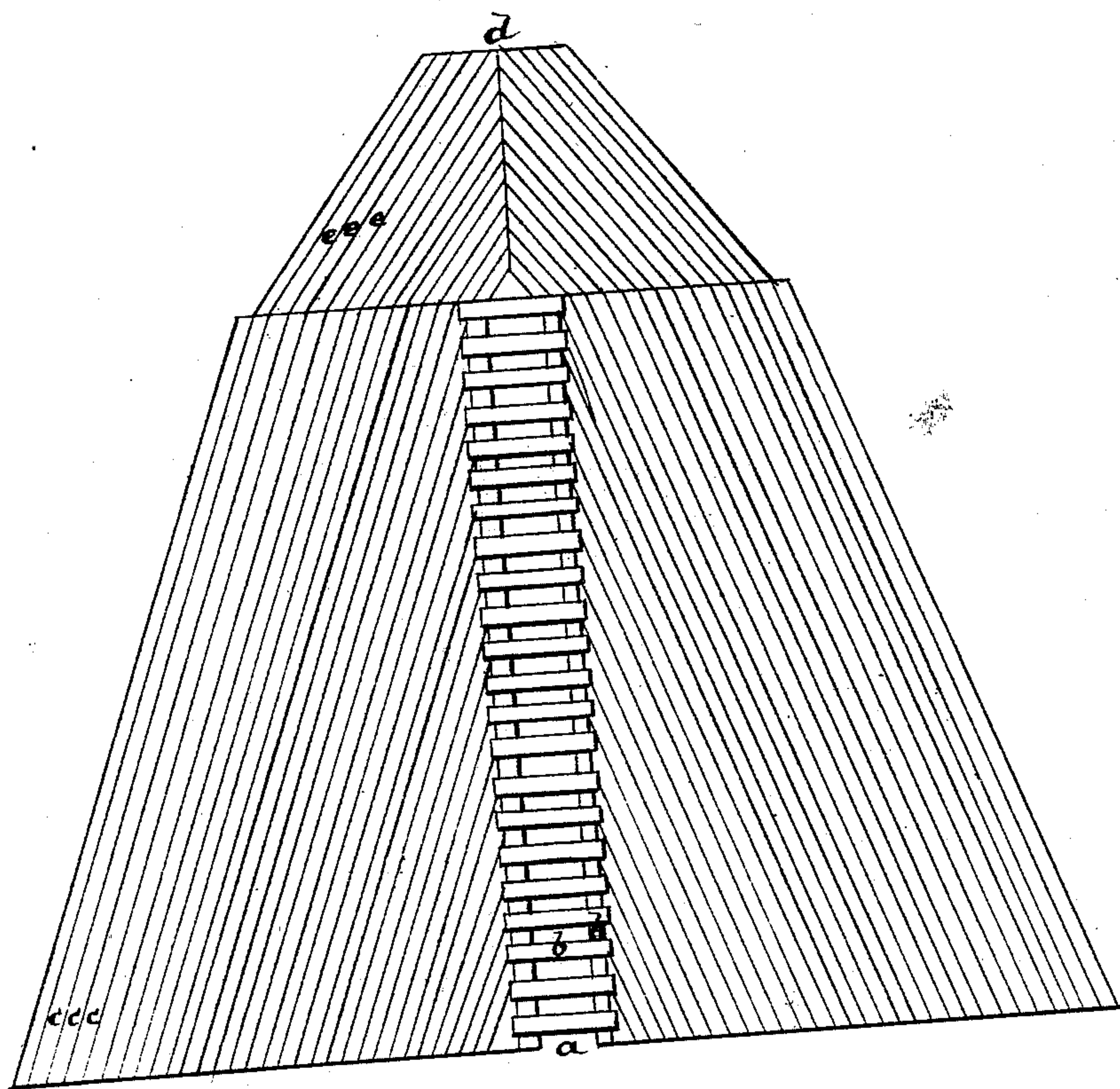


A. Grimes,
Charcoal File.

No. 16,304.

Patented Dec. 23. 1856.



UNITED STATES PATENT OFFICE.

ANDREW GRIMES, OF LANCASTER, NEW YORK, ASSIGNOR TO CHARLES DAY, OF SAME PLACE.

IMPROVEMENT IN BURNING CHARCOAL.

Specification forming part of Letters Patent No. 16,304, dated December 23, 1856.

To all whom it may concern:

Be it known that I, ANDREW GRIMES, of the town of Lancaster, in the county of Erie and State of New York, have discovered a new and Improved Mode of Manufacturing a Medium for Filtering Purposes, of which the following is a specification.

The nature of my discovery consists in part in burning wood in the open air without covering of earth or any substitute therefor, and in part of grinding the coals, when burned and while red-hot, for the purpose of producing a "filtering medium."

In order that others may profit by my discovery, I will proceed to describe the manner of constructing my pile, reference being had to the accompanying drawing, and to the letters of reference marked thereon, and the process of grinding while hot.

The figure shows a vertical section of the pile.

a is the chimney.

b are pieces of wood, about one inch square and fourteen inches in length, of which the chimney is constructed.

c are sticks of wood, split by a machine, one inch square, and varying in length from one to four feet, of which the pile is built.

d is the top of the pile, put on after the fire is introduced into the chimney.

e are sticks of wood, of the same size as those forming the body of the pile, and varying from eight inches to two feet in length, forming the top *d*, to prevent the flame from rising.

In constructing the pile I first build the chimney of the pieces of wood *b* one foot square and four feet high, cross-barred, as seen in the figure.

After building my chimney, I place the wood around it, as at *c c* in figure, the wood being short at bottom, and increasing in length to four feet. The wood, being split square, can be packed very closely together.

I do not confine myself to the particular length of wood or height of chimney described. Others may be used.

The amount of wood packed around the

chimney may be one cord. When the requisite amount is packed up, I proceed to set it on fire. The fire is introduced into the top of the chimney, thence it falls to the bottom and communicates to the pile. When kindled, I build the top of the short pieces *e*, set together over the chimney, and in the form of the body of the pile sufficient to effectually prevent the flame bursting out. So little air penetrates the pile when thus packed and set on fire that the coals are prevented from burning to ashes, and sufficient penetrates to burn it to coals in from two to three hours. I am enabled by this manner of burning the wood in the open air and of grinding the coals while red-hot to make a filtering medium at a less expense and in less time, and of a better quality, than can be done by the old method of burning charcoal and reburning it for filtering. As the pile burns, it must be kept packed tight at top by means of a short pole. It will thus burn faster at bottom than at top. After burning to the outside at bottom, it must be packed tighter at bottom than at top by means of the flat side of a shovel, in order to keep the air from penetrating and burning the coals to ashes, allowing at the same time the pile to burn through fully at top. After it has burned through at both top and bottom sufficiently, a little water may be sprinkled on, to dampen the fire some, so that it may be approached. It must then be removed to the mill, which is nothing but a common bark-mill, and ground while hot. When ground and allowed to cool, it is ready for use.

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

Burning wood in the open air without any covering of earth or any substitute therefor in such a manner as to reduce any given amount of wood to a mass of red-hot coals, preventing the pile from burning to ashes until this result is accomplished, in the manner herein set forth and described.

ANDREW GRIMES.

Witnesses:

C. M. RANSOM,

CHAS. E. DAY.