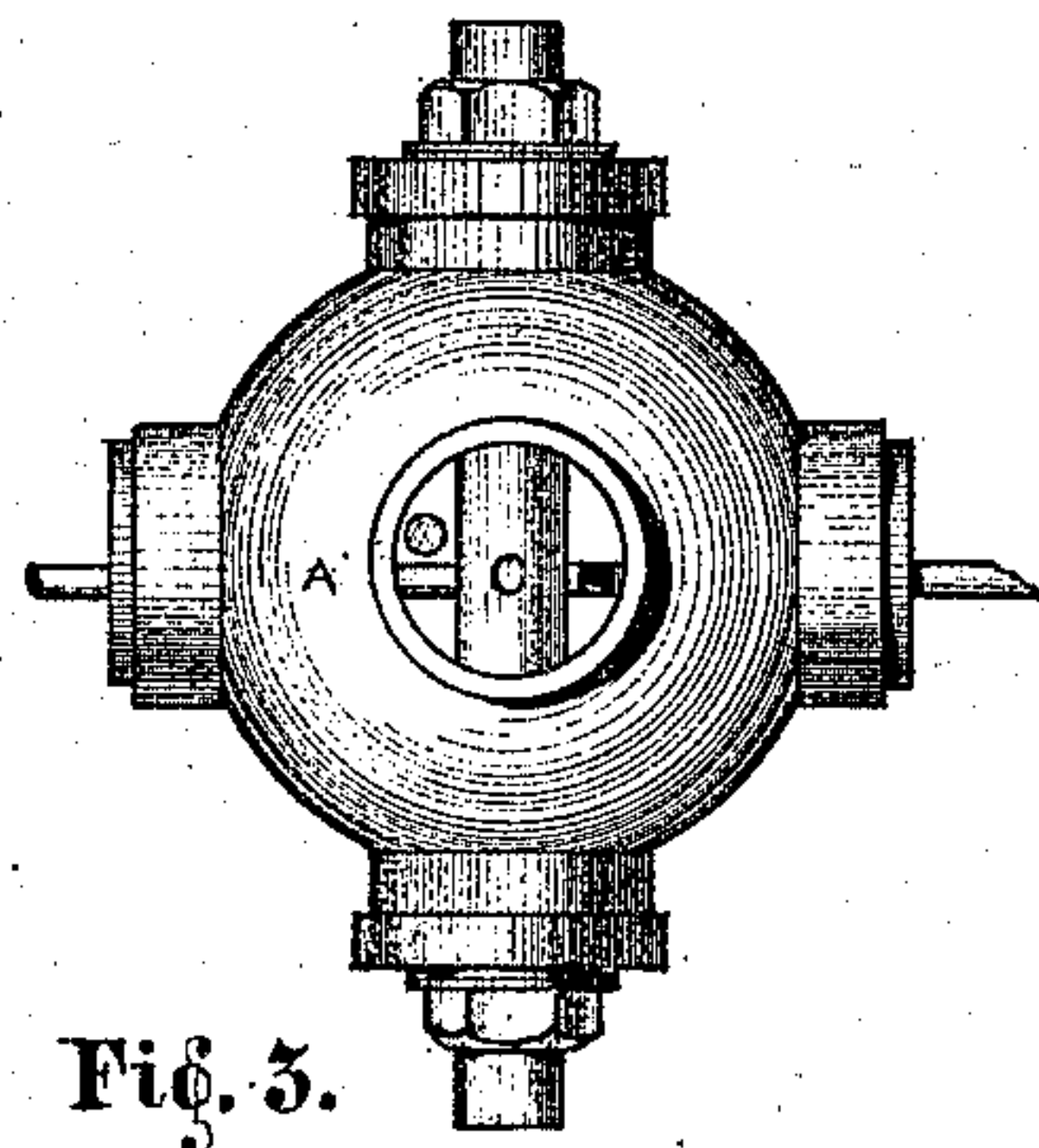
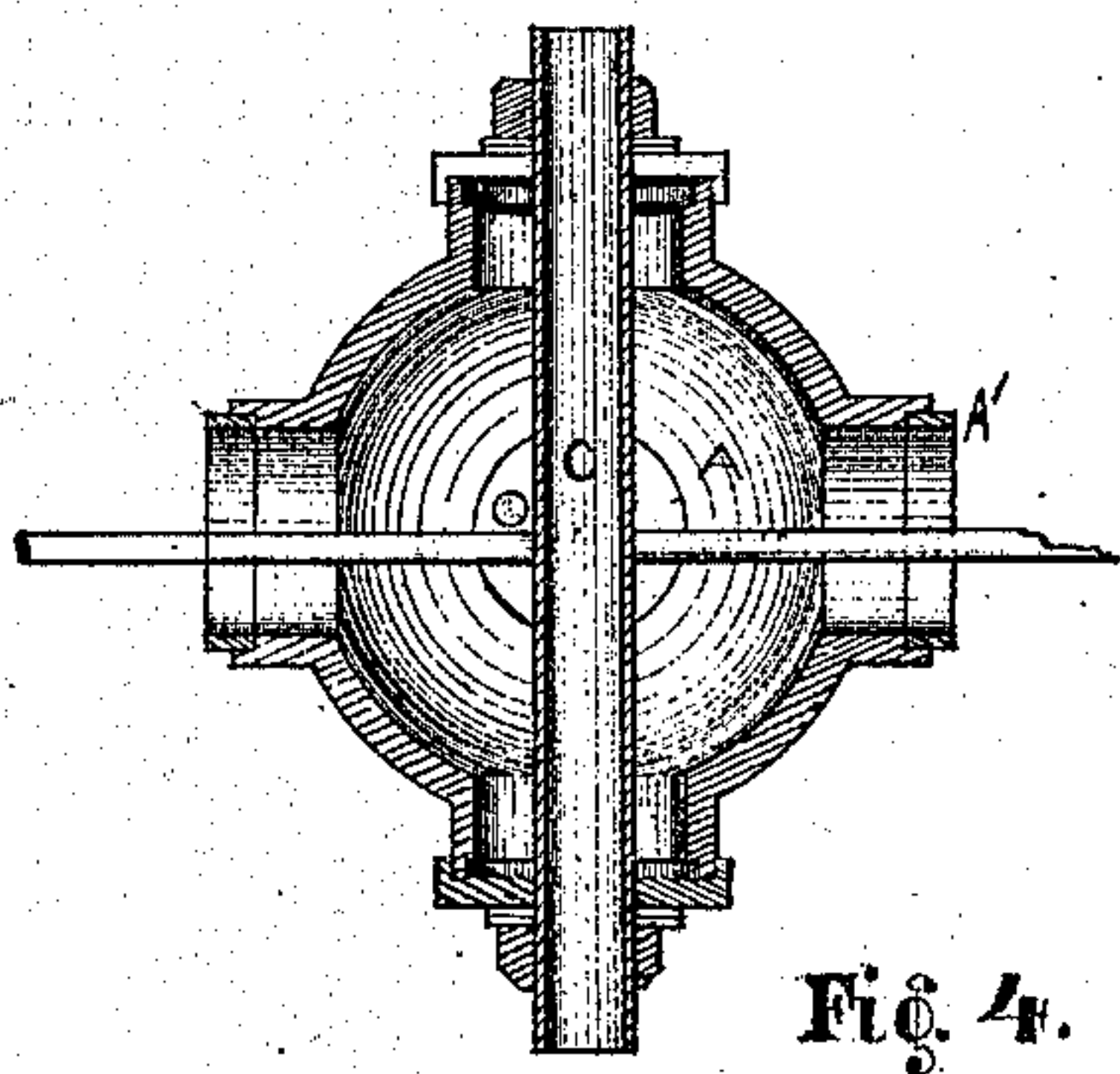
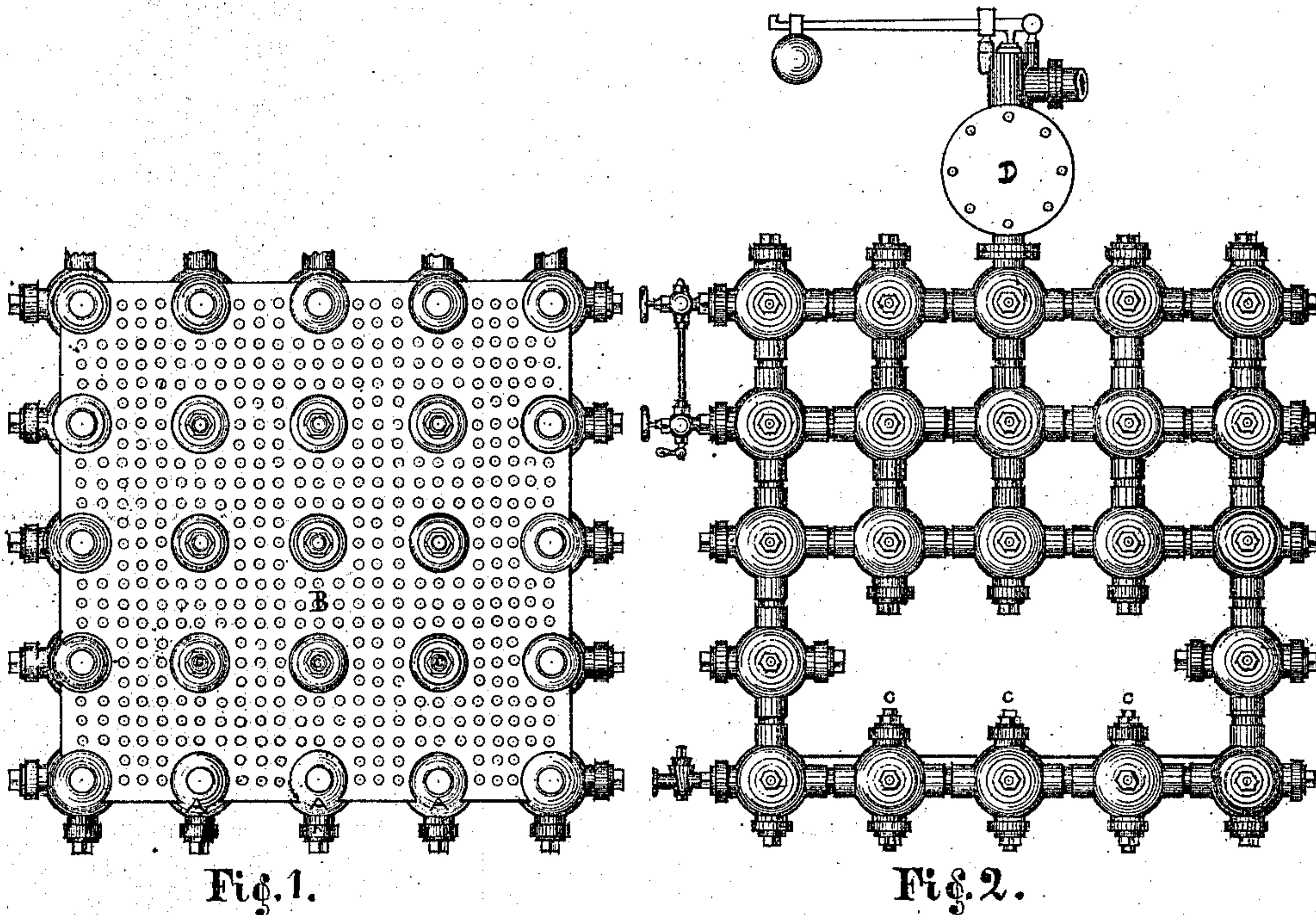


D. AMSDELL.  
STEAM GENERATOR.

No. 103,120.

Patented May 17, 1870.



Witnesses  
H. W. Dapp  
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Inventor,  
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# United States Patent Office.

DEXTER AMSDELL, OF HAMBURG, NEW YORK.

*Letters Patent No. 103,120, dated May 17, 1870.*

## IMPROVEMENT IN STEAM-GENERATORS.

The Schedule referred to in these Letters Patent and making part of the same.

I, DEXTER AMSDELL, of Hamburg, in the county of Erie and State of New York, have made certain Improvements in "Sectional Steam-Generators," of which the following is a specification.

The nature of my invention consists in constructing steam-generators of a series of sections, made of cast-iron or other suitable material peculiarly arranged and provided, the lower row of sections being constructed in conjunction with perforated plates or grate-bars fitting between the series of sections, to be used as fire-grates, the lower row of sections answering as grate and generator at the same time. This arrangement is adapted for the burning of fuel, such as sawdust, tan-bark, &c., and, in order to supply the combustible gases obtained in burning sawdust, &c., with the necessary amount of air, each of the sections of the lower row, which constitutes the grate, is provided through its center with a hot-air-supply tube, in order to convey a direct stream of hot air right into the combustible gases trying to escape without being consumed. I refer to the drawing which makes part of the following specification and illustrates my invention more fully.

Figure 1 represents a series of sections, A, secured together by a bolt running through the center, the space between the sections A being filled with perforated plates B, and each of the sections A being provided with an air-supply pipe or tube, C, in order that the whole may answer as a grate to burn sawdust and such like material.

Figure 2 represents the steam-generator, composed of series of sections A, secured together with bolts running through their center, or by other suitable means.

- A are the cast sections;
- B is the grate, as aforesaid;
- C are the hot-air-supply tubes; and
- D is the steam-receiver.

It will be observed that the capacity of the steam-generator depends upon the number of sections ap-

plied; that any number desired may be applied and secured together; and that the whole generator is to be surrounded and inclosed by masonry.

Figure 3 represents the section A, made of cast-iron or other suitable material. It terminates in branches, to enable other sections to be added and extended in all directions, and to provide for a communication from one to the other sections throughout the whole generator.

Figure 4 is a cut through the center of section A, where the same terminates in branches. It is provided with an expansion ring, A', to give ready means for making tight joints in securing sections together, and to prevent leakages, caused by expansion and contraction.

It will be observed that the branches of section A are bored out, and the expansion ring turned off, in order to fit the bore of section branch A to perfectness; and that the expansion-packing ring, when two sections are screwed together, fits one-half in the branch of one, and one-half in the branch of the other section, the expansion-packing ring, in conjunction with a branch of section A, operating like a tube of a spy-glass. With the hot-air-supply tube C, only those sections A are provided which are serving, in combination with perforated plates or grate-bars B, as fire-grate.

Having thus fully described my invention,

I desire to secure by Letters Patent—

1. In the construction of sectional steam-generators, the application of sections A, so arranged and constructed as to serve as fire-grates, substantially as described and set forth.

2. In combination with sections A, the air-supply tubes C, for the purpose set forth.

D. AMSDELL.

Witnesses:

H. WM. DOPP,  
MICHAEL J. STARK.