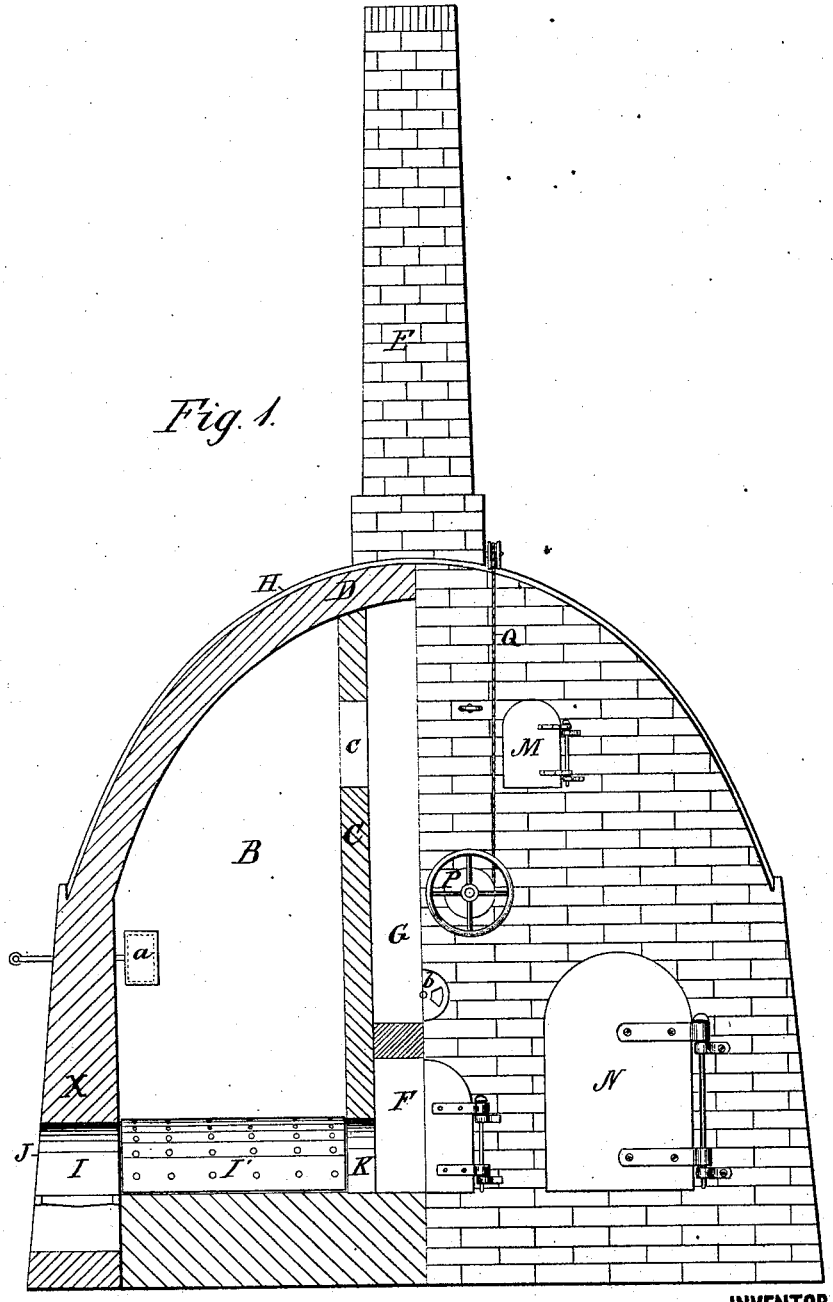
2 Sheets--Sheet 1.

P. E. SMITH.

Brick-Kiln.

No. 162,425. Patented April 20, 1875.

Fig. 1.



WITNESSES:

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Solon C. Kemon

INVENTOR:

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THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

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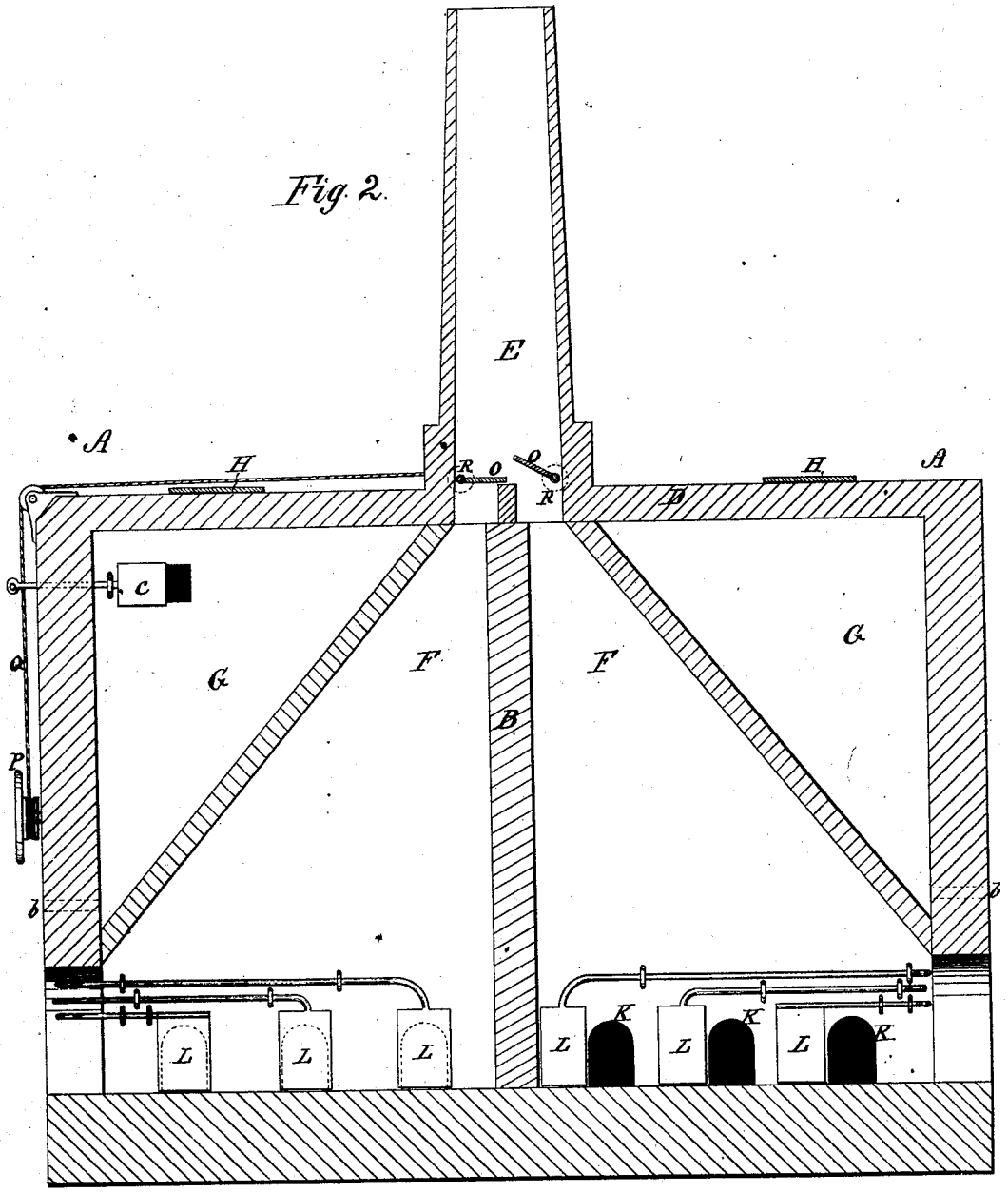
Fig. 2.



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UNITED STATES PATENT OFFICE.

PETER EDWARD SMITH, OF LISCOMB, IOWA.

IMPROVEMENT IN BRICK-KILNS.

Specification forming part of Letters Patent No. **162,425**, dated April 20, 1875; application filed March 20, 1875.

To all whom it may concern:

Be it known that I, PETER EDWARD SMITH, of Liscomb, in the county of Marshall and State of Iowa, have invented a new and Improved Brick-Kiln; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 is a front elevation, partly in section; and Fig. 2, a central vertical longitudinal section.

This invention relates to certain improvements in brick-kilns; and it consists in such a construction and arrangement of parts as will first be fully described, and then pointed out in the claims.

In the drawing, A A represent two double kilns, separated by transverse wall B, in which are placed dampers *a*, to regulate the transmission of heat from one to the other. The said double kilns are placed back to back under a common arched roof, D, and are separated by a hollow wall, C, which serves as a support to said arched roof, and contains the flues F, leading to a common chimney, E, in the center. Above said flues, in said hollow wall, are placed hot-air chambers G, provided with registers *b* and dampers *c*, for admitting the air from the outside, and transmitting it when heated to the kiln.

By this arrangement, when one kiln is burning and another has just been filled with green material, the heated air from said chamber can be transmitted to said newly-filled kiln, for the purpose of drying said green material preparatory to burning.

By my above-described plan I have four distinct, though combined, kilns, which can be operated separately or collectively, as the operator may please.

My combined kiln is intended to be about forty-eight feet in length, twenty-four feet in width, and eighteen feet in height to the top of the arched roof.

It should be constructed wholly of fire-brick clay, in order to stand the high degree of heat that is requisite to completely and rapidly burn all kinds of brick; but it may be constructed of common brick, fire-stone, or other convenient material, at the option of the builder; but of whatever material constructed, the arched roof should be externally guarded by substantial metallic bands H, to prevent said arched roof from warping, which might result from heating and cooling.

My kiln is to be constructed entirely above the ground, requiring no excavations in the earth for ash-pits, &c., and requires no other flooring than the ground. The furnaces or fire-boxes I are to be constructed with one portion stationary and in the thick brick wall X, and the other part I′ is made detachable and perforated for the escape of heat and smoke. Such sections of the fire-boxes are to be about five feet in length, two feet in width, and two and one-half feet high.

The said fire-boxes I are arranged to open into the outer air through doors J, through which the fuel is fed, and communicate through the sections I′ with the flues leading to the chimney, through vents K in the hollow wall, which are regulated by dampers L.

These fire-boxes are made in sections, so that they may be removed to admit carts or wheelbarrows through the doors N to the rear of the kiln, when filling the same with brick.

My kiln has doors or valves M in the upper part of the ends to allow the escape of steam when the kiln, filled with green material, is first fired. These doors or valves are opened or closed from the ground by means of a common hook-poker, and by means of such openings the burning of said kiln can be at any time inspected by the operator.

My kiln is constructed with dampers O in the chimney, by means of which the operator can close or open the draft of either kiln and regulate the heat to suit circumstances. These chimney-dampers are operated from the ground by means of the wheels P, rope Q, and pulleys R.

In preparing my kiln for burning the material, which is to be taken in through the large doors N at the ends, is to be arranged around and above the hereinbefore-described fire-boxes, in such a manner as to afford a free circulation of heat through and among them.

Having thus described my invention, what I claim as new is—

1. In the brick-kiln, as herein described, the

transverse wall B, with dampers *a* and hollow wall C, containing flues F leading to a common chimney, and provided with dampers L, all combined and arranged substantially as and for the purpose described.

2. The detachable fire-boxes I′, in combination with the stationary fire-boxes I in the wall X, and the hollow wall C, provided with flues F and dampers L, substantially as and for the purpose described.

The above specification of my invention signed by me this 17th day of March, 1875.

PETER EDWARD SMITH.

Witnesses:

EDWD. W. BYRN,

SOLON C. KEMON.