

S. M. HAMILTON.

Brick Kiln.

No. 101,124.

Patented March 22, 1870.

Fig. 1.

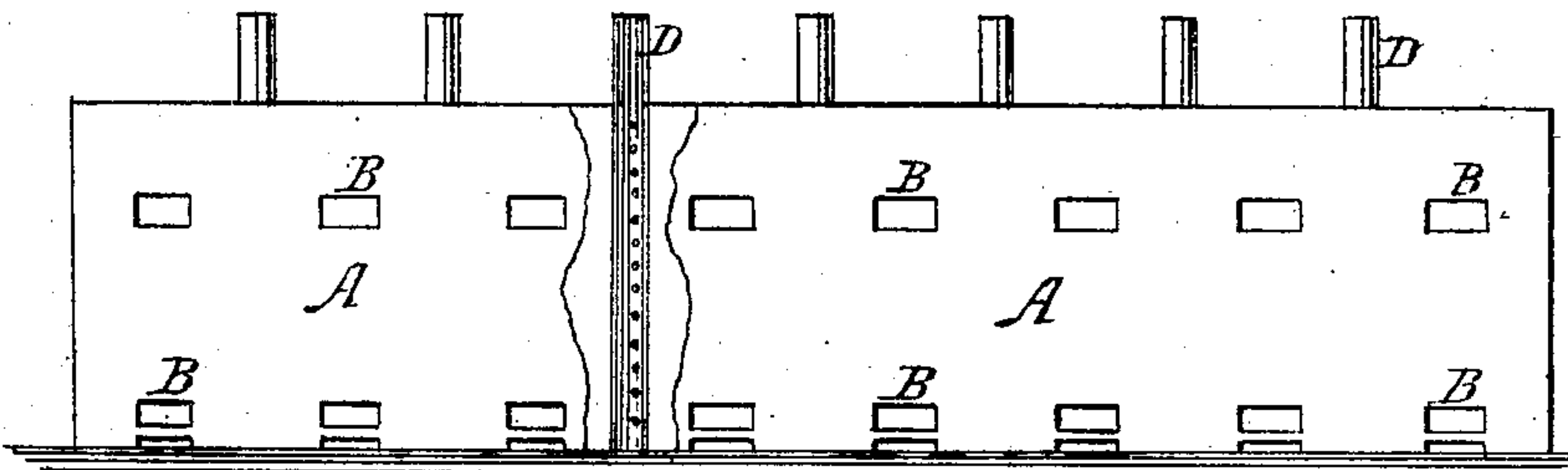
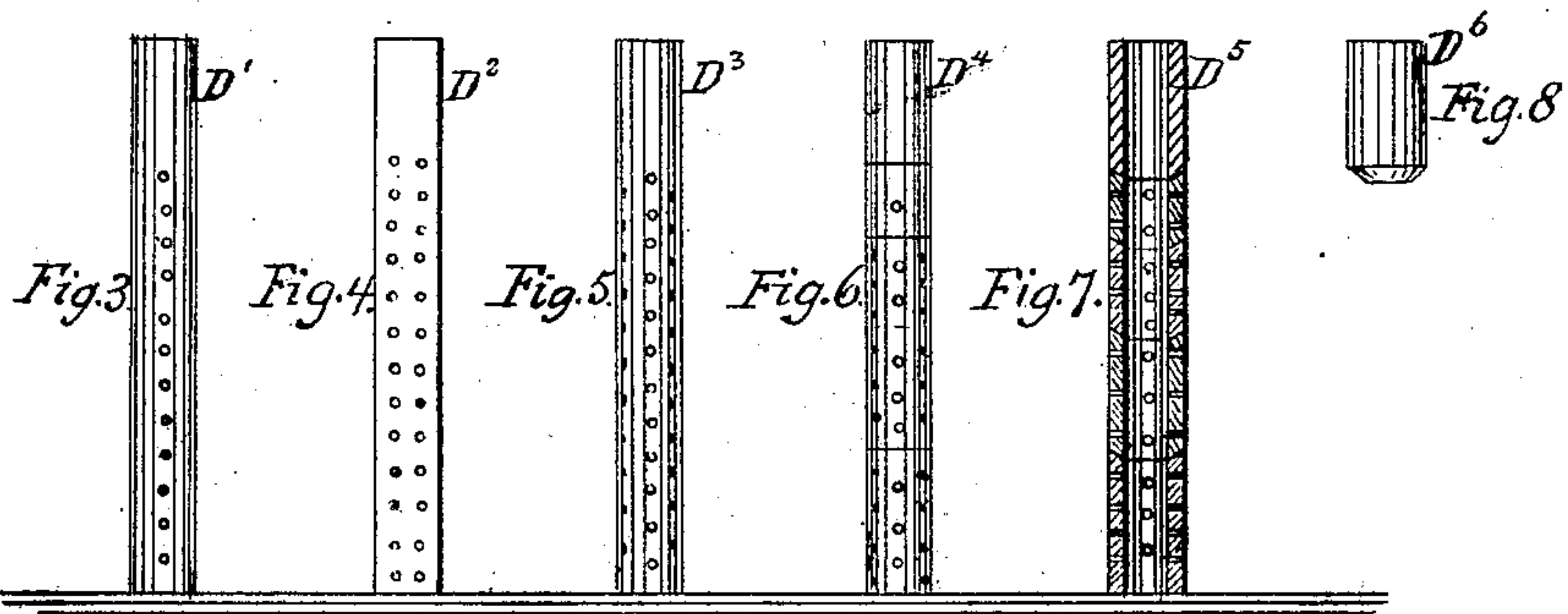
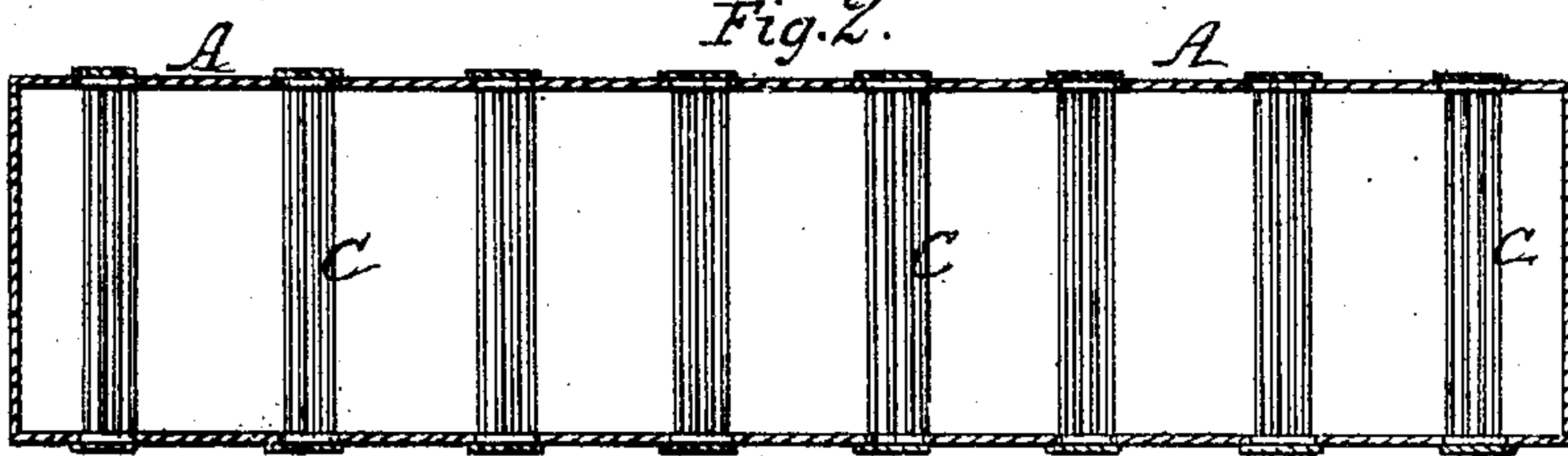


Fig. 2.



Attest
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Fig 3.^a

Fig 4.^b

Fig 5.^c

Fig 6.

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SILAS M. HAMILTON, OF BALTIMORE, MARYLAND.

Letters Patent No. 101,124, dated March 22, 1870.

IMPROVEMENT IN BRICK-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, SILAS M. HAMILTON, of the city and county of Baltimore, and State of Maryland, have invented a new and useful Improvement in Chimneys or Flues for Brick-Kilns; and I hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure I is a side elevation of a continuous brick-kiln, with a portion of its side wall broken away so as to show the application of my improved flue or chimney.

Figure II is a plan or top view of a kiln, showing the grates upon which the fuel is burned.

Figures III, IV, V, and VI are vertical elevations of different forms of the flue or chimney, being end views of the same, showing the form of their cross-sections.

Figure VII is a vertical sectional elevation, showing the perforations through which the products of combustion are admitted to the vertical flue.

Figure VIII is a transverse section, which may be used in connection with any one of the flues for the purpose of lengthening the same.

Corresponding letters refer to corresponding parts in all of the figures.

In brick-kilns as heretofore constructed, the chimneys or flues have been made to occupy fixed positions, which arrangement has been found to be a source of great delay and expense in the burning of bricks, from the fact that the heated products of combustion have a tendency to travel in straight lines from the grate or place where the fuel is burned to the uptake or flue which conducts them to the atmosphere above the top of the kiln. In consequence of the above-recited facts, great difficulty has been experienced in getting the bricks to burn evenly in all parts of the kiln.

My object in the present invention is to provide a remedy for the above referred to difficulty, and to this end

It consists in providing a portable flue or chimney, which is to be provided with perforations from its lower end upward to a point about equal in height to that to which the bricks to be burned are piled in the kiln, the perforations being largest at the bottom or lower end of the flue, and diminishing in area as they approach the upper end.

A, in the drawings refer to a brick-kiln, which may be of the form shown in the drawings which accompany the application of mine now pending in the United States Patent Office, or of any other form, the one shown being intended to be used in sections, so that

a portion of it may be used for burning brick, while other portions are being emptied of brick already burned, or filled with those which are to be burned.

B B refer to apertures in the walls, into which portable furnaces may be slid, if desired, for receiving the fuel to be burned. Two rows of such apertures are shown. The upper ones may be used if found desirable, but they are not indispensable to the successful operation of the kiln.

C C refer to a series of grates which extend transversely across the kiln, so that access may be had to them from either side, for the purpose of placing fuel thereon.

D D refer to the chimney or flue which carries off the products of combustion from such kilns.

D' refers to a portable perforated chimney or flue, it having one semicircular or rounded side, and one flattened side, as shown at fig. 3. This form of flue may be varied, as shown at figs. 4 and 5; but I prefer the form shown at fig. 3, it being the most convenient for general purposes. This flue or chimney may be made of any suitable material, such as iron or any other metal, or it may be of burned clay, or any other refractory material which will not be destroyed by the heat. It is to be perforated upon both or all of its sides with a series of holes, the largest of which are to be at its lower end, from which point they diminish in area as they approach the upper end until they reach a point as high as it is desirable to pile the bricks, or a point as high as it is desirable to take off the heated gases through such flues where they terminate, and the remaining portion of the flue is solid, or without perforations, and may be extended in this form to any desired height.

The various forms of flues or chimneys shown are all upon the same principle, varying only in form, and may be used in place of the one described, if found to be more economical in construction, or better in any other respect.

D^e refers to a section of a flue or chimney which may be used to lengthen the main one, whenever it becomes necessary to increase the draught from the fires.

Some of the advantages due to my portable chimney may be stated as follows:

It is perfectly portable, and may be easily moved from one place to another, and consequently it may be placed in such a position (or more than one may be used, and they be placed in such positions in the kiln) as to equalize the draught from the fires, and thus cause a nearly perfect equalization of the heat throughout the kiln, the result of which will be, that the bricks in the corner or other parts of the kiln which are remote from the fires will have a sufficient amount of heat conducted to them to burn them, nearly as quick as those which are nearer to the fire.

In view of the facts above stated, it is apparent that by the use of the portable chimneys or flues the over-burning or melting of the bricks in the arch will be avoided, as will also the necessity of keeping up the fires for the length of time now required to cause the proper distribution of the heat, which will result in a great saving of fuel.

Having thus described my invention,

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

In combination with a kiln for burning brick, tile,

or pottery, a portable perforated chimney, extending from the bottom to a point above the top of the kiln, whether constructed in one piece or in sections, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

S. M. HAMILTON.

Witnesses:

D. P. HOLLOWAY,
F. H. SPRAGUE.