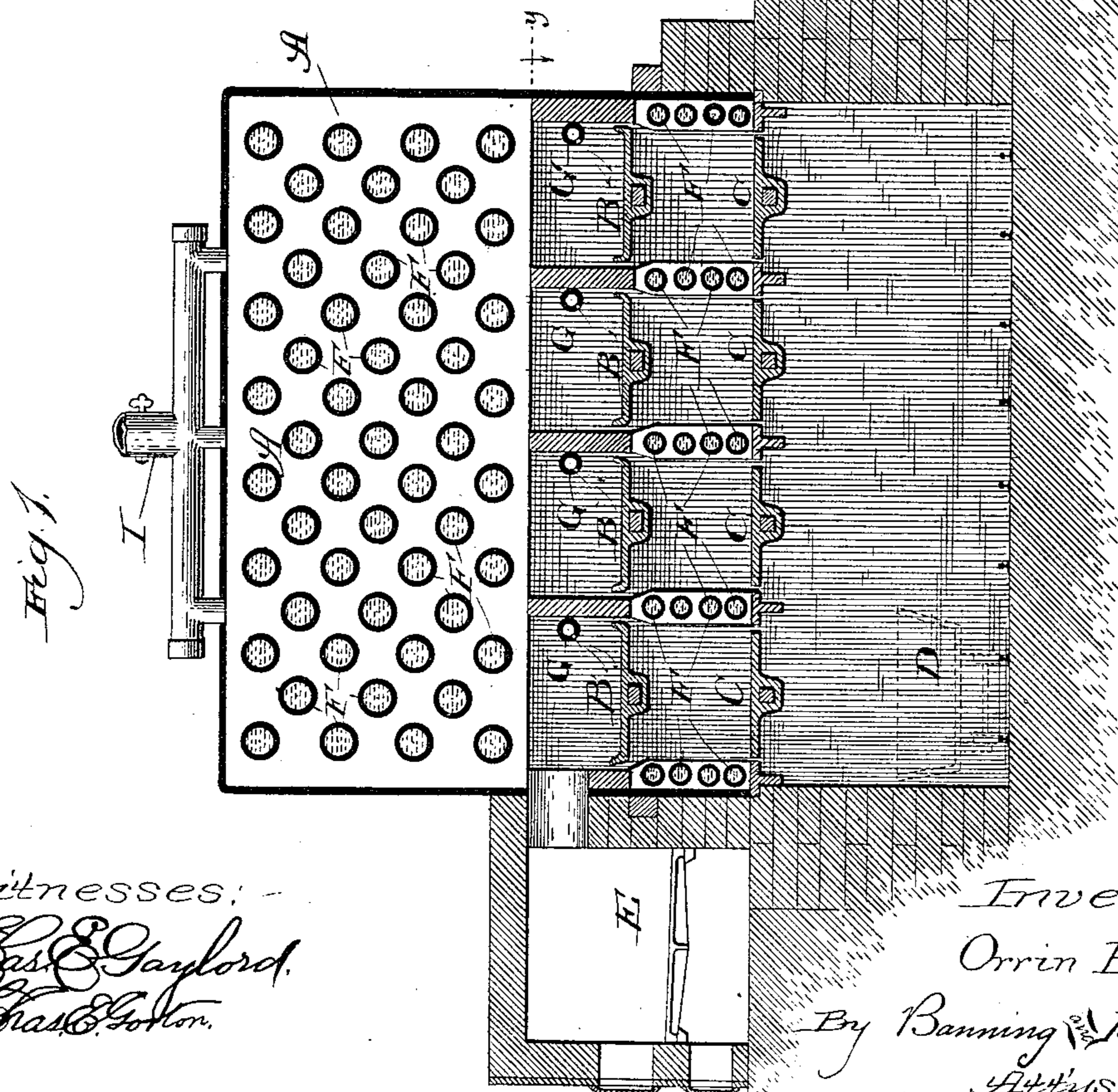
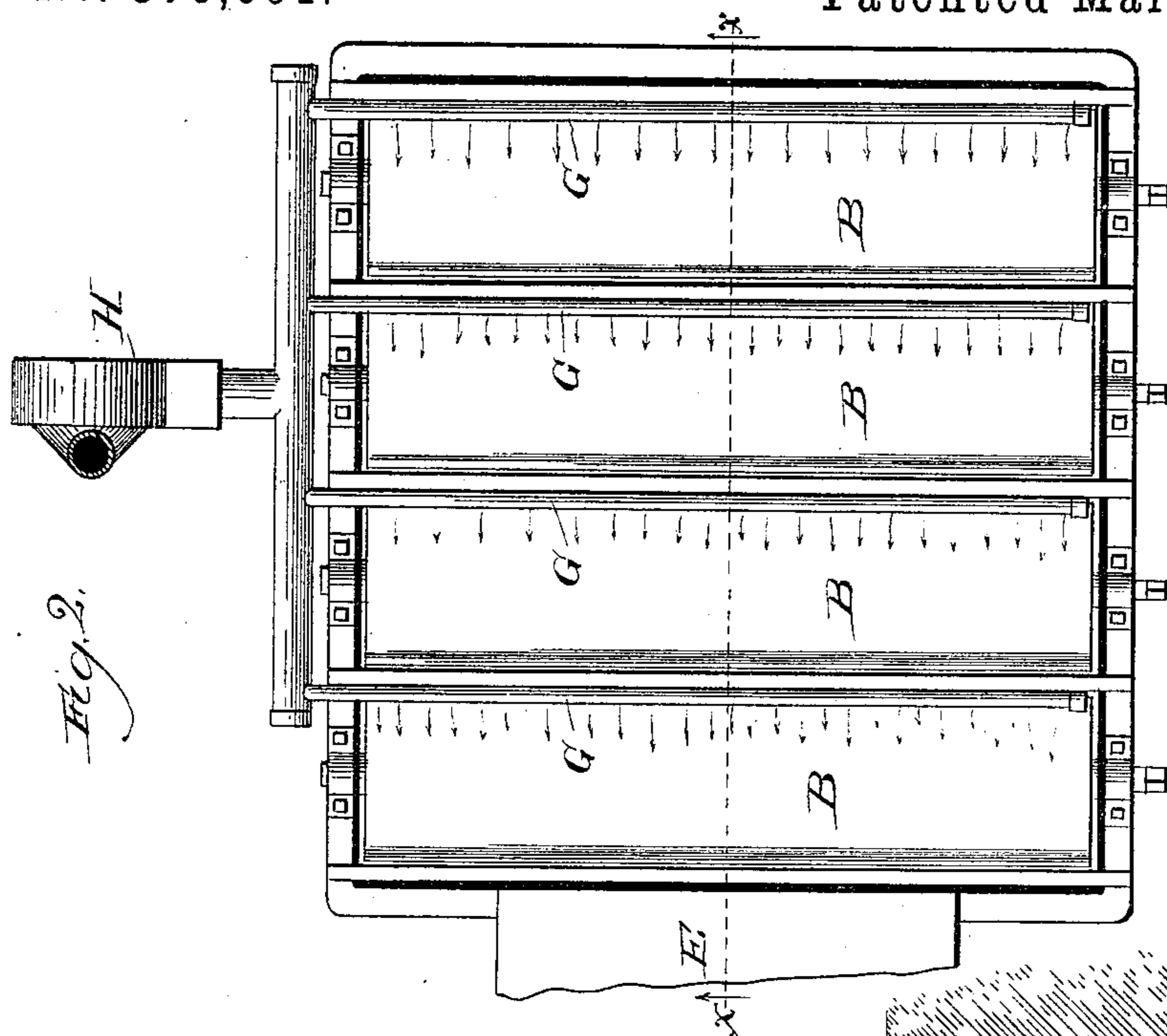


(No Model.)

O. B. PECK.
SLAG FURNACE.

No. 379,601.

Patented Mar. 20, 1888.



Witnesses:
Chas. E. Gaylord.
Chas. E. Gordon.

Inventor:
Orrin B. Peck,
By *Banning & Banning*
Attys

UNITED STATES PATENT OFFICE.

ORRIN B. PECK, OF CHICAGO, ILLINOIS.

SLAG-FURNACE.

SPECIFICATION forming part of Letters Patent No. 379,601, dated March 20, 1888.

Application filed February 7, 1888. Serial No. 263,314. (No model.)

To all whom it may concern:

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

Figure 1 is a transverse vertical section taken in the line *x x* of Fig. 2, looking in the direction of the arrows; and Fig. 2 is a plan
10 view taken in the line *y* of Fig. 1, looking in the direction of the arrow.

In the drawings, A represents the steam-generating boiler; B, slag-receiving dumping-pans located beneath the boiler; C, other
15 dumping-pans on which the slag is deposited after it has partially cooled; D, a car or receptacle into which the slag is finally dumped and carried away; E, an auxiliary furnace to assist the slag-furnace whenever desired; F,
20 water-pipes; G, air-pipes; H, a fan or blower, and I a steam-pipe for conveying the steam to the place of use.

In making my improved slag steam-generator I make a steam-generating boiler in
25 which a number of pipes are located, preferably leading back and forth from one hollow head to another, as shown in applications previously filed by me—as, for instance, in my application, No. 257,071, filed December 6,
30 1887—though as to these features I am not very particular as to the precise construction adopted. Beneath the steam-generating boiler I arrange a number of chambers separated from each other by partitions, and preferably
35 extending from one end of the generator to the other; but by terming them “chambers” I do not mean that they shall be separated by partitions of any particular height, as the partitions may in fact be but a few inches high and
40 merely serve to divide the space beneath the boiler into portions which may be separately filled and emptied. These various chambers open at the top into the space in which the greater number of the water-pipes are located.
45 They are provided with dumping or hinged bottoms or plates, so that they can be separately turned by a wrench or other means to dump the slag which they are intended to contain. Immediately beneath them is also arranged, preferably, a second series of dump-
50 ing-bottoms, on which the slag falls when

dumped from the first set of bottoms. Beneath both sets of dumping-bottoms a space is provided, into which a car or other conveyance may be run to carry off the cooled slag when
55 it is ready to be finally disposed of. A number of water-pipes may also be arranged in the partitions between the several slag-chambers, as shown in Fig. 1. A fan is also preferably used to drive a current or blast of air
60 into the several slag-chambers through the pipe F, so as to cause the slag to throw off its heat rapidly. I also prefer to employ an auxiliary furnace to increase the heat from the slag when it may be desirable to do so. This
65 furnace is shown in Fig. 1, and its operation will be readily understood without going into details. Above the water-pipes in the generator one or more pipes are arranged to collect and carry off the steam as it is generated to
70 the place of use.

In operation I empty a quantity of molten slag into the upper slag-chambers, preferably at the end, so that it can flow along the dumping-floors to the other end. By preference I
75 begin at one of the chambers at one side or the other, and fill them severally, one after the other. When the slag in the first one has cooled somewhat, I dump it by turning the floor and let it fall into the chamber immediately below and onto the dumping-floor. I
80 then fill the upper chamber which has thus been emptied, and then empty and fill the next chamber, and so on over and over again, as desired. After the slag in the lower chambers has become sufficiently cooled, I dump
85 it into a car or other conveyer run in to receive it, whence it is carried away. During this operation a fan may drive a blast of air into the upper chambers to assist the slag in
90 the radiation of its heat. Where the slag is scarce, or where, for any reason, it is desired to do so, a fire may be kindled in the auxiliary furnace to assist the slag.

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

1. In a slag-furnace for generating steam, the combination of a steam-boiler with two or more slag-supporting devices or surfaces and partitions, as described, extending upward
100 above such slag-supporting surfaces, substantially as described.

2. In a slag-furnace for generating steam, the combination of a steam-boiler, a heating-chamber, and one or more dumping slag-supporting vessels constructed and arranged to
5 dump the slag while within the heating-chamber and placed so as to impart heat to the boiler, substantially as described.

3. In a slag steam-generator, the combination of a closed steam-generating boiler and

a series of chambers provided with dumping- bottoms arranged underneath the boiler and adapted to be successively filled with and emptied of heated or molten slag, substantially as described.

ORRIN B. PECK.

Witnesses:

GEORGE S. PAYSON,
M. F. FAIRBANKS.