

J. HAAS.  
Brick-Kiln.

No. 202,542.

Patented April 16, 1878.

Fig. 1.

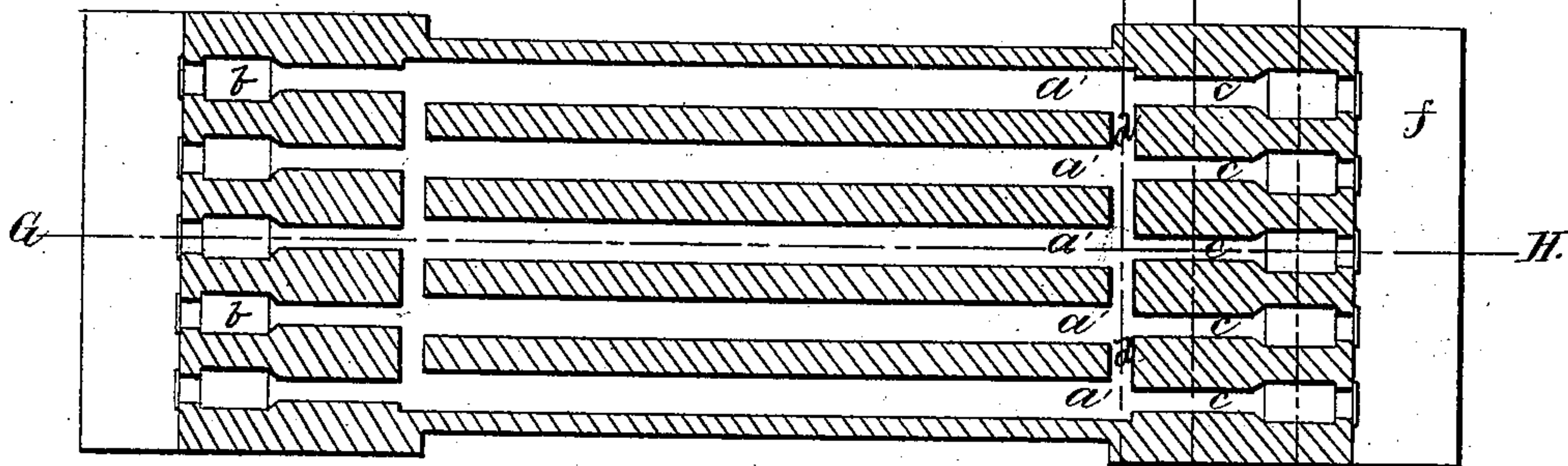


Fig. 2.

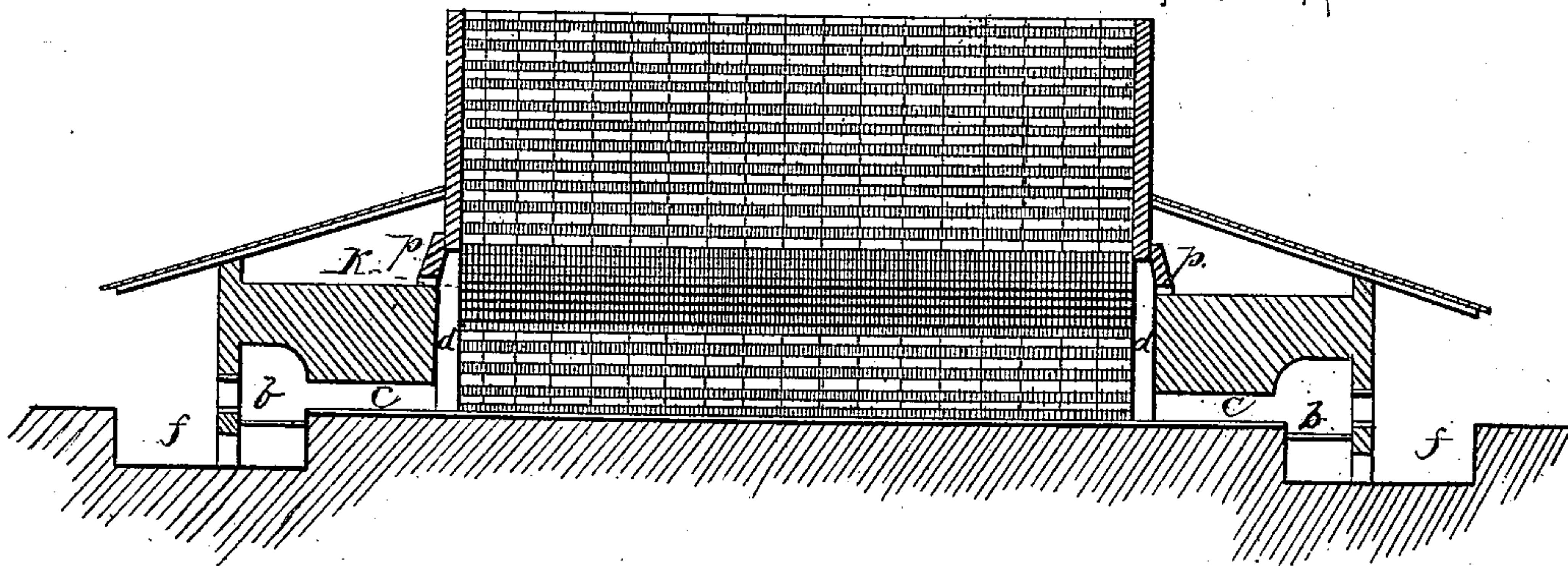
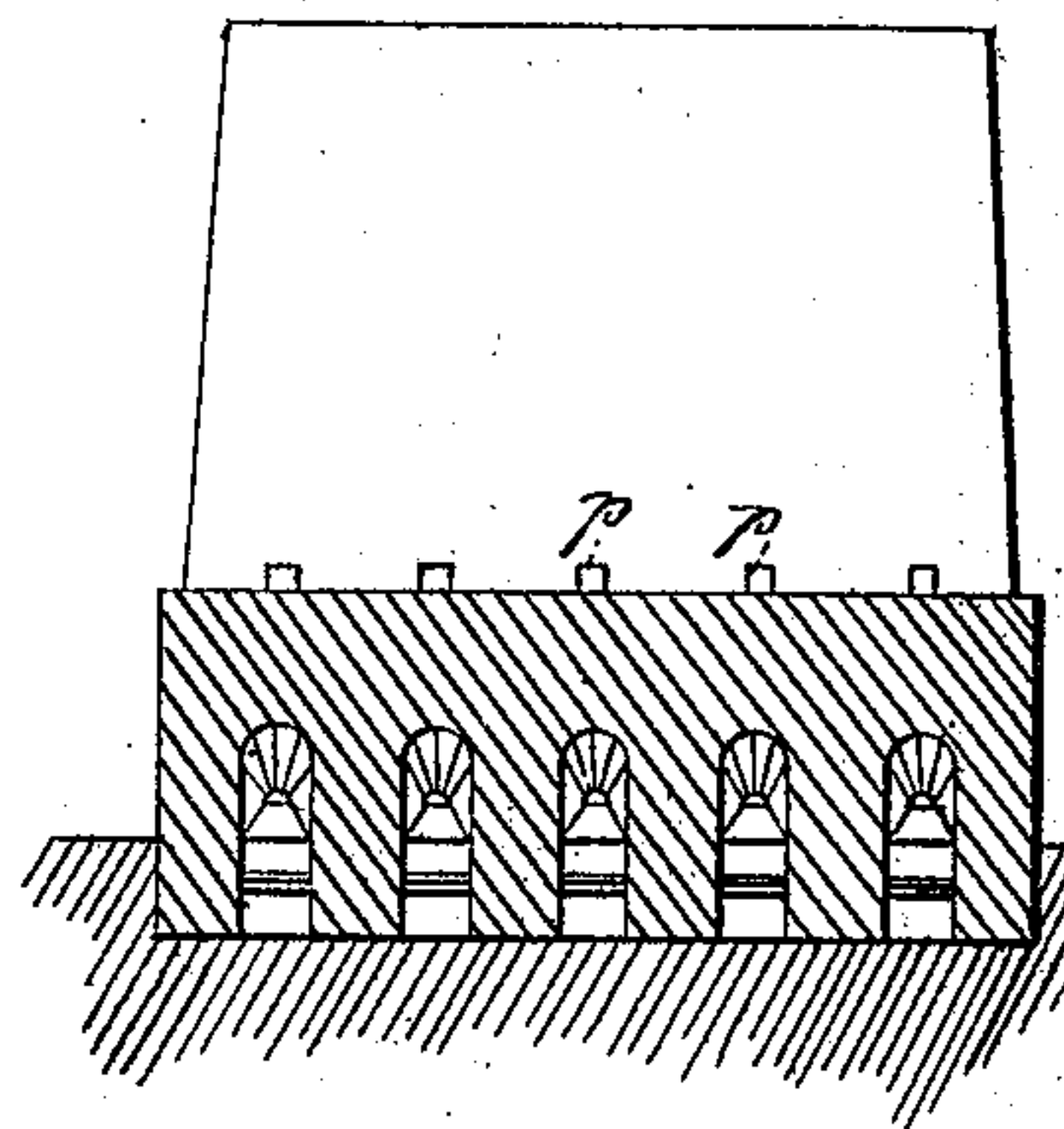
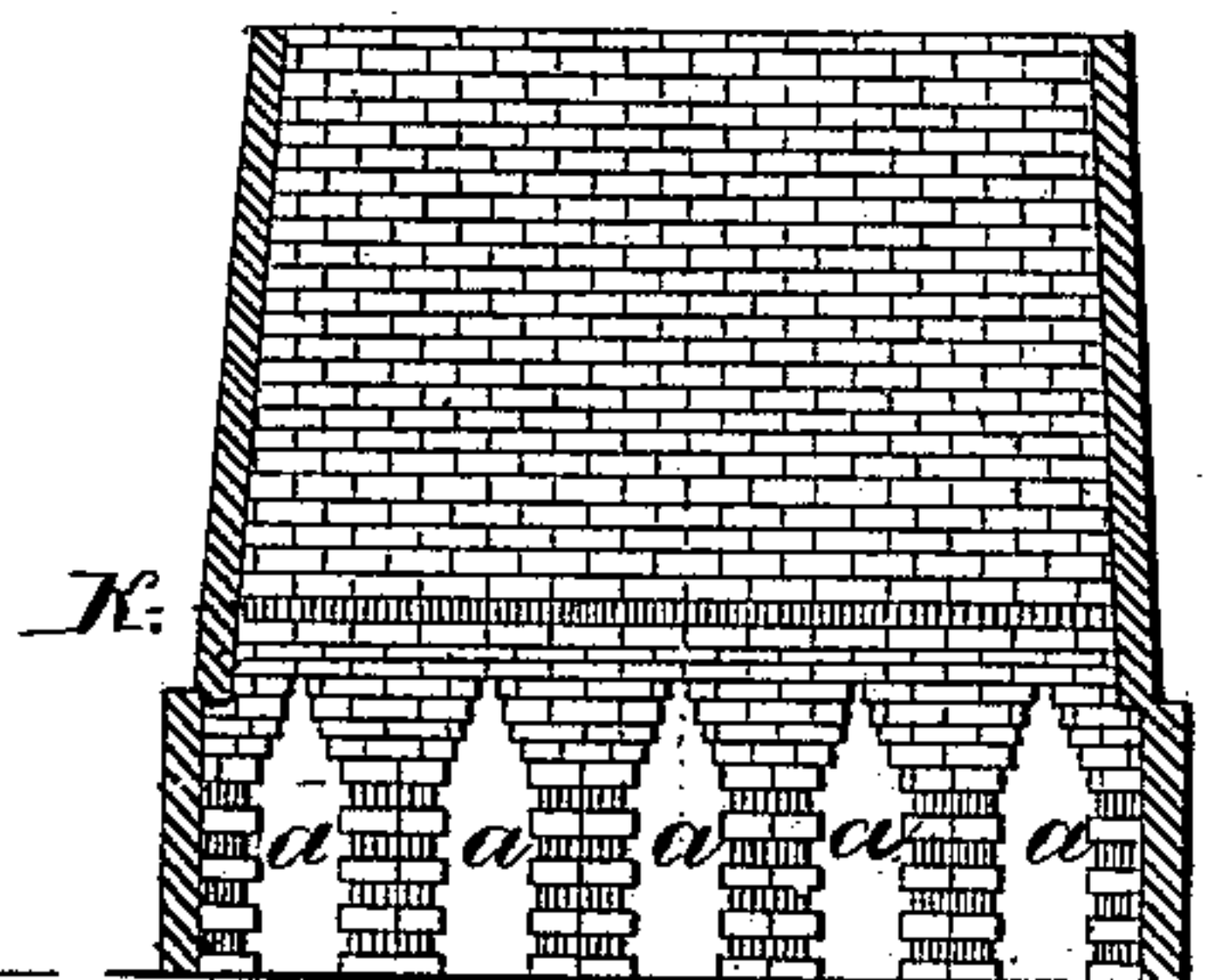
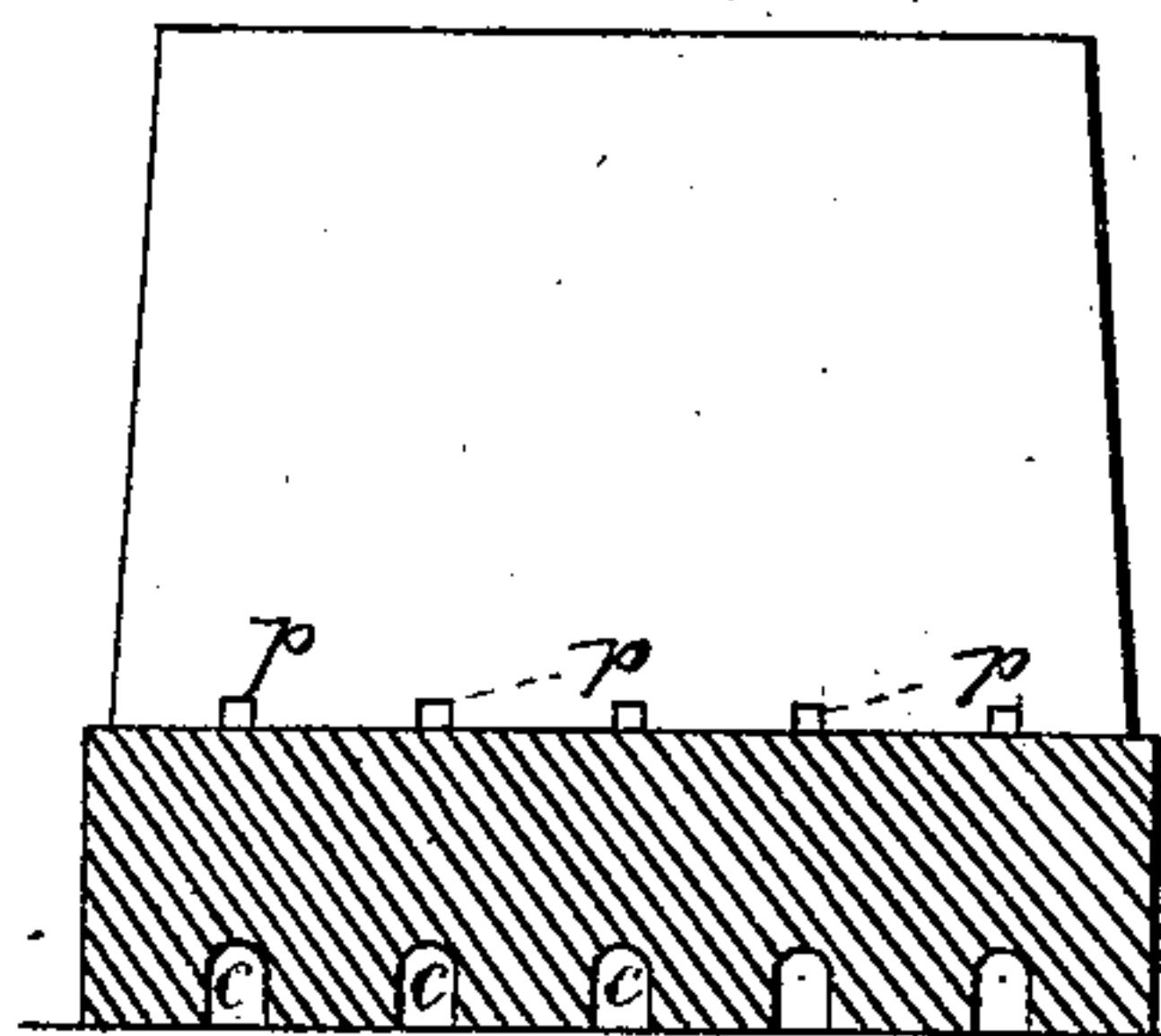


Fig. 4.

Fig. 3.

Fig. 5.



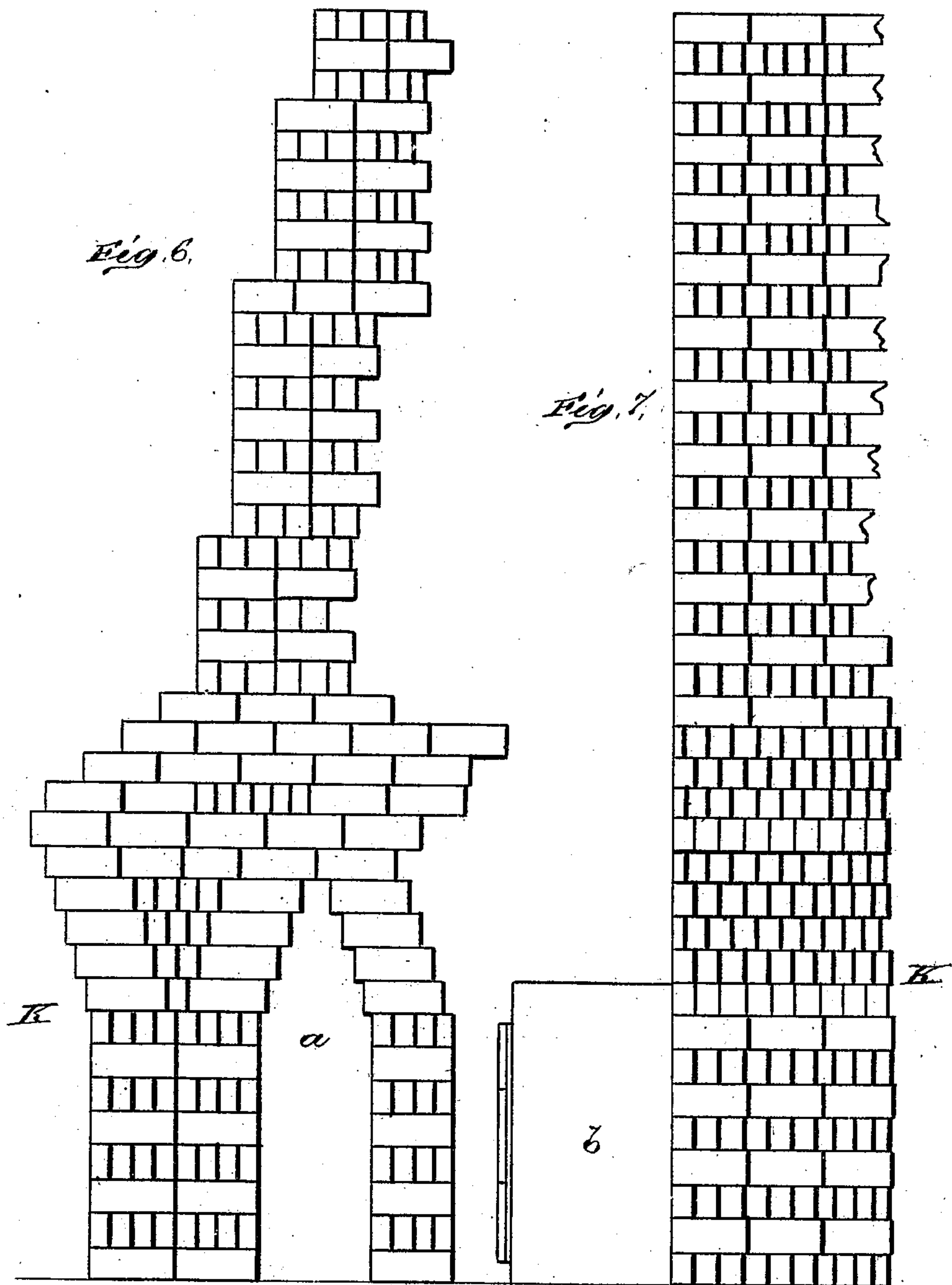
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WITNESSES

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# UNITED STATES PATENT OFFICE.

JOSEPH HAAS, OF DELAWARE, OHIO.

## IMPROVEMENT IN BRICK-KILNS.

Specification forming part of Letters Patent No. **202,542**, dated April 16, 1878; application filed March 3, 1877.

*To all whom it may concern:*

Be it known that I, JOSEPH HAAS, of the city of Delaware, county of Delaware, and State of Ohio, have invented a new and useful Improvement in Brick-Kilns, which improvement is fully set forth in the following specification and the accompanying drawings, in which—

Figure 1 represents the ground plan of the kiln. Fig. 2 represents a longitudinal section of the kiln over the lines G H in the ground plan. Fig. 3 represents a transverse section of the kiln over the line A B. Fig. 4 represents a transverse section of the extended or external flues over the line C D. Fig. 5 represents a transverse section of the flues over the line E F, showing an end view of the extended or external flues. Figs. 6 and 7 represent end views of one of the arches, in which the bricks are placed in a longitudinal and a transverse section.

The object of my invention is to prevent, to a great extent, the overburning, melting, and spoiling of the bricks in the arches of the kiln. The nature of the invention consists in building the arches by arranging the bricks composing the walls of each arch alternately in a longitudinal and a transverse direction, the longitudinally-laid bricks forming a row four deep, whereby a series of three bricks in each row is interposed between the walls of the arches in such position that the inner series will be out of contact with the fire, as will be hereinafter shown and described.

The drawing shows a kiln with arches constructed according to my invention, in which it will be seen that each arch *a* is provided with a furnace, *b*, and a flue, *c*, in a line with said arch, which is built to a greater height than the top of the furnace, and provided with a flue or chimney-hole, *p*. Externally of the kiln, but between the line of furnaces and the kiln, is a transverse flue-chamber, *d*, which is the upward as well as lateral extension of the flues *c*, and the apertures *p* are placed in the exterior wall of this flue-chamber, opposite and in line with the tops of the respective arches, and serve to admit air and regulate

the draft, especially in the upper portions of these arches, which are exceptionally high.

K represents the mode of constructing the arch. The bricks are placed in the arches *a* in a longitudinal and a transverse direction. The longitudinal bricks are laid four deep, in alternate rows with the bricks laid in a transverse direction, said bricks being laid more open than the longitudinally-laid bricks, breaking joints therewith to the ninth course from the ground, and the ninth course is laid tight. From the ninth course, and including it, I place the bricks all the same way to the fourteenth course, which fourteenth course is also laid tight, whereby a series of three bricks in each longitudinal row is interposed between the walls of the arches in a position out of contact with the fire. By this method of constructing the arches the outer bricks of the longitudinal courses only are exposed to the flame, while the bricks in the transverse courses and those above the ninth course have their ends only exposed to the action of the flame.

I am aware that bricks have been arranged in a brick-kiln transversely in rows three deep, leaving single intervening rows of bricks arranged transversely between said rows.

I am also aware that extended or external flues are not new; but

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

The method herein described of building the arches of a brick-kiln, by arranging the bricks composing the walls of each arch alternately in a longitudinal and a transverse direction, the longitudinally-laid bricks forming a row four deep, whereby a series of three bricks in each row is interposed between the arches in a position out of contact with the fire, and the bricks in the transverse courses and those above the ninth course present their ends only to the action of the flame, substantially as specified.

JOSEPH HAAS.

Witnesses:

O. C. COWGILL,  
F. M. MARRIOTT.