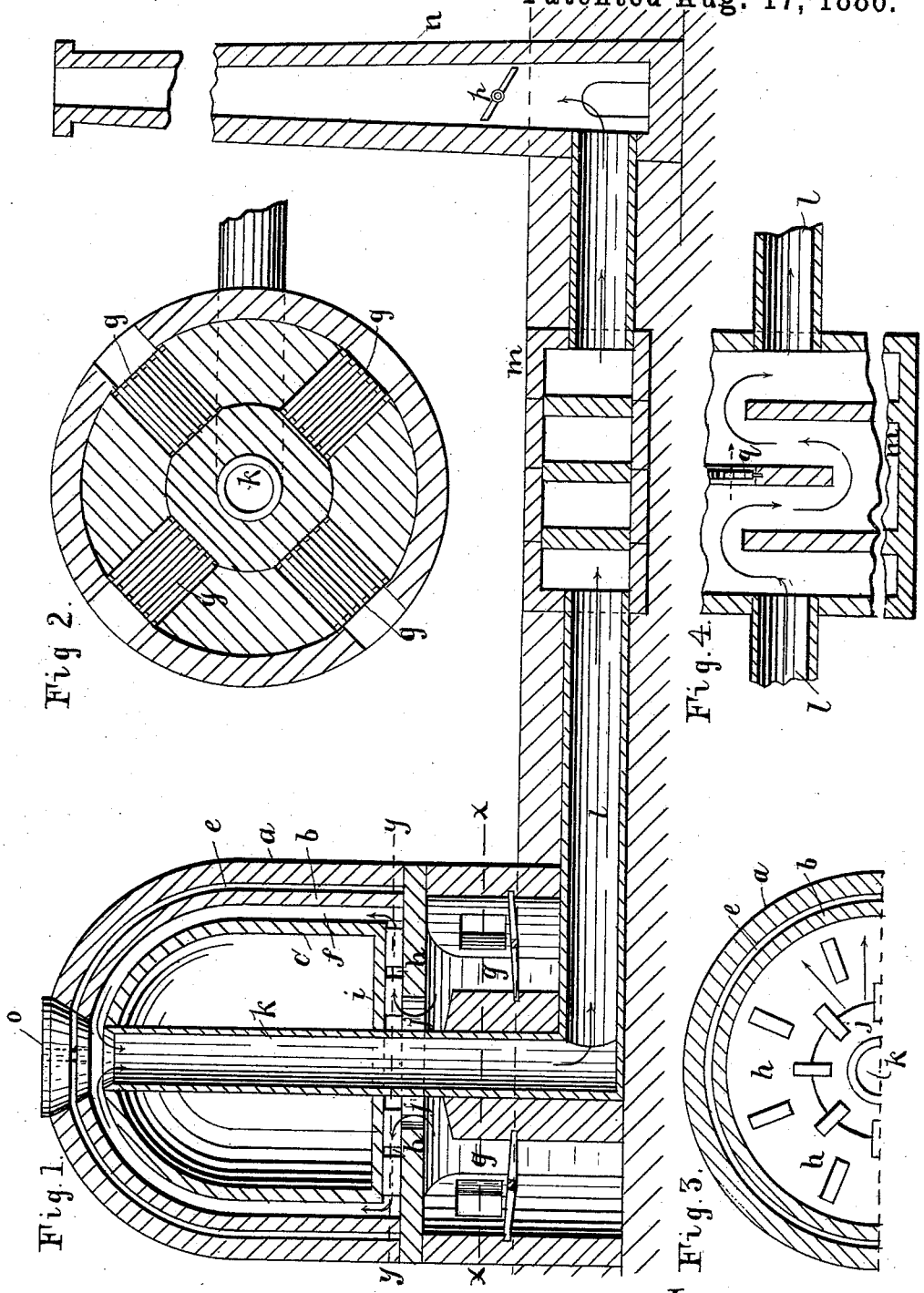
(No Model.)

J. WILSON.

BRICK KILN.

No. 347,453. Patented Aug. 17, 1886.



Witnesses.
Jos I Lockwood
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UNITED STATES PATENT OFFICE.

JOHN WILSON, OF NEW YORK, N. Y.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 347,453, dated August 17, 1886.

Application filed November 2, 1885. Serial No. 181,359. (No model.)

To all whom it may concern:

Be it known that I, JOHN WILSON, a citizen of the United States, residing at New York city, in the county and State of New York, have invented new and useful Improvements in Brick-Kilns, of which the following is a specification.

My invention consists of an improved return-flue down through the center of the kiln, having the furnaces beneath the floor, and the upward passages for the heat in the walls, for more useful effect of the heat to be applied without direct contact with the articles to be burned therein, and a lateral passage connecting with the flue below the kiln-floor and traversing a sinuous course beneath the drying-floor to the chimney, for utilizing the waste heat of the kiln-furnaces for drying the green bricks preparatory to placing them in the kiln for burning, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional elevation of the kiln drying-floor and chimney. Fig. 2 is a horizontal section of Fig. 1, line *x x*. Fig. 3 is a a partial section of Fig. 1, line *y y;* and Fig. 4 is a horizontal section of the drying-floor.

The kiln represented is mainly of ordinary construction for burning fire-bricks, tiles, and terra-cotta or china-ware; and it consists, essentially, of a cylindrical shell with a dome top made of an exterior shell, *a*, of common brick, an intermediate shell, *b*, of fire-bricks, and an inner shell, *c*, also of fire-bricks, with a dead-air space, *e*, between the outer and intermediate shells, and a fire-space, *f*, between the intermediate and inner shells, with which fire-space the radial furnaces *g* connect by the flue *h* in the kiln-floor *i*, said furnaces being arranged below the level on which the kiln-floor rests, and discharging into the flue *h* at *j*, near the center of the floor. In the furnaces of this kind now in use the heat escapes from the top into the chimney with great waste of a material portion, which I propose to utilize, first, for further benefit in the kiln itself, and, second, for facilitating the drying of the green bricks preparatory to burning them, as follows: Instead of thus discharging the heat from the top of the kiln, I construct the kiln with a return-flue of fire-bricks, *k*, extending from the top of the kiln down through the center of the kiln and its floor, and into the ground below the furnaces, where I connect it with a lateral passage, *l*, extending to and under the drying-floor *m*, where the passage is made to traverse forward and backward suitably for heating the whole area, or nearly so, and finally connecting with the chimney *n*, after thus descending through the kiln and traversing the floor, so as to give up all of its available heat for utilizing the same.

To facilitate the draft for starting the fire in the furnaces, I provide a removable cover, *o*, in the top of the furnace, through which the draft may escape for a suitable time. In consequence of the cooler and heavier condition of the escaping gases a higher chimney may be required to cause the requisite force of the draft, or the draft may be accelerated by a fan. The flue thus arranged will be advantageous to the kiln without traversing the drying-floor, and may be so arranged; but it is better, of course, to arrange it, with the drying-floor also, as I have represented it.

Any suitable valves or dampers, as *p* and *q*, may be employed to regulate the draft.

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

1. The combination, with a brick-kiln of the character herein described, having the furnaces beneath the floor and the upward-passages for the heat within the walls, for applying the heat without direct contact with the articles to be burned, of a central flue extending from the dome down through the kiln and its floor, and having a lateral connection under the floor with the chimney, substantially as described.

2. The combination, with a brick-kiln of the character herein described, of a central flue extending from the dome through the kiln and its floor, and having a lateral connection under the kiln-floor extending under and traversing the drying-floor for the green bricks, and connecting with the chimney, as specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JOHN WILSON.

Witnesses:
W. J. MORGAN,
S. H. MORGAN.