

W. S. COLWELL.
BRICK-KILN.

No. 182,895.

Patented Oct. 3, 1876.

Fig. 1.

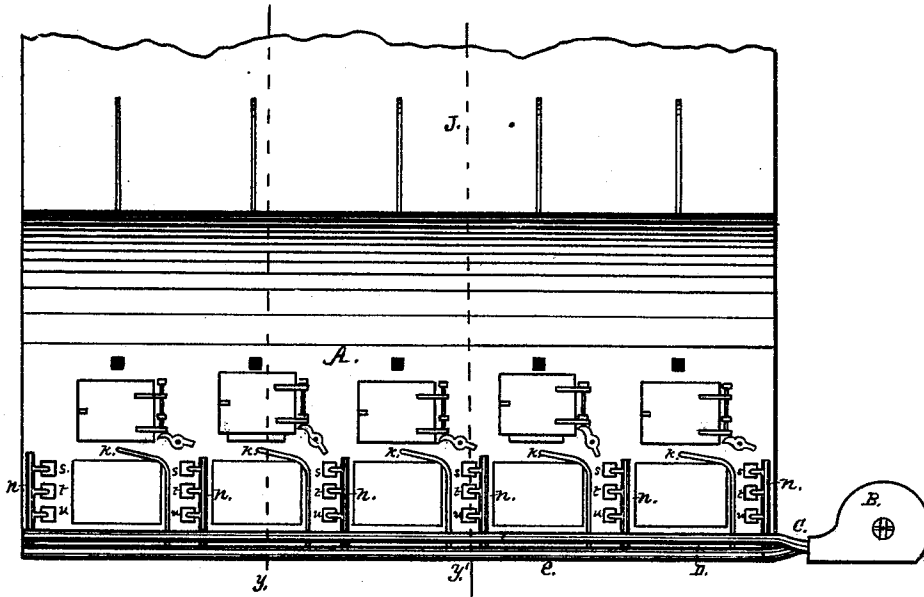
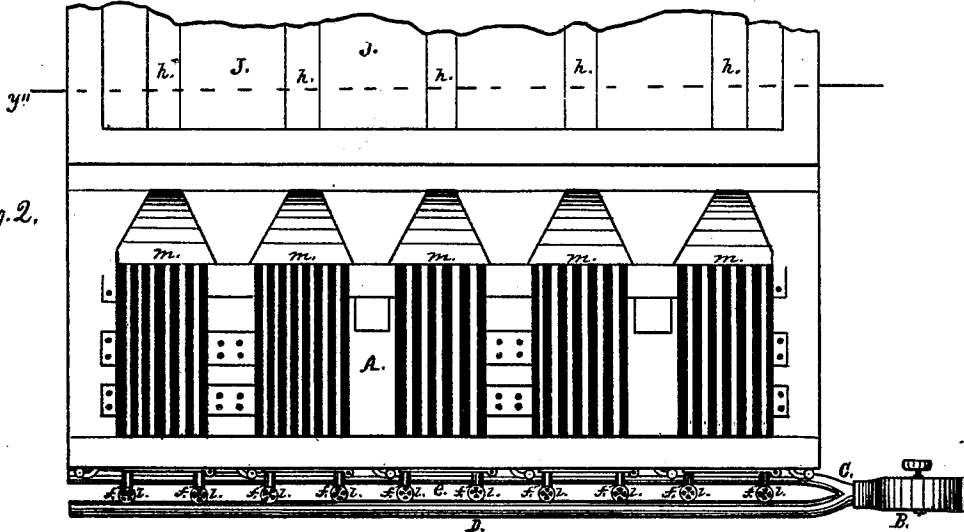


Fig. 2.



Witnesses

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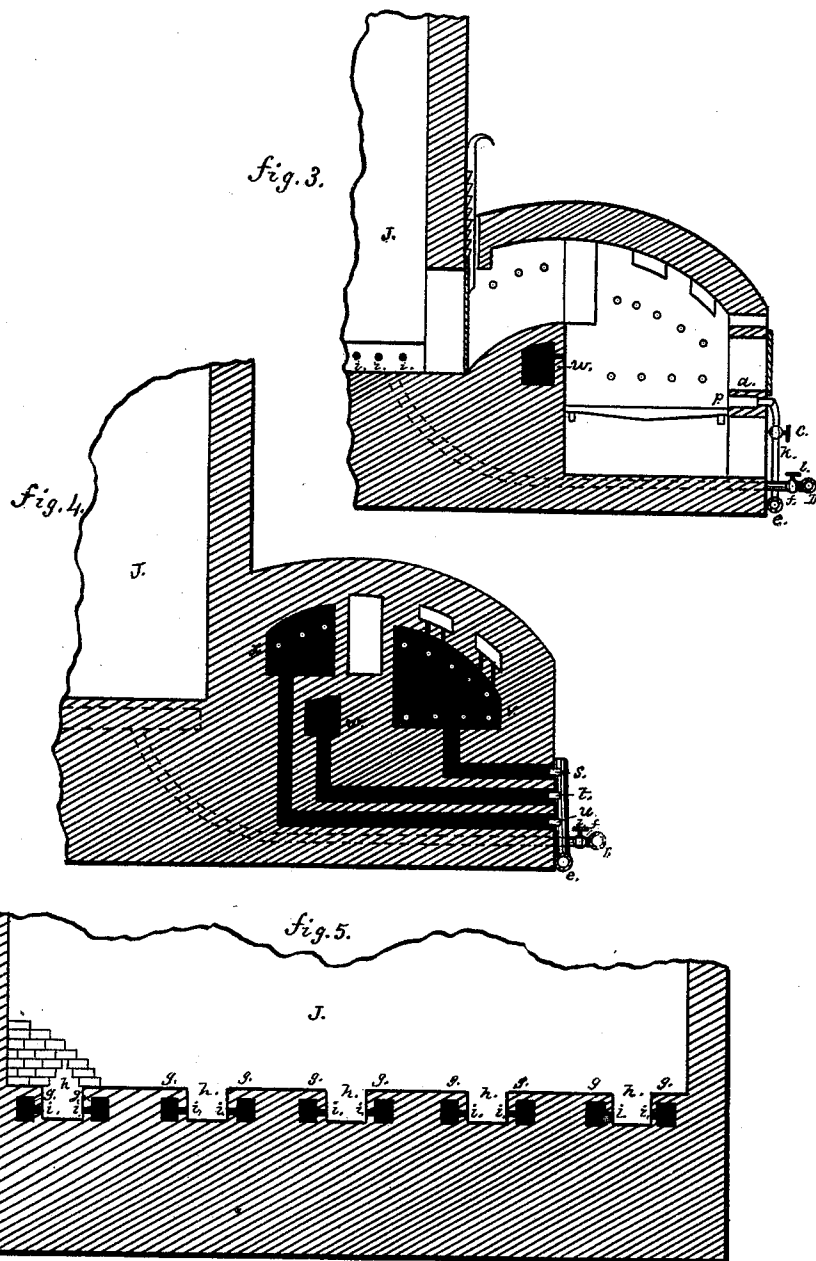
Inventor

William S. Colwell
By J. I. Johnston
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UNITED STATES PATENT OFFICE.

WILLIAM S. COLWELL, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN BRICK-KILNS.

Specification forming part of Letters Patent No. 182,895, dated October 3, 1876; application filed September 4, 1876.

To all whom it may concern:

Be it known that I, WILLIAM S. COLWELL, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Furnaces for Brick-Kilns and other purposes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement in furnaces for brick-kilns and for other purposes; and consists in supplying the fire-chamber, fire-flues, and air-flues of the furnace with an active current or currents of air through the medium of a blast-generator, said current or currents of air being controlled by means of a valve or valves combined with the pipes leading from the blast-generator to the furnace and fire-flues of the kilns.

To enable others skilled in the art with which my invention is most nearly connected to make and use it, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification, Figure 1 is a front elevation of my improvement in furnace, representing it connected to a brick-kiln. Fig. 2 is a top view or plan of the same with the crown of the furnace removed. Fig. 3 is a vertical section of the furnace and kiln at line *y* of Fig. 1. Fig. 4 is a vertical section of the furnace and kiln at line *y'* of Fig. 1. Fig. 5 is a vertical section of the kiln at line *y''* of Fig. 2.

In the accompanying drawings, A represents the furnace, which is constructed in all respects like the furnace described in Letters Patent granted me February 15, 1876, numbered 173,445, excepting that in this case a blast-generator is used in connection with the fire-chamber, fire-flues, and air-flues of the furnace, and also with the fire-flues or arches of the kiln. B represents the blast-generator, which is in this case an ordinary "blast-fan;" but other form of blast-engine may be used. To the outlet of the fan B, at C, is connected pipes D *e*, which form a junction at *c*, as shown in Fig. 2. The pipe D has branches *f*, which lead into flues *g* on each side of the fire-flues or arches *h*, the flues *g* communicating with the flues or arches *h* through the medium of a large number of openings, *i*. (See Figs. 3 and 5.)

The flues *g*, at about the center of the kiln J, are provided with a partition-wall, which serves the purpose of abutments for the air to act against, thereby causing the greatest flow of air into the flues or arches *h* at the center of the kiln, which flow is gradually diminished toward the mouth of the arches *h*.

The kiln J has a furnace and blast generator arranged on each side of it, so that the currents of air act against the partition or abutments in flues *g*, and gradually diminish in force toward the mouth of the fire-flues or arches of the kiln.

The branches *f* of the pipe D are each furnished with a valve, as indicated at *l*, for the purpose of regulating the flow of air into the flues *g*.

The pipe *e*, connected with the blast-fan, is provided with branches *k* and *n*. The branches *n* communicate with the flues *s t u*, (see Fig. 4,) which communicate with the chambers *v w x*, which flues and chambers, and their function in connection with the grates *m*, is fully described in Letters Patent No. 173,445, hereinbefore mentioned; therefore I will not further describe them.

The branches *k* communicate with the fire-grates *m* by means of apertures *p* in the fore-plates *a*, as shown in Figs. 1 and 3.

By this arrangement of the branch pipes *k* and *n*, each of which are provided with a valve, *c*, the desired quantity of air may be supplied to the grates *m* and chambers *v w x*, whereby the intensity of the fire may be increased or diminished at the pleasure of the operator, and the proper quantity of air commingled with the gases of the furnace for the purpose of securing complete combustion.

By the combination of the blast-generator and the flues *g* with the fire-flues or arches *h* the heat can be evenly distributed to all parts of the kiln, thereby enabling the operator to burn the brick to the same degree of hardness in every part of the kiln.

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

In the furnace A, the blast-pipes D *e*, in combination with the flues *s, t, u*, and *g*, substantially as herein described, and for the purpose set forth.

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