

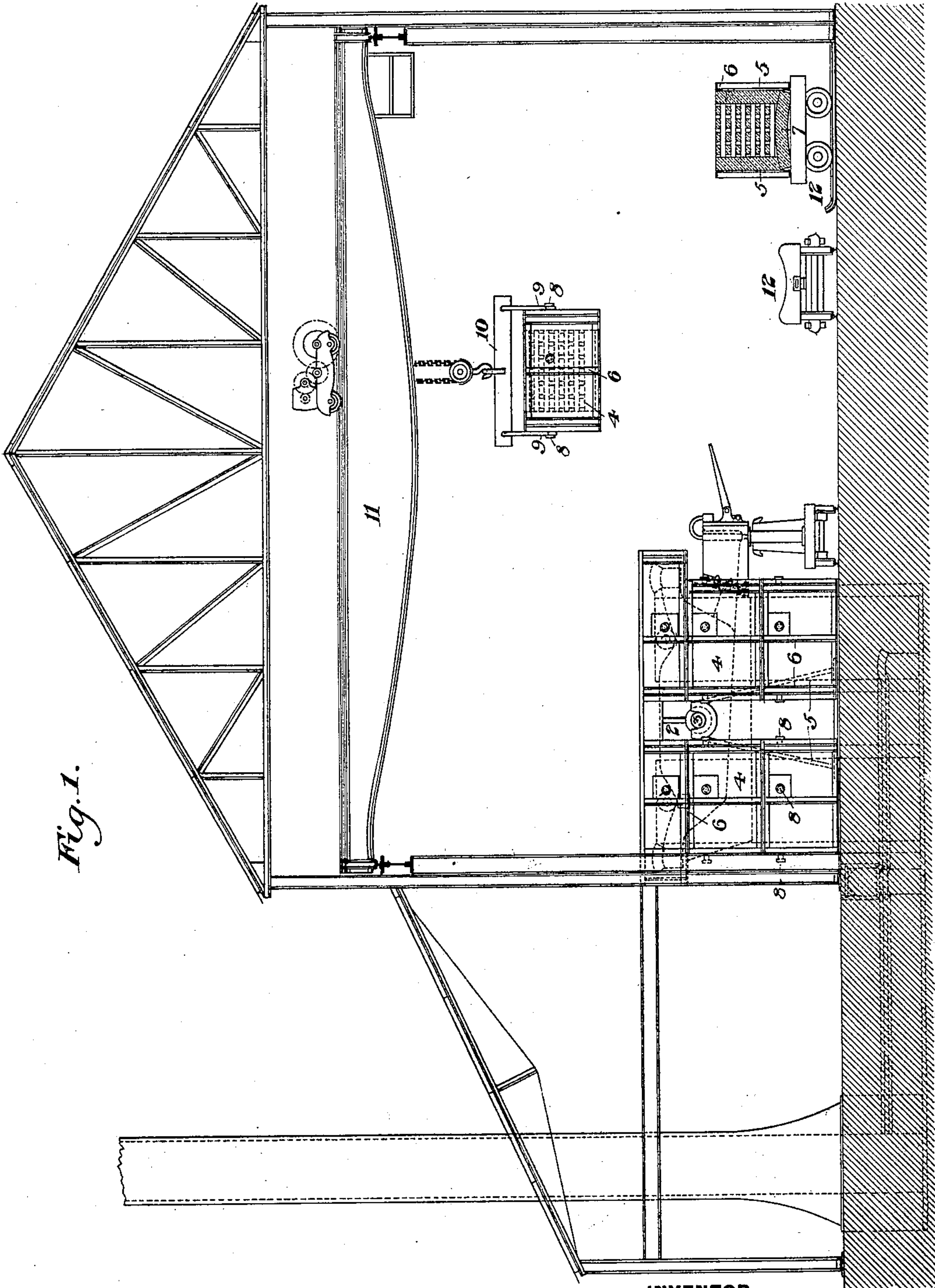
(No Model.)

3 Sheets—Sheet 1.

J. A. POTTER.
REGENERATOR.

No. 606,083.

Patented June 21, 1898.



WITNESSES

Warren W. Swartz
J. M. Connor

INVENTOR

John A. Potter
by Baxendell & Baxendell
his Attorneys.

(No Model.)

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Fig. 2.

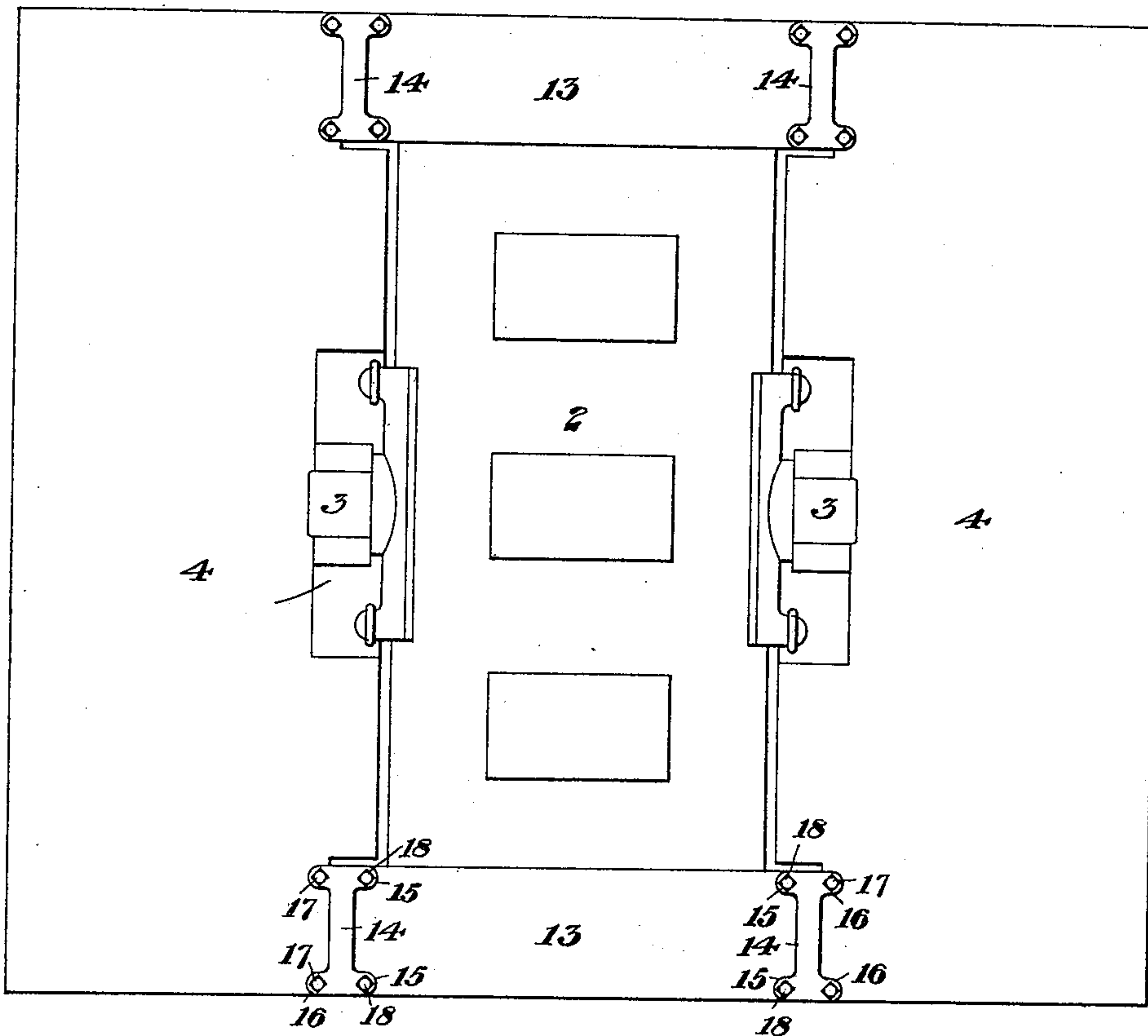
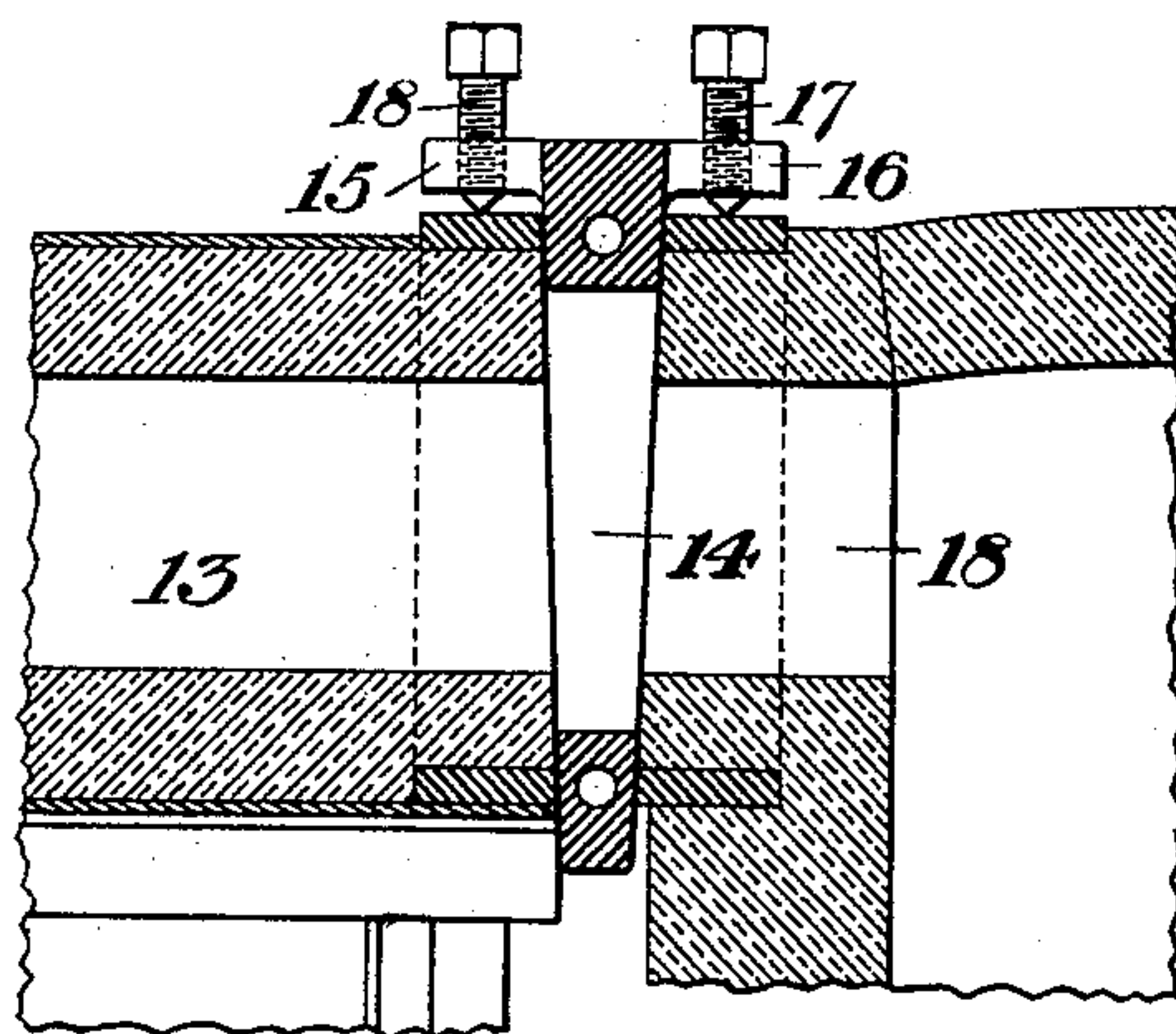


Fig. 3.



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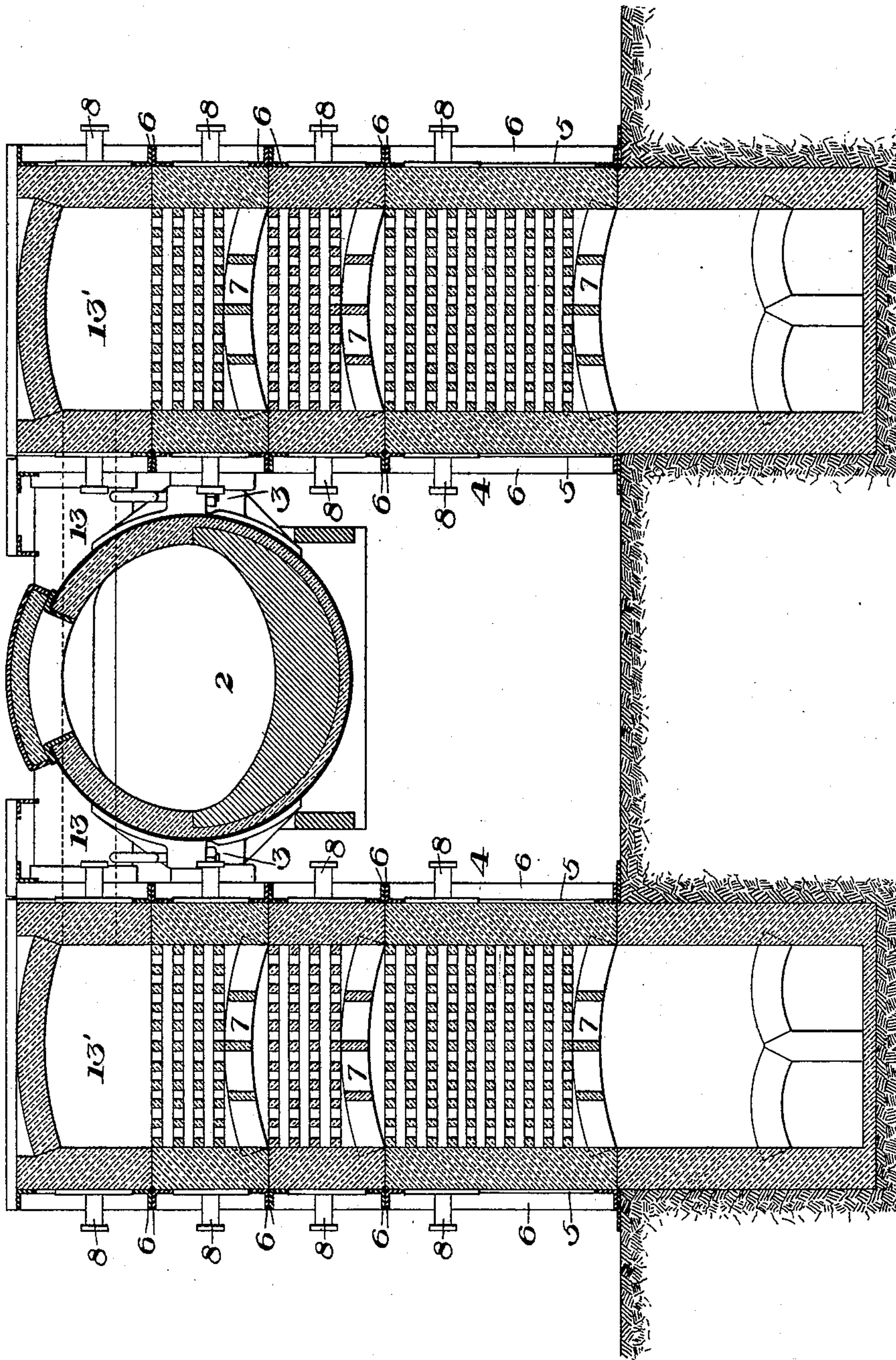
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Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN A. POTTER, OF CLEVELAND, OHIO.

REGENERATOR.

SPECIFICATION forming part of Letters Patent No. 606,083, dated June 21, 1898.

Application filed April 6, 1897. Serial No. 630,940. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. POTTER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful
5 Improvement in Regenerators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a general side elevation of a tilting furnace provided with my improved regenerators, showing the means for removing and replacing the sections of the regenerators. Fig. 2 is a top plan view of the furnace
15 and connections. Fig. 3 is a sectional detail view of the flue connections, and Fig. 4 is a cross-sectional view showing the construction of the regenerators on a large scale.

My invention relates to the regenerators
20 which are used in connection with melting and other furnaces, and is designed to overcome the difficulty which has been heretofore experienced by reason of the clogging up of the regenerator with deposits of dust, lime,
25 slag, &c.

To that end it consists in constructing such regenerators in removable sections which are practically independent of each other and any one of which may be removed
30 and replaced without interfering with the other sections.

It also consists in an improved connecting-block between the ends of the furnace-flues and the regenerator-flues.

35 In the drawings, 2 represents a tilting open-hearth furnace supported upon trunnions 3 and having regenerators 4. Each of these regenerators consists of a series of sections which are placed one upon the top of the
40 other over the regenerator-flues. Each section consists of a casing 5, of plate-steel, having riveted thereto angles 6, which give the requisite stiffness, no buckstaves being required. The checker-work in each section is
45 supported upon an arch 7, which is built in the lower portion of the section and carries the weight of the bricks within the lining of the shell. The ends of the shell are provided with annular flanges, by which the sections
50 may be secured together in place, and the sections are also preferably provided with

projecting lugs or trunnions 8, which may be engaged by suitable hooks 9, depending from a bar 10, carried from the trolley of an overhead crane 11, by which the sections may be
55 lifted and carried to cars 12 or any other suitable point. The connecting flue-section 13' at the top of the upper regenerator-section may be made in the same general way as the regenerator-sections and may be removed
60 and replaced similarly thereto, these flue-sections connecting with the sections 13, secured to the furnace.

To connect the regenerator-flue to the furnace in case a tilting or otherwise movable
65 furnace is used, I employ the water-cooled block 14, (shown in Fig. 3,) this block being preferably of wedge form, as shown, and having at its upper end lateral lugs 15 and 16, through which pass the adjusting-screws 17
70 and 18, of which the screws 17 rest upon the regenerator-flue and 18 upon the furnace-flue. The block thus hangs upon its lugs, and upon the downward movement of the furnace at one end the block will hang upon the regen-
75 erator-flue, while upon a rise of the furnace it will carry up the block with it.

The advantages of my invention will be apparent to those skilled in the art, since the troublesome and expensive dust-catchers
80 which have been employed to prevent the clogging up of the regenerators may be dispensed with, and when the top section of the regenerator is burned out or clogged up with dust it may be removed and replaced with a
85 new one with little loss of time. Similarly any of the sections may be changed, duplicates being kept on hand for each section. The sections are self-supporting and are easily carried about by the projecting lugs or
90 trunnions. The connecting-blocks also are an important part of the invention.

Many changes may be made in the form of the regenerator-sections and their connections, as well as the connecting-blocks, with-
95 out departing from my invention, since

I claim—

1. In a single surface-regenerator, a portable open-ended section provided in its lower portion with inwardly-projecting supports,
100 said section being filled with a series of separate bricks stacked to form checker-work,

said bricks being entirely carried by the said inner supports.

2. A vertically-extending regenerator composed of horizontally-divided separate sections, each having in its lower portion an arch supporting the checker-work therein.

3. The combination with two flues having registering ends, one of said flues being movable relatively to the other, of a block between the ends of the flues, and having projecting lugs supported upon said flues.

4. The combination with two flues having registering ends, of a wedge-shaped block

held between the same and having lugs supported upon the flues.

5. The combination with two flues having registering ends, of a block held between the same and having lugs provided with adjusting-screws resting upon the flues.

In testimony whereof I have hereunto set my hand.

JOHN A. POTTER.

Witnesses:

THOMAS W. BAKEWELL,
JOHN H. NEWHEY.