

# UNITED STATES PATENT OFFICE.

NAPOLEON B. HEAFER, OF BLOOMINGTON, ILLINOIS.

## IMPROVEMENT IN BRICK-KILNS.

Specification forming part of Letters Patent No. **162,818**, dated May 4, 1875; application filed January 30, 1875.

*To all whom it may concern:*

Be it known that I, NAPOLEON B. HEAFER, of Bloomington, in the county of McLean and State of Illinois, have invented a new and valuable Improvement in Brick-Kiln; and I do hereby declare that the following is a full, clear, and exact description of the same, and the annexed drawing, making a part of this specification, which represents a horizontal vertical section of a brick-kiln with my invention shown.

This invention has relation to the burning of bricks; and it consists in the combination in a brick-kiln of a layer of coarse bituminous coal, and a superimposed layer of fine coal or slack to form a bed or foundation of the kiln, as hereinafter more fully set forth.

I excavate the earth or original kiln-ground to about one foot in depth, and fill the excavation to within about two inches of the top with bituminous coal just as it comes from the mine. The excavation is then completely filled with common "slack" coal, and leveled so as to leave a smooth surface on which to build the kiln.

After the kiln is built fire is put into it in the usual way—that is to say, wood is introduced into the arches from both ends, so as to leave a layer of wood from end to end thereof. Fire is then kindled in the mouths of both ends of the arches, which will work its

way to the middle thereof, by which time the coal-bed will commence to do its work, and throw off highly-heated gases, which will be burned by the wood-flames. It requires but little labor to attend the burning of a kiln in this way, and comparatively little wood.

As the gas is not fully extracted from the coal at a single burning, I repeat the process. The second kiln being removed, there is left a large bed of coke, which I disintegrate and employ it as a substitute for anthracite or (hard) "slack" coal, for mixing with the clay of which the bricks are made, to facilitate the burning.

Instead of excavating the kiln-ground, a very good bed can be formed by forming banks of earth and filling up, as above described.

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

The combination, in a brick-kiln, of a layer of coarse bituminous coal and a superimposed layer of fine coal or slack, to form a bed or foundation for the kiln, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

NAPOLEON B. HEAFER.

Witnesses:

O. H. BLODGETT,  
JNO. D. FOWLE.