J. D. RICHESON.

Ventilating Pipes for Lead Corroding-Houses.

No. 163,529. Patented May 18, 1875.

FIG. 1.

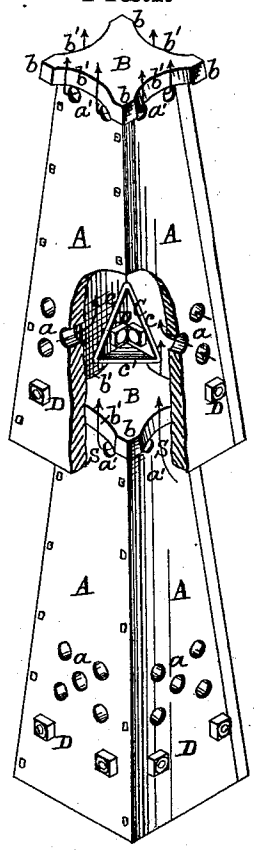
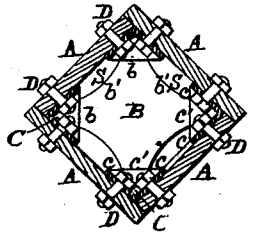


FIG. 2.



ATTEST:

Robt Burns.
Henry Tanner.

INVENTOR:

James D Richeson
By Knight Bros
Attys.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

JAMES D. RICHESON, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN VENTILATING-PIPES FOR LEAD-CORRODING HOUSES.

Specification forming part of Letters Patent No. **163,529**, dated May 18, 1875; application filed May 1, 1875.

To all whom it may concern:

Be it known that I, JAMES D. RICHESON, of St. Louis, St. Louis county, State of Missouri, have invented a certain new and useful Improvement in Ventilating or Bed Pipes for Lead-Corroding Houses or Stacks, of which the following is a specification:

My invention has for its object the furnishing of improved ventilating or bed pipes for causing a uniform circulation in the lead-corroding stacks or houses, and a consequent equal degree of heat in all the pots throughout all the tiers of the stack.

The invention consists in ventilating or bed pipes made tapering, with holes in the upper and lower parts of the sides, and with metallic corner brackets, through which pass clamping-bolts, to prevent the opening of the joints of the pipes. The corner brackets rest on the corners of the caps of the pipe-section beneath, said cap projecting at the corners and being concave at the sides, so as to admit the free upward passage of vapor between the sides of the two sections.

In the drawings, Figure 1 is a perspective view of two pipe-sections or standing pipes, with part of the upper one broken away to show the connection between the two. Fig. 2 is a horizontal section through the corner brackets.

The pipe-sections are tapering in form, and consist of sides A, cap or top B, and corner brackets C, which are bolted in place, and which rest on the projecting corners of the cap of the section beneath. The sides A have perforations *a* in the lower portion and perforations *a'* near the top. The cap B projects beyond the corners of the pipe at all the four corners *b*, and the sides *b'* of the cap are concaved to allow the upward passage of vapor between the cap and the pipe-section next above. C C are the corner brackets, which are made of triangular form, with vertical sides *c* and horizontal bottom *c'*. Screw-bolts pass through the sides *c*, and through the sides A of the pipe-sections, so as to hold the section firmly together at the corners, at the point of the greatest strain, from the side pressure of the cap, and also to hold the bracket firmly in position against vertical strain from the settling of the stack, the brackets resting upon the corners of the cap B of the pipe-section beneath. One pipe-section is used for each tier of pots, and is of such a height or length as to lap over the upper end of the section beneath, as shown, and to extend from the tier to which it belongs through the superimposed manure or tan-bark into the next tier of pots, and, in the case of the last section, to extend above the top of the stack. The pots in each tier are arranged to be on a level with the lower holes *a* of the pipe-sections.

By this construction the passage of the vapors from the lower to the upper part of the pipe induces a draft from each tier of the pots, insuring a uniform circulation and heat throughout the stack.

The pipe-sections may, if preferred, be made of sufficient length to extend upward through two tiers of pots; but it is much better that each tier should be provided with a separate section.

The bracket-rests C are a very important feature, not only in themselves, but in combination with the bolts D. As rests, they prevent the sections becoming jammed tightly into each other, and the corner joints being thus wedged open, and the brackets and bolts hold the section-sides A firmly together at all times. Without this provision the pipe-sections, owing to the vertical strain upon them as the stack settles, and the extremes of heat and dampness to which they are subject, are liable to become quickly destroyed.

The projecting corners of the cap B fit in the angles below the brackets, and thus the pipe-sections are held in vertical line, being prevented from side slip upon each other or from tilting, and thus space S between them for the passage of vapor is kept open on all sides.

I claim as my invention—

1. The tapering pipe-section having perforated sides A, projecting cap B, and corner brackets C, substantially as and for the purpose set forth.

2. In combination with the pipe-sections, as described, the bracket-screws D, substantially as and for the purpose set forth.

JAMES D. RICHESON.

Witnesses:

SAML. KNIGHT,

ROBERT BURNS.