No. 41,498. PATENTED FEB. 9, 1864.

W. J. FRYER, JR.
CHIMNEY FLUE.

Fig. 2.

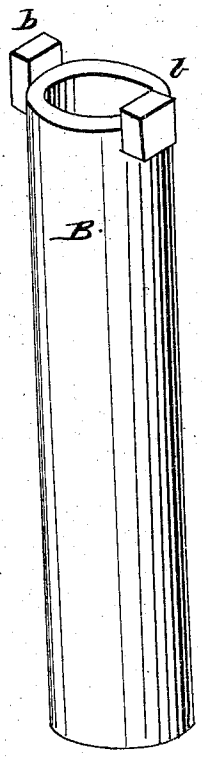


Fig. 3.

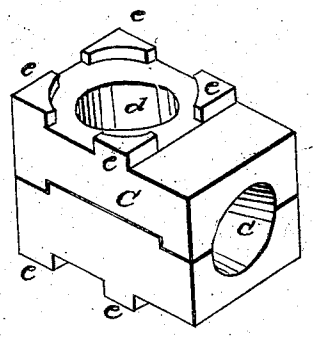
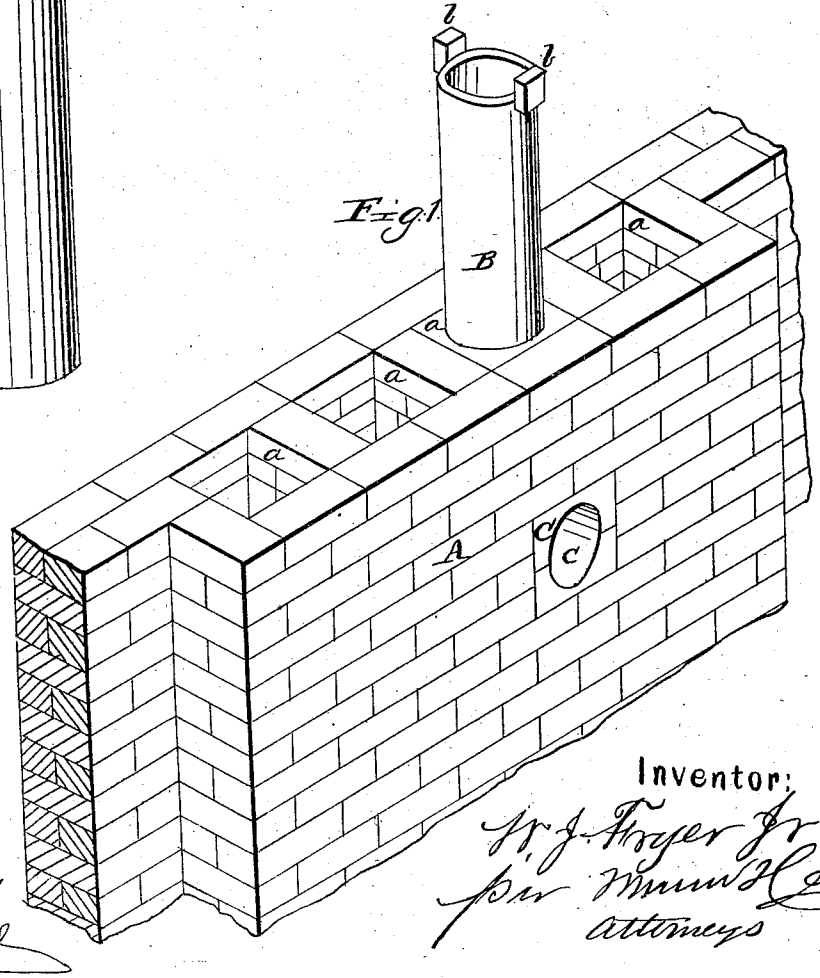


Fig. 1.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN CHIMNEY-FLUES

Specification forming part of Letters Patent No. **41,498**, dated February 9, 1864; antedated February 3, 1864.

To all whom it may concern:

Be it known that I, WILLIAM J. FRYER, Jr., of Albany, in the county of Albany and State of New York, have invented a new and Improved Chimney-Flue, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a perspective view of a brick wall built up with my flue in it. Fig. 2 is a perspective view of the flue detached. Fig 3 is a similar view of the crock supporting the flue, and containing the hole for the stove-pipe.

Similar letters of reference in the several figures indicate corresponding parts.

Chimney-flues are usually built square or oval and pargeted (plastered) on the inside with mortar, and though the greatest pains be taken with the work, it is rough and uneven. This roughness collects soot, impairs the draft, and in time completely chokes up the flue. These difficulties are entirely overcome by the use of my improved flue, which consists in the use of cylindrical, polygonal, or oval tubes of clay, plaster-of-paris, sand, lime, and water, fire-clay, or any other suitable material or materials, which tubes are built up in the square holes formed in the chimney, in the ordinary manner and size. These tubes are provided with tops or projections at the top ends, so that each length is independently supported and held firm in its place.

The stove-pipe hole is formed by a large hollow clay brick or crock made in halves and built in the chimney-breast, so that the connection is not only complete, but renders the use of flue-collars unnecessary, and altogether is a decided improvement over everything in the way of stove-pipe entrances ever before used.

To enable others skilled in the art to make and use my invention, I will proceed to describe it.

A represents the chimney, in which square holes *a* are built up in the ordinary manner and size. B is a tube of clay or other suitable material, cylindrical, polygonal, oval, or in any other desirable shape or form, made to fit into the square hole *a*. A series of such tubes are placed into each hole of the chimney to reach clear up to the top, and the corners are filled in with mortar as the work progresses, and everything connected with it is rendered compact, solid, and complete. The tube is made in lengths of three feet, (more or less,) and each length is provided with lips or projections *b* at its top end, whereby each length is supported independently and held firm in its place.

C is a crock or brick made of fire-clay or any other suitable material in two halves, and provided with a horizontal hole, *c*, to receive the stove-pipe. The hole *c* extends to the vertical channel *d*, which forms a continuation of the flue or tube B. A series of projections or lugs, *e*, hold the end of the tubes in the proper position. If the crock is used in an ordinary fire-place, a ventilator may be inserted into the hole *c*, and a tube extends from the lower end of the channel *d* to the fire place. The crock C is built in the chimney-breast, and the hole *c* is made to fit the stove-pipe, so that the same can be entered without the use of flue-collars or other similar devices, and all danger of an accident from overheating is avoided.

By my flue the draft is considerably increased, first, by its shape, and, second, by the smoothness of the inner surface, which gives no chance for the collection of soot. The flue will be always clean, and consequently the draft always perfect. There will be no difficulty with back drafts or smoky chimneys. The worst stove in the market will "draw" as well as may be desired, and the condemnation of good stoves by parties having defective chimneys will be checked; and, finally, by the use of the tubes B there will be no possible chance of any timber coming in contact with the flues, and thus one great source of conflagration, so mysterious to many people, by reason of sparks and burning soot resting on the ends of timbers built in and around the flues, will be effectually remedied.

My flue is perfectly fire-proof, and for this reason it can also be used with advantage as viaducts for the conveyance of hot air from furnaces, &c. It may, however, be also used for the conveyance of cold air supplies and for the purposes of ventilation.

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

The employment and use in chimney-flues, &c., of the tubes B, made of clay or other suitable material, with lips and projections *b* at the supporting points on the upper ends thereof, in combination with the crock C, all made and applied in the manner and for the purpose as herein described.

WM. J. FRYER, JR.

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