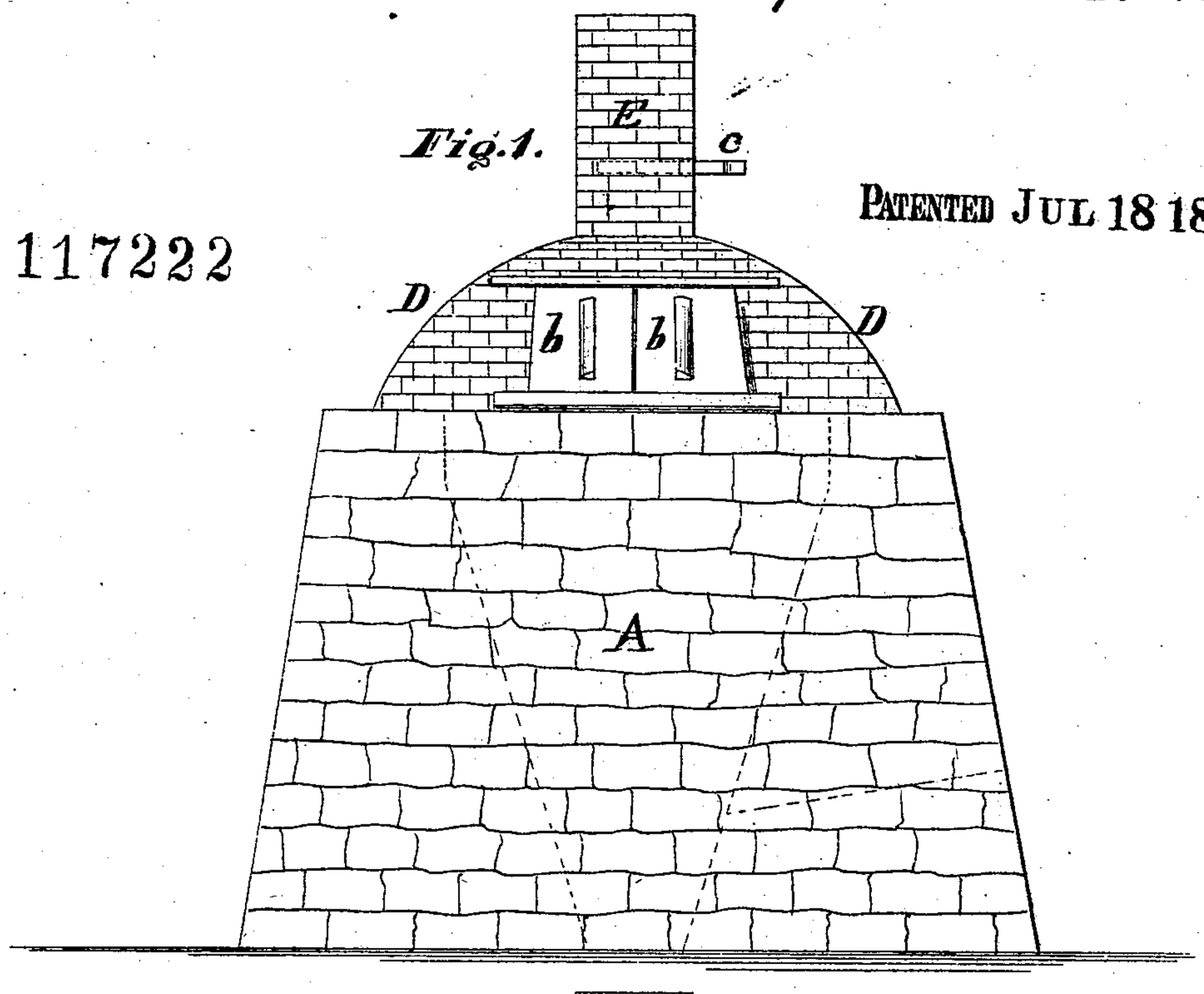
David H. Torbett. Impt. in Lime Kilns.

117222

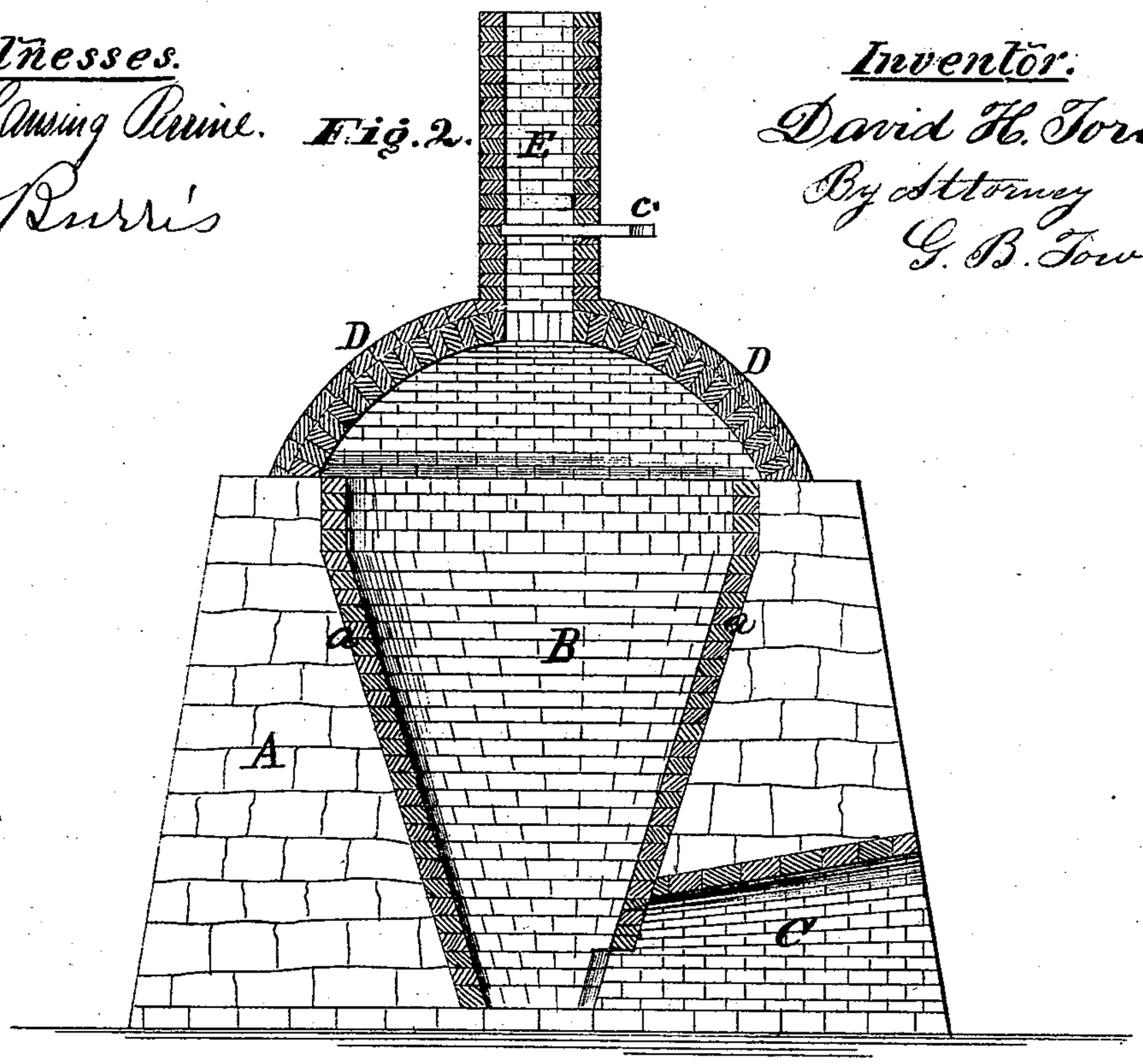
Fig. 1.



PATENTED JUL 18 1871

Witnesses.
H. Lansing Penne.
W. Burris

Fig. 2.



Inventor:
David H. Torbett.
By Attorney
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UNITED STATES PATENT OFFICE.

DAVID H. TURBETT, OF NEW BLOOMFIELD, PENNSYLVANIA.

IMPROVEMENT IN LIME-KILNS.

Specification forming part of Letters Patent No. 117,222, dated July 18, 1871.

To all whom it may concern:

Be it known that I, DAVID H. TURBETT, of New Bloomfield, in the county of Perry and State of Pennsylvania, have invented a new and useful Improvement in Lime-Kilns; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a side elevation; Fig. 2, a sectional elevation.

Like letters in both figures of the drawing indicate like parts.

My invention relates to the construction of an arch over the mouth or opening of any ordinary lime-kiln, with a chimney provided with a damper for regulating the draught, the mouth or opening of the kiln being accessible for filling it through sliding doors made in the arch; also, to the interior construction of the kiln, the lining thereof being made of brick, as ordinarily, but with the sides perpendicular from the top to a suitable distance below, and then sloping inwardly to the furnace at the bottom; the object being to construct the lining of such a shape as will prevent the lime forming a core in the body of the kiln, which I effectually accomplish by making the lining of the shape above indicated, thus facilitating the burning of the lime, the lining in this instance requiring only one thickness of brick, and lasting five or six times longer than the double thickness of brick composing the lining of the kilns in present use; consequently, while remedying the difficulty alluded to above, I at the same time effect a saving in cost of material and labor in the construction thereof; the object of the chimney being also to facilitate the burning of the lime and carry off the gas, the escaping of which from the mouth of the ordinary kiln, injuring seriously and many times fatally the person attending to or filling the same, is entirely obviated by the chimney.

A is the lime-kiln, built of stone, and of the ordinary form of construction. B represents the interior of the kiln, the lining *a* of which is made perpendicular for a suitable distance down from the top, and then inclined inwardly to the furnace C at the bottom, as seen clearly in Fig. 2. The lining, as hereinbefore mentioned, is made of one thickness of brick only, and, although being but half the thickness of the lining of the kilns in present use, yet experience has proven it to be considerably more durable in its not having to be renewed near as often as the other when burned out. This difference is owing to the shape of the old lining being made similar to the interior of an egg-shell, the sides sloping in at the top and bottom, and to the want of a proper draught for feeding the fire, the heat therefrom being unduly concentrated upon the walls of the lining, burning it out and besides causing the lime to form a core in the kiln, all of which will be avoided in this.

An important item in the running of a lime-kiln is the cost of labor and material consequent upon the renewal of the lining at various periods when burned out; but by its being made as above described, in connection with a chimney constructed over the mouth of the kiln to give the proper draught, very considerable of this will thereby be saved.

D is a brick arch, constructed over the mouth of the kiln and inclosing it entirely, and provided with sliding doors *b*, by which the operator, by sliding them back, can attend to the filling of the kiln. E is a chimney, constructed about eight feet high over the arch, with its flue extending through it, and provided with a damper, *c*, for regulating the draught.

As the burning or making of lime is so well known no explanation of it is here necessary.

This improvement can be easily applied to any of the kilns now in use, and the same roofed or inclosed so as to protect the operator from exposure to the weather. This cannot be done with any of the present kilns without cutting off the draught.

By an actual demonstration made with this improvement one man will burn one hundred and fifty bushels of lime in the same time and with the same amount of coal that it takes to burn one hundred bushels without it.

I am aware that it is not new to construct a

chimney on a lime-kiln, the same being shown in the patent of Richard Donaldson, February 19, 1861; therefore I do not claim it; but

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

In the lime-kiln A herein described, the arrangement of the lining *a*, arch D, chimney E, sliding doors *b*, and damper *c*, when all constructed and arranged as and for the purposes set forth.

As evidence that I claim the foregoing as my invention I have hereunto set my hand in the presence of two witnesses.

DAVID H. TURBETT.

Witnesses:
JOHN R. SHULER,
JAMES MCILHENNEY.