No. 667,925. Patented Feb. 12, 1901.

W. SWINDELL.

GAS PRODUCER.

(Application filed Sept. 28, 1900.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 2.

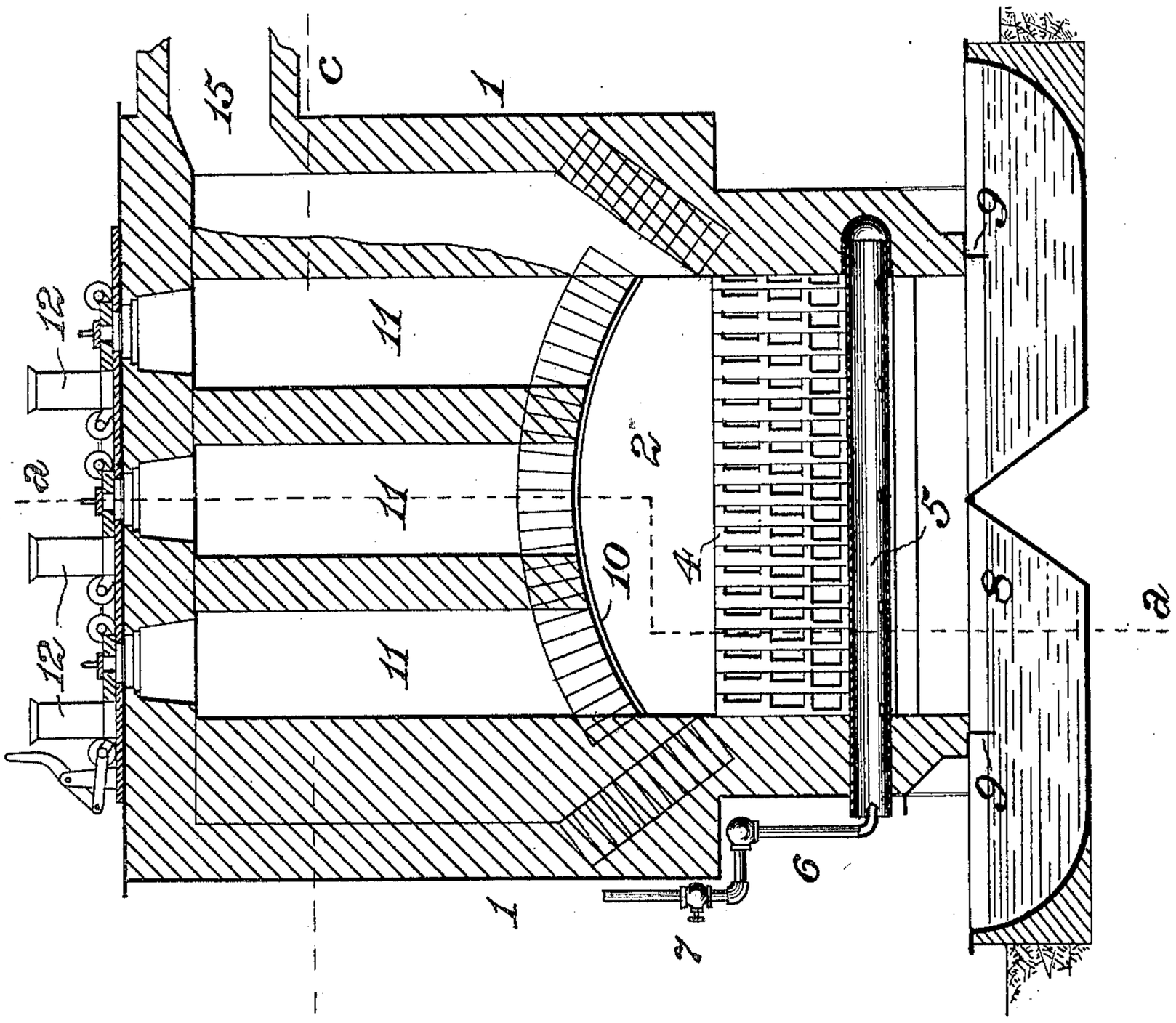
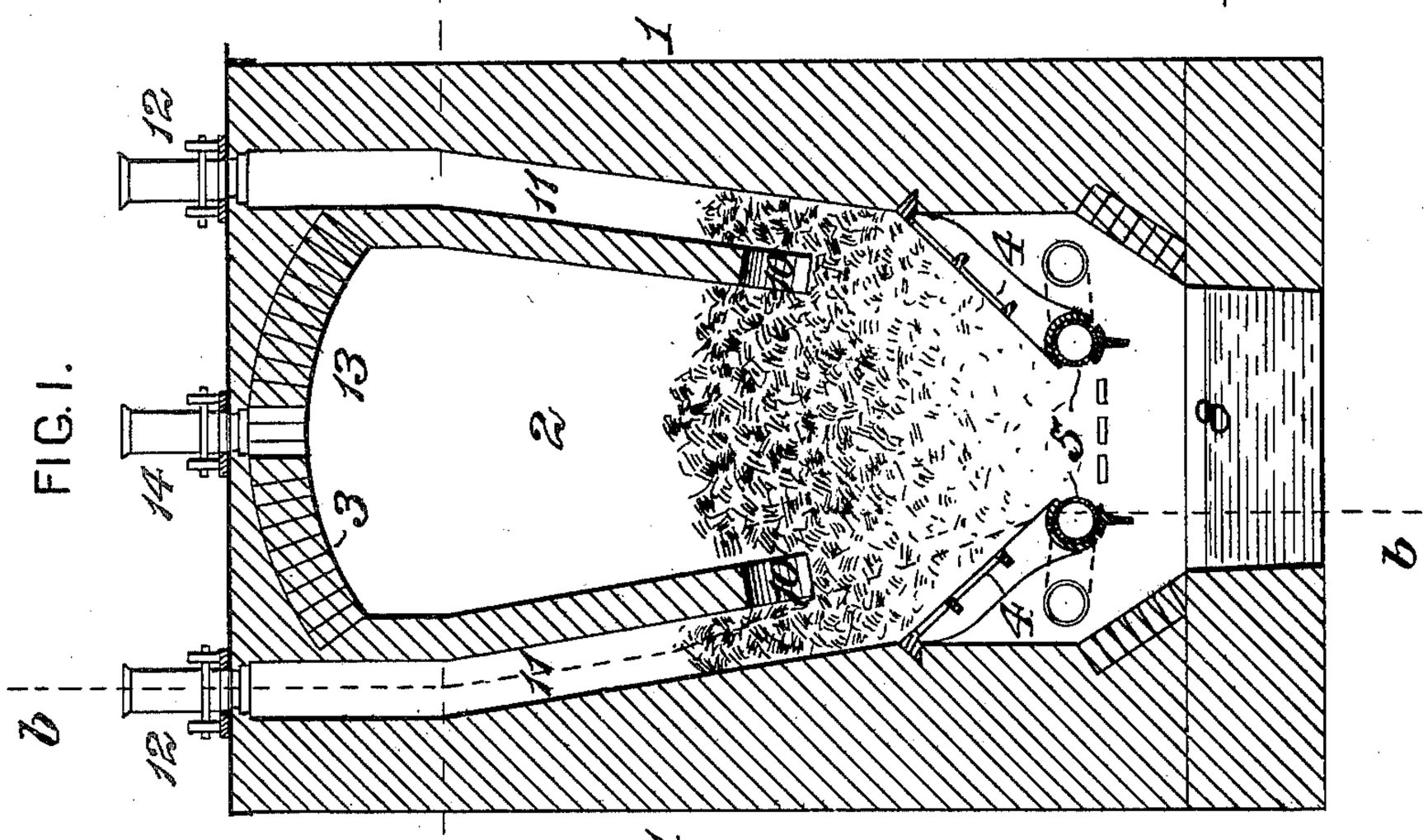


FIG. 1.



WITNESSES:

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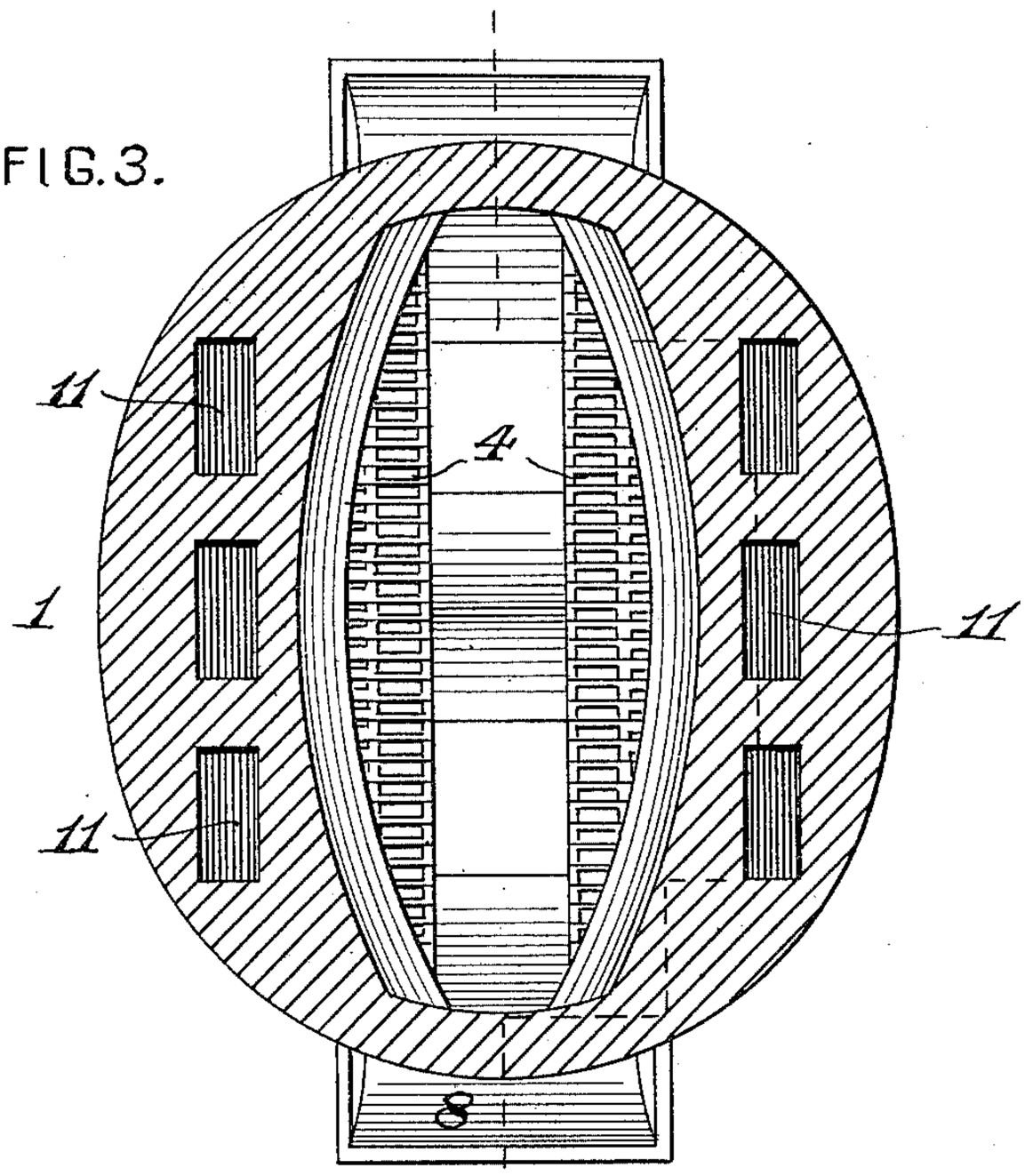
FIG. 3.



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UNITED STATES PATENT OFFICE.

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GAS-PRODUCER.

SPECIFICATION forming part of Letters Patent No. 667,925, dated February 12, 1901.

Application filed September 28, 1900. Serial No. 31,447. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SWINDELL, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Gas-Producers, of which improvement the following is a specification.

The object of my invention is to provide a gas-producer of simple and inexpensive construction which shall be capable of effectively and economically generating fuel-gas from anthracite coal or combustible material of analogous character.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a vertical transverse section through a gas-producer illustrating an application of my invention at the line *a a* of Fig. 2; Fig. 2, a vertical longitudinal section through the same at the line *b b* of Fig. 1, and Fig. 3 a horizontal section at the line *c c* of Figs. 1 and 2.

In the practice of my invention the vertical wall 1 of the producer is built of suitable masonry, preferably of elliptical contour, as shown in Fig. 3, and incloses a generating-chamber 2, which is covered and closed at its top by an arched roof 3. Inclined grates 4 are supported at the sides of the lower portion of the generating-chamber, and longitudinal blast-pipes 5, to which currents of steam are supplied by pipes 6, controlled by valves 7, extend along the lower sides of the grates 4. 4. The lower portion of the generating-chamber communicates with an ash-pit 8, which is preferably adapted to be water-sealed, transverse plates 9 extending across the ash-pit to a level below that at which water may normally stand therein, as shown in Fig. 2.

The side walls 1 of the generating-chamber are preferably formed with longitudinal offsets or shoulders 10, which may be arched, as shown, and are located at or adjacent to the level at which fuel is ordinarily maintained in the generating-chamber, and a substantially vertical fuel-supply passage 11 (one or more, according to the length of the generating-chamber) is formed in each of the side walls. The fuel-supply passages 11 extend from the tops of the side walls to the shoulders 10, at which their lower ends are open to the generating-chamber 2, and each of them is provided at its top with a suitable feed-hopper 12, through which fuel may be charged at proper intervals, as in ordinary practice. In the instance shown three fuel-supply passages are located on each side of the generating-chamber; but it will be obvious to those skilled in the art that the number of supply-passages employed is not of the essence of my invention. A central supply-passage 13, (one or more,) having a feed-hopper 14, may, if desired, be provided in the roof 3 of the generating-chamber. A discharge-passage 15 leads from the generating-chamber to a desired point of delivery.

In the operation of the producer the anthracite or analogous fuel which is employed is charged into the fuel-supply passages 11 and passes down through the same into the generating-chamber 2, in which it is supported on the grates 4. The upper level of the body of fuel in combustion in the generating-chamber is maintained at or near the lower discharge ends of the fuel-supply passages, and the lower portions of the bodies of fuel which stand in said passages become ignited and burn therein before passing therefrom into the generating-chambers. A more thorough and effective evolution of gas from the fuel is thereby attained than when, as in practice prior to my invention, the fresh fuel is charged directly from the top of the generating-chamber upon the body of ignited fuel therein.

I claim as my invention and desire to secure by Letters Patent—

1. In a gas-producer, the combination of a generating-chamber, a lower fuel-support therein, and a substantially vertical downwardly-extending fuel-supply passage inclosed in the side wall of the generating-chamber and opening thereinto at its lower end.

2. In a gas-producer, the combination of a generating-chamber, a lower fuel-support therein, a longitudinal offset or shoulder formed on a wall of the combustion-chamber, at or adjacent to the level at which fuel is normally maintained therein, and a down-

wardly-extending fuel-supply passage inclosed in said wall and opening into the generating-chamber at the shoulder or offset.

3. In a gas-producer, the combination of a generating-chamber, grates supported at the sides of the lower portion thereof, and a plurality of substantially vertical downwardly-extending fuel-supply passages inclosed in the side walls of the generating-chamber and opening thereinto at or adjacent to the level at which fuel is normally maintained therein.

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