

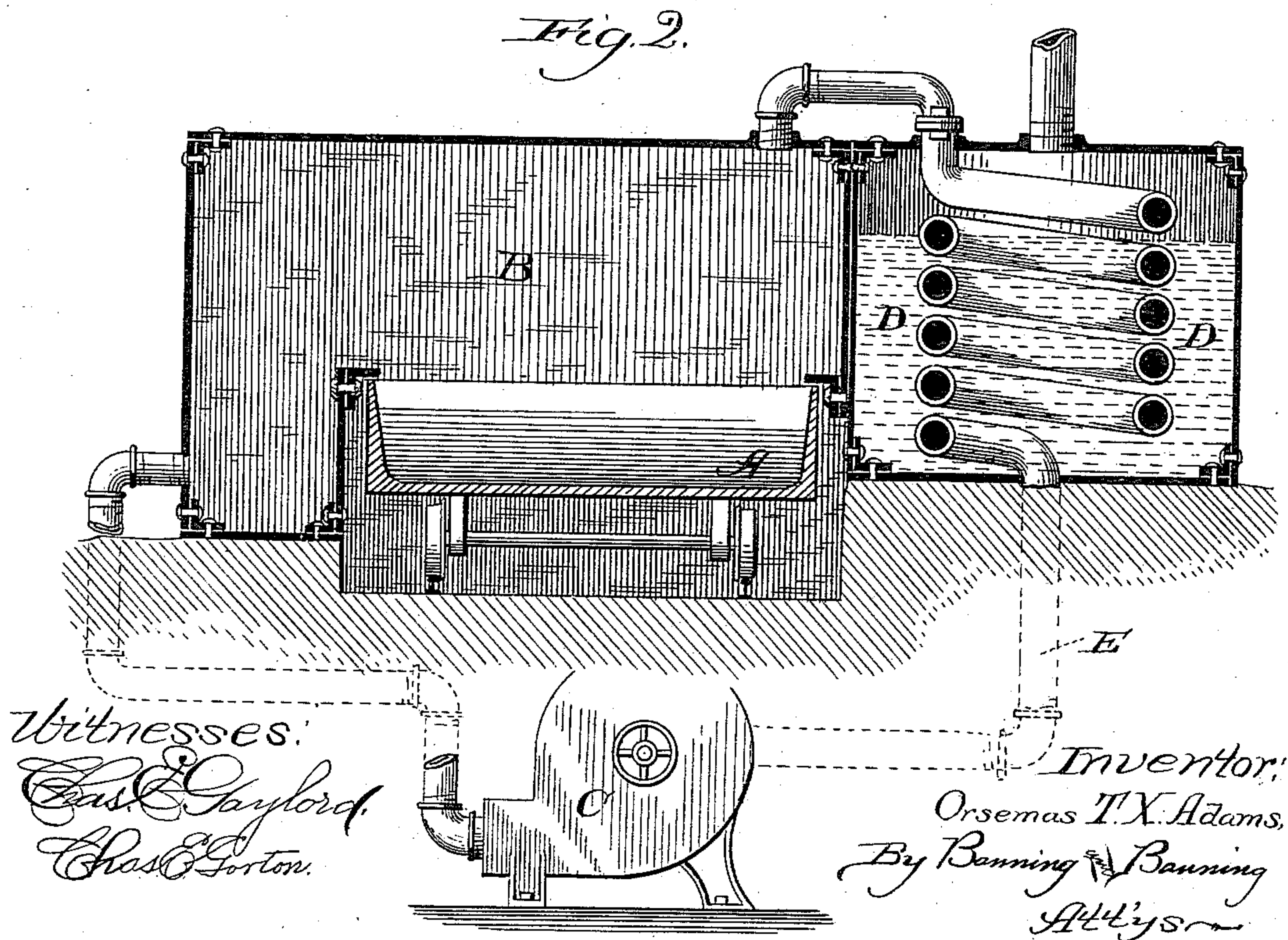
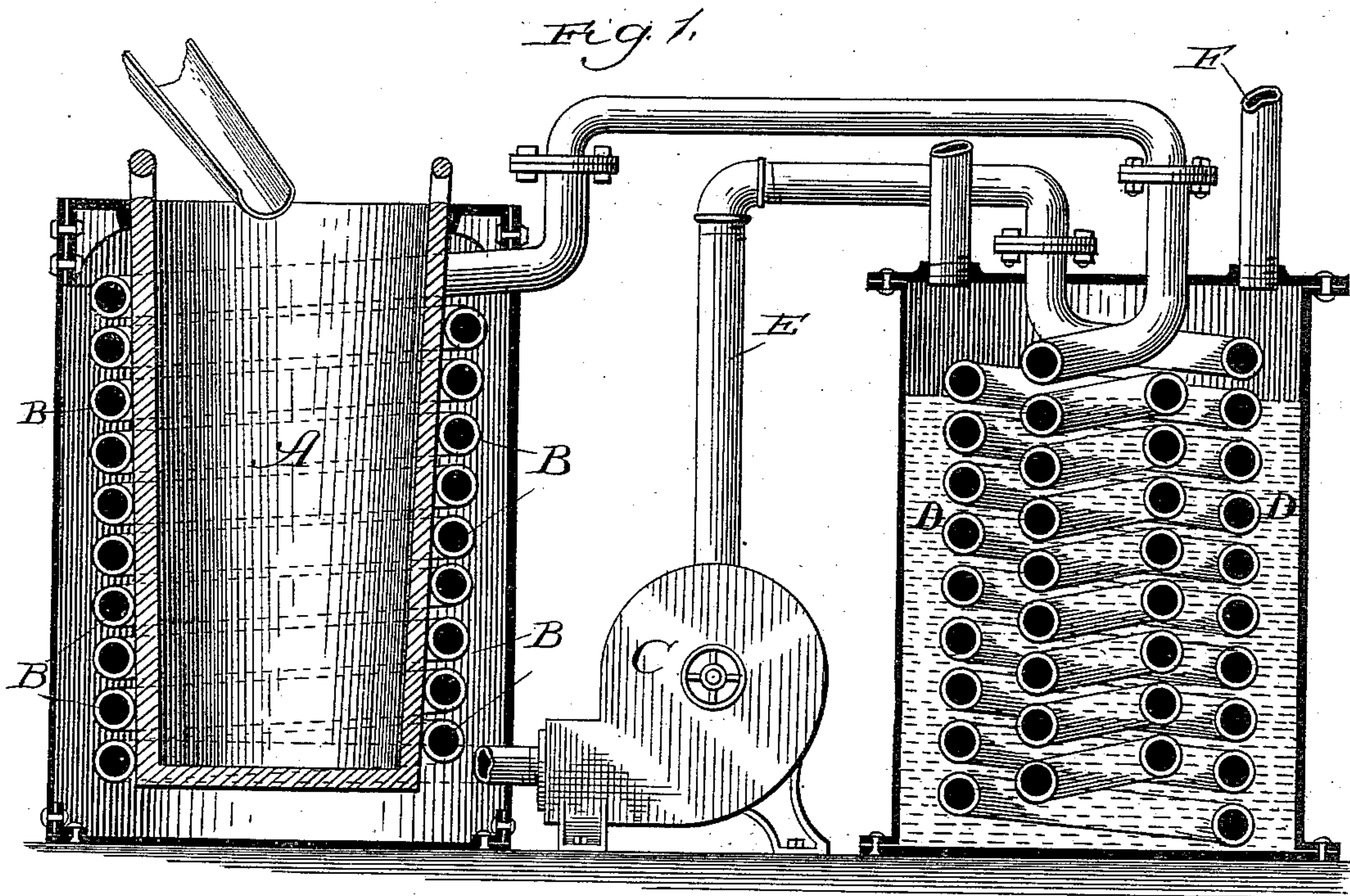
(No Model.)

O. T. X. ADAMS.

SLAG FURNACE.

No. 379,527.

Patented Mar. 13, 1888.



UNITED STATES PATENT OFFICE.

ORSEMAS T. X. ADAMS, OF CHICAGO, ILLINOIS, ASSIGNOR TO MELINDA PECK, OF SAME PLACE.

SLAG-FURNACE.

SPECIFICATION forming part of Letters Patent No. 379,527, dated March 13, 1888.

Application filed February 9, 1888. Serial No. 263,542. (No model.)

To all whom it may concern:

Be it known that I, ORSEMAS T. X. ADAMS, a citizen of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Slag Steam-Generators, of which the following is a specification.

The object of my invention is to utilize slag in the production of a hot blast of air, which is then employed in the production of steam for any purpose to which it may be desirable to apply it; and my invention consists in the features and details of construction hereinafter described and claimed.

In the drawings, Figure 1 is a transverse vertical section taken through the slag-receptacle and steam-generator, and Fig. 2 is a transverse vertical section of a modification of the same.

In the drawings, A represents a slag vessel or receptacle; B, a closed air-space, represented in Fig. 1 as a coil of pipe wound around the slag-receptacle in spiral form; C, a fan or blower to drive the air through the closed air-receptacle; D, a steam-generator adapted to hold a body of water in which a closed air-space (shown in the drawings as coiled pipes) is arranged; E, a return-pipe leading from the steam-generator back to the fan, and F a steam-pipe leading to the place of use.

In making my improved steam-generator I provide a suitable receptacle for the reception of heated or molten slag. This receptacle is preferably of tank form, as shown in Fig. 1, although other forms may be employed. At a convenient distance from the slag-receptacles I locate a steam-generator, which consists of a chamber of any suitable form adapted to receive a body of water and a closed air-space—as, for example, a series of coiled pipes—by which it is to be heated and steam generated. I locate a fan or blower in any convenient position in reference to the slag-receiver and the steam-generator. A pipe leads from the fan or blower to a closed air-space in proximity to the slag-receptacle. As shown in Fig. 1, this air-space is represented as a pipe coiled around on the outside of the slag-receptacles from the bottom to the top, whence it leads to the steam-generator and enters a closed air-space, preferably located therein, which may be a coiled pipe, though any other form of closed space will do, and in-

stead of being arranged in the steam-generating chamber it may be located in proximity thereto. From this second air-space a pipe leads back to the fan.

In Fig. 2 I have shown a modification of my invention, in which the slag-receptacle consists of a car or other conveyer, which is loaded with heated or molten slag and run in under an air-space, (represented as a chamber,) thus rendering it a closed space, into which the pipe from the fan opens and from which a pipe leads to the closed air-space in or in proximity to the steam-generator, and thence back to the fan. In both of these structures, however, it will be noticed that a fan or blower is used, from which a current or blast of air is driven through a pipe into a closed space in proximity to the slag-receiver, whence another pipe leads to a closed air-space arranged in or in proximity to the steam-generator, and then a pipe leads on back to the fan or blower again.

In operation a body of heated or molten slag is introduced into the slag-receiver, so that it may throw out its heat therefrom by radiation or otherwise. The fan or blower is put in operation and a current or blast of air is driven into a closed space around or in immediate proximity to the slag-receiver, so as to become thoroughly heated. The blast is then carried on to the steam-generator and through a closed space, which is surrounded by or in proximity to the water, to heat the water, so as to generate steam. The current or blast of air which has thus lost some of its heat, but which has not yet wholly cooled, is carried on through the pipe back to the fan again, whence it may be driven forward to make the circuit another time, and over and over again as long as desired.

The advantage of repeatedly using the same blast or current of air is that after the first circuit it will be partially heated, so that it will require less heat to bring it to a temperature to operate effectively in the generation of steam. After the steam has been generated it will of course be understood that it is to be conveyed in a pipe to a place of use.

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

1. In a slag steam-generator, the combination of a slag-receptacle, a closed air-space in

proximity thereto, to which the heat of the slag is imparted, a steam-generating chamber, a closed air-space in proximity thereto imparting its heat to the water in the generating-chamber, and free communication between the slag air-space and the generating-chamber air-space, whereby the heated air passes from the slag air-space to the generating-chamber air-space and heats the water and generates the steam, substantially as described.

2. In a slag steam-generator, the combination of a slag-receptacle, a closed air-space in proximity thereto, to which the heat of the slag is imparted, a steam-generating chamber,

a closed air-space in proximity thereto imparting its heat to the water in the generating-chamber, and means for driving a current or blast of air through the closed space in proximity to the slag-receptacle, whereby the same is heated, and then through the closed space in proximity to the steam-generating chamber, whereby the water is heated and steam generated, substantially as described.

ORSEMAS T. X. ADAMS.

Witnesses:

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M. F. FAIRBANKS.