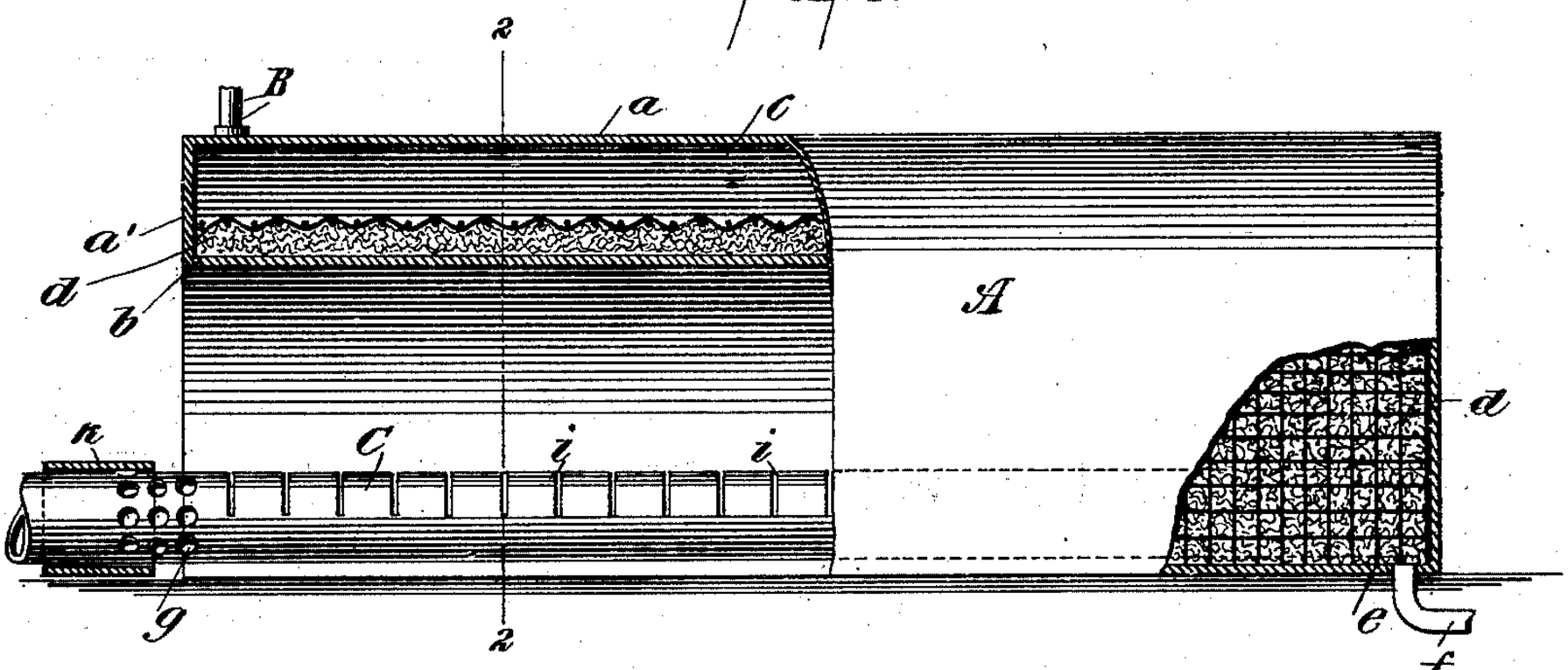


Fig. 2.

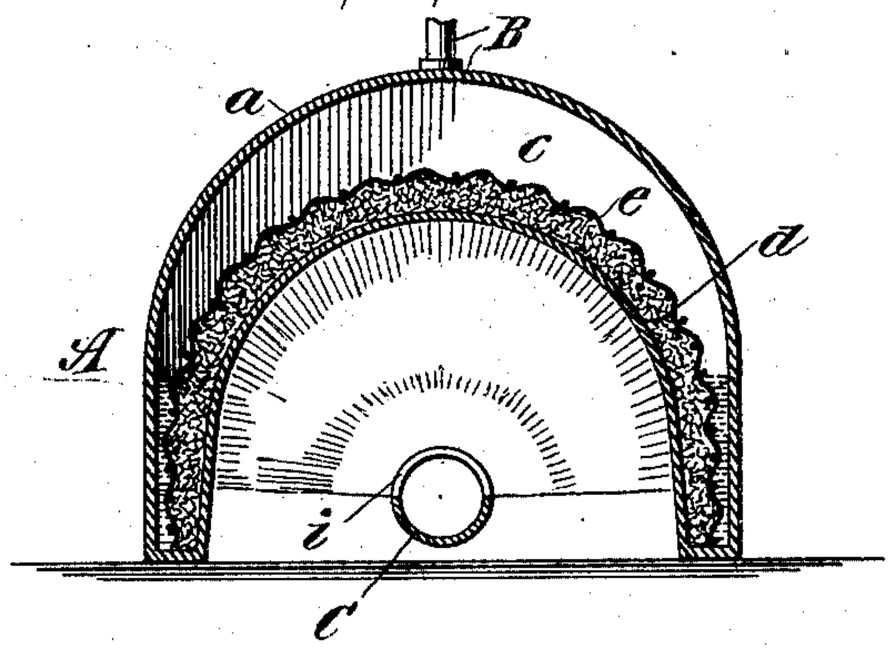
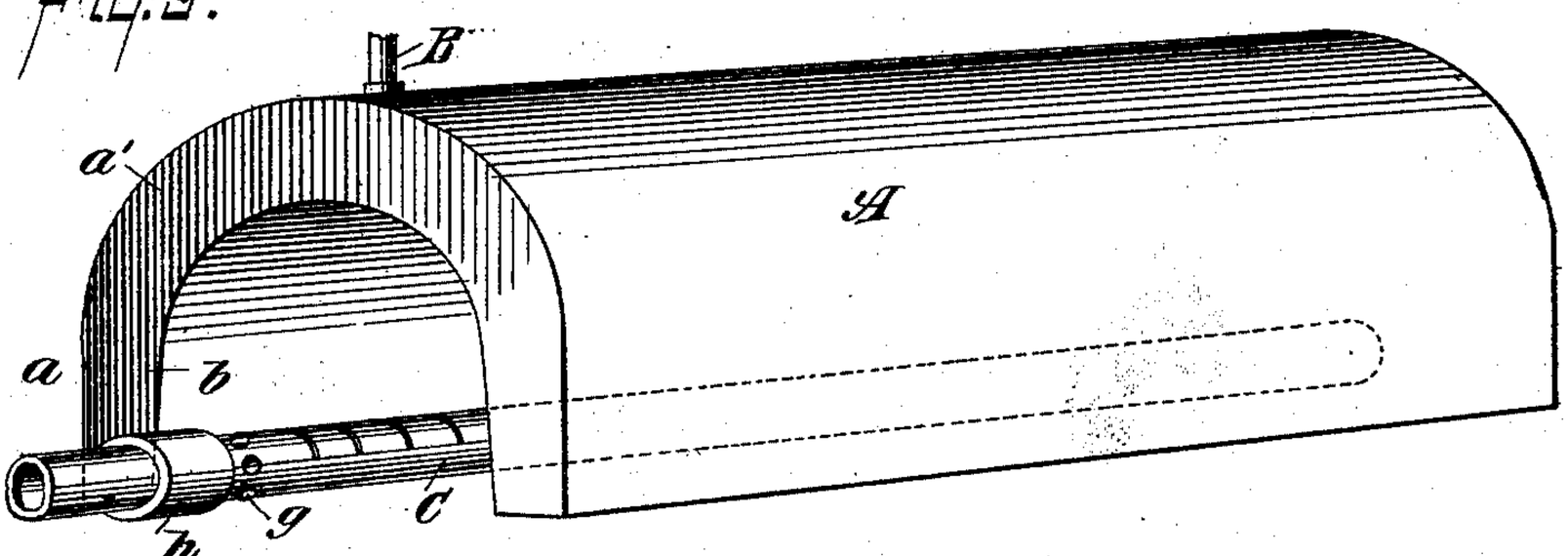


Fig. 3.



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ARNOLD KREUSLER, OF STATEN ISLAND, NEW YORK.

STEAM-GENERATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 502,418, dated August 1, 1893.

Application filed August 19, 1892. Serial No. 443,528. (No model.)

To all whom it may concern:

Be it known that I, ARNOLD KREUSLER, a citizen of the United States, and a resident of Staten Island, in the county of Richmond and State of New York, have invented a certain new and useful Improved Steam-Generating Apparatus, of which the following is a specification.

My invention relates to an apparatus for generating steam and consists of the elements hereinafter described and pointed out in the claims.

The invention is illustrated in the annexed drawings, in which—

Figure 1 represents a side elevation partly broken away. Fig. 2 represents a cross section on the lines 2—2 of Fig. 1. Fig. 3 represents a perspective view.

Like parts are represented by like letters.

A represents my steam generator in the form of an arch, and consists of an outer and an inner shell, which are connected at their bottoms and ends as shown at a' and b', so as to leave a space c and form a half tube.

b is the inner shell, and a is the outer shell.

B is a steam outlet pipe.

f is an inlet pipe for the water.

C is a gas pipe having the slots or perforations i, and which is supplied with a Bunsen gas and air inlet pipe, and which pipe extends from end to end of the generator and is set as shown in the drawings.

The pipe C is provided at the burner end with perforations or air inlets g and the sleeve h, by means of which the inlet of air is regulated. In the space between the shells a and b and around the inner shell b is placed a suitable capillary material d, which is held in place with a perforated wire screen e. At one end of the outer shell a steam outlet pipe B is provided and a water inlet pipe f is provided at the opposite lower end. I can also use this apparatus for the production of gas by vaporization of oil, by substituting crude oil for water and passing it into the space between the shells, through inlet pipe f, and permitting the vaporized oil to pass off through pipe B to a suitable receiver.

It is not absolutely necessary to use a slotted pipe, since an oil burner may be used or other means may be used where the generator is intended for power purposes. Grates may be set underneath.

When the burner is lighted, the flames strike on all sides of the inner shell and thus the water in the generator is quickly converted into steam. This generator may be used very conveniently for portable heaters or for the generation of steam for power purposes.

In practice the generator is filled with water as far as the dotted lines. The water being carried upward by capillary attraction and coming in contact with the heated shell is readily vaporized. The capillary material preferably consists of asbestus, or it may be mineral wool, or other fine material of sufficient fibrous character to cause the water to ascend by capillary attraction.

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

1. In a steam generator, the combination with inner and outer arched shells, of an arched screen located in the space between said shells, and capillary material confined between said screen and the inner shell, substantially as described.

2. A steam generator A, having the arched shells a and b, closed at the ends a' and b' and at its bottom, forming a liquid receiving chamber c; the capillary material d, and pipes f and B, in combination with means for heating the inner shell, substantially as described.

Signed at New York, in the county of New York and State of New York, this 5th day of July, A. D. 1892.

ARNOLD KREUSLER.

Witnesses:
RICHARD LIPS,
JOHN T. LITTLE, Jr.