

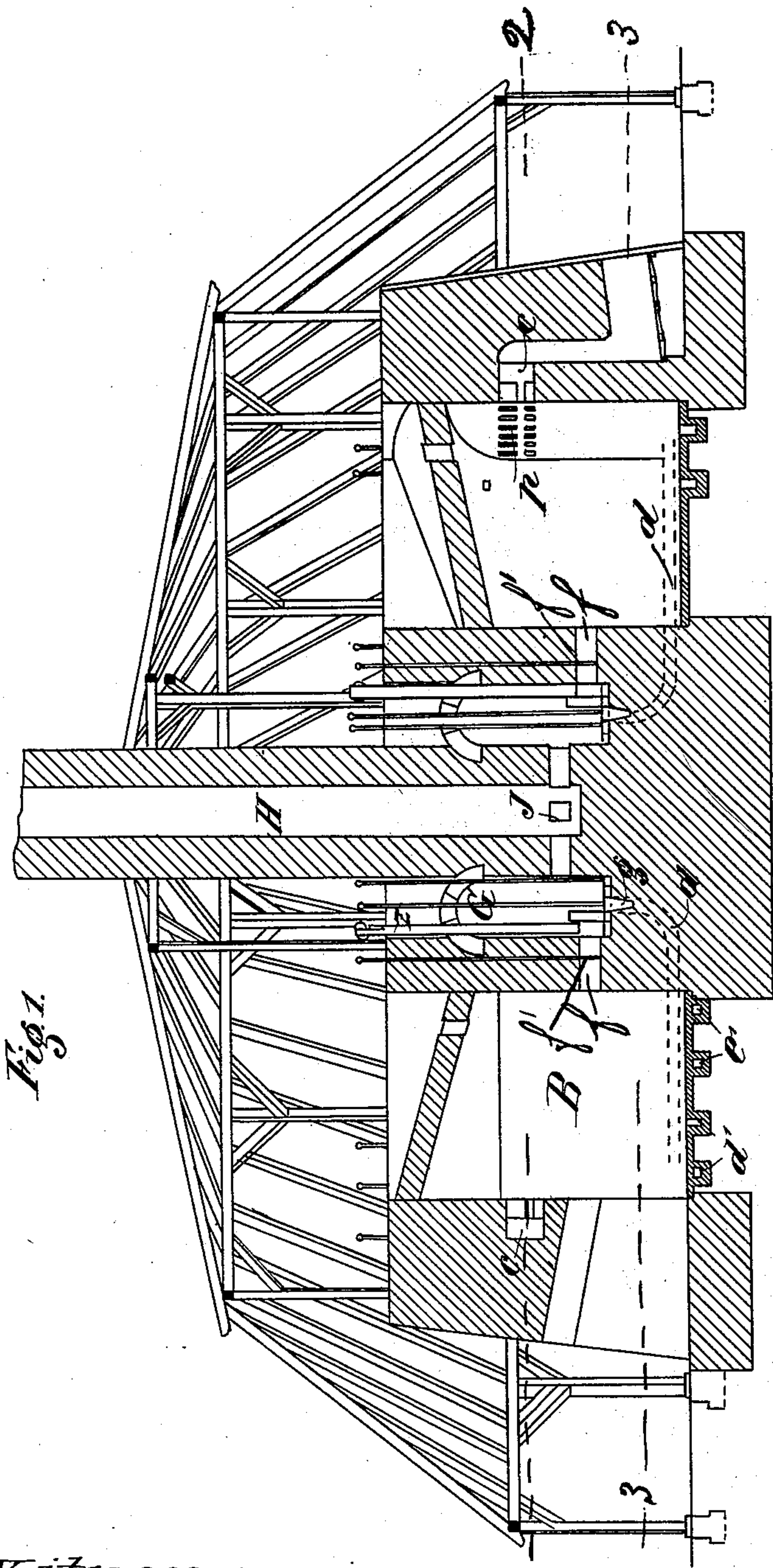
(No Model.)

C. MOELLENHOFF.
BRICK KILN.

3 Sheets—Sheet 1.

No. 508,960.

Patented Nov. 21, 1893.



Witnesses:
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E. H. Sturtevant

Inventor:
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By *Richardson*
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(No Model.)

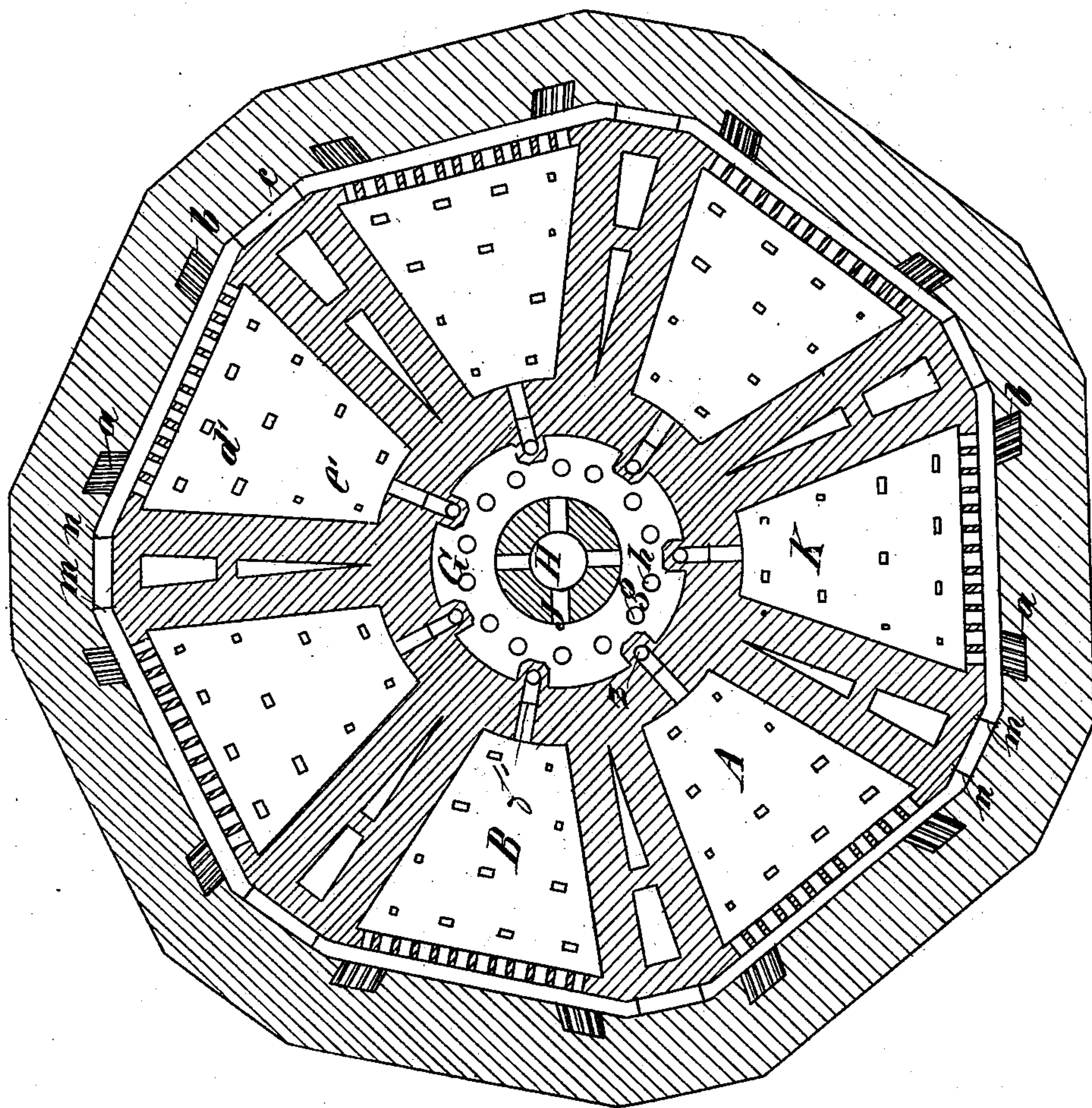
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Fig. 2.



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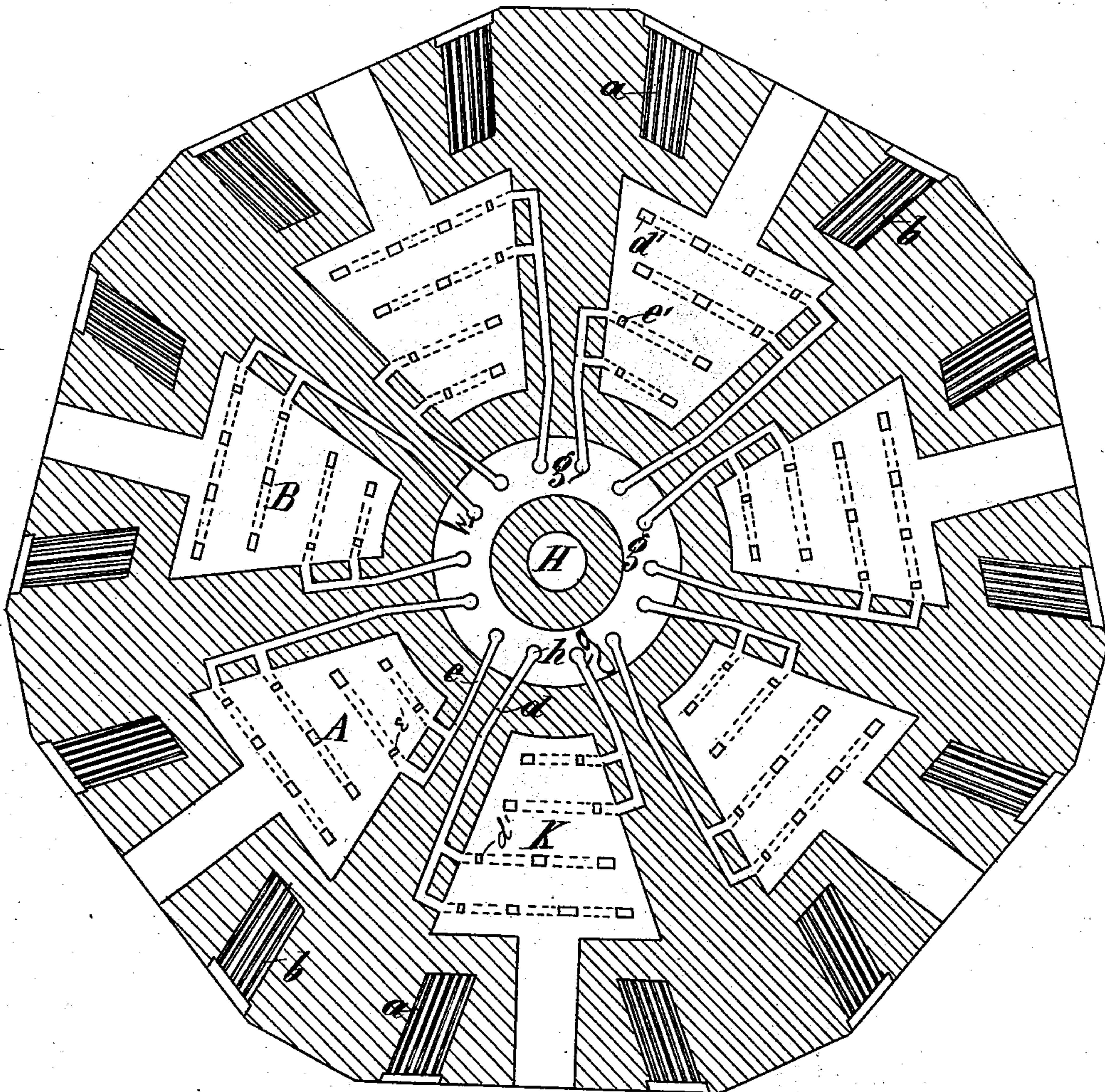
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Fig. 3.



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UNITED STATES PATENT OFFICE.

CARL MOELLENHOFF, OF HAMM, GERMANY.

BRICK-KILN.

SPECIFICATION forming part of Letters Patent No. 508,960, dated November 21, 1893.

Application filed October 22, 1892. Serial No. 449,710. (No model.)

To all whom it may concern:

Be it known that I, CARL MOELLENHOFF, a subject of the King of Prussia, residing at Hamm, Westphalia, in the Kingdom of Prussia, Germany, have invented new and useful Improvements in Baking-Ovens, consisting of Chambers for Manufacturing Potteries, of which the following is a specification.

My invention relates to the disposition of baking ovens for potteries of any kind in such a manner, that, owing to the peculiar arrangement and leading of the flues a quite uniform baking of the earthen ware with respect to color and hardness is obtained, and that the heat in excess, after the burning down of the kiln, or a part of same may be used for heating preparatorily one or several other parts of the kiln.

In the drawings, Figure 1, is a central vertical section through the oven; Fig. 2, a sectional plan on line 2—2, Fig. 1, and Fig. 3, a sectional plan on line 3—3 of Fig. 1.

The invention includes several chambers or compartments A, B, C, &c., serving to receive the earthen ware to be burned. These chambers are cone-shaped constructed and each of them is provided with two fire-places *a* and *b* from which the hot gases pass first into a channel extending in front of the chambers round the kiln and divided by slides *n* and *m* in such a manner that the gases cannot flow from the fire places of the chamber A, say, into B or K, but must enter through *p* directly to their respective chambers. There are at the bottom of the several chambers openings *e'* and *d'*; orifices of channels *e* and *d*, which, separated from each other, lead to a smoking chamber G arranged around the chimney H in the central part of the kiln and susceptible of being opened or closed by means of slides or smoke-bells *g* and *h*. In addition to this, a third channel *f* leads from the back-wall of each chamber directly into the smoking chamber G; the channel *f* can be shut off by a slide *f'*. The smoking chamber G is through the flues J in direct communication with the chimney H. By arranging the flues in the described manner, it will be possible to distribute the heat quite at will in the different chambers. If, for instance, the slides *f'* and *h* are closed, but *g*

duced in the front part of the chamber; if, on the contrary, *h* is opened and *g* closed, the highest heat is concentrated in the rear part of the chamber. The opening of channel *f* and the closing of *d* and *e* produce an energetic draft of the fire gases through the central part of the chambers, while by closing *f* and opening *d* and *e* the gases are forced toward the bottom and flow through the chamber from above downward. For this reason it is very easy to obtain by means of a suitable position of the slides and bells *f'*, *g* and *h* in combination with the conically shaped construction of the chambers such a distribution of the fire gases, that there is in all the different parts of the chamber the same temperature. By this a principal requirement for a rational baking is fulfilled, as the earthen ware to be burned, indifferently where they may be placed in the chamber, are all subjected to a heat of the same high degree, so that a quite uniform baking with respect to color and hardness will take place. Moreover the working of the kiln will become very economical, as, owing to the improved construction of the kiln, the high temperature, which after the baking is still in the chambers, is utilized in a very simple way.

When for instance, the baking process has been terminated in the chamber A, the fire places *a* and *b* of the same are shut off by means of a shell, by filling with sand, by separating by masonry, or in any other suitable way, the chambers *d*, *e* and *f* are closed, and the slides and bells *g'*, *h* and *f'* of the flues in B or K are opened, so that the direct draft to the chimney is shut off in the chamber A, but is established in the chamber B or K, whereupon the slides *n* and *m* are opened and the hot gases contained in chamber A pass to the chamber B or K. Into the finished burned chamber fresh air must of course be admitted in substitution of the discharged hot air, and for this purpose the chamber is to be put into communication with the open air. To attain this, an iron conduit *z* is provided in front of the corresponding channel *f*, after the burning down of the chamber, the smoke collector G through a suitable aperture in the roof of the collector, through which conduit the required fresh air penetrates into the chamber.

The chambers to be heated preparatorily are of course previously charged with fresh earthen wares to be burned, and heated in this way nearly without any expenses to a rather considerable high temperature, which is increased then by the fire places *a* and *b* to the required highest degree. In lieu of from the chamber A to the chamber B, the heat in excess may be transmitted to any other chamber; for this purpose it is only necessary to shut off the flues in the intermediate chambers and to open in the channel *c* the slides *m* and *n* up to the chamber in question. The preparatory heating of several chambers may of course also take place from one chamber. This construction affording by the utilization of the hot gases in excess, a large saving in fuel and permitting a continuous working, offers furthermore an essential advantage as it assists at a very high degree in the rapid manufacture of the earthen ware, because it is no longer necessary to wait for the complete drying of the wares.

While I have shown the annular conduit *c*, in front of the chambers and between them and the combustion chambers it will be understood that I do not wish to limit myself in this respect and this flue may be duplicated if desired and placed at another point without departing from the spirit of my invention.

Having now fully described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. An annular baking oven consisting of several cone-shaped chambers or compartments A, B, C, &c., for manufacturing earthen wares of any kind, which oven is characterized by the arrangement of the flues in such

a manner, that the fire gases pass from the fire places *a* and *b* through a channel *c* extending in front of the chambers round the oven and divided by slides *m*, *n*, into separate sections corresponding to the number of chambers, into the latter, whence they are led through chambers *e* and *d* arranged in the bottom of the chambers, or through the channel *f* in the back-wall of the chambers, first into a smoking chamber G surrounding the chimney arranged in the central part of the kiln, and then into the chimney H, substantially as set forth and shown in the accompanying drawings.

2. In combination the stack, the combustion chamber, the baking chamber, the independent conduits leading from the baking chamber to the stack and opening upward through the bottom of said chamber at the front and rear thereof respectively, the direct conduit leading from the rear of the baking chamber to the stack and the valves for controlling said conduits, substantially as described.

3. In combination, the stack, the baking chambers about the same, the furnaces for said chambers, the passages *f*, leading through the back wall of the chambers to the smoke stack, the annular conduit between the baking chambers and the conduit *z*, connecting with the passage *f*, for the introduction of fresh air.

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

CARL MOELLENHOFF.

Witnesses:

A. KLINGHAMMER,
G. NIEDER.