

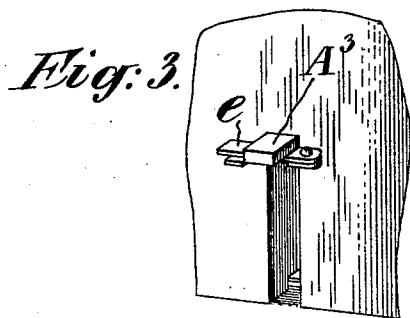
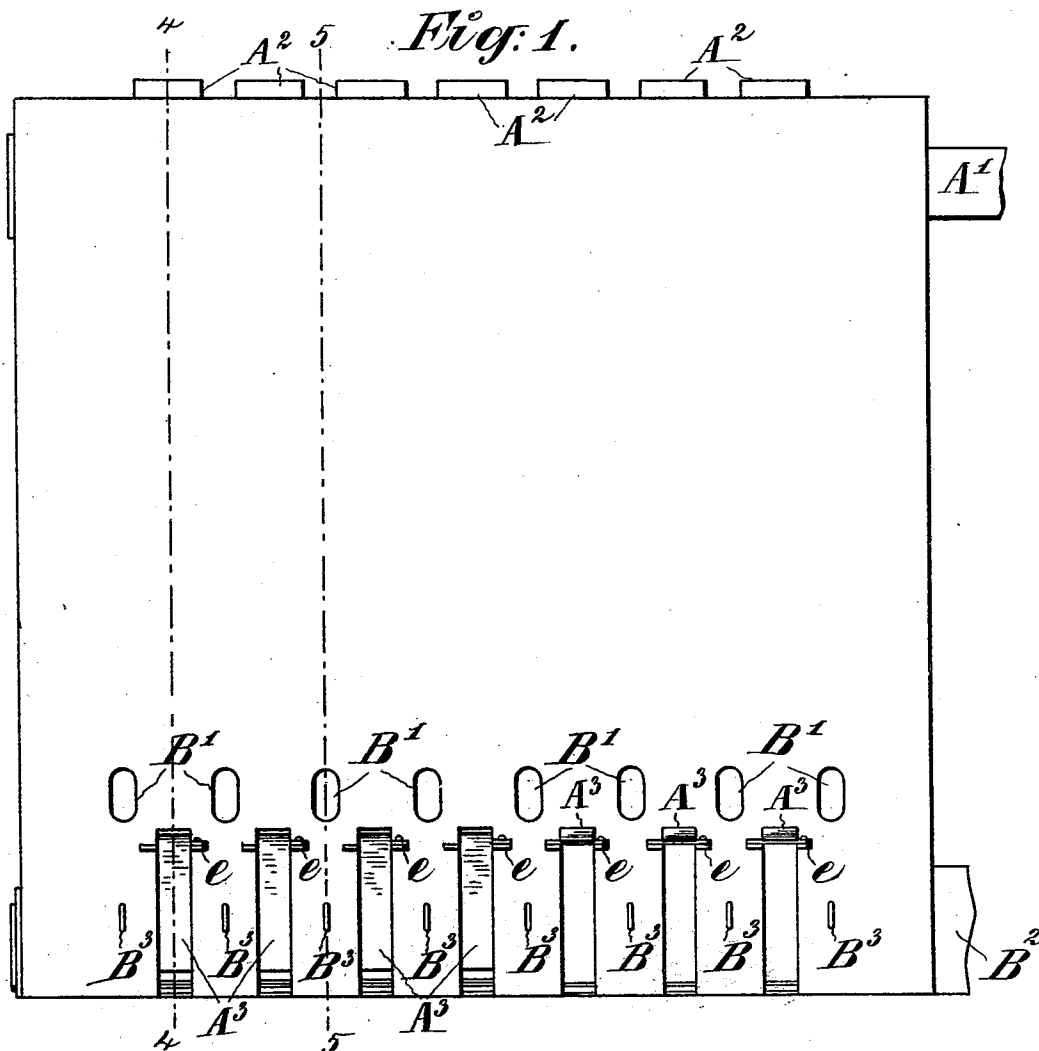
(No Model.)

3 Sheets—Sheet 1.

H. W. HEMINGWAY.
FURNACE.

No. 513,680.

Patented Jan. 30, 1894.



WITNESSES:

F. W. Wimmer
Peter A. Ross

INVENTOR:

Henry W. Hemingway
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(No Model.)

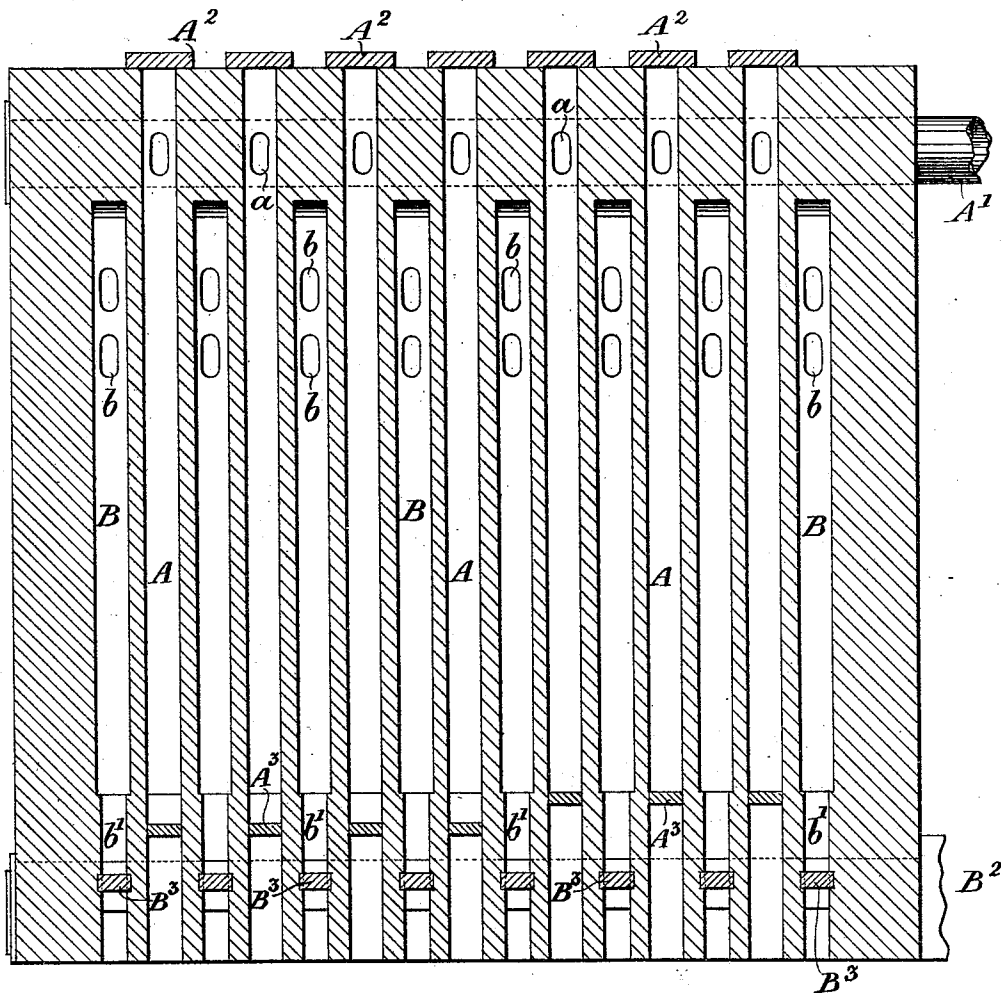
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Fig. 2.



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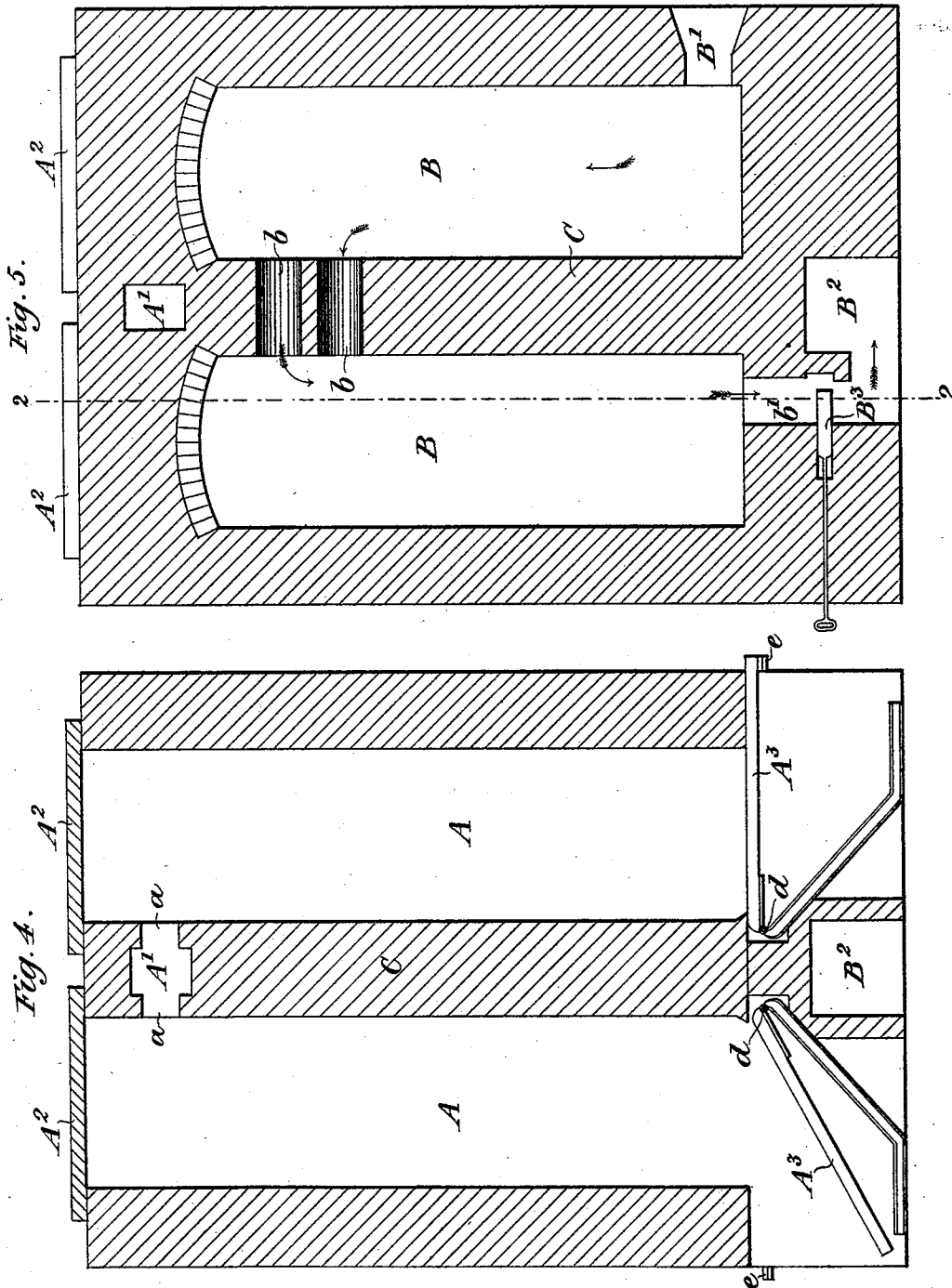
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UNITED STATES PATENT OFFICE.

HENRY WILLIAM HEMINGWAY, OF LONDON, ENGLAND.

FURNACE.

SPECIFICATION forming part of Letters Patent No. 513,680, dated January 30, 1894.

Application filed July 12, 1893. Serial No. 480,271. (No model.)

To all whom it may concern:

Be it known that I, HENRY WILLIAM HEMINGWAY, a subject of the Queen of Great Britain and Ireland, residing at 60 Mark Lane, in the city of London, England, have invented an Improved Furnace, (in respect whereof I have applied for but not yet obtained Letters Patent of Great Britain, No. 4,001, to bear date February 23, 1893,) of which the following is a specification.

This invention relates to an improved furnace or kiln which is specially adapted for use in burning copperas and producing oxide of iron or what is known in the color trade as "Venetian red" and under other names.

In the accompanying drawings, Figure 1 is a front elevation of the improved furnace. Fig. 2 is a longitudinal section on the line 2, 2 in Fig. 5. Fig. 3 is a detached perspective view of the device for supporting the pivoted floor or bottom in its elevated position. Fig. 4 is a cross section on the line 4, 4. Fig. 5 is a similar view on the line 5, 5.

The improved furnace or kiln comprises a series of chambers or pockets A alternating with flues or passages B. The chambers A are designed for the reception of the copperas, which may be in blocks or slabs corresponding in shape with the said chambers. The intervening flues B serve for the conduct of the heating gases. By the employment of this mode of construction, both sides of each block or slab of copperas are subjected to the influence of the hot gases, without however being exposed to their direct action. Moreover, the fumes evolved from the copperas while undergoing decomposition, and consisting for the most part of sulphurous and sulphuric acid gases, are kept separate from the heating gases and escape through the openings *a* into the pipe or flue A', whence they may be passed through scrubbers or equivalent appliances and condensed.

A² are removable tiles for covering the chambers or pockets A. As will be seen in Fig. 2, the pocket A, has the same dimensions from top to bottom, and the opening at the top covered by the tile A², is of the same length and breadth as the pocket so that a block of copperas may be inserted which will

fit snugly in the pocket. Openings *b* are left in the center wall C for the passage of the heating gases from the front flues B to the back flues B. The fuel-nozzles are passed through the apertures B', or they may project through apertures in the bottoms of the flues B. The products of combustion escape through flues *b'* into a main flue B², whence they are conducted to the atmosphere.

B³ are dampers for altering the available area of the flues *b'*, so as to regulate the heating of the furnace.

With a view to facilitating the removal of the material from the pockets or chambers A, I arrange the bottom of each chamber in such a manner that it may readily be removed or dropped. With this object, the floor or bottom A³ may be pivoted at its rear end on a pin *d* and supported at its front end on a removable bar or catch, such as *e*, which, upon being released, allows the floor A³ to assume a downwardly-inclined position, as shown in Fig. 4, thus releasing the material, which, breaking up, glides down the inclined floor and may be received in a barrow or other receptacle. The floor is then restored to its working position, and the pocket or chamber A recharged from above with a fresh block or blocks of copperas without rendering the cooling down of the furnace necessary. The catch or supporting bar *e*, seen best in Fig. 3, is a plain flat bar hinged at one end to a lug in the wall so that it may be swung around under the upraised end of the floor A³. Its free end is then supported on another lug in the wall.

Any suitable device may be employed to support the end of the floor but that shown is simple and efficient.

The gases for heating may be derived from the combustion of ordinary fuel or of creosote or other inflammable oil or from producer- or water-gas; and may be caused to traverse one, two or more, of the passages B intervening between the chambers A in which the blocks or slabs of copperas are placed.

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

1. The improved furnace or kiln comprising a series of narrow chambers or pockets

having at their tops openings, each of substantially the same area as the chamber, such chambers alternating with flues for hot gases, a conduit for carrying off the vapors or gases from said chambers, a flue for conducting the products of combustion from the heating flues to the atmosphere, and removable covers for the said chambers, substantially as set forth.

2. The improved furnace or kiln, comprising a series of narrow chambers A, having gas outlets and provided with openings at their tops to admit material, flues B, arranged alternately with said chambers, and movable floors to the respective chambers to permit the withdrawal of the product from below, as set forth.

3. The improved furnace or kiln comprising

ing a series of narrow chambers or pockets such as A alternating with flues B, a conduit A' leading from the chambers A for carrying off the vapors or gases evolved from the material under treatment, removable covers A² for permitting raw material to be placed in the pockets, falling floors A³ for enabling the material after treatment to be released, a flue B² for conducting the products of combustion from the flues B to the atmosphere, and dampers B³ for regulating the draft, substantially as herein described.

HENRY WILLIAM HEMINGWAY.

Witnesses:

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EDMUND S. SNEWIN.