

No. 82,242.

PATENTED SEPT. 15, 1868.

W. C. PETTIJOHN.
LIMEKILN.

Fig. 1.

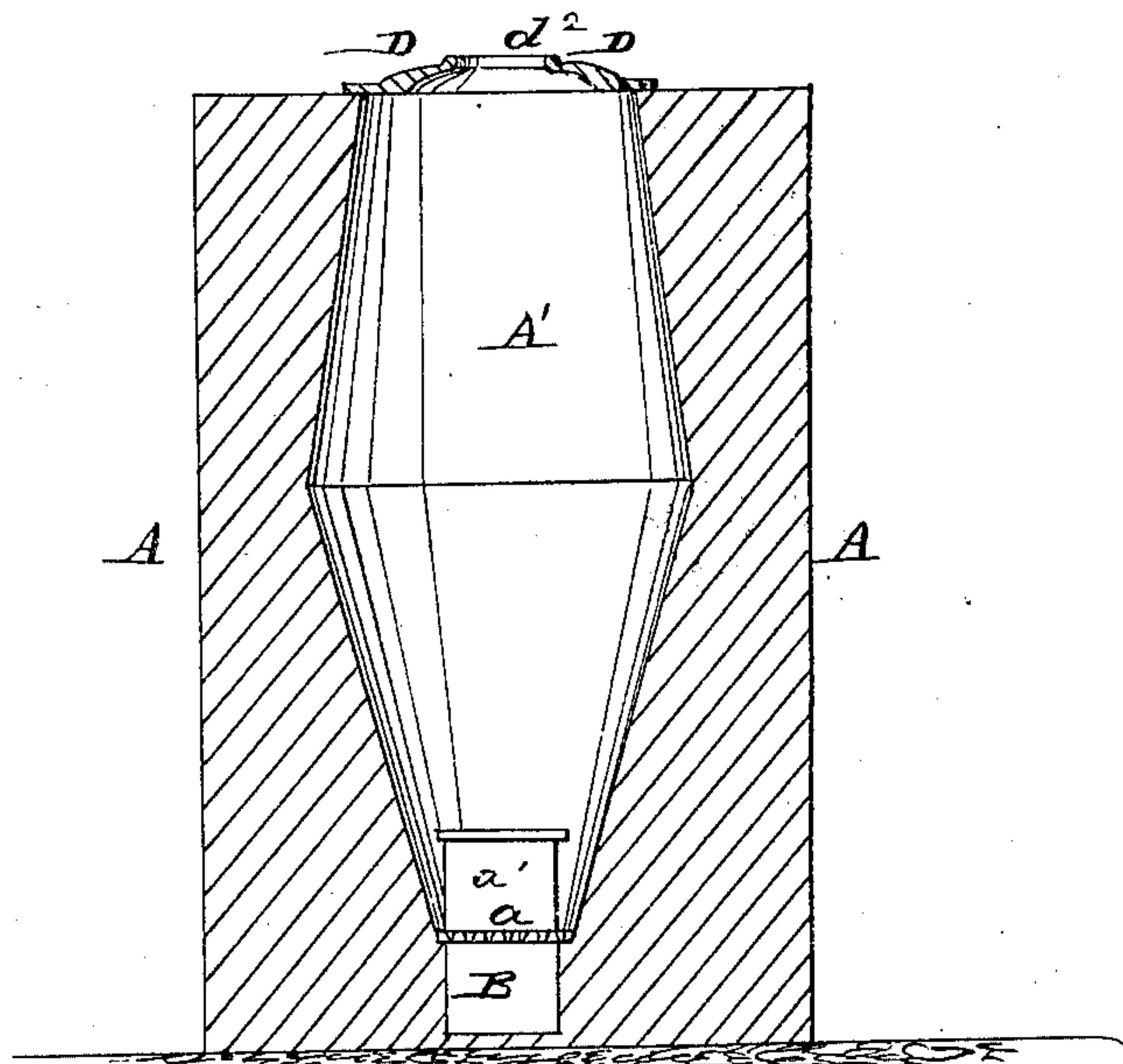
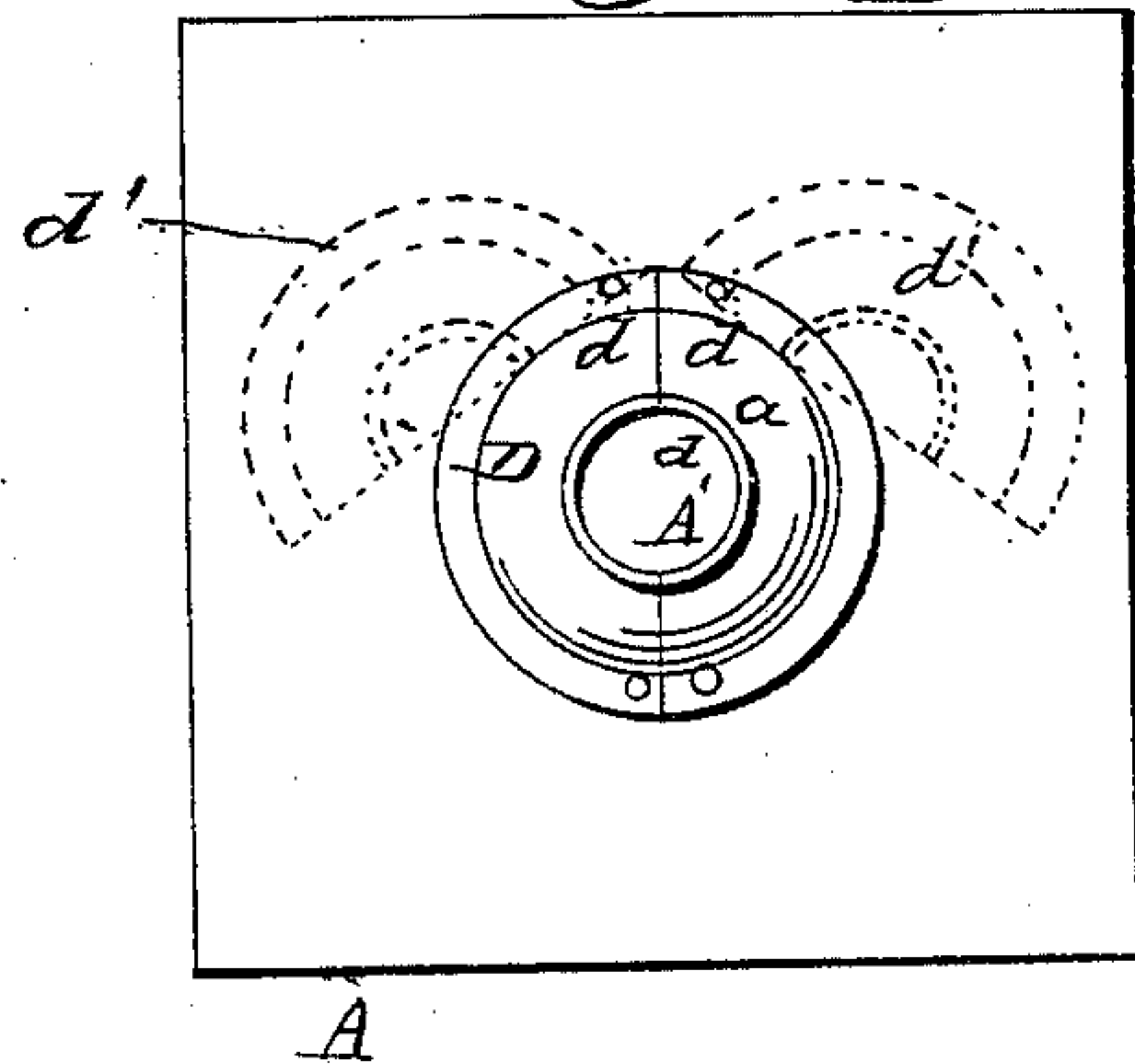


Fig. 2.



Witnesses:

Geo. M. Netherland
Geo. W. Herbert

Inventor:

Wm. C. Pettijohn

*The drawing in this patent
is not in print.*

United States Patent Office.

WILLIAM C. PETTIJOHN, OF ST. LOUIS, MISSOURI.

Letters Patent No. 82,242, dated September 15, 1868.

IMPROVEMENT IN LIME-KILNS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM C. PETTIJOHN, of St. Louis, in the county of St. Louis, and State of Missouri, have made certain new and useful Improvements in Lime-Kilns; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention has for its object the construction of a lime-kiln, in such a manner as to permit the burning-operation to be performed continuously, the kiln being fed from the top with both stone and fuel, and so arranged at the bottom as to discharge the ashes and refuse matter from the kiln into an ash-pit prepared to receive them, while the burned stone are drawn off through an aperture at the side of the kiln, just above the said ash-pit. The kiln is also provided with a metallic cover, arranged to be readily placed over the mouth of the kiln, and provided with an aperture for the emission of smoke, just sufficiently large to permit the escape of the smoke after the kiln shall have become fully fired up.

To enable those skilled in the art to make and use my improved kiln, I will proceed to describe its construction and operation.

Figure 1, of the drawings, is a vertical central section of the improved kiln, looking toward the front of the same.

Figure 2 is a top plan of the kiln.

The walls, A, are constructed so as to form the kiln-chamber, A', in an egg-shape, this shape being best adapted to free the superior mass of stone in the kiln, as the finished lime is drawn out below, and also causes the heat generated within the kiln to act in a reverberatory manner upon the mass of stone under treatment. The base of the kiln-chamber is covered with an iron grating, *a*, immediately below which is an ash-pit, B. Just above the grate there is an aperture, *a'*, in the side of the kiln, through which the calcined stone is to be drawn. The refuse matter of the kiln and ashes will pass down through the grating *a* into the ash-pit B, from whence it may easily be removed at pleasure. The top of the kiln is to be covered by a metallic dome, D, made in two pieces, as clearly shown in fig. 2, which pieces are pivoted at *d*, and arranged to slide back into the positions shown by the dotted lines *d'* in fig. 2. There may be curved rails under the outer ends of these cap-pieces, to sustain them while being run back off of the kiln. An aperture, *d'*, must be left in the dome, for the discharge of the smoke and hot gases from the kiln during the burning-operation. When this cap is closed, it will give increased reverberatory effect to the kiln.

When this kiln is first charged, it will be fired at the bottom, directly over the grate, and it will be allowed to burn from the bottom until the lower portion of stone in the kiln is thoroughly calcined, after which the new fuel (coal or coke will be used) will be introduced from the top, along with the stone, in the proper proportions for thorough burning of the mass. When the bottom portion of the stone in the kiln shall have been thoroughly burned, it will be drawn off through the aperture *a'*. After the first charge of the kiln, the fire will seldom extend down more than two-thirds of the way from the top, while the air for feeding the fire will have to pass up through this finished mass at the bottom of the kiln, which will thereby be cooled off, preparatory to drawing it from the kiln.

I am aware that the devices herein described, taken separately, are of themselves not new, and I do therefore in nowise claim said individual devices; but

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

The arrangement of the kiln A, having the chamber A', grate *a*, ash-pit B, side aperture *a'*, metallic dome D, constructed in two parts, and having the smoke-exit *d'*, all combined substantially as herein set forth.

WM. C. PETTIJOHN.

Witnesses:

M. RANDOLPH,

JNO. W. HERTHEL.