

(No Model.)

J. E. PECK.
SLAG FURNACE.

No. 379,411.

Patented Mar. 13, 1888.

Fig. 1.

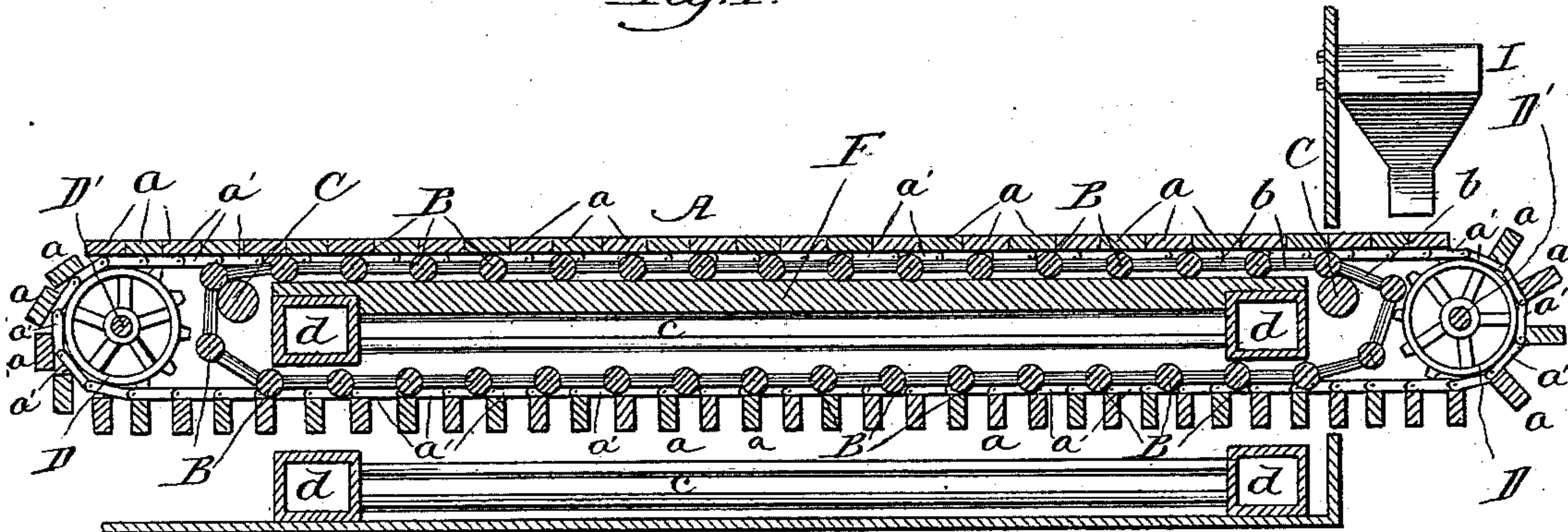
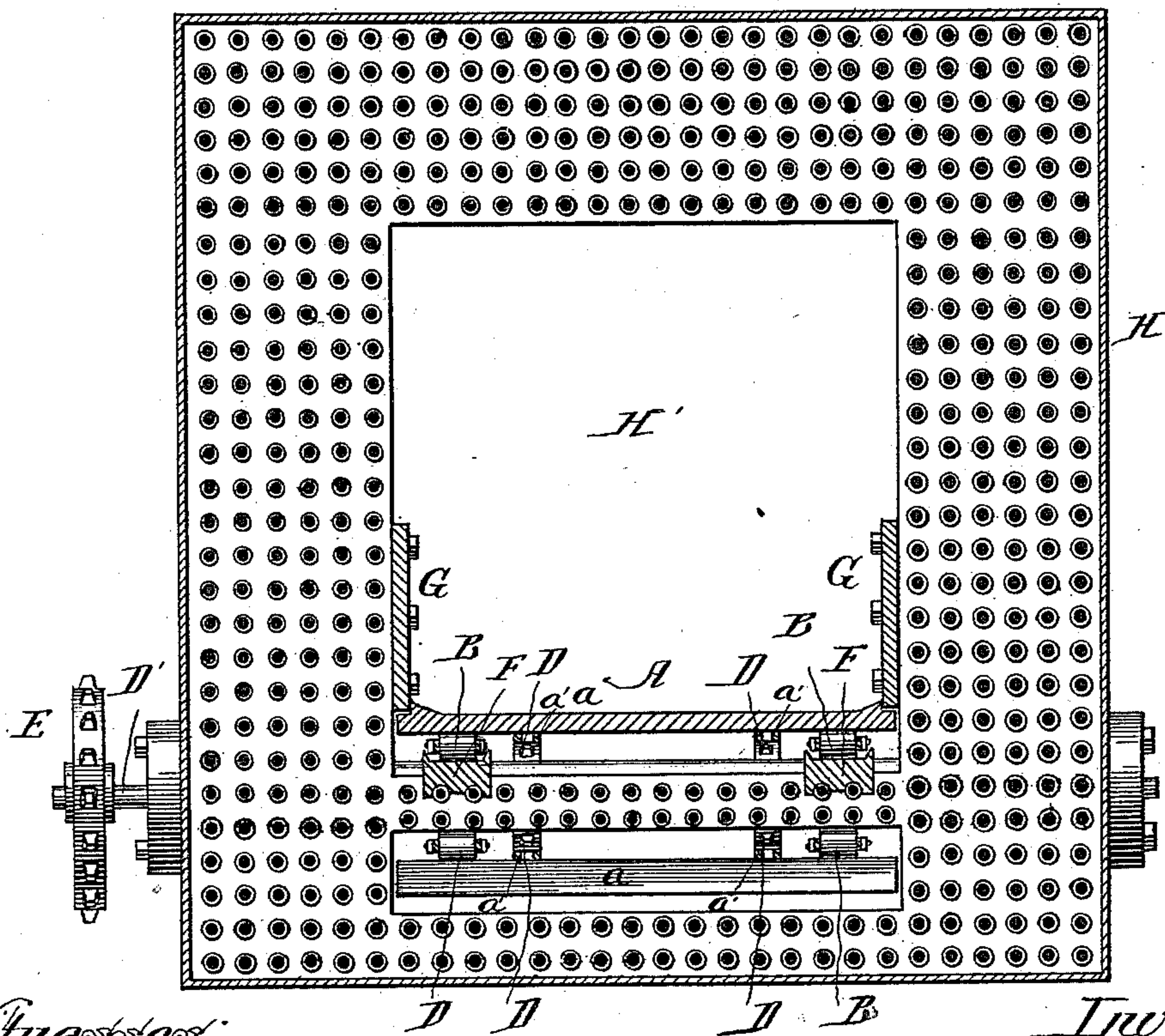


Fig. 2.



Witnesses:

Albert H. Adams.
Harry T. Jones.

Inventor:
Jesse C. Peck.

UNITED STATES PATENT OFFICE.

JESSE E. PECK, OF CHICAGO, ILLINOIS.

SLAG-FURNACE.

SPECIFICATION forming part of Letters Patent No. 379,411, dated March 13, 1888.

Application filed September 13, 1887. Serial No. 249,541. (No model.)

To all whom it may concern:

Be it known that I, JESSE E. PECK, residing at Chicago, in the county of Cook and State of Illinois, and a citizen of the United States, have
5 invented a new and useful Improvement in Slag-Furnaces, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of the traveling floor; and Fig. 2 is a cross-section through a stove or heater, showing the traveling floor.

This invention relates to means for receiving and delivering the cooled slag from a blast-furnace, which slag has been utilized for the
15 purpose of heating or superheating air or generating steam from water in a stove or heater especially designed for that purpose by me, and in which a series of circulating pipes and heaters form the stove; and the object of
20 this invention is to dispense with the use of tools and appliances heretofore employed for removing the slag by having the deposit made on a traveling floor, as hereinafter more specifically described, and pointed out in the
25 claims as new.

In the drawings, A represents the traveling floor, formed of a series of iron plates or bars, *a*, each pivotally connected to a link, *a'*, and the series of links connected one to the other,
30 so as to form an endless carrier, as shown in Fig. 1.

B is a series of rollers lying under the top of the floor A and traveling with the floor, each roller B being journaled in a link, *b*, and the
35 series of links being connected one to the other, so as to form an endless carrier.

C are rollers located at the ends or turning point of the rollers B, and over which the rollers ride, and by which any liability of the
40 rollers sticking or stopping in turning at the ends of their travel is overcome.

D are sprocket-wheels, two for each end of the floor A, and mounted on suitable shafts, D', and engaging with the links *a'*, so as to
45 drive the endless floor. As shown, two sprocket-wheels, D, are provided for each end; but more can be used, if desired, and two series of rollers, B, are provided for each side of the floor, as shown in Fig. 2.

50 E is a sprocket-wheel for driving the shaft

D', and secured to one end of the shaft, which shaft is mounted in suitable journal boxes or bearings secured to the outer casing of the stove or heater, or otherwise supported.

F is a track, one on each side, and on which
55 the rollers B run, and these tracks, as shown, are supported on the pipes forming one portion of the stove or heater, as in Fig. 2, or in any other suitable manner.

G are side plates, one on each side of the
60 traveling floor, for protecting the pipe of the heater by keeping the hot slag from coming in direct contact with the pipe.

H is a stove or heater, formed of a series of pipes, *c*, and headers *d*, the pipes and headers
65 having a connection one with the other to permit a continuous flow through them. The receiver is located within the central chamber, H', of the stove or heater H, and receives the
70 molten material from the blast-furnace, and this receiver is adapted to be tipped or tilted to allow the molten material to flow onto the floor A. The receiver is not shown.

The operation is as follows: The molten material from the receiver is allowed to flow onto
75 the floor A and to cool thereon, and the heat from the molten material will act to heat the continuous pipes *c* and headers *d* of the stove or heater H to heat or superheat air passing through the pipes and headers, or producing
80 steam from water flowing through the pipes and headers. The molten material as it cools forms slag, and this slag is to be removed from the furnace, and as this slag lies on the traveling floor A it will be seen that by driving the
85 shaft D' from the sprocket-wheel E such shaft will rotate the sprocket-wheels D, attached thereto, and these sprocket-wheels, engaging with the links *a* of the traveling floor, will advance such floor, the floor riding over the
90 rollers B without much, if any, friction, and each plate or bar *a* of the traveling floor, as it turns around the sprocket-wheels D at the discharge end, will be tipped by the act of going around, as shown in Fig. 1, throwing off any
95 slag which may be thereon and riding around under clear of the slag, so that when again on top it will be ready to receive another charge of slag; and in order to prevent the slag or iron from adhering to the plates as they come around 100

at the receiving end, they pass beneath a hopper, I, charged with sand, by means of which the plates can be successively sprinkled with sand, preventing adhesion of the slag thereto.

5 It will be seen that the traveling floor, when stationary, receives and supports the molten material deposited thereon from the receiver, and as the slag becomes cool it can be advanced gradually and a new supply be deposited on
10 the portion of the floor coming beneath the receiver, and the cooled portion, as it passes out at the delivery end of the stove or heater, will be thrown from the floor by the tipping or turning of the plates or bars *a*, and by this ar-
15 rangement the slag as it is cooled is carried away and a fresh surface brought into position beneath the receiver for a new charge of slag or molten material, the result being that the
20 molten material is discharged on the traveling floor, cooled, and discharged without the use of tools or other appliances.

The traveling floor is shown in connection with stoves or heaters formed of continuous circulating-pipes; but it may be used with other
25 forms of stoves or heaters.

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

1. The combination, with a stove or heater, of a traveling floor composed of a series of

plates, as described, and means for operating the same, whereby the heated or molten slags may be carried to heat the said stove or heater and discharged therefrom, substantially as described.

2. The traveling floor A, consisting of a series of plates or bars, *a*, and connecting-links *a'*, in combination with a series of rollers, B, and connecting-links *b*, for giving the floor a traveling support, substantially as specified.

3. The traveling floor A, consisting of a series of plates or bars, *a*, and connecting-links *a'*, for giving the floor a traveling support, in combination with the rollers B, connecting-links *b*, and anti-friction rollers C, for giving the floor a traveling support and preventing stoppage of the rollers B, substantially as specified.

4. The traveling floor A, formed of a series of plates or bars, *a*, and connecting-links *a'*, rollers B and connecting-links *b*, and tracks F, in combination with the sprocket wheel D, shaft D', and sprocket-wheel E, for supporting and moving the traveling floor, substantially as described.

JESSE E. PECK.

Witnesses:

ALBERT H. ADAMS,
HARRY T. JONES.